



City of North Bay Report to Council

Report No: CSBU-2023-026

Date: November 2, 2023

Originator: Adam Curran, M.E.S, RPP, MCIP

Business Unit:

Department:

Community Services

Planning & Building Department

Subject: Trout Lake Study Update

Closed Session: yes no

Recommendation

That City Council directs staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on the general direction of the "Directions Report, Trout Lake Watershed and Management Study" by J.L. Richards dated June 29, 2022 and Addendum #2 (November 2, 2023) and Hutchinson's "Trout Lake Watershed Study and Management Plan – Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023).

Background

The City of North Bay, in collaboration with the Municipality of East Ferris and the North Bay-Mattawa Conservation Authority (NBMCA), undertook the Trout Lake Watershed and Management Study, with consulting firms J.L. Richards and Hutchinson Environmental. The findings of the study were presented to the previous Council on July 25, 2022. Council passed resolution 2022-256(b) on August 9, 2022, to have the item remain on the Committee Agenda.

The Trout Lake Watershed and Management Study was initiated as a comprehensive review of lake quality and the review of current policies and provisions around the protection and management of the lake. A comprehensive study has not occurred since 1992, with the "Trout Lake Watershed Management Study and a Trout Lake Pollution Control Plan, Limnology and Analysis".

The province, through the Ministry of Environment & Climate Change Strategy, Eastern Region Technical Support Section, completed a "Lake Capacity Assessment" of Trout Lake in February of 2018. This assessment concluded that *"the phosphorus model does not predict within acceptable*

limits for Four Mile Bay or Trout Lake (Main Basin), as it over-predicts the spring overturn concentrations by greater than 20% of measured values. As such the model cannot be used as a planning tool to predict a background concentration (to set a background plus 50% objective), and therefore it cannot be used to estimate an upper limit for development” (Lake Capacity Assessment; Trout Lake, p.14, 2018).

The Assessment further states, *“In the future, the Ministry may be open to considering a very limited release of new development lots for Trout Lake. The decision to allow or not allow new shoreline development lots will be based on a rigorous review of the long-term measured water quality data and a detailed statistical analysis of trends by the Ministry” (Lake Capacity Assessment: Trout Lake, p. 15, 2018).*

Based on the Provinces conclusion on their Lakeshore Assessment and the fact that the City has not done a comprehensive review since the 1990’s, Council for the City of North Bay awarded a contract by Resolution No. 2021-140 to J.L. Richards & Associates Limited to *“conduct a watershed study, prepare a management plan for Trout Lake and provide planning consulting services to complete the required Official Plan Amendments and Zoning By-law Amendments”*. J.L. Richards proposal included working with Hutchinson Environmental who has an expertise in Lake Assessment and Management.

The process to date has involved four Open House meetings, a booth at the East Ferris Trade Show in 2022, numerous meetings with stakeholder groups and one-on-one correspondence through email and phone calls. The public process has received a good turn out and input from Community members in both the City of North Bay and the Municipality of East Ferris and has been well received.

Through the study the consultants have prepared the following reports:

1. *Land Use Background Report, Trout Lake Watershed Study and Management Plan*. J.L. Richards, March 28, 2022.
2. *Trout Lake Watershed Study and Management Plan – Background Report*. Hutchinson Environmental Sciences Ltd. September 20, 2021.
3. *Trout Lake Watershed Study and Management Plan – Issues, Opportunities and Constraints Report*. J.L. Richards, June 17, 2022.
4. *Draft Trout Lake Watershed Study and Management Plan – Existing Conditions, Issues, Opportunities and Constraints*. Hutchinson Environmental Sciences Ltd. October 23, 2023.
5. *Draft Directions Report – Trout Lake Watershed Study and Management Plan*. J.L. Richards, June 29, 2022.

6. *Addendum #1 to Trout Lake Watershed Study and Management Plan*
– JLR Directions Report.

7. *Addendum #2 to Trout Lake Watershed Study and Management Plan*
– JLR Directions Report.

All of these reports are available on the City's [website](#).

Attached to this report is the J.L. Richards Draft 'Directions Report' and Addendum #2 and Hutchinson's 'Trout Lake Watershed Study and Management Plan – Existing Conditions, Issues, Opportunities and Constraints, and Report to Council CSBU-2022-038 'Trout Lake Study and Management Plan' dated June 28, 2022.

The Directions Report recommends a calculated and cautious approach to new residential development and redevelopment on the lake and inflowing streams to the lake. The Directions Report does not recommend development that would bring the lake to capacity or close to capacity.

Since the original presentation to Council in July 2022, there have been several amendments to the Planning Act. The attached J.L. Richards Addendum #2 discusses the impacts of the changes to the Planning Act, and ultimately recommends that the reports move forward, incorporating the recommendations of both J.L. Richards and Hutchinson Environmental.

