

Lakehead Source Protection Plan

Annual Report

Reporting Period
January 1, 2021 to December 31, 2021

Prepared by the Lakehead Source Protection Authority



LAKEHEAD REGION
CONSERVATION AUTHORITY
LAKEHEAD SOURCE PROTECTION AREA

Lakehead Source Protection Plan Annual Report

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January 1, 2021 to December 31, 2021

April 29, 2022

Prepared by:

Lakehead Source Protection Authority

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Executive Summary

As a requirement under the *Clean Water Act, 2006*, Source Protection Authorities (SPAs) are required to provide an annual progress report to the Director of the Ministry of the Environment, Conservation and Parks (MECP) by May 1st of every given reporting year. The report must also be provided to the Source Protection Committee (SPC) at least 30 days prior to submitting to the Director and be provided to the public as soon as reasonably possible after submission to the Director. This report represents the seventh annual progress report prepared by the Lakehead SPA, covering the period of January 1, 2021 to December 31, 2021.

The Lakehead Source Protection Plan is the culmination of the Lakehead SPC's efforts to draft policies to ensure that significant threats to Municipal Drinking Water Sources in the Lakehead Source Protection Area cease to be or never become significant drinking water threats. The Lakehead Source Protection Plan applies to the two Municipal Drinking Water Sources located within the Lakehead Source Protection Area that include: Bare Point Water Treatment facility providing drinking water to the City of Thunder Bay and the Rosslyn Village Drinking Water Facility, which provides drinking water to 31 homes within Rosslyn Village.

The Plan contained six legally binding policies that applied to two implementing bodies: Municipality of Oliver Paipoonge and the Thunder Bay District Health Unit. Two non-legally binding policies were included in the Plan that applied to the City of Thunder Bay, which were considered "best management practices" and are not mandatory but recommended.

In order to monitor the progress of the policies in the Plan, the implementing bodies are required to provide annual reports to the SPA by February 1st of every reporting year, summarizing the activities of the previous year. To date nine annual reports have been received by the Lakehead SPA from the implementing bodies.

Actions completed by the Municipality of Oliver Paipoonge over the reporting period included: Completion of the annual report to the SPA. There were no Official Plan and Zoning By-law amendment applications within WHPA-A in 2021.

Future policy actions required by the Municipality of Oliver Paipoonge include: continuing to circulate all Official Plan and Zoning by-law *Planning Act* applications within WHPA-A to the SPA; continuing to prohibit prohibited land uses in WHPA-A; continue to locate salt and snow storage outside of WHPA-A; continue to minimize salt application in WHPA-A; continue to have the facts sheets related to DNAPLs and plane de-icer available for

distribution; and prepare and submit annual reports to the SPA by February 1st of every reporting year.

Actions completed by the Thunder Bay District Health Unit over the reporting period included: twelve sewage treatment system re-inspections were completed in 2021, and completion of the annual report to the SPA. The initial required septic system inspections were completed by the Thunder Bay District Health Unit as of November 2016.

Future policy actions required by the Thunder Bay District Health Unit include: re-inspect all septic systems within WHPA-A every five years, with the next re-inspection cycle starting in 2024, and prepare and submit annual reports to the SPA by February 1st of every reporting year.

Actions completed by the City of Thunder Bay over the reporting period included placing three buoys marking the anchorage boundary in proximity to the intake during the ice free period.

Future policy actions recommended to be completed by the City of Thunder Bay include: annually place buoys marking the anchorage boundary in proximity of the intake; provide the SPA copies of any updates to the Spill Prevention and Contingency Plan and a summary of any actions taken to protect the Bare Point Intakes, as well as providing updates to the Standard Operating Procedure related to monitoring and reporting of blue-green algae blooms.

For the reporting period of January 1, 2021 to December 31, 2021, all policies as outlined in the Lakehead Source Protection Plan have been implemented by the respective implementing bodies or are in the process of being implemented as required.

No actions were taken over the reporting period to address deficiencies noted in the Assessment Report.

The next annual report is due from the Lakehead SPA to the Director of the MECP on May 1, 2023 for the period of January 1, 2022 to December 31, 2022.

Table of Contents

Executive Summary	i
1 Introduction	1
1.1 Legislation.....	1
1.1.1 Clean Water Act, Section 46.....	1
1.1.2 Ontario Regulation 287/07, Section 52	2
2 Background	3
2.1 Lakehead Source Protection Area.....	3
2.2 Lakehead Source Protection Plan	4
2.2.1 Approval of the Source Protection Plan	4
2.2.2 Updates to the Source Protection Plan	4
2.3 Source Protection Authority (SPA).....	6
2.3.1 Source Protection Authority Membership	6
2.4 Source Protection Committee (SPC)	6
2.4.1 Source Protection Committee Chair.....	7
2.4.2 Source Protection Committee Membership.....	7
3 Lakehead Source Protection Plan Policies	8
3.1 Municipality of Oliver Paipoonge.....	8
3.2 Thunder Bay District Health Unit	12
3.4 City of Thunder Bay	14
4 Source Protection Plan Implementation Status.....	15
5 Deficiencies in the Assessment Report.....	20
6 Annual Report Distribution	21
6.1 Source Protection Committee	21
6.2 Source Protection Authority	21
6.3 Director of the Ministry of Environment, Conservation and Parks	21
6.4 Public	21
7 Conclusion.....	22

List of Tables

Table 1: Lakehead Source Protection Plan Policy Implementation Status.....15

List of Maps

M-1 – Lakehead Source Protection Area

1 Introduction

Source Protection Authorities (SPAs) are required under the *Clean Water Act, 2006* to provide Source Protection Plan annual progress reports to the Director of the Ministry of the Environment, Conservation and Parks (MECP), Source Protection Committee (SPC) and the public. The Minister of the MECP is required to include a summary of the progress reports in the annual report prepared by the Minister under the *Safe Drinking Water Act, 2002*.

