North Bay-Mattawa Source Protection Authority
August 17, 2022
5:30pm
IN PERSON
NBMCA Office, 15 Janey Avenue, North Bay, Ontario
NBMCA Natural Classroom

A G E N D A

Procedural Matters

1. Acknowledgement of Indigenous Traditional and Treaty Lands
2. Approval of the Agenda
3. Delegation(s)
4. Declaration of Pecuniary Interest
5. Adoption of Previous Minutes of April 27, 2022

Written Reports

6. Project Manager's Report **(Appendix #1)**
7. Source Protection Plan update **(Appendix #2)**

Other Business

8. New Business
9. Adjournment

NORTH BAY-MATTAWA SOURCE PROTECTION AUTHORITY
MINUTES
of the

THIRD meeting of the North Bay-Mattawa Source Protection Authority held at 5:30 p.m. on August 17, 2022 as an in person meeting in the NBMCA's Natural Classroom, 15 Janey Avenue, North Bay, Ontario.

MEMBERS PRESENT:

Callander, Municipality of	-	Irene Smit
Calvin, Township of	-	Sandy Cross
East Ferris, Municipality of	-	Rick Champagne
Mattawan, Municipality of	-	Michelle Lahaye
North Bay, City of	-	Dave Mendicino (Vice-Chair)
North Bay, City of	-	Chris Mayne
Powassan, Municipality of	-	Dave Britton (Chair)

MEMBERS ABSENT:

Bonfield, Township of	-	Jane Lagassie
Chisholm, Township of	-	Nunzio Scarfone
Mattawa, Town of	-	Loren Mick
North Bay, City of	-	Ed Valenti
Papineau –Cameron, Township of	-	Shelley Belanger
Strong, Township of	-	Marianne Stickland

STAFF PRESENT:

Chitra Gowda, CAO, Secretary-Treasurer
David Ellingwood, Supervisor, Source Water Protection
Helen Cunningham, Manager, Finance and Human Resources
Kurtis Romanchuk, Water Resources Engineer
Paula Scott, Director, Planning & Development/Deputy CAO
Rebecca Morrow, Administrative Coordinator
Sue Buckle, Manager, Communications and Outreach
Troy Storms, Manager, Lands & Stewardship

1. Acknowledgement of Indigenous Traditional and Treaty Lands

The Chair welcomed everyone to the meeting, and asked Rick Champagne to read the Acknowledgement of Indigenous Traditional and Treaty Lands.

2. Approval of the Agenda

Regrets were received on behalf of Jane Lagassie, Nunzio Scarfone, Loren Mick and Ed Valenti. After discussion, the following resolution was presented:

Resolution No. SPA13-22, Lahaye-Smit

THAT the agenda be approved as presented.

Carried Unanimously

3. Delegation(s)

No delegations.

4. Declaration of Pecuniary Interest

None declared.

5. Adoption of Previous Minutes of April 27, 2022

After discussion the following resolution was presented:

Resolution No.SPA14-22, Marchant-Cross

THAT the minutes of the meeting held on April 27, 2022 are adopted as written.

Carried Unanimously

6. Project Managers Report

David Ellingwood presented his report. After discussion the members thanked David and the following resolution was presented:

Resolution No.SPA 15-22, Mendicino-Champagne

THAT the project Managers Report dated August 17, 2022 be received and appended to the minutes of this meeting.

Carried Unanimously

7. Source Protection Plan update

David Ellingwood presented his report and slide presentation. After discussion the members thanked David and the following resolution was presented:

Resolution No.SPA 16-22, Smit-Marchant

THAT the "Section 36 updates and delineation of Callander Issue Contributing Area" be received and that a copy of the report be appended to the minutes of this meeting.

New Business

None declared.

12. Adjournment (6:05p.m.)

As there was no new business, the following resolution was presented:

Resolution No. 17-22, Mayne-Brandt

THAT the meeting be adjourned, and the next meeting will be held at 5:30pm on Wednesday October 26, 2022 in a format to be determined or at the call of the Chair.

Carried Unanimously

Dave Britton, Chair
Treasurer

Chitra Gowda, Chief Administrative Officer, Secretary

Further Review: Delineation of Issue Contributing Area

TO: The Chair and Members of the
North Bay-Mattawa Source Protection Authority

ORIGIN: David Ellingwood, Supervisor, Source Water Protection

DATE: August 17, 2022 meeting

SUBJECT: **Project Managers Report**

RECOMMENDATION:

- That the Source Protection Authority receive the Project Managers report and that a copy of the report be appended to the minutes.

The 2021 Source Protection Annual Report and supplemental file was submitted to the MECP on May 1, 2022. A copy of Annual Report was posted on actforcleanwater.ca

The 2022-2024 Transfer Payment Agreement was signed with MECP. This two-year funding agreement provides very similar funding amounts as the 2021-2022 period.

