

# Drinking Water Source Protection and Water Treatment Plant Operators

## The Clean Water Act

The *Clean Water Act, 2006*, is the first step of a **multi-barrier approach** to protecting drinking water from source to tap. It complements other Ontario legislation including the *Safe Drinking Water Act, Ontario Water Resources Act*, and the *Planning Act*. Municipal drinking water systems are an integral part of this approach, providing 85 per cent of Ontarians with clean drinking water. It is important to ensure that the sources of our municipal drinking water are protected now and into the future.

## The statutory standard of care

The *Safe Drinking Water Act, 2002*, includes a **statutory standard of care** section for individuals with oversight responsibilities for municipal drinking water systems. This standard ensures that due diligence is practiced to protect public health when making decisions that could affect drinking water. This includes a consideration of the source water characteristics and the risks posed to it. Let your manager know about any changes in source water characteristics, such as increasing trends in drinking water quality parameters or recurring low source water levels. This information may help detect source water problems early on.



Figure 1: Multi-barrier approach to drinking water protection

## Important changes to the Safe Drinking Water Act

A new regulation O. Reg. 205/18 under the *Safe Drinking Water Act*, and related amendments to O. Reg. 287/07 under the *Clean Water Act* were made to ensure that the water sources for municipal residential drinking water systems are protected before water is provided to the public. The new regulation O. Reg. 205/18 applies where:

- a new municipal residential drinking water system is being located within a source protection area, or
- changes are being made to an existing municipal residential drinking water system located in a source protection area that results in new or revised vulnerable areas, including (but not limited to):
  - the establishment of a new well
  - deepening an existing well
  - increasing the capacity at an existing well
  - the establishment of a new surface water intake
  - moving an existing intake.

Discuss your specific system changes with the Ministry of the Environment, Conservation and Parks (MECP) to see if the new regulation applies. You may need to undertake technical work to identify vulnerable areas and threat activities per the *Clean Water Act*. Notify the local conservation authority in writing of your intention to apply for or amend a drinking water works permit, and provide them with the necessary information. The authority will then provide a notice back to you that must be included with an application for a new or amended permit. More information is provided in a 2018 MECP factsheet listed in the Resources section.

## More on drinking water source protection in Ontario

Ontario's Drinking Water Source Protection Program was established under the *Clean Water Act*, and protects several Great Lakes intakes, inland intakes, Lake St. Clair and St. Lawrence River intakes, and groundwater wells serving municipal residential drinking water systems. Some of the municipal well supplies are groundwater under the direct influence of surface water (GUDI) – these sources may be subject to surface water contamination.

## Assessment reports

These are science-based reports prepared under the *Clean Water Act*, to identify vulnerable areas and activities that pose threats to drinking water sources within these areas.

## Vulnerable areas

These areas are mapped using local scientific data. There are four types of vulnerable areas mapped around (1) municipal wellheads, (2) municipal surface water intakes, (3) highly vulnerable aquifers, and (4) significant groundwater recharge areas. In these areas, we need to pay attention to activities that could cause contamination and overuse of our municipal drinking water sources.

## Threats to source water quality and quantity

Also identified are activities that may pose a threat to drinking water sources under certain circumstances, within vulnerable areas. These activities – assessed to be significant, moderate, or low level risks – include:

- The establishment, operation and maintenance of waste disposal sites within the meaning of Part V of the *Environmental Protection Act*.
- The establishment, operation and maintenance of systems that collect, store, transmit, treat or dispose of sewage (such as septic systems, sewage treatment plants, stormwater management facilities).
- Handling and storage of fuel, dense non-aqueous phase liquids and organic solvents.
- Application, handling and storage of road salt, and storage of snow.
- The establishment and operation of a liquid hydrocarbon pipeline.
- Management of aircraft de-icing chemical runoff.
- Application, handling and storage of agricultural source material, non-agricultural source material, commercial fertilizer, and pesticides.
- Use of land for livestock grazing/pasturing, outdoor confinement areas, farm-animal yard.
- 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.

Other activities not prescribed under the regulations can be identified by local source protection committees and may be included into assessment reports, after consideration by the MECP.