This report is the seventh annual progress report prepared by the Lakehead SPA for the period of January 1, 2021 to December 31, 2021.

In addition to this Annual Report, the SPA has completed and provided to the MECP “Source Protection Annual Progress Report”, “Annual Progress Reporting Supplemental Form for Source Protection” and the “Policy Implementation Status” (templates provided by the MECP) that provide a summary of reportable data which the Ministry can utilize in the completion of the Minister’s annual report.

1.1 Legislation

Annual reporting requirements are outlined in the *Clean Water Act, 2006* Section 46 and Ontario Regulation 287/07, Section 52 under the *Clean Water Act, 2006*.

1.1.1 Clean Water Act, Section 46

Section 46 under the *Clean Water Act, 2006* specifies the requirement of the completion of annual reports. The SPA must annually prepare and submit to the Director and the SPC in accordance with the Regulations a report that:

- 1) describes the measures that have been taken to implement the Source Protection Plan, including measures taken to ensure that activities cease to be significant drinking water threats and measures taken to ensure that activities do not become significant drinking water threats;
- 2) describes the results of any monitoring program conducted pursuant to section 45;
- 3) describes the extent to which the objectives set out in the Source Protection Plan are being achieved; and
- 4) contains such other information as is prescribed by the regulations.

The SPA must provide the report to the SPC at least 30 days prior to submitting to the Director. The SPC shall review the report and provide written comments to the SPA about

the extent to which, in the opinion of the Committee, the objectives set out in the Source Protection Plan are being achieved by the measures described in the report. If the SPA receives SPC comments before submitting the report to the Director, copies of the comments shall be included in the report. The report is to be made available to the public as soon as reasonably possible after it is submitted to the Director. The Minister shall include a summary of the reports submitted by SPAs under Section 46 in the annual report prepared by the Minister under the *Safe Drinking Water Act*.

1.1.2 Ontario Regulation 287/07, Section 52

Section 52 of Ontario Regulation 287/07 under the *Clean Water Act* outlines the requirements related to annual progress reports. The first report due shall apply to the period beginning the day the Plan takes effect and ending December 31, of the second calendar year following the year in which the Plan takes effect (i.e. October 1, 2013 to December 31, 2015 in the case of the Lakehead Source Protection Plan). Subsequent reports shall be for the full calendar year. Reports are due May 1 of the year following the year to which the report applies.

The report must include:

- 1) If the Source Protection Plan sets out a policy that specifies a date by which a particular action shall be taken by a person or body, and the person or body fails to take that action by that date, a description of the failure and the reasons for the failure.
- 2) A description of any steps taken during the reporting period to address any deficiencies in the information that was used in developing the Assessment Report set out in the Source Protection Plan.
- 3) A summary of the report prepared and submitted by the risk management official under section 81 of the Act for the same calendar year to which the report under section 26 of the Act applies (not applicable to the Lakehead Source Protection Plan, as there are no required Risk Management Officials).
- 4) Any other information that the SPA considers advisable.

2 Background

The Ontario government enacted the *Clean Water Act, 2006* in order to protect sources of water supplying municipal drinking water systems and ultimately human health and environment. This was in response to the Walkerton tragedy, in which the municipal drinking water system became contaminated resulting in the death of seven residents and thousands falling ill.

Ontario's Conservation Authorities were provided funding from the MECP to acquire the resources necessary to implement the proposed "protection of water at its source". The Minister of the MECP appointed Chairs for SPCs. Subsequently, representatives from the watershed community were appointed to the SPCs.

The first step of the Source Protection Planning process required each SPC to prepare a Terms of Reference. These documents outlined all necessary steps that document and implement the Source Protection Plan. Upon completion of the Terms of Reference, the Assessment Report, Watershed Characterization Report, and Water Budget and Water Quantity Stress Assessment were completed. The technical studies were utilized to determine vulnerable areas where contamination or shortages of water could be an issue for Municipal Drinking Water Sources. Technical studies were also used to establish a list of threats that were located within the vulnerable areas. The completed studies were then used to develop the Source Protection Plan. The Source Protection Plan contains a series of policies developed by the SPC in consultation with the local community to protect municipal drinking water sources from existing and future drinking water threats. The Plan describes the actions that must be taken by various agencies to protect surface water and groundwater sources that supply municipal drinking water.

Copies of all completed technical studies, the Lakehead Source Protection Plan, and previous Annual Progress Reports are available on-line at www.lakeheadca.com.

2.1 Lakehead Source Protection Area

The Lakehead Source Protection Plan applies within the Lakehead Source Protection Area, which is 11,526 square kilometres and covers the area of land where the flow of water contained within the secondary watershed would eventually pass through the Lakehead Region Conservation Authority (LRCA) area of jurisdiction and reach Lake Superior. The LRCA area of jurisdiction, which differs from the Lakehead Source Protection Area, covers 2,700 square kilometres and is defined by the municipal boundaries of its eight Member Municipalities including: City of Thunder Bay, Municipalities of Oliver Paipoonge, Shuniah and Neebing and the Townships of O'Connor, Conmee, Dorion and Gillies. See Map M-1, Lakehead Source Protection Area.

