DRINKING WATER SOURCE PROTECTION
ACT FOR CLEAN WATER

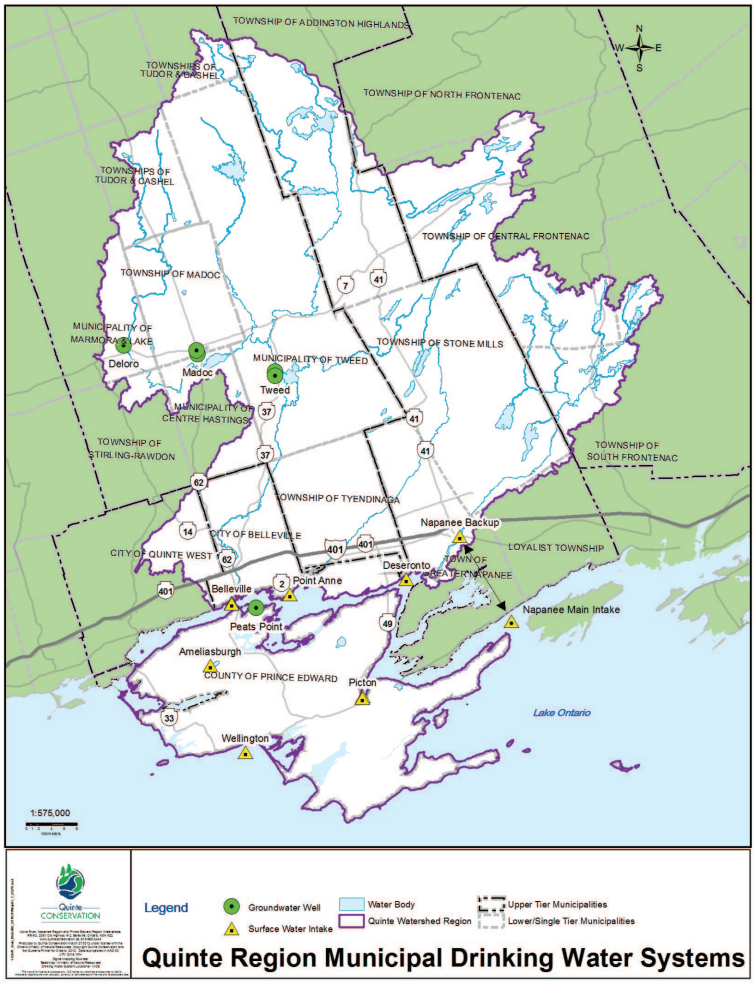
Quinte CONSERVATION
Quinte Source Protection Region

Source Protection Annual Progress Report | 05/01/2018

I. Introduction

This annual progress report outlines the progress made in implementing the Quinte Source Protection Region's source protection plan, as required by the Clean Water Act and regulations.

The report is written for the watershed residents, local stakeholders, and other interested parties and highlights implementation status in several program categories.



II.A message from the Quinte Source Protection Committee

The progress score on achieving source protection plan objectives this reporting period:

- (●) **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 Source Protection Committee arrived at evaluation scores by consensus, based on a summary of information provided by Source Protection Authority(SPA) staff in the Annual Progress Report Template and through materials presented at the March 29, 2018 Source Protection Committee meeting.

Prior to the completion of the Annual Progress Report Template, the Committee received regular updates from SPA staff on policies' implementation status since the Plan came into effect January 1, 2015. The scoring system provided by the Ministry of the Environment and Climate Change in the Annual Progress Report Template evaluates 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 report.

The Committee acknowledges and recognizes the effort made by landowners, stakeholders, ministries, and municipalities in the development of the Plan (and its associated reports), the implementation of the Plan, annual reports received from all implementing bodies, and the development of this Annual Progress Report.

III. The Quinte Watershed

To learn more, please read Quinte's assessment report and source protection plan.

The Quinte Source Protection Region is located in Eastern Ontario and covers an area of approximately 6,200 square kilometers. The Region consists of the Moira River Watershed at 2,880 square kilometres, the Napanee Region comprising the Salmon and Napanee River Watersheds at 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% live in rural areas.

