

# Threats to Our Drinking Water Sources

Activities on the land and in the water near municipal wells and surface water intakes can affect our drinking water sources. The Province of Ontario has identified 21 prescribed drinking water threats under the Clean Water Act, 2006. Nineteen of these relate to water quality and two relate to water quantity.

(See reverse for the list of 21 threats with examples.)

The goal of Source Water Protection is to manage or eliminate activities that are, or could become, significant threats to municipal drinking water sources. During recent studies of the local municipal drinking water systems, potential threats were inventoried through field observations, air photos and satellite images, existing information and landowner contact. Potential threats were ranked as significant, moderate or low. Specific locations of properties containing potential significant threats were not identified in any public documents. Reports identify only the number and type of potential threats in the vulnerable areas surrounding municipal wells and surface water intakes. Property owners were notified if their land was identified as the site of a potential significant threat. Site visits, questionnaires and conversations with landowners helped to refine estimated threat numbers.

## How are drinking water threats addressed?

Source Protection Plans contain policies to protect our drinking water supplies from threats of contamination or overuse. The City of Ottawa encompasses two Source Protection Plans, developed by local multi-stakeholder committees. The Mississippi-Rideau Source Protection Plan took effect on January 1, 2015 and the Raisin-South Nation Source Protection Plan took effect on April 1, 2015.

Source Protection Plan policies use a variety of approaches to reduce the risk posed by drinking water threats; such as education and outreach, risk management plans, changes to



## What types of drinking water threats are there?

- Waste Disposal Sites
- On-site Sewage Systems (septic systems)
- Sewage Works (sewage treatment plants, municipal sewers)
- Fuel Oil (residential heating oil)
- Liquid Fuel
- Nutrients (manure, bio-solids, outdoor livestock areas)
- Commercial Fertilizer
- Pesticides
- Road Salt and Snow Storage
- Chemicals (DNAPLs (toxic chemicals) and Organic Solvents)
- Aquaculture
- Aircraft De-icing Runoff

municipal land use planning documents, and in some cases, the prohibition of certain future activities near drinking water wells and intakes. Different policies apply to different parts of vulnerable areas based on the time it takes for water to get to the well or intake and the risk associated with the significant threat activity. In most circumstances, property owners will be able to manage significant threats to reduce the risk.

Prescribed Drinking Water Threat Activity	Examples of Threat
The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.	Storage of PCBs, waste oil and other hazardous waste, landfilling of hazardous, non-hazardous, municipal or commercial waste, land application of untreated septage.
The establishment, operation or maintenance of a system that collects, stores, transmits, treats, or disposes of sewage.	Septic systems, stormwater treatment ponds, discharge of industrial effluent, sewage treatment plants and sanitary sewer systems.
The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm animal yard.	Fields where livestock graze, and confinement areas outside barns.
The application of agricultural source material to land.	Manure produced by farm animals, and run-off from farm yards and manure storages, or wash water such as milking centre waste, or compost (such as mushroom compost). Facilities that cultivate fish or other aquatic organisms in a controlled environment also produce agricultural source material.
The storage of agricultural source material.	
The management of agricultural source material.	
The application of non-agricultural source material.	Land application of sewage bio-solids or other similar wastes such as pulp and paper bio-solids or waste materials from food processing.
The handling and storage of non-agricultural source material.	
The application of commercial fertilizer to land.	Contaminants of interest include nitrogen and phosphorus. (agricultural and non-agricultural e.g. golf courses)
The handling and storage of commercial fertilizer.	
The application of pesticide to land.	Pesticides of interest include the chemicals used to control weeds (herbicides), or fungi (fungicides) or those used as a soil fumigant to control fungi, nematodes and weeds. (agricultural and non-agricultural e.g. golf courses)
The handling and storage of pesticide.	
The application of road salt.	Contaminants of interest include chloride and sodium.
The handling and storage of road salt.	
The storage of snow.	Contaminants of interest include chloride, sodium, and petroleum hydrocarbons.
The handling and storage of fuel.	
The handling and storage of a dense non-aqueous phase liquid or DNAPL.	Bulk plants or facilities where fuel is manufactured, gas stations and cardlocks or keylocks, marinas, private storage such as farms and contractor yards, and heating oil tanks for homes and businesses.
The handling and storage of an organic solvent.	
The management of runoff that contains chemicals used in the de-icing of aircraft.	Dry-cleaning chemicals, paint and spot removers, rug cleaning fluids, and varnishes.
The management of runoff that contains chemicals used in the de-icing of aircraft.	Paints, varnishes, lacquers, adhesives, glues, and de-greasing or cleaning agents, and substances used in the production of dyes, polymers, plastics, textiles, and printing inks.
WATER QUANTITY THREAT: An activity that takes water from an aquifer or a surface water body without returning the water taken to the same aquifer or surface water body.	Airports using ethylene glycol to de-ice aircrafts.
WATER QUANTITY THREAT: An activity that reduces the recharge of an aquifer.	Water taken from a river or bay and then discharged onto the ground and into groundwater.
WATER QUANTITY THREAT: An activity that reduces the recharge of an aquifer.	Increasing impervious cover of the ground, often through construction of paved areas e.g. parking lots.