DRINKING WATER SOURCE PROTECTION
Our Actions Matter

What is an Intake Protection Zone? 2025

Source Water Sources for Municipal Drinking Water

Many municipalities rely on lakes and rivers to supply drinking water to their residents. The majority of Ontario's population draws its drinking water directly from the Great Lakes and large rivers, such as the Ottawa River and the St. Lawrence River. Surface water is transported through an intake pipe directly from the lake, river or stream and into a water treatment system. Fortunately, many of these drinking water intakes are located far from shore in deep water, like in the Great Lakes, where contamination is less likely. However, many other municipal surface water intakes in Ontario are located in areas where there are greater risks of contamination.

Intake Protection Zones (IPZs)

The Technical Rules under the *Clean Water Act, 2006* specify how to determine Intake Protection Zones.

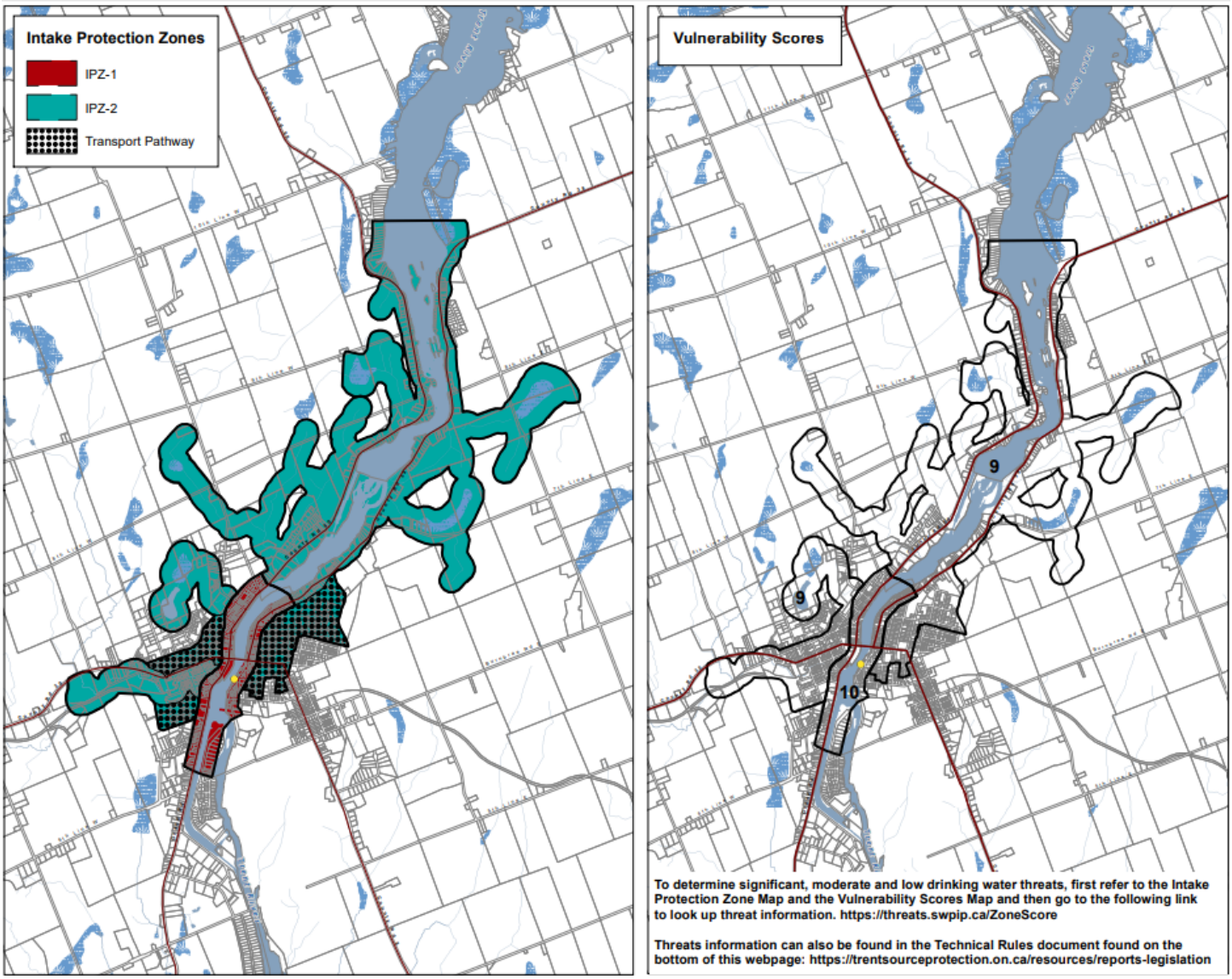
A municipal intake is simply the end of the pipe where water is drawn from a lake or river to supply a water treatment plant. An Intake Protection Zone is the area around the intake where land use activities have the potential to affect the quality of water that flows into the intake.

Intake Protection Zones are determined depending on the type of intake. For example, a Great Lakes Intake will have an IPZ-1 that is a 1 kilometre radius around the intake. If that circle touches land it is buffered at 120 metres inland. Then IPZ-2 is determined by mapping where water can reach the intake within 2 hours and this zone also includes a 120-metre buffer onto the land. It is similar for river intakes with a 1 kilometre radius around the intake but where the circle touches land it extends 120 metres onto the land. If there is a dam or waterfall downstream of the intake the IPZ-1 is cut off at that point. The IPZ-2 is determined by mapping upstream of the Intake where water can reach the intake within 2 hours and this zone also includes a 120 metre buffer onto the land. Vulnerability scores are assigned to the Intake Protection Zones based on factors such as the depth of the intake and distance to the land. In the case of Great Lakes Intakes, the vulnerability score is typically low because the intakes are so far offshore in deep water. Conversely the scores can be much higher in a river because any contaminant getting into the river will flow by the intake and could contaminate the source water.

Determining threats in Intake Protection Zones

Once Wellhead Protection Areas have been delineated and vulnerability scores are assigned the Technical Rules are used to determine which activities are considered drinking water threats in each zone.

Intake Protection Zone Mapping and Vulnerability Scores



Examples of Intake protection Zone Mapping and Vulnerability Scores

Managing Threats in Intake Protection Zones.

Every activity that has been determined to be a significant drinking water threat must be managed by policies in the Source Protection Plan. These policies ranges from providing Education and Outreach to the people engaged in the activity to prohibition of the activity in the worst-case scenario. Prohibition in the Source Protection Plan only applies to future activities. For example, if someone is proposing to put a gas station in an Intake Protection 1 with a vulnerability score of 10, that would be prohibited. A more common approach is to require risk management plans to mitigate the threats of the activity. A risk management plan is negotiated between the person engaged in the activity and the Risk Management Official and it contains required best management practices to manage the threat.

Activities That Could be Threats in an Intake protection Zone

Pollutants from a variety of activities on the land can seep into the ground and move toward a well. Examples of activities that could negatively affect groundwater if not managed properly include but are not limited to:

- Chemical Storage
- Septic Systems
- Handling and Storage of Fuel
- Agricultural Activities including feedlots, manure, fertilizer and pesticides
- Road Salt Storage and Application
- Storm Water Facilities
- Snow Storage

For more information about the Clean Water Act or drinking water source protection:

Visit our website at www.trentsourceprotection.on.ca

Lower Trent Conservation, at (613) 394-3915 ext. 246 or info@trentsourceprotection.on.ca

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