



# Drinking Water Source Protection Primer: For Planning Staff

Your community relies on safe, sustainable drinking water. Protecting the water at its source is an important first step in the drinking water safety net.

Under the *Clean Water Act, 2006*, the Ontario government established the Drinking Water Source Protection Program. This program protects sources of municipal drinking water from contamination and overuse.

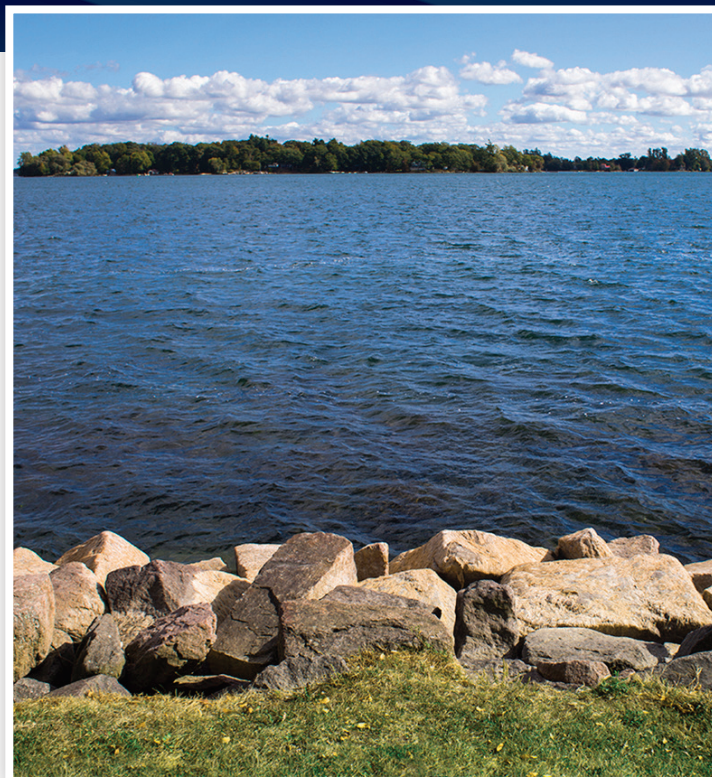
## Where does our drinking water come from?

Our province's drinking water comes from surface water sources including lakes and rivers, and from groundwater sources through wells drawing from aquifers. Aquifers are water-bearing layers of sand, gravel and rock, underneath the ground.

## What's a vulnerable area?

Drinking water source protection is based on science. Local scientific data was used to create maps that show drinking water vulnerable areas. In these areas, we need to pay attention to activities causing contamination and overuse of our municipal drinking water sources.

To find out if a property is located in a drinking water vulnerable area, search the Source Protection Information Atlas at [ontario.ca/page/source-protection](https://ontario.ca/page/source-protection).



There are four types of vulnerable areas:

- 1. Wellhead protection areas (WHPAs)** are areas around municipal wells where the groundwater is travelling toward that well when the well is being pumped. These areas should be protected from risks to the quality and quantity of the drinking water source.
- 2. Intake protection zones (IPZs)** are areas of land and water around surface water intakes that should be protected from risks to the quality and quantity of the drinking water source.



**3. Significant groundwater recharge areas (SGRAs)** are areas where a relatively high percentage of precipitation seeps into the ground to help maintain the water level in an aquifer that supplies a community or private residence with drinking water.

**4. Highly vulnerable aquifers (HVAs)** are areas that are particularly susceptible to contamination based on factors such as the aquifer depth underground, the soil types, soil permeability and other characteristics of the surrounding soil or rock.

If a water quality issue is identified by source protection committees under the *Clean Water Act*, issue contributing areas (ICAs) can be delineated within the vulnerable areas. Examples of issues identified in Ontario include nitrate and sodium. Mandatory policies apply within issue contributing areas in order to ensure that the source water quality is protected or improved.

## Know the threats to drinking water sources

The *Clean Water Act* identifies activities that could pose a threat to drinking water sources under certain circumstances. These threat activities may be significant, moderate or low level risks. Identified threats include:

- Application, handling and storage of agricultural source material (such as manure), non-agricultural source material (such as biosolids), commercial fertilizer, and pesticides.
- Handling and storage of fuel, dense non-aqueous phase liquids (DNAPLs\*), and organic solvents.
- Management of aircraft de-icing chemical runoff.
- Land used for livestock grazing or pasturing, outdoor confinement areas, and farm-animal yards.

