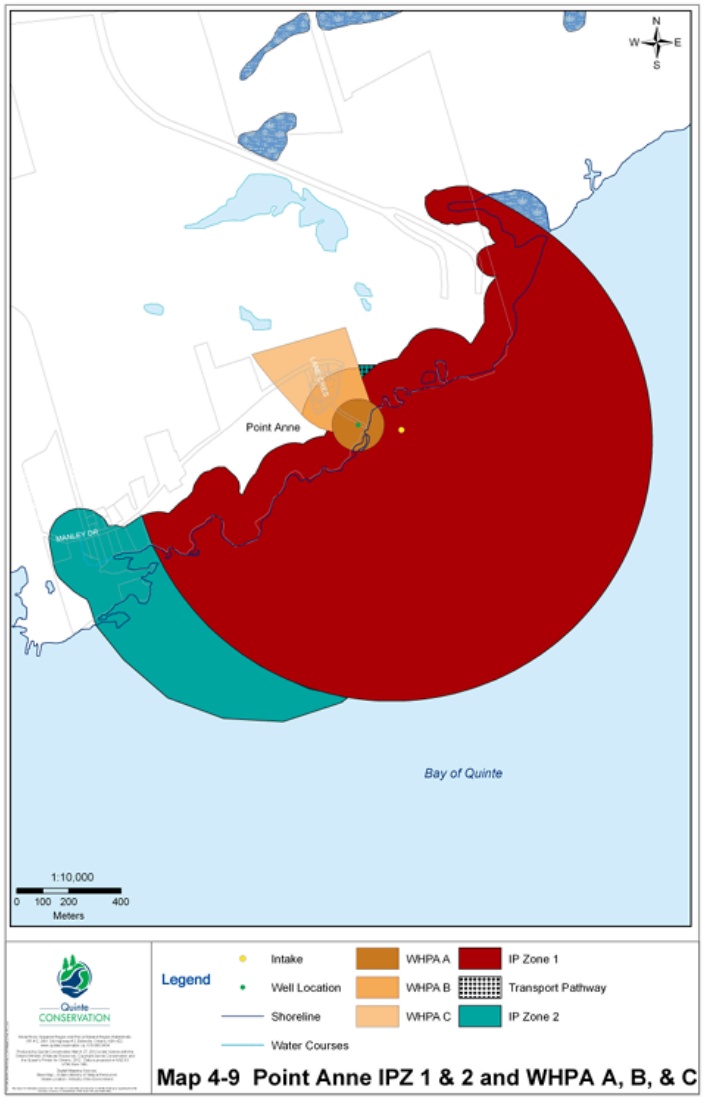
# Point Anne's Drinking Water System

Point Anne is a small Hamlet in the City of Belleville, located east of the Gerry O'Connor Water Treatment Plant. This drinking water system is unique because it services less than 22 residences and has both Wellhead Protection Areas (WHPAs) and Intake Protection Zones (IPZs). The system draws water from the Bay of Quinte and pumps it to the inland well by gravity. The well was constructed with concrete well tiles that can open on the side to allow shallow groundwater to enter the well and mix with the surface water. Due to the system's structure, treatment and protection measures for both surface water and groundwater sources are necessary to ensure that the water source produces safe potable water.

## Point Anne's Vulnerable Areas

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

- **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.
- **WHPA A:** 100 metre radius around the well.
- **WHPA B:** the area where it would take two years or less for a contaminant to reach the well.
- **WHPA C:** the area where it would take five years or less for a contaminant to reach the well.



Map 4-9 Point Anne IPZ 1 & 2 and WHPA A, B, & C

## Vulnerability Scores

Vulnerability scores help to quantify how vulnerable the drinking water source is to contamination. Scores for IPZs are calculated based on the characteristics of the intake and the areas around the intake, taking into account how contaminants might move through them. Scores for WHPAs are calculated based on the ground conditions around the well, and how contaminants might move.

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 Point Anne Drinking Water Systems are:

- **IPZ 1** = 10
- **IPZ 2** = 8
- **IPZ 3a** = 7
- **IPZ 3b** = 3
- **WHPA A** = 10
- **WHPA B** = 10
- **WHPA C** = 8

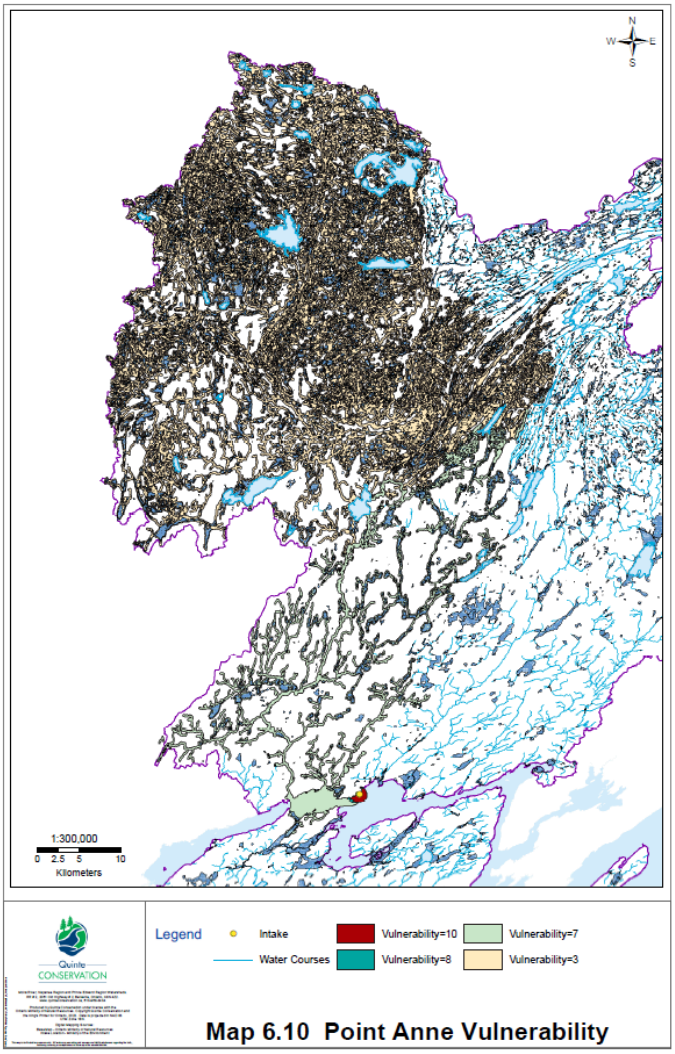
## Drinking Water Issues

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 Point Anne Drinking Water System.

## 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 Point Anne's IPZs and WHPAs. 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.
- Septic systems



Map 6.10 Point Anne 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 2024.