

## Drinking Water Threats from Fuel

The handling and storage of fuel are considered drinking water threats under Ontario's *Clean Water Act, 2006*. The need for fuel to heat homes and power vehicles and machinery means fuel storage tanks are common throughout the Lower Trent Source Protection Area. Handling and storing fuel may result in spills and leaks which pose a serious threat to human health and environmental quality. One litre of gasoline can contaminate up to one million litres of water. Fuels can be highly mobile, and flow with groundwater or surface water for great distances making clean up difficult and very costly. Fuels are persistent in the environment. Approximately 60 percent of Canada's contaminated sites involve petroleum hydrocarbon contamination (Canadian Council of Ministers of the Environment, 2001). Without adequate clean up or management, these contaminants can impair municipal water sources.

### Which fuel handling and storage activities are threats?

Specific activities considered to be significant drinking water threats include the handling and storage of fuel in quantities from 250 to 2,500 litres, and greater than 2,500 litres. (Home heating oil tanks hold approximately 1,000 litres.) The circumstances under which each volume category is a threat is subject to whether the fuel storage is below grade, partially below grade, or above grade, and the type of vulnerable area where it is found.

Some of the land use activities where fuel storage tanks may be found include: facilities where it is manufactured, retail outlets (gas stations and cardlocks/keylocks), marinas, private storage such as farms and contractor yards, and heating oil tanks for homes and businesses.

The determination of whether the activity is a significant threat is made based on site specific circumstances which include the volume and type of storage (i.e. above or below grade) and the proximity to the municipal water source.

### Types of threats to our drinking water sources:

**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**

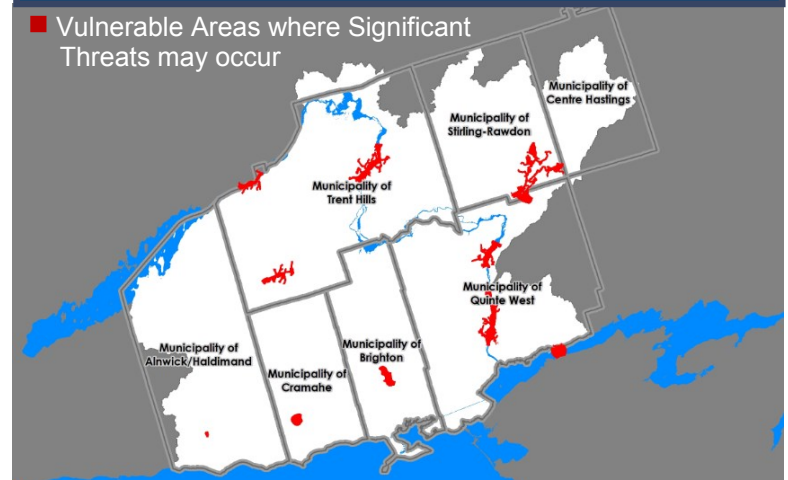
**Road Salt and Snow Storage**

**Chemicals** (DNAPLs (toxic chemicals) and Organic Solvents)

**Aquaculture**

**Aircraft De-icing Runoff**

### Lower Trent Source Protection Area



## Where are the fuel threats in the Lower Trent Source Protection Area?

Fuel storage activities can be considered significant drinking water threats when they occur in the most sensitive areas near municipal drinking water sources. In the Lower Trent Source Protection Area, this includes: the most vulnerable zones surrounding wells, called Wellhead Protection Areas (WHPAs) and the most vulnerable zone surrounding some surface water intakes, called Intake Protection Zones (IPZs). There is the potential for significant threats from fuel handling and storage:

- In the most vulnerable portions of the WHPAs for the Brighton, Colborne, Stirling, and Grafton municipal wells
- In the most vulnerable portions of the IPZs for the surface water intakes in Campbellford, Trenton, Hastings, and Warkworth

Maps showing the vulnerable zones surrounding municipal water sources in the Lower Trent Source Protection Area are available at [www.trentsourceprotection.on.ca](http://www.trentsourceprotection.on.ca).

Home heating oil tanks (<1,000 litres) are the most commonly identified threat from fuel handling and storage in the Lower Trent Source Protection Area. Larger fuel tanks (>2,500 litres) located in highly vulnerable municipal drinking water intake protection zones are considered significant threats, but very few have been identified in the Lower Trent Source Protection Area. Large tanks associated with gas stations are also not abundant within vulnerable areas associated with municipal drinking water systems.

*A double walled or double bottomed home heating oil tank installed with a drip tray and alarm helps to protect both private property and drinking water sources.*



## How are fuel threats being addressed?

Policies in the Source Protection Plan address both existing and future fuel related activities that are or would be significant drinking water threats in the specific vulnerable areas. Policies in the Source Protection Plan [www.trentsourceprotection.on.ca](http://www.trentsourceprotection.on.ca), call for the following:

**Education and Outreach:** This policy calls for a program to raise awareness about the location of vulnerable areas and actions that can be undertaken to protect municipal drinking water supplies, including the maintenance of oil heating systems. This program will apply to landowners, heating oil contractors, as well as the handlers of fuel and insurance companies.

**Risk Management Plans:** Where existing fuel storage activities are significant drinking water threats, property owners will be required to develop a plan to establish an acceptable means of managing any drinking water threats. This may include such measures as regular inspection and maintenance of storage tanks, and the installation of information stickers on the tank and fill pipe that advise what to do in the event of a spill. A Risk Management Official will contact anyone requiring a Risk Management Plan for fuel handling and storage.

**Prohibition:** In the future, new fuel storage tanks located in close proximity to municipal drinking water sources, where they would be a significant threat, will be prohibited. (This applies to new, first time installations, not to the replacement or the upgrade of existing tanks.)

**Restricted Land Use:** This allows the municipality to identify areas where fuel storage activities are either prohibited or require a Risk Management Plan. Municipalities will create an internal administrative process to ensure compliance with the requirements in the Source Protection Plan.