The northern areas are rugged and form part of the Precambrian Shield covering approximately 50 percent of the Region. This northern region can be described as 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 plateaus towards either Lake Ontario or the Bay of Quinte. Surface water is an important resource in the Quinte 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 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. The records for approximately 22,000 wells report that 95 percent obtain supply from bedrock aquifers and the remaining five percent from overburden aquifers. Well yields are typically low but sufficient for meeting residential demand; some exceptions do occur with high yield wells found in areas of highly fractured bedrock. Four residential drinking water systems, Deloro, Madoc, Tweed, and Peats Point, draw from groundwater sources.

The Tyendinaga Mohawk Territory (Mohawks of the Bay of Quinte) is a First Nation Reserve located within the Region on the northern shores of the Bay of Quinte, covering an area of approximately 70 square kilometers. The population on the Territory is approximately 2200 people who are primarily served by private wells and holding tanks (approximately 650 homes). The remainder are served by the Town of Deseronto's municipal drinking water supply (300 homes) and most recently, a new surface water treatment plant owned and operated by the Mohawks of the Bay of Quinte, supplies 56 homes, 10 community buildings, and one business on the Territory.

To learn more, please read Quinte's Assessment Report and Source Protection Plan.

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

1. Source Protection Plan Policies

Across the Quinte Region, over 90% of policies that address significant drinking water threats are implemented, in progress, and/or have been evaluated and determined to require no further action.

The overall progress score on achieving source protection plan objectives across the Quinte Source Protection Region 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 municipalities in the Quinte Source Protection Region have vulnerable areas where significant drinking water threat policies apply. In addition, some of these municipalities rely on an upper-tier municipality as their Planning Act Approval Authority. In total, nine municipalities are responsible for implementing 50 policies within the Quinte Source Protection Plan.

All municipalities (100%) in the Quinte Source Protection Region have processes in place to ensure that their day-to-day planning and/or building permit decisions conform with all policies within the source protection plan.

Four municipalities in the Quinte Region are also required to review and update their Official Plan to ensure it conforms to the source protection plan, which requires Official Plans to be updated no later than the date of the municipalities' next five year review required under the Planning Act. Three municipalities (75%) have amended, or are in the process of amending, their Official Plan to conform with the source protection plan for the Quinte region while one is due to begin amendments in 2018.

All municipalities (100%) have ensured the Education and Outreach policy is in place, in progress, not applicable or the policy outcome has been evaluated and no further action is required.

All municipalities (100%) have reported that all Waste Disposal policies are in place, in progress, not applicable or the policy outcome has been evaluated and no further action is required.

The majority of municipalities (95%) have reported that all sewage related policies are in place, in progress, not applicable or the policy outcome has been evaluated and no further action is required.

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

P : Progressing Well/On Target

3. Septic Inspections

The Ontario Building Code requires all septic systems within highly vulnerable areas be included in a mandatory inspection program. 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 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 septics systems.

Municipalities reported 100% of on-site sewage systems (septic) have been inspected in accordance with the Ontario Building Code. Of the 171 systems inspected, results found the majority (96%) are functioning as designed. The remaining 4% required maintenance work, like a 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

All municipalities in the Quinte Source Protection Region have delegated the responsibility of Risk Management Officials and Inspectors to Quinte Conservation. Risk Management Officials (RMOs) are the implementing body for 33 of the policies in the Quinte 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.

The total number of risk management plans established in the Quinte Source Protection Region is 66. Forty -three plans were negotiated in 2015, 15 in 2016 and 8 in 2017. Implementation compliance dates for future threats related to Part IV occurred when the Plan came into effect January 1, 2015. Existing threats related to Part IV have a varying compliance date of 1-5 years of the Plan taking effect, depending on the threat activity and vulnerable area. Twenty - six properties with threats (39%) remain to be managed through risk management plans. Of these 26 properties, 19 are within the Madoc Issues Contributing Area and have two more years to comply with the effective date of the policy. The remaining are in progress and, where limited progress has been made, are discussed in the Summary of Delays Section.

There were no inspections carried out by a Risk Management Official/Inspector for prohibited or regulated activities. As such, the compliance rate with the risk management plans established is not applicable.

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 RMO issues a Section 59 clearance notice. In the previous calendar year, 45 Section 59 notices were issued. Since the plan took effect, a total of 121 Section 59 notices have been issued. The process to screen development applications is reported to be working well for all municipalities (100%).