2.2 Lakehead Source Protection Plan

The Lakehead Source Protection Plan is the culmination of the Lakehead SPC's efforts to draft policies to ensure that significant threats to Municipal Drinking Water Sources in the Lakehead Source Protection Area cease to be or never become significant drinking water threats.

Within the Lakehead Source Protection Area, there are only two sources of Municipal drinking water: Bare Point Water Treatment facility, providing drinking water to the City of Thunder Bay, and the Rosslyn Village Drinking Water Facility, which provides drinking water to 31 homes within Rosslyn Village.

The Source Protection Plan contains a series of policies developed by the SPC in consultation with the local community to protect municipal drinking water sources from existing and future drinking water threats. The Plan describes the actions that must be taken by various agencies to protect surface water and groundwater sources that supply municipal drinking water

It is noted that the Lakehead Source Protection Plan did not include any policies that required Risk Management Officials or the development of Risk Management Plans.

There are two implementing bodies that are required to implement the Plan's legally binding policies, they include the Municipality of Oliver Paipoonge and the Thunder Bay District Health Unit and are related to the Wellhead Protection Zones associated with the Rosslyn Village water supply. No significant or moderate threats were found to occur within the Intake Protection Zones of the City of Thunder Bay's Bare Point Water Treatment Plant; therefore, only two non-legally binding policies, which do not require mandatory actions, are applicable to the City of Thunder Bay.

2.2.1 Approval of the Source Protection Plan

The Lakehead Source Protection Plan was approved by the Minister of MECP on January 16, 2013, with an effective date of October 1, 2013.

2.2.2 Updates to the Source Protection Plan

A Section 36 Order was issued to the Lakehead SPA from the Minister of the MECP on October 13, 2015. The Order specified that the SPA shall prepare and submit a workplan to the MECP by November 30, 2017. The Order required that the workplan include detailed steps for the review of the Source Protection Plan and be developed in consultation with the Lakehead SPC, participating municipalities of the Source Protection

Area, and the MECP. The Order also required that the Lakehead SPA take information from the first two annual progress reports into account in preparation of the workplan.

The Lakehead SPA proposed the following changes to the Lakehead Assessment Report and SPP, as outlined in the table below.

Proposed Update No.	Description of Proposed Update	Implementing Body/Municipality	Applicable Document
1	IPZ-2 update with new floodplain mapping for North Star Creek.	City of Thunder Bay	Assessment Report and SPP
2	Update of Policy RV.1.CW-PA in SPP to remove references to the size of prohibited Waste Disposal Sites.	Municipality of Oliver Paipoonge	SPP
3	Review of Policy RV.5.CW-EO in SPP to assess the need to distribute Education and Outreach materials in the future. Remove EO materials related to agriculture.	Municipality of Oliver Paipoonge and TBDHU	SPP
4	Update of Policy RV.1.CW-PA in SPP to ensure future updates of Official Plan and Zoning continue to reflect applicable policies.	Municipality of Oliver Paipoonge	SPP
5	Update of Policy RV.3.CW-SP in SPP to require updates and/or reviews of Salt Management Plan.	Municipality of Oliver Paipoonge	SPP
6	Update of Policy TB.1.NLB-SP in SPP to require the placement of a minimum of three buoys at the surface water Intake.	City of Thunder Bay	SPP

The Section 36 Workplan was submitted to the MECP on November 30, 2017. The Minister responded on May 8, 2018 and noted that a comprehensive review and update of the Lakehead SPP and Assessment Report was not required at that time. Further consultation with the Ministry confirmed that the Lakehead SPA could complete the proposed changes either under Section 34 or wait until the next review and submission of the Section 36 Workplan in five years (i.e., May 2023).

It was decided to not proceed with a Section 34 amendment and assess again during the next Section 36 Workplan process.

2.3 Source Protection Authority (SPA)

The SPA for the Lakehead Source Protection Area follows the same structure as the LRCA Board of Directors. The LRCA Board is made up of members appointed by their respective municipal councils, which are either elected officials or appointed members of the public. For the reporting period, the SPA composition was the same as the LRCA Board of Directors.

2.3.1 Source Protection Authority Membership

SPA membership throughout the term of the reporting period included:

1. Donna Blunt, Municipality of Shuniah, Chair
2. Grant Arnold, Township of Conmee, Vice-Chair
3. Joel Brown, Township of Dorion
4. Rudy Buitenhuis, Township of Gillies
5. Erwin Butikofer, Municipality of Neebing
6. Jim Vezina, Township of O'Connor
7. Allan Vis, Municipality of Oliver Paipooonge
8. Andrew Foulds, City of Thunder Bay
9. Umed Panu, City of Thunder Bay
10. Andrea Goold, City of Thunder Bay
11. Trevor Giertuga, City of Thunder Bay

2.4 Source Protection Committee (SPC)

The SPC, as stated in the *Clean Water Act*, was responsible for preparing the Terms of Reference, the Assessment Report and the Source Protection Plan, while being supported by SPA. Through an application process, the Lakehead SPC was initially appointed by the SPA in the fall of 2007.

As outlined in O. Reg. 288/07 under the *Clean Water Act*, the SPA passed a resolution in April 2016 to reduce the Lakehead SPC from nine members to six. Following an application process, the new members of the reduced SPC were appointed by the SPA on November 30, 2016.

2.4.1 Source Protection Committee Chair

The Minister of the MECP appoints the Chair of the SPC. The Chair of the Lakehead SPC over the term of the reporting period was Ms. Lucy Kloosterhuis, who was appointed by the Minister of the MECP, effective September 24, 2019. The new three-year term has an expiry date of August 19, 2022.