## Transport pathways

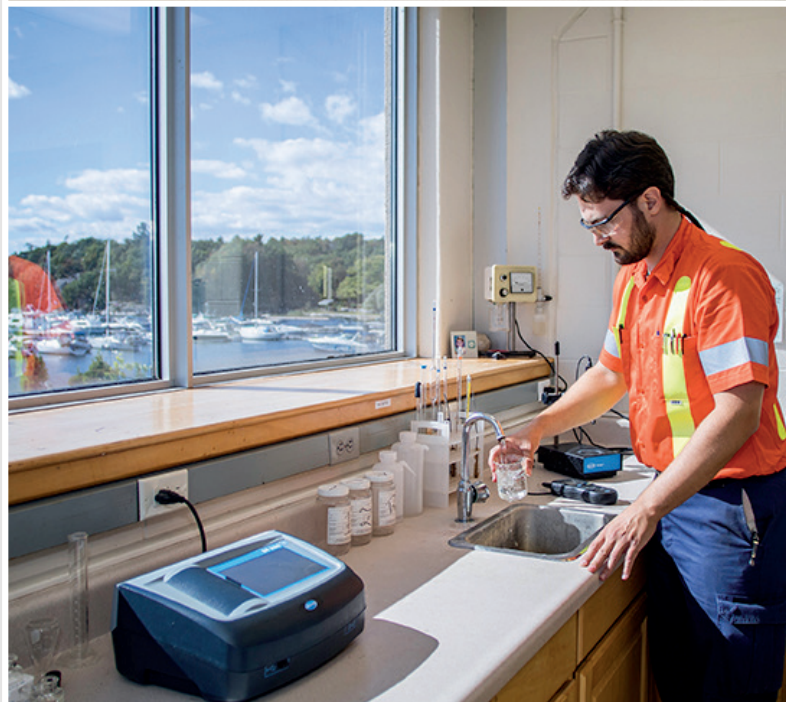
A transport pathway is a land condition caused by human activity that results in faster or more widespread distribution of contaminants in water. For example, alterations to natural surface drainage can accelerate flows resulting in more contaminant laden water reaching lakes and rivers. Similarly, some activities speed up water movement from the surface into the aquifer, possibly resulting in contamination of groundwater sources. Examples of potential transport pathways are quarries, geothermal energy systems, drainage projects, sewers and major construction projects. Under the *Clean Water Act*, transport pathways near vulnerable areas must be examined in case they increase the vulnerability of a drinking water source, and brought to the attention of local conservation authorities.

## Water quality issues

Some municipal residential water treatment system operators deal with raw water quality issues and modify their treatment processes accordingly, possibly resulting in an increased cost of operation. Under the *Clean Water Act*, specific **water quality issues** are identified if they are due to human activities and are known to have caused, or are trending towards causing, the deterioration of source water quality for drinking water purposes. Drinking water system operators are encouraged to share trends in raw water quality with their senior management, to determine if this information should be shared with the local conservation authority. This may help identify **source water** quality issues, and then establish policies to protect the source water. Issues identified in Ontario include, sodium, chloride, nitrate, and microcystins. An issue contributing area (ICA) is delineated within vulnerable areas where land-based activities contribute or may contribute to the presence of an issue in source water.

## Source protection plans

Source protection plans were developed through a multi-stakeholder, collaborative process. These plans contain policies to protect municipal drinking water sources in Ontario from contamination and overuse. They may help mitigate some of the source water quality and quantity problems that water treatment



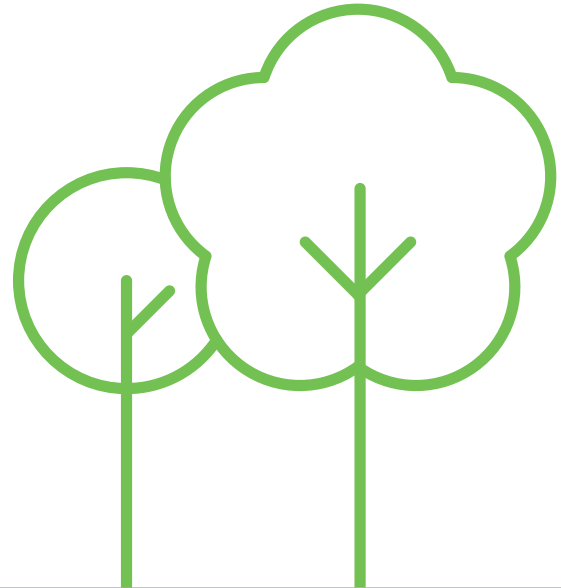
plant operators face. Municipalities, the government of Ontario, conservation authorities and others implement the policies. The policies use a wide variety of tools such as education and outreach, monitoring, stewardship, land use planning, risk management plans and in limited cases, prohibition. Policies that address significant level risk activities (including those that contribute to water quality issues in ICAs) are legally binding.

### Working together

Local program partners including local conservation authorities are a valuable resource. Together, you can work to put source protection planning in place that will complement your water treatment operations. This supports the multi-barrier approach to protecting drinking water sources for Ontarians.

### Resources:

- For more information on drinking water source protection and local contacts see [protectingwatermatters.ca](http://protectingwatermatters.ca).
- For the MECP factsheet “New Requirements for Municipal Drinking Water System Owners – August 2018”, see <https://conservationontario.ca/resources/>
- Find more on drinking water source protection from the Government of Ontario at [ontario.ca/page/source-protection](http://ontario.ca/page/source-protection)



### For more information contact:

Name of local municipality  
Address line 1  
Address line 2  
Phone  
Email

Name of local source protection authority  
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