

Deseronto's Drinking Water System

The Bay of Quinte is the drinking water source for the Town of Deseronto, which is located along the north shore of the Bay of Quinte, east of the City of Belleville. The Deseronto Water Treatment Plant serves less than 5,000 residents with a municipal intake that is located almost 500 metres off-shore in the Bay of Quinte.

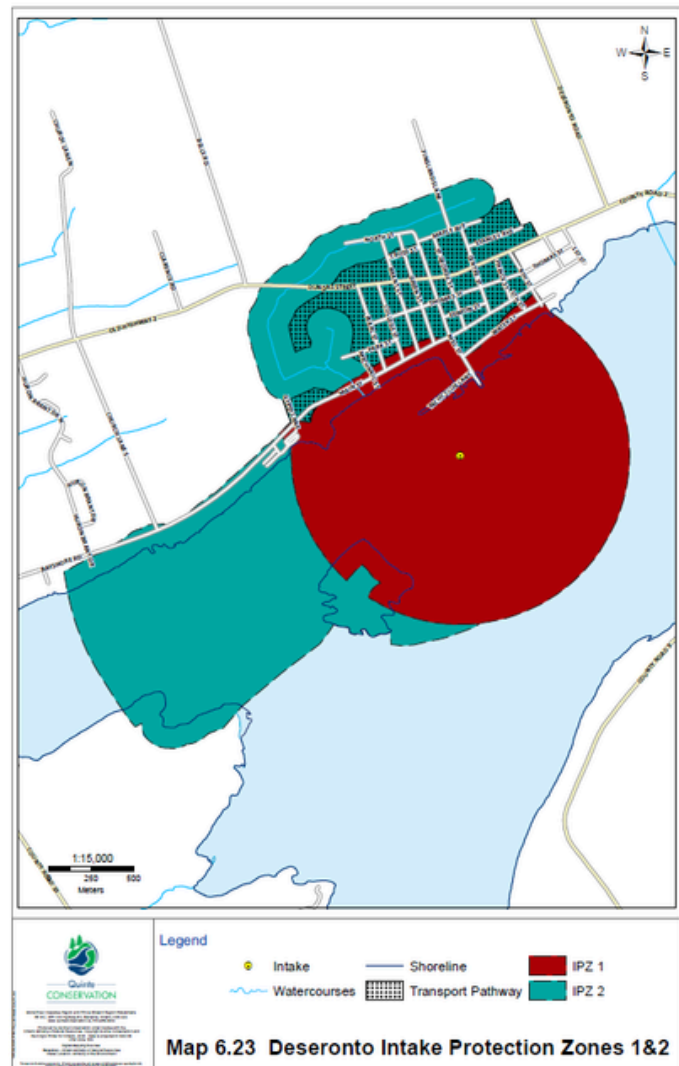
The municipality also serves their residents with a municipal sewage treatment system. Due to the typical water movement of the Bay of Quinte (west to east), the sewage treatment plant is located to the east of the water treatment plant. Other land uses around the intake include a mixture of residential, agricultural, commercial, and industrial.

Deseronto's Vulnerable Areas

Using science, the Assessment Report has delineated zones to show which areas near the municipal intake are the most vulnerable to pollution and contamination. These zones are called Intake Protection Zones (IPZs) and include the water and land where activities could affect the quality and quantity of water flowing towards the intake. The location and size of an IPZ is determined in part by the direction of flow and the speed/rate it moves. In Deseronto, there are three IPZs:

- **IPZ 1:** this zone is the closest to the intake. This is the zone of highest concern because contaminants can reach the intake quickly with little or no dilution.
- **IPZ 2:** this zone is calculated based on how far water can travel to the intake within two hours or less.
- **IPZ 3:** this zone is the total area of drainage that contributes to the intake.
 - The Bay of Quinte and the contributing watershed, make up the IPZ 3.