2.4.2 Source Protection Committee Membership

In 2021, the term for the four non-municipal SPC members was up for renewal. Through an application process, the Lakehead SPC non-municipal members were appointed by the SPA on October 27, 2021, for a term of five years commencing on December 1, 2021.

For the reporting period, membership of the SPC consisted of the following six members:

- Municipal
 - Walter Turek, City of Thunder Bay
 - Chris Bowles, Municipality of Oliver Paipoonge
- Industrial
 - Guy Jarvis, Thunder Bay Port Authority (ended November 30, 2021)
 - Ashleigh Marchl, Resolute Forest Products (December 1, 2021 to 2026)
- Agricultural
 - Bernie Kamphof (reappointed for another 5 year term)
- Other
 - Ross Chuchman, Environmental, Vice Chair (ended November 30, 2021)
 - Shanley Thompson, Environmental (December 1, 2021 to 2026)
 - Erin Knight, Public Member (reappointed for another 5 year term)

The SPC has also been supported by non-voting Liaison members. Over the reporting period, the First Nations liaison position remained vacant.

- Liaison Members
 - Lee Sieswerda, Thunder Bay District Health Unit
 - Tea Pesheva (January to July), Mary Wooding (August to September), Elizabeth Forrest (October to December), Ministry of Environment, Conservation and Parks
 - Tammy Cook, Chief Administrative Officer, Lakehead Region Conservation Authority

3 Lakehead Source Protection Plan Policies

The following are the policies that the implementing bodies (i.e. Municipality of Oliver Paipoonge and Thunder Bay District Health Unit) are required to implement.

No significant or moderate threats were found to occur within the Intake Protection Zones of the City of Thunder Bay's Bare Point Water Treatment Plant. For this reason, only two Specify Action policies were included in the Lakehead Source Protection Plan. These policies are non-legally binding; however, they were considered important to the SPC, and represents a good faith commitment on behalf of the City of Thunder Bay. The City must have regard for these policies and should consider them when making decisions pertaining to their applicability.

The full policies can be viewed in the full version of the Lakehead Source Protection Plan that is available on-line at www.lakeheadca.com.

3.1 Municipality of Oliver Paipoonge

The Lakehead Source Protection Plan contains six policies that apply to the Municipality of Oliver Paipoonge. The policies were implemented to ensure activities that are or would be a significant threat to municipal drinking water sources cease to exist or never become significant.

Policies that apply to the Municipality of Oliver Paipoonge are summarized below:

1. Policy RV.1.CW-PA prohibits future significant threats by prohibiting certain land uses.

Policy number RV.1.CW-PA (on page 55 of the Plan) states:

The following land uses are prohibited in Wellhead Protection Area A (WHPA-A):

- 1) Land uses that normally require waste disposal sites approvals including:
 - Application of hauled sewage to land;
 - Mine tailings stored in a pit or in impoundment structures where the National Pollutant Release Inventory (NPRI) notice requires a person to report;
 - Landfarming of petroleum refining waste (more than ten hectares);
 - Landfilling of hazardous waste (less than one hectare);
 - Landfilling of municipal waste (less than one hectare);
 - Land disposal of commercial or industrial waste (less than one hectare);

- Land disposal of liquid industrial waste
 - Storage of PCBs; and
 - A waste disposal site that is not approved to accept hazardous waste or liquid industrial waste but accepts small volumes that are exempt from Ontario Regulation 347.
- 2) Sewage treatment facilities, not including septic systems under 10,000 litres per day.
 - 3) Non-residential uses where organic solvents occur including, but not limited to, dry cleaning operations, vehicle service centres, paint and hardware stores, retail or wholesale pharmaceutical storage and distribution centres.
 - 4) Uses where fuel is stored including but not limited to, non-residential fuel storage, retail fuel outlets, uses where backup generators are required (with the exception of the backup generator at the Rosslyn Village Water Treatment Plant), industrial operations and any other uses involving the bulk handling and storage of fuel.
 - 5) Uses which include the storage of dense non-aqueous phase liquid (DNAPLs) except for incidental volumes for personal domestic use.
 - 6) Future Agricultural uses.
 - 7) The Official Plan and Zoning By-law shall be brought into conformity with provisions 1 to 6 in accordance with Section 26 of the *Planning Act*.
2. Policy RV.2.M-PA is used to monitor the implementation of RV.1.CW-PA under the Source Protection Plan. Through the monitoring, the Lakehead SPA can monitor changes to the Official Plan and necessary Zoning By-laws. This will help to facilitate the monitoring process and advise the SPC of any issues related to the Land Use Planning Policy.

Policy RV.2.M-PA (located on page 57 of the Plan) states:

In relation to policy RV.1.CW-PA, the Municipality of Oliver Paipoonge shall provide an Annual Report to the Lakehead SPA by February 1 of each year on the steps it has taken in the previous calendar year to implement the policies that are set out in the Source Protection Plan and apply to its decisions under the *Planning Act* and the *Condominium Act*.

The SPA, in conjunction with the Municipality, shall evaluate the effectiveness of the significant threat policies in the Source Protection Plan that affect *Planning Act* and *Condominium Act* decisions.

3. Policy RV.3.CW.SP manages future significant threats of application handling and storage of road salt, and storage of snow and potential future land use changes.

