

The City of Greater Sudbury's Source Protection Plan

Presented To:	Operations Committee
Meeting Date:	October 15, 2025
Type:	Correspondence for Information Only
Prepared by:	Andre Frappier Water/Wastewater Treatment & Compliance
Recommended by:	General Manager of Community Infrastructure

Report Summary

This report provides information regarding the Greater Sudbury Source Protection Plan and the Source Protection Program, highlighting the policies, vulnerable areas, and regulatory tools used to prevent contamination of municipal drinking water sources.

Relationship to the Strategic Plan, Health Impact Assessment and Climate Action Plans

The Greater Sudbury Source Protection Plan addresses a number of objectives within the strategic plan, including:

- 3.1 "Support Ecological Sustainability" through the reduction of salt contamination in our drinking water source
- 3.3 "Build Climate Resiliency into Existing Programs" by managing potential sources of drinking water contamination with risk management plans

Financial Implications

There are no financial implications associated with this report.

Background

Source Water Protection refers to proactive policies, land use planning, and on-the-ground actions that safeguard the rivers, lakes, and aquifers from which our drinking water is drawn. Instead of reacting to contamination after it occurs, Source Water Protection reduces risks at the source, making water safer and treatment more reliable. It is the first barrier in Ontario's multi-barrier approach to drinking water safety, which includes treatment, testing and distribution.

This program was developed in response to the Walkerton tragedy in 2000, where contaminated drinking water led to illness and fatalities. Following the Walkerton Inquiry, the Government of Ontario implemented the *Clean Water Act, 2006*, which established a framework for protecting drinking water sources through locally developed science-based Source Protection Plans.

The Greater Sudbury Source Protection Plan came into effect on April 1, 2015. The plan focuses on preventing contamination and overuse of water sources such as Ramsey Lake, Vermilion River, Wanapitei River, and 24 groundwater wells within the City of Greater Sudbury. The plan is available on the City of Greater Sudbury website and linked below in References Cited.

Key Components of the Program

The Greater Sudbury Source Protection Plan is a region-specific plan that was created by the Greater Sudbury Source Protection Committee, which included representatives from the municipality, conservation authority, Indigenous communities, industry, and other stakeholders. The Greater Sudbury Source Protection Plan identifies the “vulnerable areas” of the region, the activities that pose risks to drinking water, and policies to manage or prohibit those activities.

The Greater Sudbury Source Protection Plan contains technical assessments that utilized local scientific data to create the vulnerable areas mapping to show areas where drinking water sources are most at risk. The vulnerable areas include Intake Protection Zones (IPZs) and Wellhead Protection Areas (WHPAs).

The Greater Sudbury Source Protection Plan has a total of 47 policies. The City of Greater Sudbury is designated as the implementing body for 34 of those policies, particularly those under Part IV of the *Clean Water Act*. These include policies related to land-use planning and development approvals, education and outreach initiatives, development of Risk Management Plans (RMPs), Part IV enforcement for restrictions and prohibitions, and annual reporting responsibilities. The City of Greater Sudbury uses its existing administrative processes, by-laws, and programs to fulfill these duties. The City departments that are responsible for annual progress or completion of their specific policies are Emergency Management, Community Infrastructure (Linear Infrastructure Services, Drainage/Stormwater, Environmental Services and Water Wastewater Treatment and Compliance), Planning and Growth (Environmental Planning Initiatives, Planning Services and Building Services), and Community Services (Parks and Recreation Services).

Vulnerable Areas: Risks and Characteristics

A vulnerable area is a specific geographic zone where drinking water sources, like lakes, rivers or groundwater wells, are more at risk of being contaminated by human activities. The Greater Sudbury Source Protection Plan has policies for two types of vulnerable areas: Intake Protection Zones and Wellhead Protection Areas.

An Intake Protection Zone (IPZ) is a mapped area around a municipal surface water intake that helps protect a drinking water source from contamination. There are three types of IPZs, each with increasing distance from the intake and decreasing vulnerability. An IPZ-1 is closest to the intake and most vulnerable, where contaminants can reach the intake almost immediately. An IPZ-2 includes areas where contaminants could reach the intake within two hours, allowing time to respond to spills. An IPZ-3 covers areas that could affect the intake during extreme events like storms or floods and is generally less vulnerable but still important for emergency planning. The Greater Sudbury Source Protection Plan has designated IPZs for the surface water intakes in Ramsey Lake (*Figure 1*), the Vermilion River and the Wanapitei River.