Between the J.L. Richards and the Hutchinson Environmental there are 28 recommendations to improve on current practices and ultimately protect the health of the lake. The 28 recommendations are listed below and details regarding each recommendation are contained in the attached background reports.

1. Include guiding policies on climate change and its associated impacts regarding Trout Lake in both the North Bay and East Ferris Official Plans.
2. Implement a hybrid approach to the Municipal Water Quality Objective (MWQO) by updating the MWQO for the Trout Lake Main Basin to 5.64 µg/L of TP and maintain the existing MWQO of 7.0 µg/L of TP for the Four Mile Basin in both the North Bay and East Ferris Official Plans.
3. Remove all reference and prohibitions on lot creation associated with the 300 metre setback from Trout Lake within the North Bay and East Ferris Official Plans.
4. Implement a Trout Lake Influence Area Overlay within the North Bay and East Ferris Official Plan, which would apply to all lands within 300 metres of the shoreline, islands, major inflowing streams and Four Mile Lake.

5. Permit a limited number of new lots to be created in the Trout Lake Influence Area, subject to best management practices. This includes 70 lots in the Main Basin (42 in North Bay and 28 in East Ferris) and up to 20 lots in Four Mile Bay.
6. Require development on existing, vacant legal lots of record to conform to updated development standards (e.g. setbacks and vegetative buffers) and best management practices.
7. Implement parameters in both the North Bay and East Ferris Official Plans and Zoning By-laws to permit limited expansions of non-complying buildings and structures, as of right and subject to best management practices.
8. Expand the policies in the North Bay Official Plan regarding legal non-conforming minor variance applications to require administrative best practices be implemented on all minor variance applications and implemented through Site Plan Control.
9. Include guidance on minor variance applications for legal non-conforming or complying uses to the East Ferris Official Plan. *(Note: North Bay's Official Plan policy already includes this guidance.)*
10. Require that all lots within the Trout Lake Influence Area Overlay be subject to Site Plan Control and establish site plan control applications requirements within the Official Plans for both North Bay and East Ferris.
11. Establish consistent best management practices to be used in the site plan process in the North Bay and East Ferris Official Plans.
12. Continue to prohibit Additional Residential Units in the study area.
13. Permit sleep cabins, subject to site plan control and best management practices on waterfront lots. Establish sleep cabin development controls in the zoning by-laws for North Bay and East Ferris. *(Note: Sleep cabins sometimes referred to as guest cabins or bunkies are not considered a dwelling unit-they are accessory buildings used for temporary sleeping purposes.)*

Along with the Planning recommendations from J.L. Richards, Hutchinson Environmental also provided the following recommendations:

1. Increase the parameter list for samples collected in Trout Lake to include emerging limnological issues (calcium and chloride) and explanatory variables (total suspended solids, dissolved organic carbon and phytoplankton).

2. Implement a consistent sampling methodology, increase Quality Accuracy/Quality Control (QA/QC) procedures such as the collection of duplicate samples, and continue to use a water quality laboratory with a proven track record of delivering consistent low level TP results such as the Dorset Environmental Science Centre which has been utilized since 2013.
3. Expand the water quality monitoring program to include inflowing tributaries and complete mass balance modelling to determine the phosphorus reduction efficiencies of each watercourse which can be used to help inform management decisions.
4. Complete a thorough review of dissolved oxygen data that has been collected and develop a standardized and repeatable approach for collecting suitable data and calculating Mean Volume Weighted Hypolimnetic Dissolved Oxygen (MVWHDO) concentrations in Four Mile Bay, Trout Lake – Main Basin, Turtle Lake and Lake Talon. NBMCA completed a thorough analysis of MVWHDO in 2018 in Trout Lake so that approach should be reviewed to determine if it can be adopted as a standardized assessment approach.
5. Complete and distribute annual monitoring reports to the City of North Bay and East Ferris and include comparisons of data to Municipal and Provincial Water Quality Objectives to provide an ongoing dataset to inform planning policy.
6. Develop a Lakeshore Capacity Model (LCM) and dissolved oxygen model for each of Turtle Lake and Lake Talon to quantify the impact of increased Total Phosphorous (TP) loads associated with the three development scenarios on TP concentrations and MVWHDO concentrations in Turtle Lake and Lake Talon. Combine the findings with updated MVWHDO evaluations in Turtle Lake and Lake Talon (Recommendation #4) and other available monitoring data to better determine downstream impacts.
7. Sampling at Sites 2625 and 2685 should be reinitiated to establish the effectiveness of those septic systems.
8. Examine the septic system monitoring results as they are received so that immediate corrective action can be taken in the event of missing samples or anomalous results.
9. Follow up on the results for those systems not averaging at least 93% phosphorus removal by conducting more sampling and/or installing an additional piezometer at the furthest downgradient point in the tile field. *(Note: For Minimum Impact Lots only)*
10. Develop a septic inspection program that provides a better

understanding of system functionality than visual observations of obvious system failures, such as inspections completed during home inspections.

