

## Town of Picton Drinking Water Source - System Summary

### Drinking Water From Picton Bay

Picton Bay is the source of water for the Town of Picton on the east side of Prince Edward County. Picton Bay is part of the Bay of Quinte on Lake Ontario.

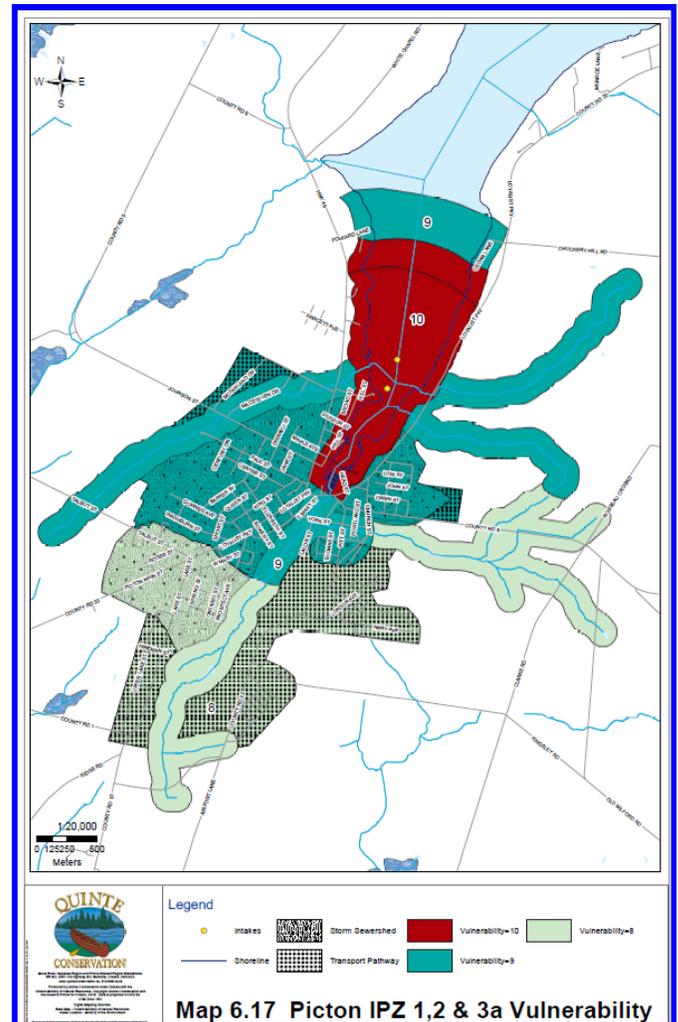
The drinking water system serves almost 6,000 people in Picton and over 600 people in the Village of Bloomfield. Water is drawn from the Bay of Quinte in Picton Bay by one of two intake pipes. The main intake is the south intake and both pipes are shallowly located about 3.3 m from the surface. The water treatment plant was upgraded in 2005.

Picton is also served by a recently upgraded municipal sewage treatment plant. The plant reconstruction will allow for growth of the town and improve effluent quality. The new system has tertiary treatment that meets stringent effluent water quality targets. The sewage treatment plant discharges into Marsh Creek immediately upstream of Picton Bay, the source for the drinking water system. Land use around the intake is a mixture of predominantly residential and agricultural with some commercial, industrial and institutional.

### 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 intake pipes 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 (**red on the map**). It is the area of highest concern because contaminants entering this zone would reach the intake quickly with little or no dilution.
- **IPZ 2** is a secondary protection zone (**dark blue on map**). It is calculated based on how far water can travel during a four-hour time period. The contributing area to IPZ 2 was determined by considering contributions from flows, wind, sewersheds and transport pathways. **This zone was amended in 2019 to include newly developed land that falls within the two-hour time of travel.**
- **IPZ 3** is the total area of drainage that contributes to the intake. The IPZ 3 for Picton includes portions of the Marsh Creek drainage system, Bay of Quinte, Hay Bay and tributaries within the Cataraqui Region Source Protection Area. The IPZ 3 is a very extensive area, and was split into IPZ 3a and 3b. IPZ 3a (**pale green on map**) includes the Marsh Creek tributaries outside the IPZ 2. The IPZ 3b includes the upper watershed tributaries. Each of the IPZ 3a and 3b extends from the water features to 120 m inland or the regulation limit, whichever is greater.