A Wellhead Protection Area (WHPA) is a mapped zone around a municipal groundwater well that helps protect the water supply from contamination. There are four defined zones based on time-of-travel of water and potential contaminants to reach the municipal well. The most vulnerable zone is a WHPA-A which has a 100 metre radius around the wellhead. A WHPA-B has a defined zone where water can reach the well within 2 years, WHPA-C within 5 years, and WHPA-D within 10 years. The farther the zone is from the well, the lower the vulnerability, but all zones are important for keeping drinking water safe. The 24 groundwater wells within Greater Sudbury are located in Valley East (*Figure 2*), Garson, Falconbridge, Dowling, and Onaping.

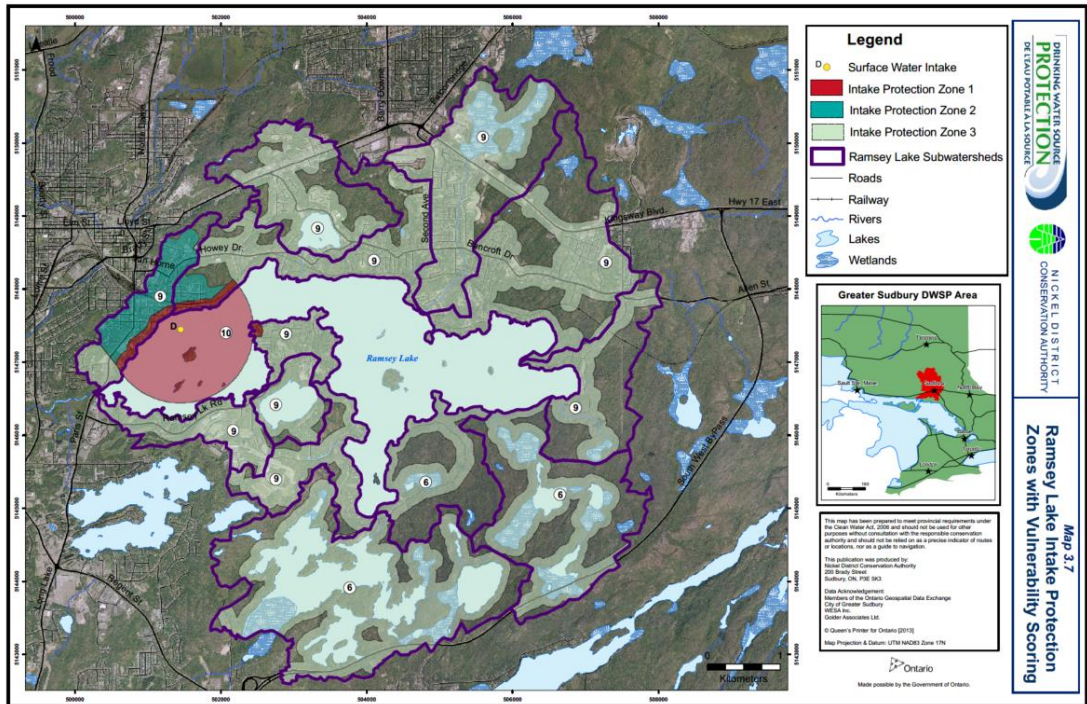


Figure 1: Mapping of Ramsey Lake IPZ 1, IPZ 2, and IPZ-3

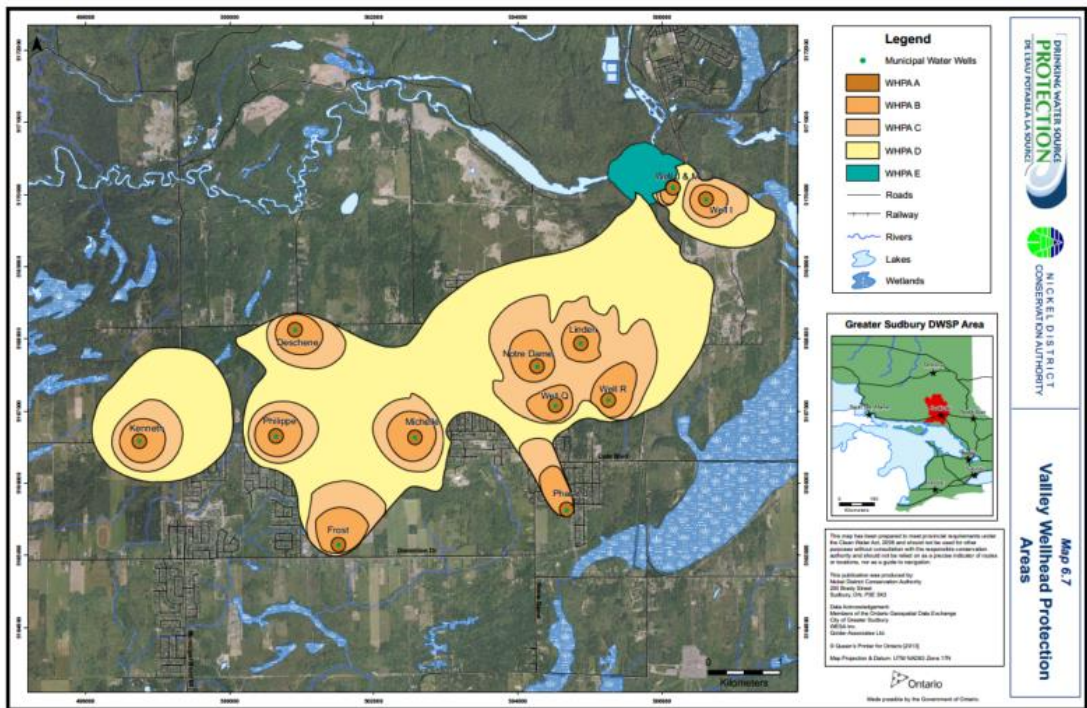


Figure 2: Mapping of Valley East Wellhead Protection Areas

Regulatory Tools Under Part IV of the Clean Water Act

Part IV of the *Clean Water Act* (CWA) provides municipalities with regulatory tools to manage activities that pose a significant threat to drinking water sources. The three main tools are: Prohibitions (Section 57 of the CWA), Risk Management Plans (Section 58 of the CWA), and Restricted Land Uses (Section 59 of the CWA).

The Greater Sudbury Source Protection Plan includes Section 57 prohibition policies. Certain activities are completely banned in vulnerable areas to prevent contamination of drinking water sources. This generally only applies to “future