DRINKING WATER SOURCE PROTECTION

ACT FOR CLEAN WATER

Quinte CONSERVATION

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Drinking Water Threats from Sewage

Sewage Systems are considered drinking water threats under Ontario's *Clean Water Act, 2006.* Sewage systems are one of the most common drinking water threats found in the vulnerable areas around municipal drinking water supplies in the Quinte Region. Urban centres in the region have sewage systems related to sanitary sewer collection systems, sewage treatment plants and stormwater treatment ponds. In rural areas homes, businesses and institutions are serviced by private septic systems. Sewage systems are considered to be potential threats to drinking water source due to the potential for leaching of contaminants such as chemicals and bacteria into ground or surface water.

Which sewage-related activities are considered threats?

Sewage systems listed as potential significant drinking water threats are:

- **Septic systems:** Including holding tanks (i.e. typically a septic tank and leaching bed). This includes small systems for a private residence (less than 10,000 litres/day as approved under the Building Code) and large systems (greater than 10,000 l/day as approved by the Ministry of Environment) for larger scale development such as campgrounds, restaurants etc.
- **Stormwater treatment ponds:** These ponds are designed to discharge to ground or surface water and receive drainage from a specific area.
- **Discharge of industrial effluent systems:** These systems are designed to receive, transmit, treat and discharge industrial effluent.
- **Sanitary sewers and combined sewers:** These are piping systems (including pumping stations) that are designed to transmit sanitary waste to a treatment facility. These may also include older sanitary sewers that may have combined sanitary sewage and stormwater possibly discharging untreated sewage.
- **Sewage treatment plants:** Threats related to sewage treatment plants include effluent and bypass discharge as well as storage tanks containing sewage.

The occurrence of one or more of these activities in vulnerable areas does not necessarily mean they are a significant drinking water threat. That determination is made based on site specific circumstances such as the type of system, design flow and vulnerability of the area.

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

Where are the sewage threats in the Quinte Region?

Sewage systems are considered to be significant drinking water threats in many of the vulnerable areas surrounding municipal water supplies. In the Quinte Region this includes sensitive areas surrounding municipal wells called wellhead protection areas (WHPAs A, B, and E) and the vulnerable zones surrounding some of the municipal surface water intakes called intake protection zones (IPZs 1, 2 (and Picton 3a)). (Maps showing the vulnerable zones surrounding local municipal water sources are available at www.quintesourcewater.ca.)

There is the potential for significant threats from sewage systems (mostly from septic systems), with actual threats identified:

- In the WHPAs A, B, and E of the wells for the Villages of Tweed, Deloro and Madoc (and within 30 metres of Deer and Madoc Creeks in the WHPA F), and the Hamlet of Peats Point,
- In the IPZ 1 and 2 of the surface water intakes at the Town of Picton and the Village of Ameliasburgh,
- The Hamlet of Point Anne has both intake protection zones and wellhead protection areas because the water from the intake in the Bay of Quinte flows to a collector well that is influenced by groundwater. So, for Point Anne significant threats may occur in both the IPZs and WHPAs.

Regular septic system maintenance helps to protect against costly system failure and also protects drinking water sources.

And while the potential exists for sewage threats to be present there are very few threats (or none) identified in the vulnerable areas surrounding the intakes for the Town of Deseronto, City of Belleville and the Napanee Backup.

The most common threat to municipal drinking water sources in the Quinte Region is from septic systems. The lowest number of sewage related threats is for stormwater ponds, sewage treatment plants, and sewage pumping stations and while these activities do occur in the Quinte Region, they do not occur frequently in the vulnerable areas of municipal drinking water systems.

How are sewage threats being addressed?

Eight policies in the Source Protection Plan address both existing and future sewage related activities that are or would be significant drinking water threats in the specific vulnerable areas. Policies in the Source Protection Plan, available at www.quintesourcewater.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 importance of proper operation and maintenance of septic systems.

Septic System Inspections: All septic systems in vulnerable areas where they are or would be significant drinking water threats are required to be inspected on a five year cycle in accordance with the *Ontario Building Code*.

Land Use Planning: Where municipal sewers exist, any existing unserviced facilities will be required to connect. New development proposing septic systems in vulnerable areas will be considered where appropriate and through justification by proper engineering and hydrogeological study. Future sewage treatment plants are to be located outside of vulnerable areas.

Specific Action Required: Sewage related facilities must be inspected, operated and maintained by the municipality on a regular basis to ensure operation as designed and to minimize potential for adverse impact.

Update Existing Documents: Where facilities exist or are proposed the Ministry of Environment and Climate Change is to review existing Certificate of Approvals and new applications with consideration to managing the drinking water threat.

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