

NORTH BAY-MATTAWA SOURCE PROTECTION AREA

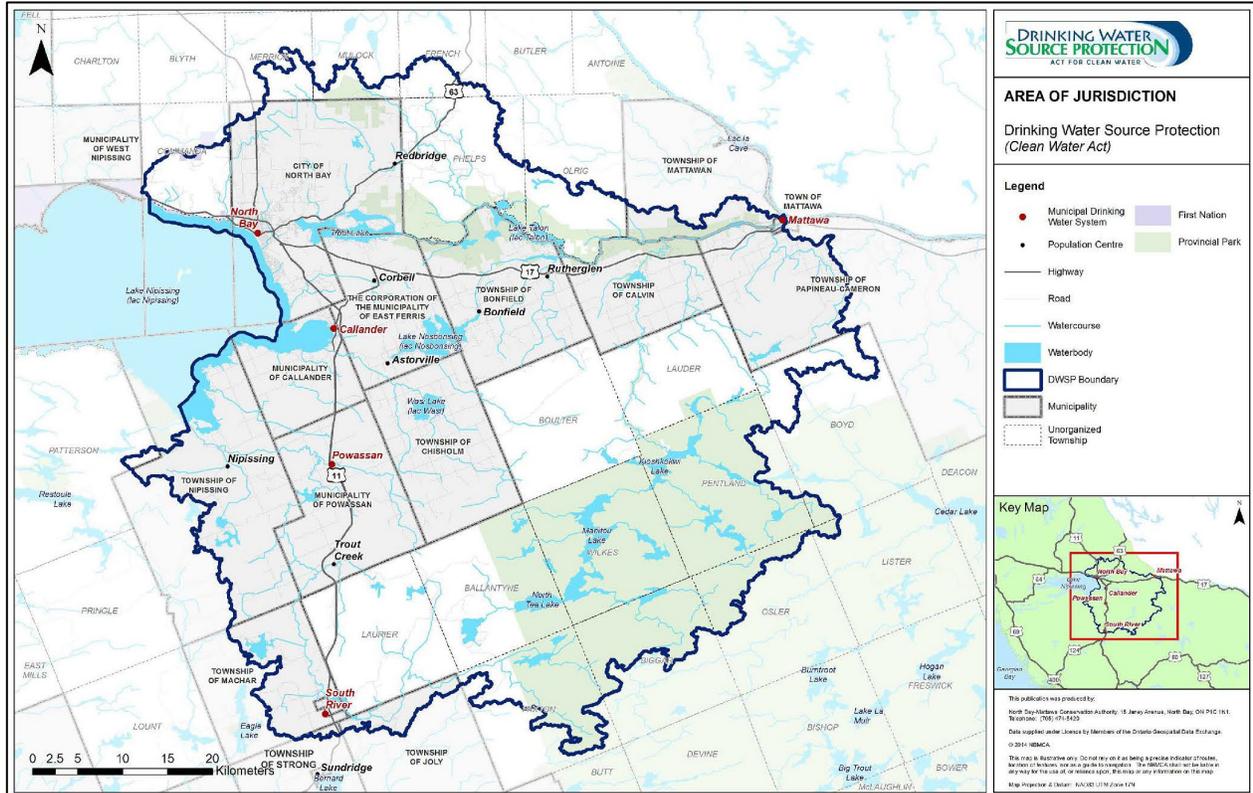
Source Protection Annual Progress Report

May 2, 2022

I. Introduction

This annual progress report outlines the progress made in implementing the source protection plan for the North Bay-Mattawa Source Protection Area (effective date of July 1, 2015), as required by the Clean Water Act and regulations. The report rates progress on implementation of policies by all affected municipalities, ministries and agencies as specified in the source protection plan. It also flags challenges experienced with certain policies, local threats and a pre-existing issue.