activities” that were not established at the time the Greater Sudbury Source Protection Plan came into effect. The Greater Sudbury Source Protection Plan uses Section 57 prohibitions for various threat types, including fuel handling, Dense Non-Aqueous Phase Liquids (DNAPLs), and organic solvents, where the risk to drinking water is deemed too high to manage through other means.

The Greater Sudbury Source Protection Plan includes Section 58 policies, which require the development and implementation of Risk Management Plans (RMPs) for certain activities that pose a significant drinking water threat to drinking water sources. Section 58 allows for a site-specific RMPs to be negotiated between the Risk Management Official (RMO) and the person conducting the activity. These plans are used when the activity is not prohibited but still needs to be managed to reduce risk. Since the inception of the Greater Sudbury Source Protection Plan, 51 files have been opened to investigate the potential requirement for Risk Management Plans (*Figure 3*). A total of 20 Risk Management Plans have been established to date. There are 13 RMPs within the Ramsey Lake IPZ area for activities such as storing snow, applying and/or storing road salt, and handling and storing fuel. There are also 7 RMPs established within the Valley East and Garson WHPAs for activities such as handling and storing fuel, handling and storing fertilizer, handling and storing DNAPLs, applying and storing agricultural source material, applying pesticides, and livestock grazing and pasturing.

