

Executive Summary

Ontario's *Clean Water Act* was created in 2006 to address 22 of the 121 recommendations resulting from Justice O'Connor's public inquiry into the 2000 Walkerton drinking water crisis. The focus of the Act is to ensure communities in Ontario are able to protect their municipal drinking water supplies, both surface water (lakes and rivers) and groundwater sources (aquifers), from overuse and contamination. This is being accomplished through 19 watershed-based Source Protection Areas and Regions who are overseen by 19 multi-stakeholder Source Protection Committees.

Assessment Reports being created by each Source Protection Committee are the outcome of years of studies looking at each watershed's physical characteristics, water quality and quantity, and land use. Assessment Reports help us understand how water is distributed throughout our watersheds and where there are risks of overuse or contamination. This technical information will guide the development of Source Protection Plans which will contain policies to address drinking water threats.

Mississippi-Rideau Source Protection Region

The Mississippi-Rideau Source Protection Region (MRSPR):

- Is located in Eastern Ontario and covers approximately 8,585 km²
- Consists of two subwatersheds of the Ottawa River Basin: Mississippi and Rideau

These watersheds are managed by Mississippi Valley Conservation (MVC) and the Rideau Valley Conservation Authority (RVCA) respectively and their Conservation Authority boundaries form the boundaries of the Mississippi Valley Source Protection Area (MVSPA) and the Rideau Valley Source Protection Area (RVSPA).

Rideau Valley Source Protection Area

This Assessment Report is for the Rideau Valley Source Protection Area.

Municipal Drinking Water

There are currently nine municipal drinking water systems in the RVSPA, five groundwater systems and four surface water systems.

The following table shows the systems' full names as shown in the RVSPA Terms of Reference, with the name they are generally referred to following in brackets.

RVSPA	Groundwater Systems	<i>Surface Water Systems</i>
	Kemptville Well Supply (Kemptville)	Britannia Water Purification Plant (Britannia)
	Merrickville Well Supply (Merrickville)	Lemieux Island Water Purification Plant (Lemieux Island)
	Munster Hamlet Well Supply (Munster)	Perth Water Treatment Plant (Perth)
	King's Park Well Supply (Richmond-King's Park)	Smiths Falls Water Treatment Plant (Smiths Falls)
	Westport Well Supply (Westport)	

Municipal Drinking Water Systems in the RVSPA

This Assessment Report identifies where sources of municipal drinking water may be vulnerable to contamination, as well as the degree of vulnerability.

- **Wellhead Protection Areas** identify vulnerable areas for municipal groundwater drinking water supplies
- **Intake Protection Zones** identify vulnerable areas for municipal surface water drinking water supplies

Other key points:

- Within the RVSPA of 4,234 km², only 72.5 km² (without DNAPLs) and 250.5 km² (with DNAPLs) are vulnerable enough that a land use activity could be considered a significant drinking water threat.
- 782 potentially significant threats to municipal drinking water sources have been identified in the RVSPA.
- Of these threats 568 are in Wellhead Protection Areas and 214 are in Intake Protection Zones.

Significant threats are land use activities listed in the Ontario Ministry of the Environment's threats tables that are considered existing or potential future activities which could adversely affect the quality or quantity of current or future source water for municipal drinking water systems.

It is **likely that the number of potentially significant threats will decrease** in the RVSPA as further information on each potential threat becomes available since this first inventory involved making assumptions about land use activities rather than undertaking individual property site visits.

Regional Groundwater

In the MRSPR, approximately 135,000 residents rely on non-municipal systems (almost entirely private wells) for their drinking water. Approximately 89% of the MRSPR has been classified as **Highly Vulnerable Aquifers**. These are areas where there is a high probability that groundwater will be contaminated if a contaminant or bacteria is released at the ground surface. A smaller percentage, approximately 13%, of the MRSPR has been classified as **Significant Groundwater Recharge Areas**, areas where groundwater infiltration is greater than 55% of the average regional water surplus.

Drinking water issues have been identified in one area where private wells use groundwater within the RVSPA and one area where private wells use groundwater in the RVSPA and MVSPA.

Water Quantity

This report also provides information on the quantity of water in the region in the Water Budget; where it is and how much there is. Four of 22 subwatersheds in the MRSPR have been identified as having **moderate water quantity stresses**, one of these is related to groundwater of a RVSPA subwatershed.