Policy RV.3.CW.SP (located on page 58 of the Plan) states:

To address the handling and storage of road salt (existing and future) and storage of snow (existing and future) the Municipality of Oliver Paipoonge shall prepare a Salt Management Plan to address the sensitivity of the Rosslyn Village WHPA-A within one year of the Source Protection Plan taking effect. Specific actions that should be included in the plan to address the risk of road salt effects on source water include:

- a) Locating salt and snow storage areas outside of the WHPA-A
- b) Minimizing application of road salt within WHPA-A

Copies of any Official Plan and Zoning By-law amendment applications in WHPA-A shall also be provided by the Municipality of Oliver Paipoonge to the Lakehead SPA once they have been received for review and comment and shall provide copies of these amendments once they have been adopted. This procedure must be established within one (1) year of the Source Protection Plan taking effect.

4. Policy RV.4.M.SP is the monitoring policy that has been put in place in order to monitor the actions and measures of policy RV.3.CW.SP.

Policy RV.4.M.SP (located on page 60 of the Plan) states:

By February 1 of each year after the Source Protection Plan takes effect, the Municipality of Oliver Paipoonge shall provide an Annual Report to the Lakehead SPA with a description of the actions/measures they have taken to implement policy RV.3.CW-SP during the previous calendar year. The report shall also include a description of what steps are being taken to determine the extent to which the specified action has achieved its objectives and any information on the results of those steps.

The Municipality of Oliver Paipoonge shall provide the Lakehead SPA with a copy of the Salt Management Plan once it is adopted.

5. Policy RV.5.CW-EO is designed to educate the residents of WHPA-A on existing and possible future threats on their property related to plane de-icer, agricultural threats and DNAPLs.

Policy RV.5.CW-EO (located on page 62 of the Plan) states:

The Municipality of Oliver Paipoonge shall develop an education program regarding the potential harmful effects of plane de-icer within the WHPA-A. This material will be required in the event of an airport being proposed.

To address all agricultural related drinking water threats (existing and future – Agricultural Source Material, Non-Agricultural Source Material, commercial fertilizer, pesticide and livestock grazing or pasturing of land, an outdoor confinement area or farm animal yard) the Municipality of Oliver Paipoonge shall develop an education and awareness program to advise the landowner in WHPA-A whose property currently contains existing agricultural threats. The Municipality shall prepare a package that will include information for best management practices and to raise awareness of and reduce drinking water threats. This information shall be developed and distributed within 2 years of the Source Protection Plan taking effect.

The Municipality shall prepare a package that will include information for best management practices and to raise awareness of and reduce drinking water threats related to the harmful effects of DNAPLs impacting groundwater resources.

6. Policy RV.6.M-EO has been put forth to monitor policy RV.5.CW-EO, allowing the Lakehead SPA to ensure the actions and measures being carried out by the Municipality of Oliver Paipoonge are in compliance with the Source Protection Plan.

Policy RV.6.CW-EO (located on page 62 of the Plan) states:

By February 1 of each year, the Municipality of Oliver Paipoonge shall provide an Annual Report to the Lakehead SPA with a description of the actions/measures they have taken to implement the education and outreach program in the Source Protection Plan in the previous calendar year. The report shall also include a description of what steps are being taken to determine the extent to which the program has achieved its objectives and any information on the results of those steps.

The Municipality of Oliver Paipoonge shall also provide a copy of any materials produced and the number of residents reached by the education and outreach materials.

The policies are applicable to the Municipality of Oliver Paipoonge and only apply to the WHPA-A designated area.

3.2 Thunder Bay District Health Unit

Four policies apply to the Thunder Bay District Health Unit (TBDHU).

Policies that apply to the TBDHU are summarized below:

1. Policy number RV.3.CW-SP (on page 58 of the Plan) manages the existing significant threat of septic systems under 10,000 litres a day as well as new septic systems under 10,000 liters a day. The Policy states:

The Thunder Bay District Health Unit shall ensure that on-site sewage maintenance inspections are conducted on all existing and future septic systems within WHPA-A, under the authority of the Building Code. This process will begin within 5 years of the approval of the Assessment Report for the Lakehead Source Protection Area (June 21, 2011).

All septic system inspections within the Rosslyn Village Wellhead Protection Area-A (WHPA-A) must be completed by the Thunder Bay District Health Unit on or before June 20, 2016, and every five years thereafter.

2. Policy RV.4.M.SP (on page 60 on the Plan) is the monitoring policy that has been put in place in order to monitor the actions and measures of policy RV.3.CW.SP.

The Policy states:

By February 1 of each year after the Source Protection Plan takes effect, the Thunder Bay District Health Unit shall provide an Annual Report to the Lakehead SPA with a description of the actions/measures they have taken to implement policy RV.3.CW-SP during the previous calendar year. The report shall also include a description of what steps are being taken to determine the extent to which the specified action has achieved its objectives and any information on the results of those steps.

The Thunder Bay District Health Unit shall also provide the Lakehead SPA with the following information:

- a) Results of mandatory sewage system maintenance inspections.
 - b) A summary compliance report outlining any corrective action found to be necessary as a result of the Sewage Systems Maintenance Program.
3. Policy number RV.5.CW-EO (on page 62 on the Plan) is designed to educate the residents of WHPA-A on existing and possible future threats on their property.

The Policy states:

To address septic systems under 10,000 litres a day (existing and future) the Thunder Bay District Health Unit shall provide within two years of the Source Protection Plan taking effect, information to landowners whose properties are serviced by an on-site sewage system within WHPA- A. The information shall be made available for a minimum of two years and will include:

- a) The reasons for the required inspection program.
 - b) Maintenance of systems.
 - c) Various types of allowed systems.
 - d) Best management practices for using a system.
4. Policy number RV.6.M-EO (on page 64 on the Plan) states:

By February 1 of each year, the Thunder Bay District Health Unit shall provide an Annual Report to the Lakehead SPA with a description of the actions/measures they have taken to implement the education and outreach program (Policy RV.5.CW-EO) in the Source Protection Plan in the previous calendar year. The report shall also include a description of what steps are being taken to determine the extent of which the program has achieved its objectives and any information on the results of those steps.