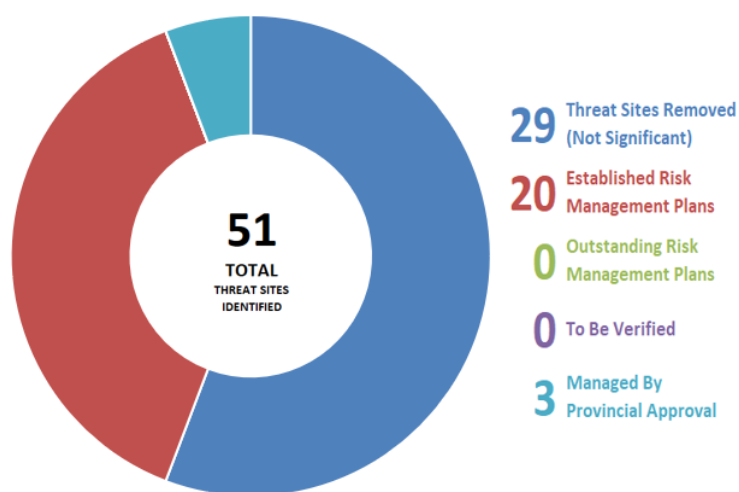


Figure 3: Total Risk Management Plan Investigations Since 2015

The Greater Sudbury Source Protection Plan also includes Section 59 Restricted Land Use policies. These policies are used to screen development applications to ensure that proposed land uses do not involve activities that could pose a significant threat to a drinking water source unless they comply with the Source Protection Plan. Together, Planning and Building Services along with the RMO Office of Water Wastewater Treatment and Compliance continue to effectively screen a variety of Planning Act applications and Building Permit applications (*Figure 4*). These policies help ensure that new or modified land uses do not inadvertently introduce significant drinking water threats without proper oversight. Possible outcomes of the Restricted Land Use review could result in the prohibition of an activity or the requirement of a RMP to manage a restricted activity prior to proceeding with the proposed land use.

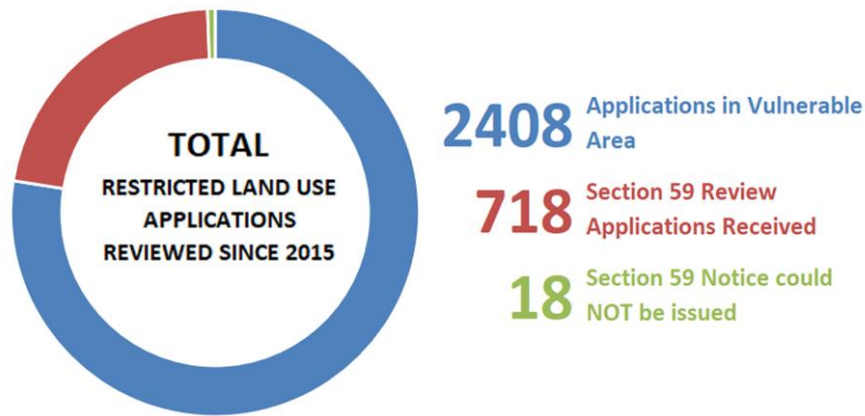


Figure 4: Total Restricted Land Use Applications Reviewed Since 2015

Conclusion

The Source Water Protection Program is a vital component of Ontario’s strategy to ensure safe and sustainable drinking water for communities. Through the Greater Sudbury Source Protection Plan, the City of Greater Sudbury has taken a proactive approach to identifying and managing threats to its drinking water sources, including surface water intakes and groundwater wells. By implementing science-based policies, mapping vulnerable areas, and enforcing regulatory tools under the *Clean Water Act*, the Greater Sudbury Source Protection Plan is helping to prevent contamination before it occurs.

Municipal departments play a key role in this effort, integrating source protection policies into land use planning, infrastructure management, emergency response, and public education and outreach. These coordinated actions not only protect public health but also support environmental stewardship and long-term water security.

Resources Cited

1. Clean Water Act, 2006
2. Greater Sudbury Source Protection Area, Updated Source Protection Plan, March 16, 2021: <https://www.greatersudbury.ca/live/water-and-wastewater-services/source-water-protection/water-protection-files/greater-sudbury-source-protection-area-updated-spp-mar21-pdf/>
3. Greater Sudbury Source Protection Area, Assessment Report, March 16, 2021: <https://www.greatersudbury.ca/live/water-and-wastewater-services/source-water-protection/water-protection-files/ar-march2021-pdf/>
4. Risk Management Official’s Annual Report: 2024 Activities: <https://www.greatersudbury.ca/live/water-and-wastewater-services/projects-plans-reports-and-presentations/risk-management-annual-reports/2024-rmo-annual-report/>