

## Napanee Backup Drinking Water Source - System Summary

### Drinking Water from the Napanee River

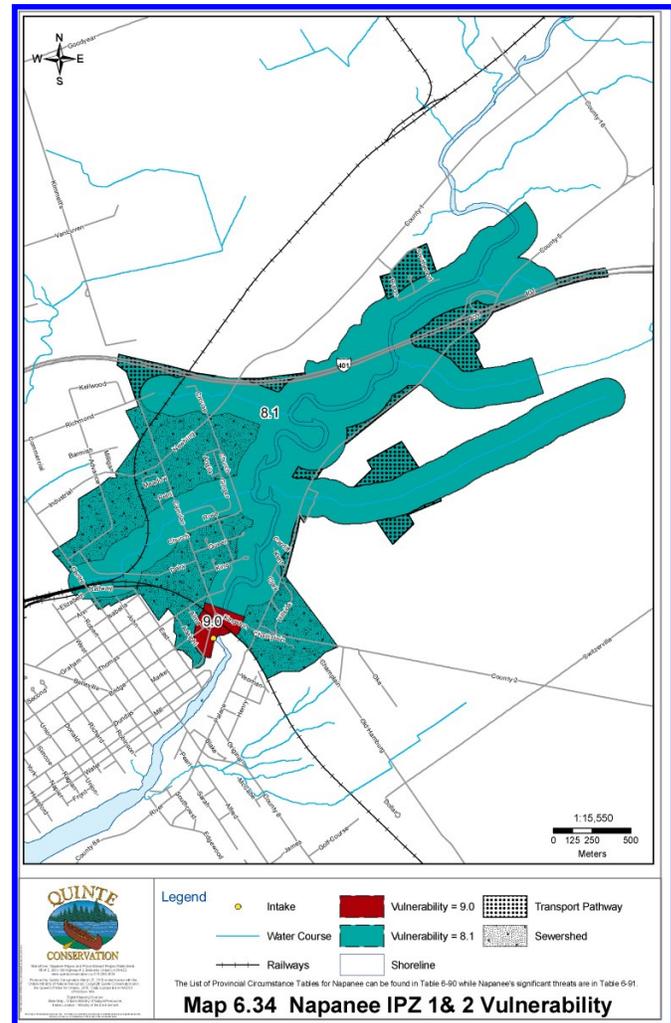
The backup water source for the Town of Greater Napanee is the Napanee River. Under normal operation, raw water for the town is drawn from Lake Ontario, approximately 18 km away. This source is within the Cataraqui Source Protection Area and has been studied by the Cataraqui Source Protection Committee. The backup water source, the Napanee River, is within the Quinte Source Protection Region.

The Napanee River has been the backup water source for the town since 1982. If an emergency situation arises where transmission of water from Lake Ontario is interrupted for an extended period of time (such as a pipe rupture), the backup intake may be used. The Napanee Backup Intake draws water from the Napanee River at the head pond of the Springside Dam immediately upstream of Napanee Falls on the west bank of the river. Water is drawn by gravity through an operational gate, from a channel that brings water westward towards the treatment plant.

### Vulnerable Areas

Through the science of the Assessment Report, (available at [www.quintesourcewater.ca](http://www.quintesourcewater.ca)) zones were mapped that show which areas surrounding the water intake pipe are most vulnerable to pollution and contamination. These are called intake protection zones or IPZs. Three IPZs are identified; each with different levels of vulnerability:

- **IPZ 1** is the area closest to the intake (in red on map). This is the area of highest concern because contaminants entering this zone would reach the intake quickly with little or no dilution. The zone does not extend downstream as water could not reach the intake from downstream, because of the falls.
- **IPZ 2** is a secondary protection zone (in dark blue on map). It is calculated based on how far water can travel during a two-hour time period. It includes portions of the town drained by storm sewers, ditches and tile drains.
- **IPZ 3** is the total area of drainage that contributes to the Intake (see map on reverse). It includes the Napanee River, contributing tributaries and mapped drainage features, including lakes and wetlands upstream of the intake, and the greater of the 120 metre setback or the regulated area. The 120 m setback was extended in some areas to include several wetland areas. Tile drainage areas that may contribute water and are interconnected to the surface water system are also included. The IPZ 3 is an extensive area and so was split into IPZ 3a and IPZ 3b.