Staff continue to participate in working groups and meetings hosted by Conservation Ontario: salt management; communications; best practices for source protection in other drinking water systems; project manager meetings; SPC Chair meetings with MECP.

David Ellingwood
Supervisor, Source Water Protection

Further Review: Delineation of Issue Contributing Area

TO: The Chair and Members of the
North Bay-Mattawa Source Protection Authority

ORIGIN: David Ellingwood, Supervisor, Source Water Protection

DATE: August 17, 2022 meeting

SUBJECT: **Section 36 updates and Delineation of Callander Issue Contributing Area**

RECOMMENDATION:

- That the Source Protection Authority receive the report "Section 36 updates and delineation of Callander Issue Contributing Area and that a copy if the report be appended to the minutes.

BACKGROUND:

The Source Protection Committee at meetings in 2020 and 2021 had discussed updates to the mapping and some technical data I'm the Assessment Report. The SPC also undertook a review of policies in the Source Protection Plan. Some existing policies have been edited for clarity and some have been modified to address implementation challenges. New policies are proposed to address future pipelines as a prescribed drinking water threat.

Callander Issue Contributing Area
At an SPC meeting on July 21, 2002, the Committee had further discussions about the extent of the Callander Issue Contributing Area and the associated Source Protection Plan policies. Staff have proceeded with the section 36 process for the Source Protection Plan and Assessment Report with the SPC guidance to use the full extent of the Callander intake protection zone to delineate the Callander Issue Contributing Area.

Recently, information used in a draft study of the Trout Lake watershed has referenced studies that provide some insight into how phosphorus behaves in subsurface movement from septic systems. As well, NBCMA staff presented a detailed analysis of properties that may be newly affected by updated mapping for the Callander Issue Contributing Area. If the full extent of the Intake Protection Zone were used, there would be a much higher number of significant drinking water threats than previously presented to the Committee, specifically the number of septic systems needing a maintenance inspection. Accordingly, staff are brought this information to the SPC for discussion about retaining or altering the method for delineating the Callander Issue Contributing Area.

ASSESSMENT REPORT CONSIDERATIONS

For the Callander Drinking Water Intake, microcystin-LR has been identified as an issue in the Assessment Report. This toxin is produced by certain cyanobacteria, commonly called blue-green algae, and can be harmful to human health. The associated chemical parameter

that contributes to cyanobacteria blooms was listed as phosphorus in the Assessment Report. Once an issue is identified, then an Issue Contributing Area is delineated. Under the Technical Rules, the Issue Contributing Area is all or a portion of the intake protection zone for the surface water intake.

The 2015 Assessment Report and the draft updates in the section 36 process have included the full extent of the intake protection zones IPZ-1, IPZ-2, IPZ-3a, IPZ-3b, and IPZ-3c for the Callander Drinking Water Intake. IPZ-1 includes the waters of Callander Bay in a 1000-metre radius circle centred on the intake and a 120-metre land area adjacent to the water. IPZ-2 includes water within a two-hour time-of-travel to the intake, which extends in the waters of Callander Bay and up any incoming watercourses. Along the watercourses, a 120-metre adjacent land area is also included. IPZ-3 includes watercourses, waterbodies and wetlands that hydraulically contribute water into IPZ-1 and IPZ-2. Similarly, 120m adjacent to the watercourses is included in the IPZ-3. The IPZ-3 for Callander has been separated into three subzones: IPZ-3a includes lands within 120 metres of Callander Bay; IPZ-3b includes the Wasi River downstream of Wasi Lake, tributaries on this portion of Wasi River and all other tributaries to Callander Bay plus a 120 metre setback from these watercourses; and IPZ-3c includes Wasi Lake, Wasi River, all tributaries to this section of Wasi River, and other tributaries upstream of Wasi Lake plus a 120 metre setback from these watercourses.

The 2015 Assessment Report states:

> "The Issue Contributing Area includes the entire vulnerable area of the Callander intake (IPZs) because activities, conditions that result from past activities, and naturally occurring conditions in this area may all contribute to the phosphorus concentration in Callander Bay." (Assessment Report, section 4.5)

Activities that can contribute any amount of phosphorus are listed as potential significant drinking water threats in the Assessment Report. These activities and their circumstances are derived from the *Clean Water Act* regulations, Director's Technical Rules and Threats Tables.

The listed activities contributing phosphorus are:

- The application of agricultural source material to land;
- The application of commercial fertilizer to land;
- The application of non-agricultural source material to land;
- The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage;
- The establishment, operation or maintenance of a waste disposal site;
- The handling and storage of commercial fertilizer;
- The handling and storage of non-agricultural source material;
- The storage of agricultural source material;
- The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.

The list of activities are generally ones where phosphorus could be released to the surface and move via surface water flows. Some phosphorus may infiltrate to the ground and move through shallow groundwater flows.

