

Wellington Drinking Water Source - System Summary

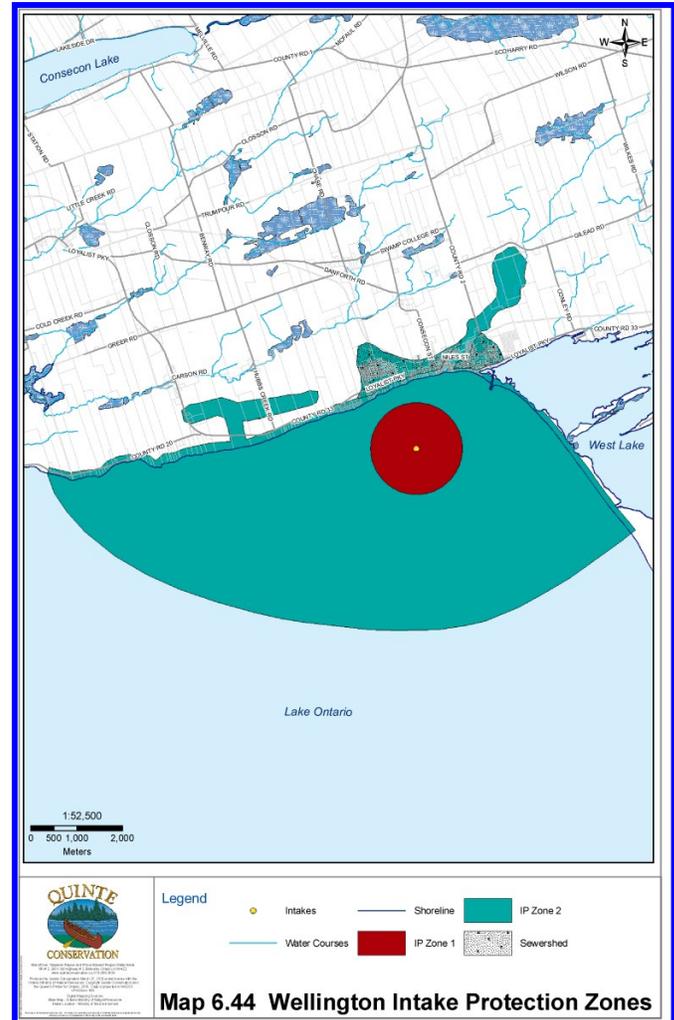
Drinking Water From Lake Ontario

Lake Ontario is the source of drinking water for the Village of Wellington in Prince Edward County. Lake Ontario water is considered a well regulated supply and generally good quality. The water surface elevation fluctuates from an average high of 75.04 masl (metres above sea level) in June to a low of 74.53 masl in December. The lake bottom is gently sloping along the shore in the vicinity of the intake dropping 10 m vertical over 1000 m horizontal. East of the intake is a barrier beach separating Lake Ontario from West Lake. The water treatment plant draws water from Lake Ontario through an intake located about 1500 m offshore in 8.5 m depth of water. The permitted plant capacity is 2,488 cubic metres per day servicing 1700 people in the Village of Wellington. The plant is operated by Prince Edward County municipal staff and was upgraded in 2005. The Village also has municipal sewage services. That plant is located next to the water treatment plant. Land use around the intake is a mixture of predominantly agricultural, residential and some commercial.

Vulnerable Areas

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

- **IPZ 1** is the area closest to the intake (red on map). It is the area of highest concern because contaminants entering this zone would reach the intake quickly with little or no dilution. The intake is located more than 1 km offshore and therefore the IPZ 1 is a complete circle of radius 1km.
- **IPZ 2** is a secondary protection zone. (aqua on map). It is calculated based on how far water can travel during a two-hour time period. The contributing area to IPZ 2 was determined by considering contributions from flows, wind, sewersheds and transport pathways.
- **IPZ 3** For intakes on Lake Ontario the IPZ 3 can only be developed by modelling. Two potential events were considered. The first was a Tritium spill from Pickering and Darlington nuclear generating stations modelled after an actual spill which occurred in 1992. The second spill event model was a sewage spill from the Wellington sewage treatment plant. As a result of the spill scenarios modelling there is not anticipated to be a significant threat to water quality in this zone and therefore an IPZ 3 has not been established for Wellington.



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 Wellington Intake are: **IPZ 1 = 5, IPZ 2 = 3.5.**

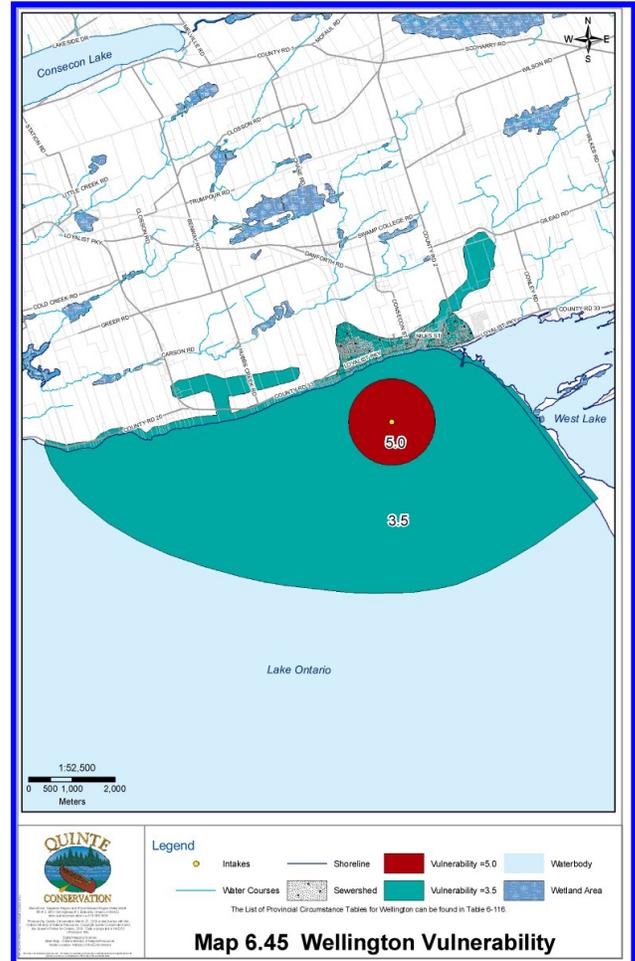
Drinking Water Issues

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 Wellington Intake was screened to identify issues in the source water of Lake Ontario 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 are inventoried by field observations, air photos and satellite images, existing databases and landowner contact. These are then ranked as significant, moderate or low. There were no significant, moderate or low threats found in the IPZ 1 and IPZ 2 for the Wellington intake.

No threats were identified based on the presence of any past land uses or pre-existing conditions. More information is available in the Assessment Report.



Source Protection Plans

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



Made possible through the support of the Government of Ontario