- Application, handling and storage of road salt, and storage of snow.
- The establishment, operation and maintenance of systems that collect, store, transmit, treat or dispose of sewage (such as septic systems and sewage treatment plants, and stormwater management facilities).
- The establishment, operation and maintenance of waste disposal sites (such as landfills).
- Activities that take water from a water body without returning the water to the same water body.
- An activity that reduces the recharge of an aquifer.
- The establishment and operation of a liquid hydrocarbon pipeline (added in April 2018, through an amendment to the *Clean Water Act*).

*\*DNAPLs, or dense non-aqueous phase liquids, are a particularly hazardous group of substances that are heavier than water and are difficult to remove once they contaminate a water source.*

## Your local source protection plan

Under the *Clean Water Act, 2006* local source protection plans are in place. These plans contain policies to protect municipal sources of drinking water. Municipalities are responsible for implementing more than half of the policies in the plans, many of which are legally binding.

## Building in a vulnerable area

Development applications, and planning or building permits may be subject to policies under the local source protection plan. An application or permit could be subject to land use planning policies, such as low-impact development for stormwater management, or flagged per restricted land use policies.

A flagged application or permit must be reviewed by the local risk management official before it can be submitted to the municipality. In some cases, the proposed activities may require a risk management plan or be prohibited.

## Provincial Policy Statement

Municipalities and other planning authorities must follow the Provincial Policy Statement. Section 2.2.1 mandates planning authorities to protect, improve or restore the quality and quantity of water. This includes protecting vulnerable areas associated with drinking water sources.



# About risk management

## Be informed:

- Review the **source protection plan** for your area to find out what policies are to be implemented in your municipality, and what actions are being taken to protect drinking water vulnerable areas.
- Incorporate source protection planning into your **application forms and checklists**, including the opportunity for an applicant to check if their proposed activities will occur in a drinking water vulnerable area.
- Understand your **local process** for responding to land use inquiries and applications with regards to drinking water source protection; each municipality customizes their approach.
- Find out if your municipality has a **risk management official and/or inspector**. Sometimes they'll be located at another municipality or at a local conservation authority. Understand when you need to direct someone to a risk management official, and when the activity is handled by other legislation.
- Recognize that some activities will be **managed through other methods** such as environmental compliance approvals, permits-to-take-water, and nutrient management plans/ strategies.
- Depending on the level of risk associated with the proposed threat activities, some may be prohibited as proposed or **require other supporting studies** such as risk management plans, site-specific salt management plans, water balance assessments and/or hydrogeological assessments.
- **Sewage systems** identified under the *Clean Water Act* as causing significant level risks to drinking water sources, are subject to mandatory inspections through the *Building Code Act, 1992*.
- **New regulation (205/18)** has been established under the *Safe Drinking Water Act, 2002*, to ensure that source protection planning is in place for new or expanding municipal systems, before treated drinking water is provided to the public. These new changes came into effect on July 1, 2018. Notify your local conservation authority immediately, when planning for a new well or intake for an existing drinking water system, or for a new system.

Some policies require a risk management official (RMO) to work with landowners/renters to develop a risk management plan that contains measures to protect drinking water sources. Legally binding, a plan is only required when a property is in a vulnerable area and the activity being undertaken poses a significant level risk to municipal drinking water sources.

A risk management inspector (RMI) conducts inspections through site visits to ensure compliance with the *Clean Water Act — Part IV* policies (i.e. prohibitions and risk management plans). They can take samples, excavate, take measurements, run tests, record and copy documents, etc., and can issue enforcement orders when compliance is not met.

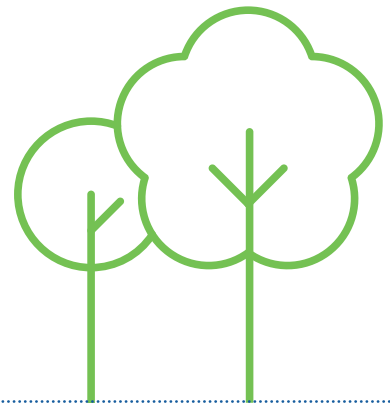
For more on source protection planning, visit [protectingwatermatters.ca](http://protectingwatermatters.ca).





## Have you seen this Drinking Water Protection Zone sign?

These signs are appearing across Ontario to raise awareness about the vulnerability of our municipal drinking water sources. Governments at the local and provincial level are placing signs along roadways where a pollution spill could have a negative impact on our drinking water sources.



120 Bayview Pkwy  
Newmarket, ON L3Y 3W3  
**905-895-0716**

**DRINKING WATER**  
**SOURCE PROTECTION**  
Our Actions Matter