The overall progress score on achieving source protection plan objectives in this reporting period is as follows:
P : Progressing Well/On Target

5. Provincial Progress: Addressing Risks on the Ground

Five provincial ministries are responsible for 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 to manage drinking water threats. 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. The provincial approvals are being amended or revoked where necessary to conform with plan policies. Policies in Quinte's plan set out a time-line of 1-3 years to complete the review and make any necessary changes. The ministries have completed this for 92% of previously issued provincial approvals in the source protection region.

For future threats, ministries reported that 100% are implemented, with standard operating procedures in place ensuring applications are reviewed to confirm the proposed activity conforms with the Plan.

Including provincial approvals, ministries reported on 15 policies related to the management of significant threat activities. The five ministries have implemented 81% of the policies with the remaining 19% in progress.

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 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 100% reported implementation of this policy.

Drinking Water Protection Zone signs were identified as an effective tool for raising awareness of the Drinking Water Source Protection program. To date, eight (8) signs have been installed on provincial highways and 33 signs on municipal roads, equaling 100% implementation by all municipalities and the Ministry of Transportation. The first road sign in Ontario was installed in 2015 in the Town of Greater Napanee.

Risk Management Officials work with landowners, should be commended for changes in behaviour and awareness in the Quinte Region. RMOs reported instances where landowners knew they would be required to negotiate a plan, and based on letters, factsheets, and knowledge of neighbouring Risk Management Plans (RMPs), had adopted many best management practices into their operation prior to meeting with the RMO.

The Quinte Region saw large community buy-in early on in the program. From 2007 to 2014 half a million dollars in stewardship grants (of up to 80%) went to 90 projects undertaken by landowners in the Quinte Region to address significant drinking water threats. The grant program, combined with effective communication (i.e. open houses, newsletters, fact sheets,and mail outs, etc) led to the uptake of the program.

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

Risk Management Plan for Managing the Handling and Storage of Dense Non-Aqueous Phase Liquids (DNAPLs)

Municipalities saw delays in addressing DNAPL threats by the Risk Management Official. This was due to the lack of guidance and expertise related to managing DNAPL threats. Background resources were collected but found to be insufficient in determining what risk management measures could be included in a Risk Management Plan. There are five DNAPL threats remaining to be managed. Risk Management Officials are awaiting direction from a recently formed provincial working group that is working to clarify the circumstances in which DNAPLs are significant drinking water threats.

The Application of Road Salt

The application of road salt on municipal roads requires the creation/updating of a salt management plan. This is a significant drinking water threat in one municipality and moderate/low threat in the other 7 municipalities. The majority of municipalities (63%) reported no progress on this policy due to the time and effort required by staff to develop a salt management plan. There was also some concern surrounding the determination of areas where salt is a significant drinking water threat. The Source Protection Authority is awaiting direction from the Provincial Salt Working Group for salt management guidance. In the meantime, municipalities with completed plans are sharing documents to assist those who have yet to make progress on their salt management plans. The Source Protection Authority also plans to re-evaluate the approach and methodology for determining locations where salt application is a drinking water threat.

Emergency Response Plans

Municipalities were asked to update Emergency Response Plans (ERP) for the purposes of protecting drinking water sources. The majority of municipalities (64%) reported delays in implementing this policy due to the time and effort demanded of staff to update plans. As this policy does not address a significant drinking water threat, it was given a lower priority in terms of implementation. All municipalities recognize the importance of including source water in their ERPs and have therefore reported their intent to update their ERP. Most plan to collaborate with those municipalities with updated plans in an effort to reduce staff time required to implement this policy.

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 show 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. Under the *Clean Water Act,* all activities that contribute to the issues in the ICA automatically become significant drinking water threats.

Issues were identified at the Madoc 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 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 21 of 40 risk management plans in the ICA. There are two more years for implementation before the end of the compliance date.

Raw water samples show Organic Nitrogen results are improving. From 2013-2018, only one 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.

9. Science-based Assessment Reports: Work Plans

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

Although no work plans were required, two areas of future study were identified in the Updated Approved Assessment Report: Pharmaceuticals/Personal Care Products and Algae Toxins.

