# Belleville's Drinking Water System

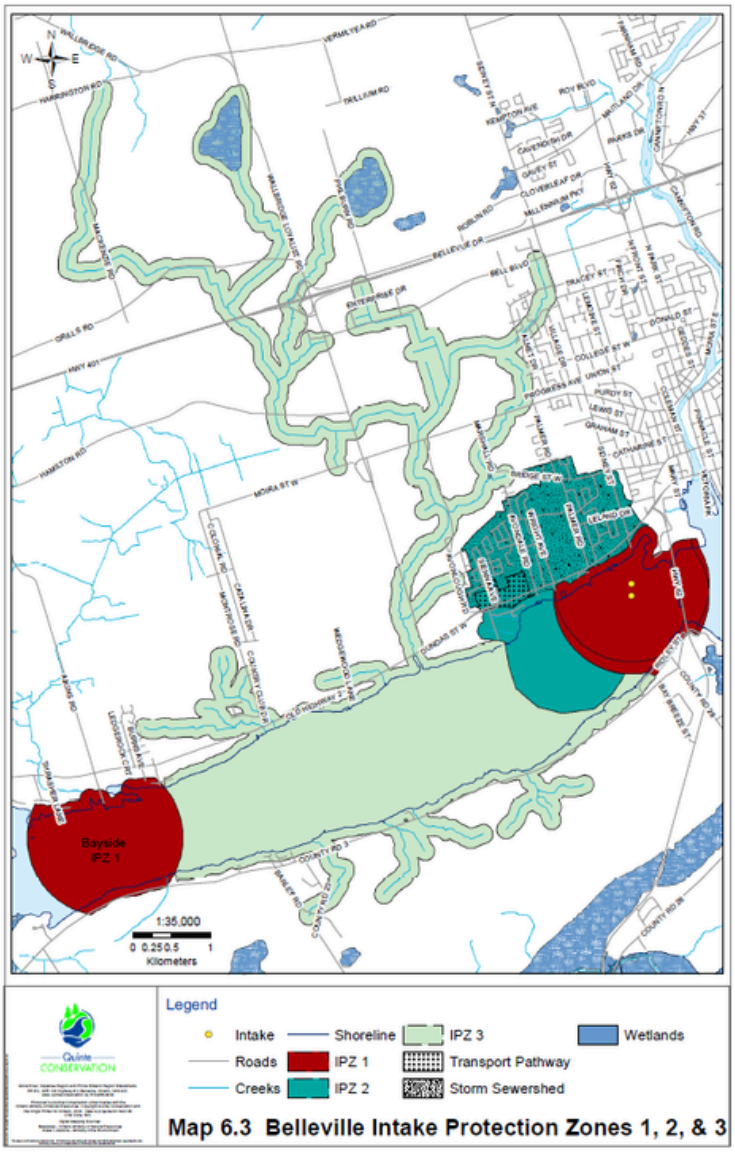
The City of Belleville obtains their drinking water through surface water intakes located in the Bay of Quinte. Belleville has over 50,000 residents and approximately 40,000 are connected to municipal water services. The Gerry O'Connor Water Treatment Plant is located at the southern end of Sidney Street. In addition to the Gerry O'Connor Water Treatment Plant, Belleville provides drinking water to 400 residents in Prince Edward County (Rossmore and Fenwood Gardens). To support development, the plant was upgraded in 2001 and has reserve capacity for anticipated future growth.

## Belleville'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 Belleville, 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 Bayside intake is located in Quinte West just west of the Belleville Intake and is under the Trent Conservation Coalition Source Protection Region's jurisdiction. This means that the IPZ 3 for Belleville stops where the Trent Conservation Coalition's Source Protection Region begins. This avoids duplication of work and associated costs.



Map 6.3 Belleville Intake Protection Zones 1, 2, & 3

## 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 well. The vulnerability scores range from 2 (lowest) to 10 (highest). The vulnerability scores for the Belleville drinking water systems are:

- **IPZ 1** = 9
- **IPZ 2** = 8.1
- **IPZ 3** = 7.2

## Drinking Water Issues

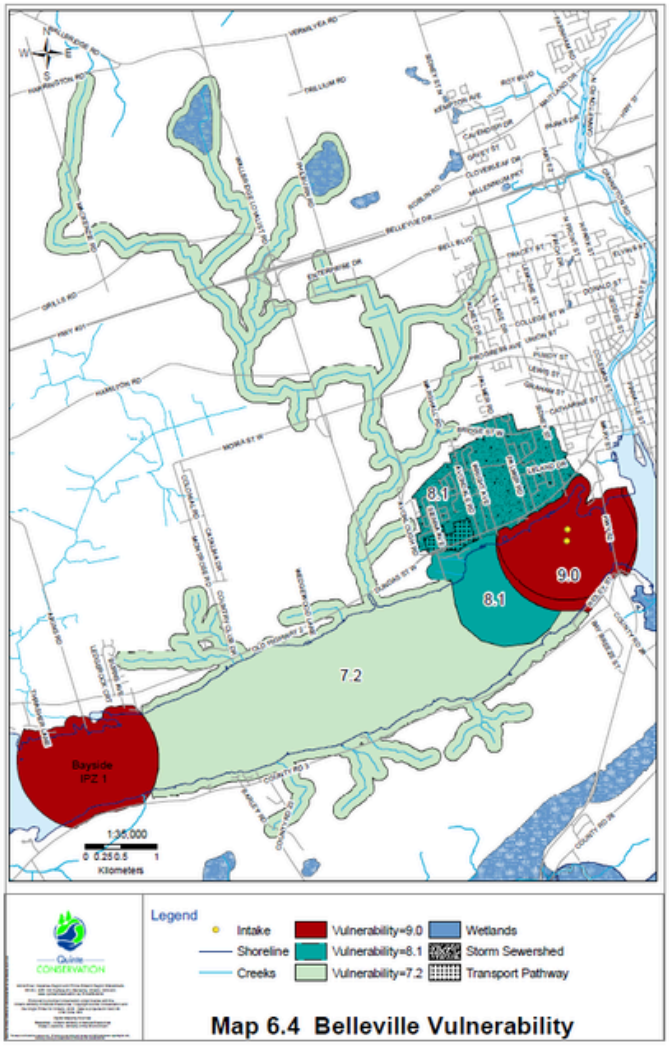
Drinking water issues are chemicals or bacteria found in untreated water that exceeds the provincial allowable values. A four-step screening process confirmed that no issues in the raw water exist for the Gerry O'Connor Water Treatment Plant. However, elevated levels of microcystins are of interest for further investigation.

## 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 Belleville's IPZs. Some of the threat types that are, or could be occurring include:

- Application, handling and storage of road salt.
- Establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.
- Handling and storage of fuel.

The Gerry O'Connor Water Treatment plant is located next to Zwicks Park. Historically, this location was known as the Zwicks Island Landfill which is now considered a significant condition based threat in the IPZ 1. Due to the past land use activities, contamination from this condition could affect the drinking water source.



Map 6.4 Belleville Vulnerability

## 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.