



Cataraqui Source Protection Area Policy Implementation Progress Report 2015 – 2017

May 1, 2018

The following annual report outlines the progress made in implementing source protection policies within the [Cataraqui Source Protection Area](#) (Cataraqui area), from April 1, 2015 to December 31, 2017.

Report contents are based on criteria provided by the Ontario Ministry of the Environment and Climate Change (MOECC) to score reporting feedback from implementing bodies, Risk Management Officials / Inspectors, and the Cataraqui Source Protection Committee (the Committee), while highlighting progress towards achieving the objectives within the Cataraqui Source Protection Plan (the Plan).

This report was prepared by Cataraqui Region Conservation Authority (CRCA) staff on behalf of the Cataraqui Source Protection Authority. Local municipalities, Ontario Provincial ministries, local public health units, landowners, stakeholders, and the Committee have all contributed to developing the Plan and implementing the associated policies.

Our Source Protection Area

Under the Ontario *Clean Water Act*, the Plan includes policy requirements and/or recommendations to reduce the risk of pollution in vulnerable areas surrounding municipal, residential drinking water supplies and sensitive groundwater areas. Additionally, there are related reporting obligations and recommendations included to track policy implementation and effectiveness. The Plan consists of 144 policies, 12 municipal drinking water systems, and came into effect on April 1, 2015.

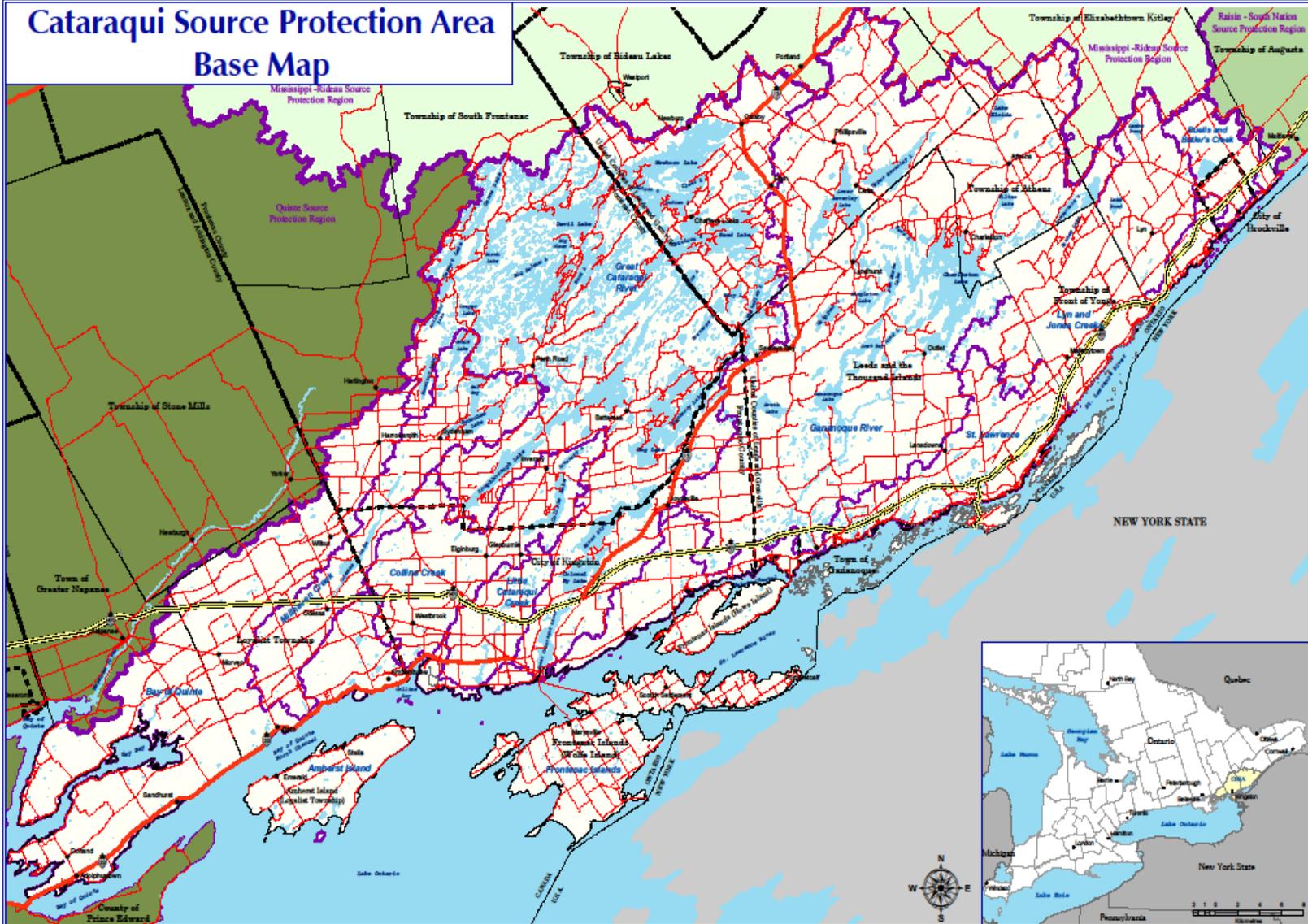
The Cataraqui area is comprised of 12 major watersheds that represent the jurisdiction of the CRCA, with the addition of the Frontenac Islands (Howe and Wolfe Islands), and about 1,800 smaller islands in the St. Lawrence River. Located at the eastern end of Lake Ontario and beginning of the St. Lawrence River, the area measures approximately 3,600 square kilometers, with 12 lower tier municipalities, 3 upper tier municipalities (e.g., counties), and about 212,500 residents. Most of the population live in towns and urban centers concentrated along the shoreline, such as the City of Kingston (about 161,175 residents), and City of Brockville (about 22,000 residents), while the remaining live in rural areas¹.