Enclosed with the Thunder Bay District Health Unit Annual Report shall be copies of any materials produced and the number of landowners/operators/persons engaged in significant drinking water threats reached by the program.

3.4 City of Thunder Bay

The Specify Action policies within the Lakehead Source Protection Plan are non-legally binding; however, were considered important to the Lakehead SPC during the Plan development. They are recommended “best management practices” for the City of Thunder Bay.

Policy TB.1.NLB-SP was implemented to protect the intake pipe from the potential impacts of ship anchorage. The policy states:

The City of Thunder Bay should update a Spill Prevention and Contingency Plan that may include, at a minimum placing a buoy at the anchorage boundary that is within proximity to the Intake. It was further recommended by the Lakehead SPA that the City of Thunder Bay should consider the following: instead of placing one buoy on the anchorage line, it was suggested that buoys were placed at the intersections of the anchorage line and Intake Protection Zone 2 (IPZ 2), if depth permits.

Policy TB.2.M-SP was created to monitor the implementation of Policy TB.1.NLB-SP by stating that the City of Thunder Bay shall provide the Lakehead SPA with a copy of any updates to the Spill Prevention and Contingency Plan that is created, any actions that are taken under this Plan to protect the Bare Point Intakes, including blue-green algae monitoring.

4 Source Protection Plan Implementation Status

The following table summarizes the implementation status of the policies with action items included in the Source Protection Plan, along with the dates of all tasks completed during the reporting period of January 1, 2021 to December 31, 2021.

Table 1: Lakehead Source Protection Plan Policy Implementation Status					
Policy #	Implementing Body	Policy Description	Implementation Date	Completion	Status
RV.1.CW-PA	Municipality of Oliver Paipoonge	Update Official Plan and Zoning By-Law to reflect prohibitions and provide conformity with the Plan.	Official Plan updated and adopted May 2018. Official Plan references SPP Policies. Zoning by-law updated December 2018. Site Specific Zoning amendment 745-2013 passed, removing agriculture, stables, riding academies and dog kennels from list of permitted uses for portion of land parcel located in WHPA-A.		Implemented
RV.2.M-PA	Municipality of Oliver Paipoonge	Provide Annual Report to SPA every year by February 1 st of each year related to decisions under the <i>Planning Act</i> and <i>Condominium Act</i>	Reports received by SPA: January 24, 2014 January 29, 2015 January 28, 2016 January 30, 2017 January 30, 2018 January 8, 2019 January 28, 2020 January 5, 2021 January 27, 2022		Implemented On-going Subsequent reports due in future reporting years.
RV.3.CW-SP 1)	Municipality of Oliver Paipoonge	Prepare Salt Management Plan by October 1, 2014	October 2, 2014 Adopted by Council October 15, 2014 No salt or snow stored in WHPA-A. No salt applied in WHPA-A.		Implemented On-going Continue to not store snow and salt and minimize salt application in WHPA-A

Table 1: Lakehead Source Protection Plan Policy Implementation Status

Policy #	Implementing Body	Policy Description	Implementation Date	Completion	Status
RV.3.CW-SP 2)	Thunder Bay District Health Unit	Inspect all septic's located within WHPA-A by June 20, 2016 and every 5 years thereafter. Next inspections are due by 2026.	25 of 25 inspected as of 2016. 7 septic's reinspected in 2019. 6 septic's reinspected in 2020. 12 septic's reinspected in 2021. No issues observed.		Implemented On-going All septic systems will be inspected every 5 years from the date of initial inspection.
RV.3.CW-SP 3)	Municipality of Oliver Paipoonge	Provide copies of all Official Plan and Zoning by-law amendment applications in WHPA-A to SPA and establish procedure by October 1, 2014.	All Official Plan and Zoning by-law amendment applications are provided to the SPA		Implemented On-going Future applications in WHPA-A to be provided to SPA.
RV.4.M-SP 1)	Municipality of Oliver Paipoonge	Provide Annual Report to SPA every year by February 1 st of each year related to Policy RV.3.CW-SP. Provide a copy of the Salt Management Plan once it is adopted.	Reports received by SPA: January 24, 2014 January 29, 2015 January 28, 2016 January 30, 2017 January 30, 2018 January 8, 2019 January 28, 2020 January 5, 2021 January 27, 2022 Salt Management Plan received October 2, 2014		Implemented On-going Subsequent reports due in future reporting years.
RV.4.M-SP 2)	Thunder Bay District Health Unit	Provide Annual Report to SPA every year by February 1 st of each year related to Policy RV.3.CW-SP. Include results of mandatory septic system inspections and any corrective actions.	Reports received by SPA: January 30, 2014 January 23, 2015 January 19, 2016 January 16, 2017 January 30, 2018 January 3, 2019 January 10, 2020 January 5, 2021 January 4, 2022		Implemented On-going Subsequent reports due in future reporting years.