As required by the Minister's revised order under section 36 of the Clean Water Act, the Source Protection Committee has been working on updates and improvements to the Source Protection Plan and Assessment Report. The proposed revised Source Protection Plan is expected to undergo agency and public consultation, and be submitted in 2022.



II. A message from your local Source Protection Committee

P : Progressing Well/On Target – The majority of the source protection plan policies have been implemented and/or are progressing.

All of the source protection plan policies (30 out of 30) have been implemented.

The provincial Ministries have reviewed existing permit approvals near vulnerable areas to determine if adequate measures are in place to manage activities so that they do not pose a significant threat to municipal drinking water sources. The Ministries have also established protocols, procedures, training, and guidelines to screen applications, undertake detailed reviews and impose conditions on permits if deemed appropriate to ensure compliance with source protection plan policies.

All eight municipalities have implemented all significant threat policies. However, the education and outreach approach used for the implementation of Policy SMF1, related to land application of nutrients, does not technically meet the policy intent of prohibiting this activity. A full explanation is provided later in section 7.

Policies to address the microcystin issue (cyanobacteria blooms) in Callander Bay through research and monitoring, as well as education and outreach efforts to spur action by residents, require ongoing commitment and resources.

The North Bay-Mattawa Source Protection Committee wishes to express their thanks to municipalities for the long-standing cooperation in Source Protection Plan implementation.



Above: The Wasi River empties into Callander Bay after a dramatic set of waterfalls.

III. Our watershed

To learn more, please read our assessment report and source protection plan.

The North Bay-Mattawa Source Protection Area (SP Area) covers 4,000 km² and is home to about 80,000 residents. It is located 350 km north of Toronto and 360 km west of Ottawa. The SP Area includes the North Bay-Mattawa Conservation Authority (NBMCA) administrative area (2,800 km²) with its ten member municipalities, as well as the South River watershed. Extending the Source Protection Area to include the latter watershed brought the Municipality of Powassan and the Village of South River into the program and added portions of five more municipalities, giving each the opportunity to participate in the project.

In total the Source Protection Authority includes fifteen (15) municipalities, namely: Township of Bonfield, Municipality of Callander, Township of Calvin, Township of Chisholm, Municipality of East Ferris, Township of Joly, Machar Township, Town of Mattawa, Mattawan Township, Papineau- Cameron Township, Municipality of Powassan, Township of Nipissing, City of North Bay, Village of South River, and Strong Township. Not all municipalities in the South River watershed currently have sitting members on the Source Protection Authority board. The Source Protection Area crosses a major watershed divide in Ontario with 85% of the territory draining to the Ottawa River basin via the Mattawa River and the remaining 15% draining to Lake Nipissing, which is part of the Great Lakes basin.

Five (5) municipal drinking water systems are included in the SP Plan: Callander, Mattawa, North Bay, Powassan and the Village of South River. The City of North Bay draws drinking water from Trout Lake at the headwaters of the Mattawa River. The Municipality of Callander takes water from Callander Bay, which is a confined bay of Lake Nipissing that is fed by the Wasi River. The Village of South River obtains drinking water from the South River. Both the Town of Mattawa and the Municipality of Powassan get their water from wells. Many residents who live outside these five communities rely on their own private wells or intakes.

IV. At a glance: Progress on Source Protection Plan implementation

1. Source Protection Plan Policies

Of the 27 legally binding policies addressing significant threats, a total of 27 have been implemented (100%).

2. Municipal Progress: Addressing Risks

Eight (8) municipalities in our source protection area have vulnerable areas where significant drinking water threat policies apply.

P : Progressing Well/On Target

All municipalities (100%) in our source protection area have fully implemented the Land Use Planning policies in the SP Plan through either Official Plan Amendments or Zoning By-Laws, and have processes in place to ensure that their day-to-day planning decisions conform with the source protection plan.

All municipalities have also fully implemented education and outreach policies as required.

