

2019 Source Protection Annual Progress Report

I. Introduction

This annual progress report outlines the progress made implementing the Quinte Region Source Protection Plan, as required by the *Clean Water Act* and regulations.

Drinking water sources can be from surface water such as lakes and rivers, or groundwater from underground aquifers. Source protection focuses on protecting existing and future sources of municipal drinking water from overuse and contamination, thus ensuring an adequate supply of clean water for future generations.

Approximately half the population of the Quinte Region Source Protection Area is serviced by eleven (11) municipal drinking water systems within the watershed (shown on the map below).

This third annual progress report highlights the implementation status in several key program areas. This report is written for submission to the Ministry of the Environment, Conservation and Parks as required, but it is also intended to inform the watershed residents, local municipalities, stakeholders, and other parties of progress made on implementation to date.



II. A message from the Quinte Source Protection Committee

- P : Progressing Well/On Target – The majority of the source protection plan policies have been implemented and/or are progressing.**
- S : Satisfactory – Some of the source protection plan policies have been implemented and/or are progressing.**
- L : Limited progress – A few of source protection plan policies have been implemented and/or are progressing.**

The summarized objectives of the Quinte Region Source Protection Plan are: to protect existing and future municipal drinking water sources and to ensure that for every area identified in the Assessment Report, where an activity is, or would be, a significant drinking water threat, the activity ceases to be or never becomes a significant drinking water threat.

The Quinte Region Source Protection Committee arrived at evaluation scores based on a summary of information provided by Quinte Region Source Protection Authority staff in the Annual Progress Report Template and through materials presented at the February 27, 2020 Source Protection Committee meeting.

The Committee received regular updates from Quinte Region Source Protection Authority staff on policy implementation statuses since the Plan came into effect January 1, 2015.

The scoring system provided by the Ministry of the Environment, Conservation, and Parks in the Annual Progress Report Supplemental Form and Template assisted the Committee in evaluating the progress achieved related to the implementation of the Quinte Region Source Protection Plan. The Committee was able to assess progress made on implementation of all 63 policies by considering how many policies are in a stage of implementation versus how many policies have had no progress made towards implementation to date. This assessment was accomplished through a review of each of the sections in this third annual report and statistics provided by Quinte Region Source Protection Authority staff.

III. Quinte Watershed

The Quinte Region Source Protection Area is located in Eastern Ontario and covers an area of approximately 6,200 square kilometers. The Region consists of the Moira River Watershed covering 2,880 square kilometres, the Napanee Region comprising the Salmon and Napanee River Watersheds with a combined area of 1,955 square kilometres, and the Prince Edward Region at 1,365 square kilometres. The Quinte Region is home to 21 municipalities and approximately 117,000 residents with the majority living in the southern portions of the Quinte watershed.

Approximately half of the population of the Region lives in town and urban centres, such as the City of Belleville or the Village of Deloro, and the remaining 51 percent live in rural areas. The northern areas are rugged and form part of the Precambrian Shield covering approximately 50 percent of the Area. The Shield is largely forested with many wetlands and small lakes and is sparsely populated. To the south of the Shield, the area is underlain by Paleozoic limestone bedrock with large areas of thin soil cover as well as some isolated areas of significant soil depth along the south western boundary of the Moira River Watershed. In the Prince Edward Region, the landscape is dominated by thin soil over limestone bedrock, with some areas of topographic relief provided by glacial deposits and bedrock escarpments.

The Region has many significant surface water features which include the Napanee, Salmon, and Moira Rivers draining from the north into the Bay of Quinte (a connecting link to Lake Ontario) at the south. The Prince Edward Region is drained by a number of small drainage courses leading outward from inland towards either Lake Ontario or the Bay of Quinte. Surface water is an important resource in the Quinte Source Protection Region providing supply to seven municipal drinking water systems, namely Belleville, Point Anne, Deseronto, Napanee, Ameliasburgh, Picton, and Wellington.

Groundwater is also an important source of drinking water in the Quinte Region Source Protection Area providing supply to approximately 50 percent of the residents. Of these residents, the majority are on private wells, with approximately three percent on municipal groundwater systems. Groundwater is typically found in a shallow, unconfined fractured bedrock aquifer made up of either limestone or Precambrian rock. Well yields are typically low but sufficient for meeting residential demand. Four residential drinking water systems, Deloro, Madoc, Tweed, and Peats Point, draw from groundwater sources.

To develop the Quinte Region Source Protection Plan, a local committee with multiple stakeholders was created. This committee includes members representing municipalities in the region, the agricultural community, industry, businesses, government and non-governmental organizations, as well as members of the public. The Source Protection Committee is supported by the Conservation Authority staff and Board of Directors, referred to as the 'Source Protection Authority' when undertaking source protection work. The Quinte Region Source Protection Authority is responsible for providing administrative and technical support to the committee, and overseeing the source protection process.

To learn more, please read the Quinte Region Assessment Report and the Quinte Region Source Protection Plan. <http://quintesourcewater.ca/web/resources/reports/>

IV. At a Glance: Progress on Source Protection Plan Implementation

1. Source Protection Plan Policies

Across the Quinte Region one hundred (100) percent of the legally binding policies are implemented, in progress, and/or have been evaluated and determined to require no further action.