11. Complete a thorough septic inspection on any short-term rentals to determine if the system can adequately treat wastewater generated by such uses
12. Develop a comprehensive and fulsome list of Best Management Practices (BMPs) and development standards that are automatically applied to all waterfront development applications so that a protective approach to development is implemented as part of all waterfront developments.
13. Complete a review of septic system technologies such as the EcoFlo Biofilter and Waterloo Biofilter, and soil requirements for leaching bed systems that have proven to attenuate phosphorus (e.g. <1% CaCO₃, >1% acid-extractable concentrations of iron and aluminum [MOE 2010]) to determine appropriate sewage system requirements that will minimize impacts on Trout Lake.
14. An influx of new residents that value manicured lawns and are not familiar with waterfront BMPs and lake stewardship could negatively impact Trout Lake. Regulatory BMPs on existing and future development should be encouraged through education, stewardship and enforcement.
15. Repeat the Trout Lake Management Study in the near future (e.g. 3-5 years) to assess the health of Trout Lake in response to ongoing climate change, effectiveness of BMPs, and progress related to the Recommendations provided here-in, utilizing any new updated lake capacity tools, so that appropriate changes to planning policy can be developed and implemented.

The approach being taken is cautious and provides alternatives to the current practices. The science demonstrates the lake is in excellent health, and with a careful and cautious approach the lake health would be maintained and improved with the proposed best management practices.

With the completion of the background studies, the next step in the process is to incorporate the recommendations into policy and regulations. Through the Official Plan and Zoning By-law Amendment process, there will be detailed policy created that will be presented, through a fulsome public process and to Council for further review and decisions. Proceeding with the Official Plan and Zoning By-law Amendment is important to the overall protection of the lake and will provide a defensible position on our Trout Lake policies and provisions.

Meetings and collaboration will continue with the Township of East Ferris

towards joint efforts for the management of Trout Lake Water Quality.

Financial/Legal Implications

Financial implications would include staff time associated to preparation of the Official Plan Amendment and Zoning By-law Amendments including preparing for and attending various open houses and public meetings. All other costs were approved through the award of the contract to J.L. Richards (Report to Council CORP 2021-35) and Capital Project No. 3418PZ.

Corporate Strategic Plan

- | | |
|----------------------------------------------------------------|--------------------------------------------------|
| <input checked="" type="checkbox"/> Natural North and Near | <input type="checkbox"/> Economic Prosperity |
| <input checked="" type="checkbox"/> Affordable Balanced Growth | <input type="checkbox"/> Spirited Safe Community |
| <input type="checkbox"/> Responsible and Responsive Government | |

Specific Objectives

- Protect, promote and enhance the environment in all aspects of the City's operations and plans;
- Leverage the natural environment to enhance healthy living and recreational opportunities;
- Explore and implement opportunities to streamline processes, policies and practices that make it easier and more effective to do business in North Bay.

Options Analysis

Option 1: That City Council directs staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on the general direction of the "Directions Report, Trout Lake Watershed and Management Study" by J.L. Richards dated June 29, 2022 and Addendum #2 (November 2, 2023) and Hutchinson's "Trout Lake Watershed Study and Management Plan – Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023).

This option is recommended for the reasons outlined in this report.

Option 2: That City Council does not direct staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on the general direction of the "Directions Report, Trout Lake Watershed and Management Study" by J.L. Richards dated June 29, 2022 and Addendum #2 (November 2, 2023).

This option is not recommended. As outlined in this report and previous report to Council CSBU 2022-038, the lake has not had a fulsome study completed since the 1990s, the Province concluded that the model to predict phosphorus levels cannot be used as a planning tool, and the Hutchinson report recognizes the lake is not at capacity.

The City could leave the Official Plan policies as is and restrict any new lot creation within the Trout Lake watershed; however, this approach increases the City's risk related to challenges to the Ontario Land Tribunal and removes

the ability of the City to develop updated policies and implement updated and current best management practices on Trout Lake and its major inflowing streams based on updated lake quality data.

Recommended Option

Option 1 is the recommended option.

That City Council directs staff to initiate an Official Plan Amendment and Zoning By-law Amendment based on the general direction of the "Directions Report, Trout Lake Watershed and Management Study" by J.L. Richards dated June 29, 2022 and Addendum #2 (November 2, 2023) and Hutchinson's "Trout Lake Watershed Study and Management Plan – Existing Conditions, Issues, Opportunities and Constraints (October 23, 2023).

Respectfully submitted,

Name: Adam Curran, M.E.S., MCIP, RPP

Title: Policy and Business Development Planner

I concur with this report and recommendation

Name Beverley Hillier, MCIP, RPP

Title: Manager, Planning & Building Services

Name Ian Kilgour, MCIP, RPP

Title: Director, Community Services

Name John Severino, P.Eng., MBA

Title: Chief Administrative Officer

Personnel designated for continuance:

Adam Curran, M.E.S., MCIP, RPP

Policy and Business Development Planner