Septic systems are a notable exception where the main movement of phosphorus would be via groundwater. The effluent moves underground in the leaching bed, mantle and downgradient soils. Septic program staff have stated that even in a failing system the vast majority of effluent would still be below grade.

Phosphorus Movement in Soil and Water

Phosphorus can be attenuated (decreased) through natural chemical processes as it moves through the physical environment. The proportion of phosphorus that is attenuated has been studied by several researchers. Particular soil properties and distance have a strong bearing on the proportion of phosphorus that is removed. Lower levels of calcium in the soil tend to be better at attenuating phosphorus. Smaller particle sizes in soil composition also reduce phosphorus. Phosphorus can bind to other soil components to form compounds that remain 'locked' in the soil. Under certain conditions, some of these compounds can break down and the phosphorus is released. As the phosphorus is carried further away by the groundwater movement, more of the phosphorus may bind to the soil, thereby further lowering the amount of phosphorus reaching the watercourse.

Considerations for Extent of Issue Contributing Area

As noted above, the maximum size of the Issue Contributing Area is the size of all intake protection zones (iPZ-1, IPZ-2, IPZ-3) together. However, the ICA can be smaller than the full IPZ extent where there is technical rationale and evidence.

The Director's Technical Rules specify the size of the Intake Protection Zone along watercourses and allow for "a setback of not more than 120 metres inland along the abutted land measured from the high water mark of the surface water body that encompasses the area where overland flow drains into the surface water body." (Technical Rules 65 and 68; MECP 2017). The 120 metre setback is a figure derived from technical work that informed the Director's Technical Rules.

The Callander Issue Contributing Area in the North Bay-Mattawa Assessment Report was developed using a buffer distance of 120m. The ICA includes Callander Bay and all tributaries up to their headwaters, as well as a 120m wide buffer on either side of these watercourses.

Since the 1990s, NBMCA has been designated as the principal authority responsible for conducting inspections, issuing permits and investigating violations for on-site sewage systems (septic systems) under Part 8 of the Ontario Building Code within the Nipissing District and most of the Parry Sound District. Part of the responsibility includes what are termed "mandatory maintenance inspections". Septic systems that have been identified as

a significant drinking water threat in an approved Assessment Report are required to undergo an inspection every five years according to the Building Code. In the North Bay-Mattawa Source Protection Plan, policy SEW3 serves as a reminder of this obligation for re-inspection of septic systems. Re-inspection applies to two properties in one of the wellhead protection areas and to more than 500 properties in the Callander Issue Contributing Area.

Staff from the septic program have been providing additional understanding of how a failing system would behave and the results of their observations during more than 10 years of the re-inspection work in this region. A re-inspection visit consists of a visual examination of the system components for any defects. The 2017 Source Protection Annual Report contained a summary of the first five-year cycle of inspections: "Inspection results found that the majority of those inspected are functioning as designed with only 20 systems either not being in full compliance with the regulations or requiring some kind of maintenance work. Of these only 3 had major deficiencies requiring system replacement." In the second five-year cycle there were 10 systems with minor deficiencies, and one had a major deficiency. An example of a minor defect could be a cracked lid, which would not pose an additional risk of phosphorus release. As noted, four systems were identified as needing major repairs or replacement out of more than 1000 re-inspections, or a rate of less 0.5% of inspections. It can also be noted that each year a number of system owners apply on their own for permits to replace tanks, leaching beds or whole septic systems that they have noticed are nearing the end of the service life.

Further, recent studies suggest that phosphorus from septic systems in non-calcareous soils typical of the area is less mobile than had been assumed. A draft report from the Trout Lake Management Study being undertaken in the City of North Bay and the Municipality of East Ferris (Hutchinson Environmental Sciences and JL Richards) has reviewed literature about phosphorus attenuation. Based upon a local study of some septic systems in East Ferris and findings from other researchers, the Trout Lake study team is suggesting that the septic system components will attenuate 86% of the phosphorus; meaning that the other 14% slowly migrates away from the site. This is a notable difference from the 74% attenuation figure (26% migrating off site) used in the Callander Bay Subwatershed Phosphorus Budget report that informed prior Assessment Report discussions.

SPC Direction on Callander ICA

After considering the information about phosphorus attenuation and the implementation of the related Source Protection Plan policies, the SPC passed a motion to reduce part of the extent of the Issue Contributing Area. In particular, the Issue Contributing Area: will continue to have a 120 meter setback for parts adjacent to Callander Bay IPZ-1, IPZ-2 and IPZ-3a; and a reduced setback of 60 meters for all upstream areas in IPZ-3b and IPZ-3c.

CONSULTATION

A consultation round with implementing bodies will commence in the next two weeks and extend into the first week of October. Municipalities and the Conservation Authority will be consulted given their role as the implementing agency for Source Protection Plan policies.

Information Packages will be sent to CAOs and clerks. An online session will be held with a presentation and question period. Individual discussions are also available.

David Ellingwood
Supervisor, Source Water Protection