Municipalities, Provincial Ministries, Risk Management Officials, and the Source Protection Authority continue to work hard to ensure threats are managed according to the time-lines set out in the source protection plan.

As a result of policies being continuously implemented across the Quinte Region, over ninety (90) percent of existing significant drinking water threats on the landscape have been addressed (i.e. eliminated or managed).

The overall progress score on achieving source protection plan objectives across the Quinte Region Source Protection Area in this reporting period is as follows:

P: Progressing Well/On Target - Most of the source protection plan policies have been implemented and/or are progressing well according to time-lines in the Quinte Region Source Protection Plan.

2. Municipal Progress: Addressing Risks on the Ground

Eight (8) lower and single tier municipalities in the Quinte Region Source Protection Area have vulnerable areas where significant drinking water threat policies apply. In addition to these municipalities, one (1) upper tier municipality acts as the Planning Act Approval Authority for its member lower tier municipalities.

Municipalities in the Quinte Region Source Protection Area are required to review and update their Official Plan to ensure it conforms to the local source protection plan. This review is required to occur during the first instance of an Official Plan cyclical review under the Planning Act, following the source protection plan coming into effect. Eight (8) municipalities have amended or are in the process of amending their Official Plan to conform to the source protection plans for our region. The remaining municipality is yet to commence its review period.

All municipalities (100%) have ensured the Education and Outreach policy is in place, and being updated as required.

The overall progress score on achieving the Quinte Region Source Protection Plan objectives in this reporting period is as follows:

P: Progressing Well/On Target

3. Septic Inspections

When an on-site sewage system is functioning properly, contaminants from the system are greatly reduced or eliminated. The Ontario Building Code requires all septic systems within highly vulnerable areas be included in a Mandatory On-site Sewage System Inspection Program. Under the program inspections are required on a five (5) year cycle.

These inspections may be administered by the local Health Unit, municipality, or Conservation Authority. In the Quinte Region, all municipalities with septic threats employ municipal staff to undertake these inspections. The Quinte Region Source Protection Plan contains a supporting policy, directing municipalities to complete these inspections, as required by the Ontario Building Code, and to prioritize these inspections based on location and age of septic systems.

Municipalities in the Quinte Region have completed the initial round of inspections and the majority are due to start the second round in 2020-2021. Municipalities reported one hundred (100) percent of on-site sewage systems (septic) have been inspected in accordance with the Ontario Building Code. Of the one hundred seventy-one (171) systems inspected, ninety-six (96) percent are functioning as designed. The remaining four (4) percent required maintenance work, e.g. pump out or tank replacement, and are reported to now be functioning as designed.

The overall progress score on achieving source protection plan objectives in this reporting period is as follows:

P: Progressing Well/On Target

4. Risk Management Plans

A risk management plan is a document that outlines the actions required to address an activity that has the potential to contaminate drinking water. These actions manage the risk associated with the activity so that all threats to drinking water are properly managed. A Risk Management Official (RMO) works with the person engaging in the threat activity to decide on the necessary components of the risk management plan. All municipalities in the Quinte Region Source Protection Area have delegated the responsibility of Risk Management Officials and Inspectors to Quinte Conservation. Risk Management Officials are the implementing body for thirty-three (33) of the policies in the Quinte Region Source Protection Plan and utilize prohibition, risk management plans, and restricted land uses, all tools under Part IV of the Clean Water Act, to manage existing and future significant drinking water threats.

In the previous calendar year, two (2) risk management plans were established in the Quinte Source Protection Region. Since the Quinte Region Source Protection Plan took effect in 2015, a total of eighty-seven (87) risk management plans have been established.

Three (3) inspections were carried out by a Risk Management Official/Inspector for prohibited or regulated activities. Of these inspections, no risk management plan required a renegotiation to reflect changes on the property.

Risk Management Officials are also responsible for reviewing building and planning applications in vulnerable areas, to ensure no new significant threats are created. Once there is confirmation no new threats will be created, the Risk Management Official issues a Section 59 clearance notice. In the previous calendar year, seventy-eight (78) Section 59 notices were issued. Since the plan took effect, two hundred and ninety (290) Section 59 notices have been issued. The process to screen development applications is reported to be working well for all municipalities (100%).

Although over eighty (80) percent of all required risk management plans have been negotiated to date, because limited progress was made in 2019 on the remaining properties, the overall progress score on achieving source protection plan objectives in this reporting period is as follows:

S: Satisfactory

5. Provincial Progress: Addressing Risks on the Ground

Ontario ministries are reviewing previously issued provincial approvals (i.e., prescribed instruments, such as environmental compliance approvals under the Environmental Protection Act) where they have been identified as a tool in the Quinte Region Source Protection Plan to address existing activities that pose a significant risk to sources of drinking water. The provincial approvals are being amended or revoked where necessary to conform to plan policies.

Provincial ministries are identified as the implementing body in eight (8) provincial approval policies in the Plan to address existing activities that pose a significant risk to sources of drinking water. Policies in the Quinte Region Source Protection Plan set out a time-line of 1-3 years to complete the review and make any necessary changes. The ministries have reported full completion (100%) of the review of previously issued provincial approvals in the source protection region.