3. Septic Inspections

P : Progressing Well/On Target

The Ontario Building Code requires periodic inspections of all septic systems located in areas where treatment or disposal of sewage could pose a significant threat to a source of municipal drinking water. The NBMCA is the principal authority within the North Bay-Mattawa SP Area. Inspections are required for:

- two (2) septic systems within municipal Wellhead Protection Areas where there would be a concern about pathogens; and
- 545 septic systems within the Callander Issue Contributing Area where the concern is the potential to release phosphorus, which might increase the growth of cyanobacteria (blue-green algae).

The number of systems is divided into roughly five parts so that all systems are inspected over a five-year cycle. In 2021, a total of 202 properties were inspected, of which more than half were inspections delayed from 2020 due in part to Covid protocols. During these inspections only 3 systems were determined to need minor maintenance work. The second five-year cycle has now been completed in this SP Area and a new five-year cycle will commence in 2022.

4. Risk Management Plans

Not applicable to the North Bay-Mattawa SP Area.

5. Provincial Progress: Addressing Risks on the Ground

P: Progressing Well/On Target

A total of six SP Plan policies require Ontario ministries to review previously issued provincial approvals, prescribed instruments (PIs), and have processes in place to review new applications for activities that could pose a significant threat to source water. The Ministries have completed the review of existing prescribed instruments (100%). In 2021, one (1) existing prescribed instrument (nutrient management strategy) underwent a detailed review and was found to be subject to significant drinking water threat policies. The nutrient management strategy was replaced in 2021.

Ministries have instituted processes to ensure screening of new applications in areas affected by SP Plan policies and applying appropriate conditions. These processes include: staff training; guidance documents; resource library; protocols; mapping tools; and standard operating policies.

For 2021, the Ontario ministries have reported that the following number of applications within the North Bay-Mattawa SP Area were reviewed: one (1) pesticide permit where a significant threat was managed through conditions on the permit; one (1) application for a nutrient management strategy where a significant threat was managed through conditions.

6. Source Protection Awareness and Change in Behaviour

The SP Plan includes a number of policies directed toward increasing public awareness of what people should be doing to help protect source water. Information has been posted online by the North Bay-Mattawa SP Authority at actforcleanwater.ca regarding: safe use of fuel oil tanks and heating systems; awareness of the threats posed by organic solvents and dense non-aqueous phase liquids (DNAPLs); application of pesticides; proper disposal of hazardous waste; and the potential risk from pathogens in uncomposted manure. Municipalities have installed links from their websites to this information.

Although the signage policy SVA1 is voluntary, all five municipalities with drinking water systems have installed road signs at the boundaries of vulnerable areas. The objective is twofold: to alert emergency responders if a spill occurs in a vulnerable area, and to increase public awareness of these areas. Twelve (12) Drinking Water Protection Zone signs have been installed by municipalities on roads within North Bay, Callander, Mattawa, South River, and Machar, and three (3) signs have been installed by the Ministry of Transportation on Highway 11 in Powassan and on Highway 63 east of North Bay.

The most substantive efforts to change behaviour are related to addressing the microcystin issue in the source water for the Municipality of Callander. Policy ICA1 specifies that a community-based social marketing approach be used to identify changes in behaviour that would be effective, identify barriers to adoption of desired behaviors, and then reduce or remove those barriers.

7. Source Protection Plan Policies: Summary of Delays

Implementation of all policies appears to be on schedule except for policy SMF1.

Policy SMF1, Municipal Action to Prohibit Land Application of Nutrients, requires municipalities to prohibit the application of agricultural source material (ASM), nonagricultural source material (NASM), and commercial fertilizer, where such applications could pose a significant threat to drinking water. However, once threat circumstances are considered, the only significant threat from existing or future activities would be potential pathogens from the application of uncomposted ASM. Therefore, an education and outreach approach has been used to-date, which does not actually constitute a prohibition as specified by the policy.