The area is characterized by exposed bedrock, lakes, and woodlands of the Canadian Shield (Frontenac Axis) in the central part, and an agricultural landscape of limestone and clay plains to the west and east. Two main rivers, the Cataraqui and the Gananoque, flow towards Lake Ontario and the St. Lawrence River. In addition, several smaller tributaries drain throughout the western and eastern sections with 39 dams and water control structures in operation.

Approximately 80% of the residents (about 170,000) rely on municipal drinking water systems from surface or groundwater sources. The remaining 40,000 obtain their drinking water from private wells or intakes.

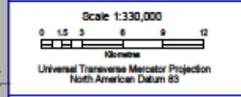
¹ Statistics Canada 2016 Census

Cataraqui Source Protection Area Base Map



- Legend**
- International Boundary
 - Upper Tier Municipalities
 - Lower Tier Municipalities
 - Communities
 - Waterbodies
 - Waterbodies Boundary
 - Freeway
 - Expressway / Highway
 - Collector
 - Rapid Transit
 - Service Road
 - Airports

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Ontario

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The Cataraqui area has nine drinking water systems serving about 155,000 residents within intake protection zones (IPZs). One is in Sydenham Lake, six are along the Lake Ontario shoreline, and two are located along the St. Lawrence River. From west to east they include:

1. Town of Greater Napanee - Sandhurst Shores,
2. Town of Greater Napanee - A.L. Dafoe,
3. Loyalist Township – Fairfield in Amherstview,
4. Loyalist Township – Bath,
5. City of Kingston - Point Pleasant,
6. City of Kingston - Central,
7. Town of Gananoque - James W. King,
8. City of Brockville – Brockville, and
9. Township of South Frontenac - Sydenham.



Exposed bedrock, karst (fractures created by water drainage), and thin soils are common characteristics in the CATARAQUI AREA.

In addition to the intake protection zones listed above, three municipal drinking water systems rely on groundwater. They include:

1. City of Kingston - Cana Subdivision (Kingston Mills),
2. Township of Front of Yonge - Miller Manor Apartments, and
3. Township of Leeds and the Thousand Islands – Lansdowne Well Supply.

The Picton Intake Protection Zone located around a municipal, residential intake in the Quinte Source Protection Region also extends into the Cataraqui area, as does a portion of the Westport Wellhead Protection Area (from the Mississippi-Rideau Source Protection Area).