The IPZ 3 was divided into two sub-zones (3a and 3b) due to the varying physiographic conditions and vulnerability considerations (see map on next page). IPZ 3a includes the drainage area immediately upstream of the IPZ 2 to the areas with higher density of agricultural land uses. Within IPZ 3a, the land uses are predominantly agricultural while IPZ 3b is mainly forested. The divide between IPZ 3a and IPZ 3b also corresponds to the approximate southerly edge of the Canadian Shield geology of 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 the intake and the IPZs around the intake, taking into account how contaminants might move through zones.

An area with a higher vulnerability score is more likely to allow contaminants from that area to reach the intake. The vulnerability scores range from 2 (lowest) to 10 (highest). The vulnerability scores for the Deseronto's Drinking Water System are:

- **IPZ 1** = 9
- **IPZ 2** = 8.1
- **IPZ 3a** = 7.2
- **IPZ 3b** = 2.7

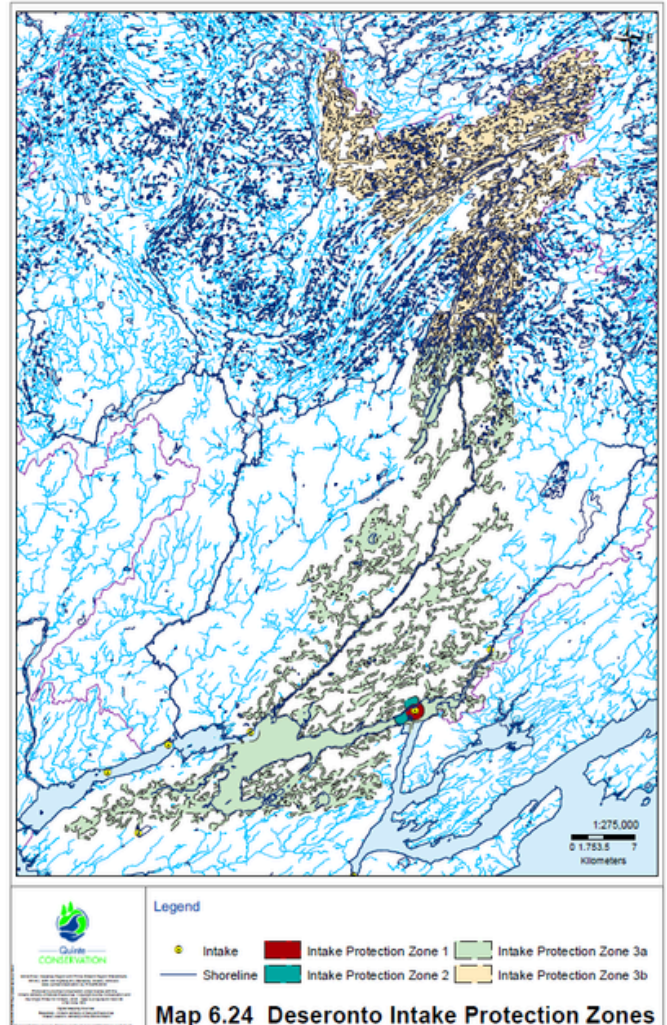
Drinking Water Issues

Drinking water issues are chemicals or bacteria found in untreated water that exceeds the provincial allowable values. A four-step screening process confirmed that no issues in the raw water exist for the Deseronto Drinking Treatment Plant.

Drinking Water Threats

Drinking water threats are based on 22 categories prescribed by the Ministry of the Environment, Conservation and Parks. Threats were identified in Deseronto's IPZs. Some of the threat types that are, or could be occurring include:

- Application, handling and storage of road salt.
- Sewage treatment and storage.
- Application of agricultural source material to land.
- Use of land as livestock grazing or pasturing land and outdoor confinement areas or farm-animal yards.
- Handling and storage of non-agricultural source material.
- Handling and storage of fuel.



The Quinte Source Protection Plan

The Quinte Source Protection Plan has over 80 policies to protect and maintain clean and plentiful drinking water sources. The policies address drinking water threats that were identified in the science-based Assessment Report. Each policy was developed by the Quinte Source Protection Committee in consultation with communities and stakeholders.

The Quinte Source Protection Plan came into effect January 1, 2015 and has undergone amendments in 2019, 2023, and 2026.