Table 1: Lakehead Source Protection Plan Policy Implementation Status

Policy #	Implementing Body	Policy Description	Implementation Date	Completion	Status
RV.5.CW-EO 1)	Thunder Bay District Health Unit	By October 1, 2015, provide information to landowners in WHPA-A related to septic inspection program, maintenance, types of systems allowed and best management practices. Information must be available for a minimum of two years.	Distributed to WHPA-A residents on: February 7, 2014 January 11-15, 2016 January 16-20, 2017		Implemented
RV.5.CW-EO 2)	Municipality of Oliver Paipoonge	Develop an education program regarding harmful effects of plane de-icer within WHPA-A.	Fact Sheet created		Implemented
RV.5.CW-EO 3)	Municipality of Oliver Paipoonge	Develop an education program regarding agricultural threats to advise the landowner in WHPA-A whose property contains existing agricultural threats. Package must be provided by October 1, 2015.	Package distributed prior to September 30, 2015		Implemented
RV.5.CW-EO 4)	Municipality of Oliver Paipoonge	Develop a package that includes information for best management practices and raise awareness related to the threats posed by DNAPLS.	Fact Sheet created and distributed prior to September 30, 2015.		Implemented

Table 1: Lakehead Source Protection Plan Policy Implementation Status

Policy #	Implementing Body	Policy Description	Implementation Date	Completion	Status
RV.6.M-EO 1)	Thunder Bay District Health Unit	Provide Annual Report to SPA every year by February 1 st of each year related to Policy RV.5.CW-EO. Provide copies of any material produced and number of residents reached by program.	Reports received by SPA: January 30, 2014 January 23, 2015 January 19, 2016 January 16, 2017 January 30, 2018 January 3, 2019 January 10, 2020 January 5, 2021 January 4, 2022	Copies of material provided.	Implemented On-going Subsequent reports due in future reporting years.
RV.6.M-EO 2)	Municipality of Oliver Paipoonge	Provide Annual Report to SPA every year by February 1 st of each year outlining what actions have been taken to implement the education and outreach program. Provide a copy of materials produced and number of people reached by program.	Reports received by SPA: January 24, 2014 January 29, 2015 January 28, 2016 January 30, 2017 January 30, 2018 January 3, 2019 January 28, 2020 January 5, 2021 January 27, 2022		Implemented On-going Subsequent reports due in future reporting years.
TB.1.NLB-SP	City of Thunder Bay	Non-legally binding policy. Suggested to place buoys at the anchorage boundary that is within proximity to the intake.	Three buoys placed by private contractor. Removed every year at ice up.		Implemented On-going Requires re-installation every spring.

Table 1: Lakehead Source Protection Plan Policy Implementation Status

Policy #	Implementing Body	Policy Description	Implementation Date	Completion	Status
TB.2.M-SP	City of Thunder Bay	<p>Non-legally binding policy.</p> <p>Provide SPA a copy of any updates to the Spill Prevention and Contingency Plan that is created, and any actions that are taken under this Plan to protect the Bare Point Intakes.</p>	<p>Emergency Management Plan updates provided March 17, 2016.</p> <p>Update to Standard Operating Procedure related to blue-green algae monitoring and reporting received on March 16, 2021.</p>		<p>Implemented</p> <p>On-going Copies of subsequent updates are to be provided to the SPA.</p>

5 Deficiencies in the Assessment Report

As required in Section 52 (1) part 2 of Ontario Regulation 287/07, the annual report is to include a summary of any steps taken during the reporting period to address any deficiencies in the information that was used in developing the Assessment Report set out in the Source Protection Plan.

General deficiencies noted in the Approved Assessment Report for the Lakehead Source Protection Area, dated May 2011 included:

- Intake Protection Zone 3 not delineated (noted as an action item for future Assessment Report updates)
- Lack of groundwater well data
- Lack of surface water intake data
- No data on groundwater/surface water interactions
- Lack of long-term weather data
- Lack of available depth, soil composition and water table depth data to delineate Highly Vulnerable Aquifers with any certainty
- Aquifer vulnerability was not assessed in a large part of the Lakehead Source Protection Area due to a lack of available data.

Over the reporting period, no steps were taken to address the deficiencies noted in the Approved Assessment Report. It is noted that the majority of deficiencies are related to a lack of overall base data, which is not likely to become available any time in the near future or may never become available.

6 Annual Report Distribution

6.1 Source Protection Committee

The SPC was provided a copy of the 2022 Annual Reports covering the period of January 1, 2021 to December 31, 2021 within their March 18, 2022 SPC Meeting Agenda.

The Report was discussed at the SPC Meeting held on March 18, 2022 and it was the consensus of the SPC that the Source Protection Plan was meeting its objectives.

6.2 Source Protection Authority

The SPA adopted the 2022 Annual Report on April 27, 2022 as per resolution # 3/22.

6.3 Director of the Ministry of Environment, Conservation and Parks

The Lakehead Source Protection Plan Annual Report was provided to the Director of the MECP on April 29, 2022.

6.4 Public

The Lakehead Source Protection Plan Annual Report will be accessible by the public on the Lakehead Source Protection website www.lakeheadca.com.

7 Conclusion

For the reporting period of January 1, 2021 to December 31, 2021, all policies as outlined in the Lakehead Source Protection Plan have been implemented by the respective implementing bodies or are in the process of being implemented as required.

Actions completed by the Municipality of Oliver Paipoonge over the reporting period included: Completion of the annual report to the SPA. There were no Official Plan and Zoning By-law amendment applications within WHPA-A in 2021.

Future policy actions required by the Municipality of Oliver Paipoonge include: continuing to circulate all Official Plan and Zoning by-law *Planning Act* applications within WHPA-A to the SPA; continuing to prohibit prohibited land uses in WHPA-A; continue to locate salt and snow storage outside of WHPA-A; continue to minimize salt application in WHPA-A; continue to have the facts sheets related to DNAPLs and plane de-ice available for distribution; and prepare and submit annual reports to the SPA by February 1st of every reporting year.