The overall progress score on achieving source protection plan objectives in this reporting period is as follows:

P: Progressing Well/On Target

6. Source Protection Awareness and Change in Behaviour

There is one (1) education and outreach policy within the Quinte Region Source Protection Plan. This was deliberately placed as the first policy within the plan to recognize the importance of education and outreach to the success of the Plan. All municipalities collaborate on their education and outreach initiatives and one hundred (100) percent reported implementation of this policy. This includes resources on the quintesourcewater.ca website, a series of brochures and fact sheets for a variety of stakeholders including watershed residents, well and borehole drillers, real estate professionals, etc. and outreach via social media.

Drinking Water Protection Zone signs were identified as an effective tool for raising awareness of the Drinking Water Source Protection program. These signs alert travelers to the vulnerable area, are intended to prompt spill reporting and response, and to encourage good stewardship practices. To date, eight (8) signs have been installed on provincial highways and thirty-three (33) signs on municipal roads, equaling one hundred (100) percent implementation by all municipalities, as well as the Ministry of Transportation. The first road sign in Ontario was installed in 2015 in the Town of Greater Napanee.

In 2019 the Quinte Region Source Protection Area participated in a Conservation Ontario initiative to distribute their Drinking Water Source Protection animated video. This video was shown at the Belleville Cineplex Odeon Theatre for a month during movie previews. In addition, Quinte Conservation advertised the video on its Facebook page. The advertised video reached over twenty thousand (20,000) people in the Quinte Region.

The overall progress score on achieving source protection plan objectives in this reporting period is as follows:

P: Progressing Well/On Target

7. Source Protection Plan Policies: Summary of Delays

There are sixteen (16) parcels of land that still require a risk management plan to be negotiated in the Issues Contributing Area for the Madoc Drinking Water System. These parcels were required to have a plan negotiated by the end of 2019. Unfortunately, due to staffing changes, the Source Protection Authority was unable to finalize the remaining risk management plans by the end of the year. The risk management official has begun negotiations on the majority of these parcels; however by the end of 2019 risk management plans could not be agreed upon and signed. The risk management official will continue to work with property owners to finalize risk management plans on the remaining properties.

Some non-legally binding policies have not yet been implemented, or implementing bodies have reported 'limited progress' on their implementation status as resources were used to implement the legally-binding significant threat policies initially. Source Protection Authority staff will continue to work with these bodies to collect information and to support those who are working to implement these policies.

8. Source Water Quality: Monitoring and Actions

A water quality issue occurs when a contaminant is present in the raw water at a municipal drinking water system. If the contaminant, derived from human activity, exceeds acceptable limits or shows an upward moving trend, it can become a drinking water issue.

An Issues Contributing Area (ICA) is the geographic area of land or water where activities contribute to the water quality issue(s). Under the *Clean Water Act*, all activities that contribute to the issue(s) in the ICA automatically become significant drinking water threats.

Issues were identified at the Village of Madoc's municipal drinking water system in Centre Hastings. These issues include E. coli, Total Coliform, and Organic Nitrogen. Due to the proximity of the wells to the northern neighbouring municipality, the Issues Contributing Area falls within the Municipality of Centre Hastings and the Municipality of Madoc Township. In response to these issues, the municipalities engaged in the following activities:

- Reported annually on the implementation of policies to address the issues to the Quinte Region Source Protection Authority.
- Monitored the issues through raw samples collected at the municipal drinking water system.
- Completed all septic inspections in the ICA, and any necessary upgrades/replacements.
- Completed Education and Outreach activities related to sewage threats and agricultural activities.
- Completed 25 of 41 risk management plans in the ICA.
- The Municipality of Centre Hastings has installed a new municipal well to replace one of the existing wells that experiences quality and quantity issues.

Raw water samples show Organic Nitrogen results are improving. In the last five (5) years only one (1) sample from each well showed an exceedance of Organic Nitrogen above the provincial operational guideline. E. coli and Total Coliform remain elevated in raw water results. Because these wells are both groundwater under the direct influence of surface water (GUDI), it is anticipated some level of these parameters will exist in the raw water samples. Additionally, as the new well is in a different aquifer than the well being replaced, it is anticipated that results will be positively affected.

9. Science-based Assessment Reports: Work Plans

No work plans were required to be implemented for the Quinte Region Assessment Report.

10. More from the Watershed

Challenges related to water supply at one of the municipal wells in the Village of Madoc led to the municipality undertaking an exploration program to find an additional drinking water supply. The municipality completed the Class Environmental Assessment Study. Simultaneously, the Source Protection Authority updated the Assessment Report and Source Protection Plan to include the new well and to remove one of the two existing municipal wells as it was decommissioned upon the completion of the new well system. These updated plans were approved by the Ministry of the Environment, Conservation and Parks in September 2019.

For more information about Drinking Water Source Protection and what the Quinte Region has been doing to address threats and implement the source protection plan visit www.quintesourcewater.ca



Photo Credit: Bloom Centre