Drafting a by-law to implement policy SMF1 was found to be complicated for the public to interpret and a by-law officer to enforce. When balanced against the unlikelihood of a threat occurring, an education and outreach was chosen as the appropriate tool to implement SMF1. In that regard, information has been posted on the Source Protection website actforcleanwater.ca to inform residents of the potential risk of applying uncomposted manure and other forms of ASM near sources of drinking water. The affected municipalities have installed links from their websites.

The Source Protection Committee considers significant threats from the application of nutrients to be sufficiently addressed through this Education and Outreach approach. During the Section 36 review of the SP Plan, the SPC will bring forward policy revisions to policy SMF1.

Note that this SP Plan does not provide for a Risk Management approach under Part IV of the Clean Water Act.

8. Source Water Quality: Monitoring and Actions

Callander Bay Phosphorous Issue

The only identified drinking water issue is the risk of the toxin microcystin-LR in the source water for Callander due to the periodic incidence of cyanobacteria blooms (blue-green algae) in Callander Bay. When the risk was identified the Municipality upgraded its water treatment plant to include charcoal filtration on all treated water. However, the SP Plan still needs to address the issue in the source. Problematic growth of cyanobacteria is generally attributed to levels of phosphorus in excess of Provincial Water Quality Objectives. The SP Plan includes four policies directed specifically to addressing the issue and also requires consideration of the issue through several other policies such as approvals for sewage treatment facilities and waste disposal sites.

The area in which activities could contribute to the issue is called the Issue Contributing Area (ICA). The contributing watershed is 300 sq km and includes territories of five municipalities.

The four specific ICA policies are:

ICA1: Education - Issue Contributing Area,

ICA2: Nutrient Management Act Tools to Implement Phosphorous Best Management in Issue Contributing Area,

ICA3: Governing Research in the Issue Contributing Area, and

ICA4: Monitor Issue in Callander ICA - Phosphorous Contribution Related to Microcystin LR.

Phosphorus is a fundamental nutrient for most organisms. The intent of these policies takes a multi-prong approach: improve understanding of the factors contributing to the issue; inform residents; and encourage positive action to both reduce inputs of phosphorus and to enhance attenuation mechanisms.

Local research since 2008 has provided a wealth of data on water quality parameters, including phosphorus. Phosphorus loading in watercourses has been found to be associated with high turbidity following storm events and during high flows. Stream bank erosion is a major contributor of phosphorus to the Wasi River watershed. The Wasi River provides 70% of the inflow to Callander Bay. An Erosion and Runoff Mitigation Study completed in 2016 identified specific practices with respect to ditching, bridge design and culvert installation as contributing to the erosion problem. Education and outreach activities with municipal public works staff is being undertaken to improve practices and lessen erosion.

Internal loading of phosphorus from organic deposits in Callander Bay appears to be a significant contributor. The phosphorus is cycled back into the water column when anoxic conditions occur near the sediment.

An education and outreach initiative encourages property owners to plant shorelines with trees, shrubs and perennials to intercept overland flows and help stabilize banks. The NBMCA conducted the Restore Your Shore program (RYS) over a five-year period through 2019 with funding provided by grants from various organizations. RYS provided shoreline assessments, planting plans, planting stock, and planting assistance to eligible shoreline and stream bank property owners.

9. Science-based Assessment Reports: Work Plans

The Assessment Report (AR) identifies two areas of additional work:

- delineation of the Callander Issue Contributing Area (ICA), and
- assessment of the pipeline threat in the North Bay IPZ.

During the Section 36 updates to the Source Protection Plan, mapping for the Callander IPZ and Callander Issue Contributing Area will be revised with new data for watercourses, wetlands, regulated areas, elevations, and subwatershed boundaries.

New policies for hydrocarbon pipelines will be included as part of the Section 36 updates to address any future changes to pipelines that cross the Source Protection Area.

10. More from the Watershed

To learn more about the North Bay-Mattawa Source Protection Area, visit actforcleanwater.ca.



Above: Municipalities have installed roadsigns stating 'Drinking Water Protection Zone' to mark the location of intake protection zones and wellhead protection areas.