Pharmaceuticals and Personal Care Products

The Quinte Region Assessment Report explains that long term effects of pharmaceuticals and personal care products are still unclear and although various ministries of the Ontario government are reviewing the science around the impacts to the environment, the information available is insufficient to develop risk assessments or risk management strategies at this time. Source Protection Authority staff continue to review emerging science and any monitoring results as they become available.

Algae Toxins

The Quinte Region Assessment Report notes the increase of Microcystin in harmful algae blooms found in the Bay of Quinte. The Report explains that the factors that control bloom toxicity and the production, release, distribution and degradation of toxins in the Bay of Quinte are not yet understood, highlighting the critical need for increased monitoring. Source Protection Authority staff continue to monitor the water quality data results from the Bay of Quinte Algae Watch Program and water quality data from municipal drinking water systems. Results show Microsystin has not become an issue during this reporting period.

10. More from the Watershed

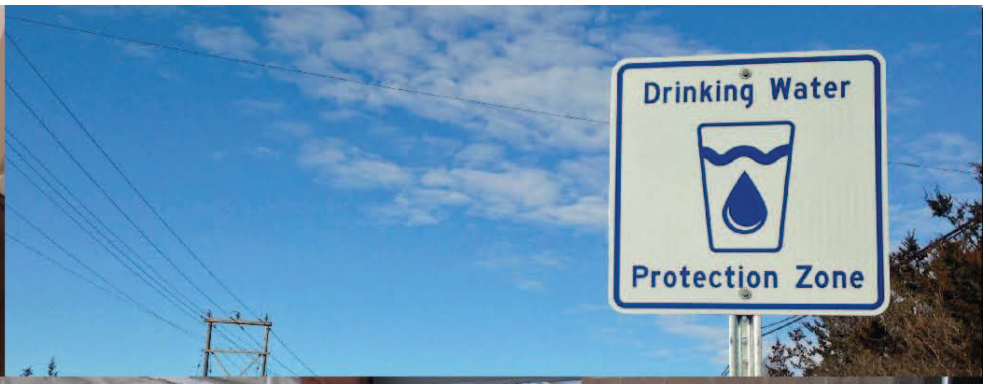
To learn more about the Quinte source protection region/area, visit the Homepage:
www.quintesourcewater.ca

In 2016, the Quinte Watershed had a new surface water treatment plant open. The water treatment plant owned and operated by the Mohawks of the Bay of Quinte supplies 56 homes, 10 community buildings, and one business on the Tyendinaga Mohawk Territory. The Mohawks of the Bay of Quinte are in the process of developing a source protection plan to protect their drinking water supply.

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. To date, one new well has been drilled and the Class Environmental Assessment study has commenced with source water protection being incorporated.

The importance of source protection plans and the accuracy of the intake protection zones were evident during a diesel spill in spring of 2017. The spill, occurring in an Intake Protection Zone (IPZ) 3b, eventually travelled into the IPZ 1. Municipal staff tracking the movement of the spill referred to the intake protection zone maps in the Quinte Region Source Protection Plan. Staff were able to notify the water treatment plant operators when the spill reached the IPZ 1, resulting in a shutdown of the intake in order to protect the drinking water of the municipal residents.

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


Drinking Water
Protection Zone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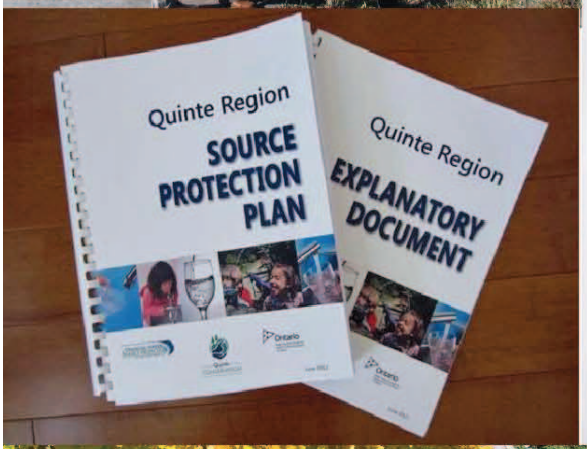
Quinte Region
SOURCE PROTECTION PLAN
Quinte Region
EXPLANATORY DOCUMENT


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