### Vulnerability Scores

Vulnerability scores help to quantify how vulnerable the drinking water source is to contamination. Scores are calculated based on the characteristics of the intake and IPZs 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 highest concern is 10. The vulnerability scores for the Picton IPZs are: **IPZ 1 = 10, IPZ 2 = 9.0, IPZ 3a = 8.0 and IPZ 3b = 6.0.**

## 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 Picton Intake was screened to identify issues in the source water of Picton Bay which may contribute to degraded water quality. Using a 4-step screening process it was confirmed that no issues were identified in the raw water of the Picton Intake.

## Drinking Water Threats

Eight activity-based significant threats and one condition based threat to the drinking water supply were identified for the Town of Picton. Over 60 parcels of land had one or more of these significant threats.

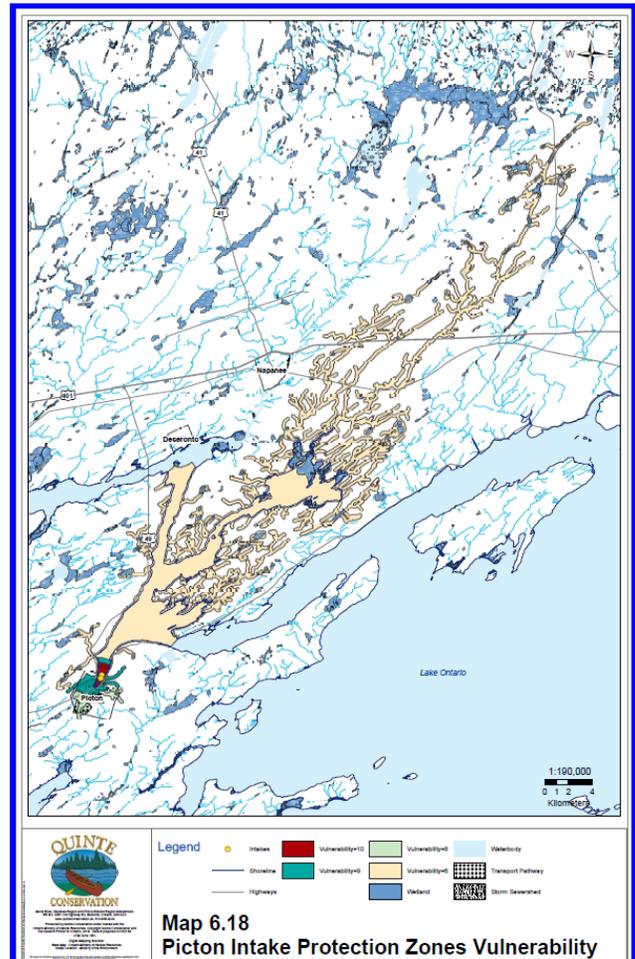
Activity based threats are based on the categories prescribed by the Ministry of the Environment and Climate Change. Threats were inventoried by field observations, air photos and satellite images, existing databases and landowner contact. These threats were then ranked as significant, moderate or low. There were 68 parcels in the IPZ 1 and IPZ 2, and 1 parcel in the IPZ 3a, identified with significant threats. The threat types are:

- septic systems
- municipal sewage system
- municipal stormwater pond
- storage and application of agricultural source material (manure)
- application of pesticides
- handling and storage of fuel
- use of land as livestock grazing/pasturing land an outdoor confinement area or a farm animal yard
- application of road salt
- waste disposal site (storage of waste oil)

Conditions are past land use activities that have resulted in contamination that could affect our drinking water sources. A review of land use conditions in the Picton IPZs identified a former landfill as a significant condition-based threat in IPZ 2. Moderate and low threats are shown in tables in the Assessment Report.



This project has received funding support from the Government of Ontario. Such support does not indicate endorsement by the Government of Ontario of the contents of this material.



## 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, Conservation and Parks. The Quinte Region Source Protection Plan came into effect January 1, 2015. **The effective date for policies within the amended IPZ 2 is September 16, 2019.**

**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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