Actions completed by the Thunder Bay District Health Unit over the reporting period included completion of the annual report to the SPA, and re-inspection of twelve septic systems in 2021. The initial required septic system inspections were completed by the Thunder Bay District Health Unit as of June 2016.

Future policy actions required by the Thunder Bay District Health Unit include: re-inspect all septic systems within WHPA-A every five years, with the next re-inspection cycle starting in 2024, and prepare and submit annual reports to the SPA by February 1st of every reporting year.

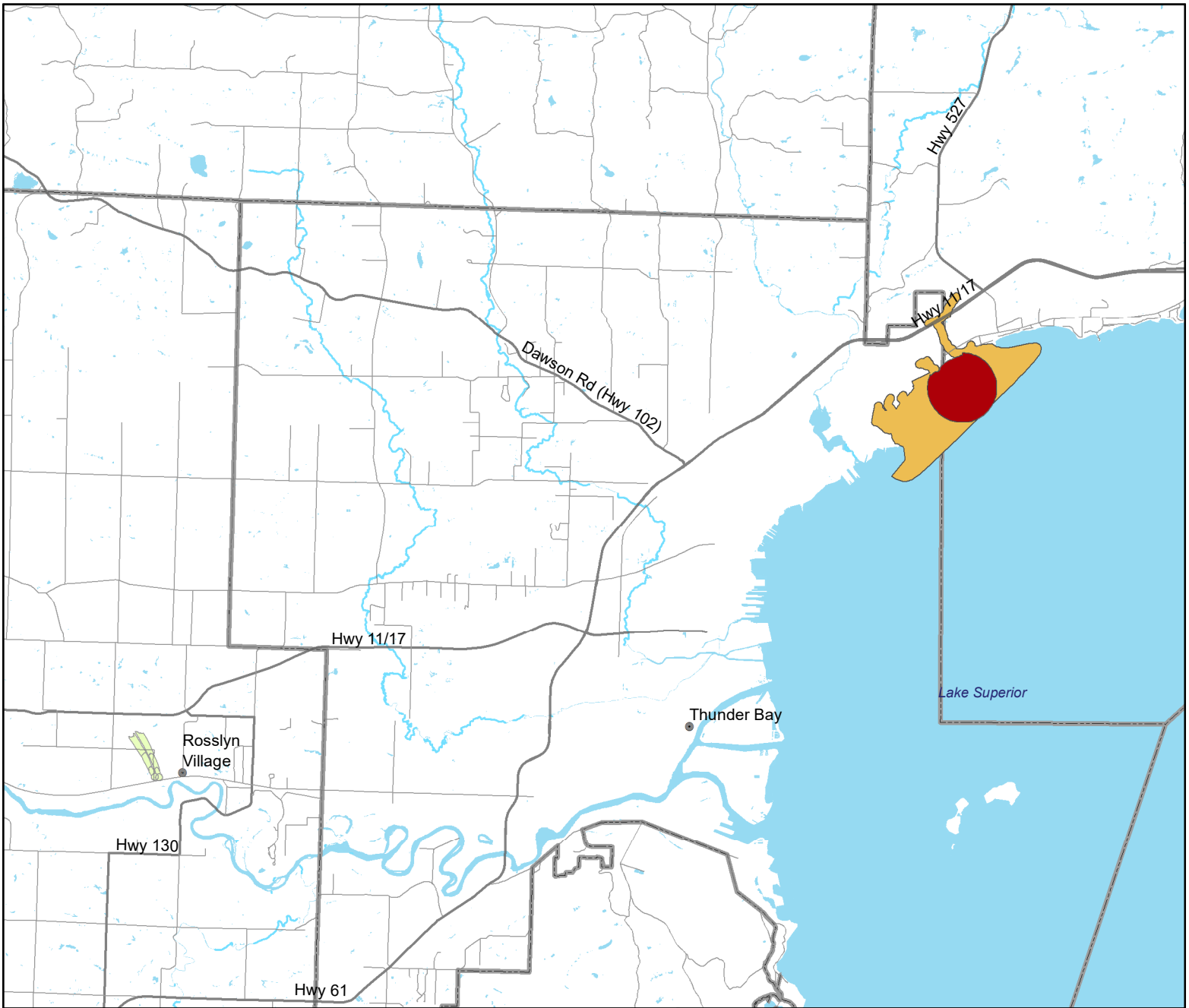
Actions completed by the City of Thunder Bay over the reporting period included placing three buoys marking the anchorage boundary in proximity to the intake during the ice free period.

Future policy actions recommended to be completed by the City of Thunder Bay include: annually place buoys marking the anchorage boundary in proximity of the intake; provide the SPA copies of any updates to the Spill Prevention and Contingency Plan and a summary of any actions taken to protect the Bare Point Intakes, as well as providing updates to the Standard Operating Procedure related to monitoring and reporting of blue-green algae blooms.

For the reporting period of January 1, 2021 to December 31, 2021, all policies as outlined in the Lakehead Source Protection Plan have been implemented by the respective implementing bodies or are in the process of being implemented as required.

No actions were taken over the reporting period to address deficiencies noted in the Assessment Report.

The next annual report is due from the Lakehead SPA to the Director of the MECP on May 1, 2023 for the period of January 1, 2022 to December 31, 2022.



**Map M-1
Lakehead Source
Protection Area**

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