### Vulnerability Scores

Vulnerability scores help to quantify how vulnerable the drinking water source is to contamination. Scores are calculated based on the characteristics of each intake and IPZ around the intake, taking into account how contaminants might move through them. An area with a higher vulnerability score is more likely to allow contaminants from that area to reach the drinking water intake. The vulnerability score of the highest concern is 10. The vulnerability scores for the Napanee Backup Intake are: **IPZ 1 = 9, IPZ 2 = 8.1, IPZ 3a = 7.2 and IPZ 3b = 2.7.**

## Drinking Water Issues

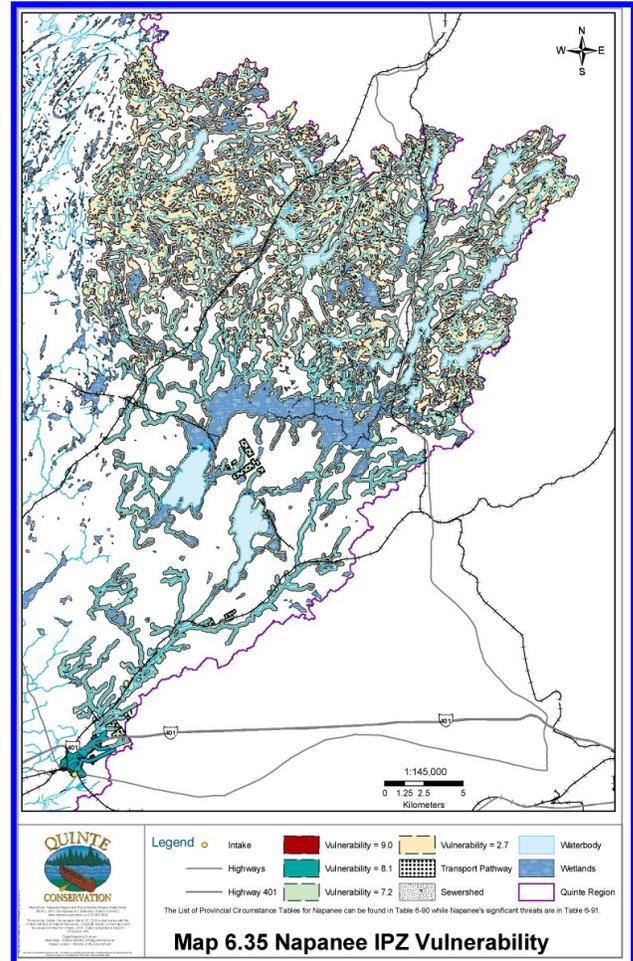
Drinking water issues are chemicals or bacteria in the untreated water that exceed allowable values. The raw water quality data that represent conditions at the Napanee Backup Intake was screened to identify issues in the source water of the Napanee River which may contribute to degraded water quality. Using a 4-step screening process it was confirmed that no issues in the raw water exist.

## Drinking Water Threats

Threats to the drinking water source within the IPZs were evaluated. These threats are based on the categories prescribed by the Ministry of the Environment and Climate Change. Threats were inventoried by field observations, air photos and satellite images, existing databases and landowner contact. These threats were then ranked as significant, moderate or low. There were no significant threats found in the IPZ1 and 14 parcels were identified to have significant threats in the IPZ 2. The identified threats types are:

- application of agricultural source material to land
- application of non-agricultural source material to land (including treated septage)
- application of pesticide to land
- use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard.

No threats have been identified based on the presence of any past land uses or pre-existing conditions. Moderate and low threats are shown in tables in the Assessment Report.



## Source Protection Plan

The Approved Quinte Region Source Protection Plan includes policies, developed by the Source Protection Committee in consultation with the local community. The 63 policies in the plan address the drinking water threats identified in the science-based Assessment Report. The Assessment Report, identified the vulnerable areas surrounding the 11 municipal drinking water sources in the Quinte Region and ranked the threats as significant, moderate or low.

The source protection planning process is governed by the *Clean Water Act, 2006* and directed and funded by the Ontario Ministry of the Environment and Climate Change. The Quinte Region Source Protection Plan comes into effect January 1, 2015.

**For more information, including the complete Assessment Report and the Source Protection Plan, visit:**

**[www.quintesourcewater.ca](http://www.quintesourcewater.ca)**



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