Comments from the Cataraqui Source Protection Committee

The Cataraqui Source Protection Committee is a multi-stakeholder group comprised of 16 members. Our progress score for the Cataraqui area on achieving source protection plan objectives this reporting period is as follows:

P: Progressing well / on target	The majority of the source protection plan policies have been implemented and/or are progressing in accordance with the timelines specified in the source protection plan.
✓ S: Satisfactory	Some of the source protection plan policies have been implemented and/or are progressing in accordance with the timelines specified in the source protection plan.
L: Limited Progress made	A few of source protection plan policies have been implemented and/or are progressing in accordance with the timelines specified in the source protection plan.

The majority of significant drinking water threat policies are being implemented as required. Progress toward implementation of non-binding policies is also high.

The Committee arrived at the above grade based on implementation efforts to date and compliance with noted timelines in the Plan. Ongoing policies are considered complete once the policy has been initiated.

At a Glance: 2015 – 2017 Implementation Progress

1. Source Protection Plan Policies

S: Satisfactory

Seventy-eight percent of the 65 policies addressing significant drinking water threats have been implemented in accordance with the timelines set out in the Plan and evaluated to determine no further action is required. An additional 12% are in progress.

All policies to be completed immediately following the Plan's effective date have been implemented for land use planning, including the initiation of risk management efforts and municipal operation-based policies. Ontario Provincial ministries and local health units have also reported high implementation success.

Overall in the Cataraqui area, there has been 71% policy implementation success since the Plan came into effect in 2015.

2. Municipal Progress: Addressing Risks on the Ground

S: Satisfactory

Within the Cataraqui area, there are 15 implementing bodies including upper-, lower-, and separated municipalities with a total of 12 IPZs and WHPAs. Out of the 15, seven municipalities, listed below, have vulnerable areas where significant drinking water threat policies apply:

1. Cana WHPA - City of Kingston
2. Lansdowne WHPA - Township of Leeds and the Thousand Islands
3. Miller Manor WHPA - Township of Front of Yonge
4. Brockville IPZ - City of Brockville / Township of Elizabethtown-Kitley
5. Sydenham IPZ - Township of South Frontenac, and
6. James W. King IPZ - Town of Gananoque / Township of Leeds and the Thousand Islands.

Based on 2017 reporting, 83% of municipalities in the Cataraqui area have addressed policies to ensure source protection is considered in day-to-day planning decisions to conform to the Plan. Seventy-five percent of municipalities have indicated the integration of drinking water source protection into building permit decisions is complete or under review. Staff-level discussions are in-progress, planned, or prospective timelines awaiting approval for implementation in the next reporting cycle.

The seven municipalities with significant drinking water threats are required to review and update their Official Plan and Zoning By-Laws to ensure they conform with the Plan by April 2020 or no later than at the time of the next review required under section 26 of the Ontario *Planning Act*. Six of seven municipalities are in the process of amending their Official Plan, with one completed. Five municipalities are in the process of updating their Zoning By-Laws. The two remaining have long-term plans to initiate planning document updates during the 2019-2020 fiscal year.

3. Septic Inspections

P: Progressing Well / On Target

Twenty-four on-site sewage maintenance re-inspections are required to be inspected once every five years in accordance with the Ontario Building Code's mandatory program. The local health units (Kingston, Frontenac, Lennox and Addington Public Health and Leeds, Grenville and Lanark District Health Unit) are responsible for implementing the associated policies on behalf of each required municipality, except for the Township of Leeds and the Thousand Islands. The Township has successfully implemented a septic re-inspection program that was initiated in 2017.

Inspection results were to be provided by January 17, 2017 by both public health units. Ninety-two percent of the on-site sewage systems have been inspected in accordance with the Ontario Building Code, with nine satisfactory record searches. Inspection results show septic systems are functioning as designed, with few requiring major maintenance. Through this program, educational materials have been provided to septic system owners with recommendations for number of pump-outs and best practices for maintenance based on the requirements of the system.

4. Risk Management Plans (RMPs)

L: Limited progress

Six of seven municipalities where Part IV policies apply joined a Regional Risk Management Office hosted by the Cataraqui Region Conservation Authority, except for the Township of Leeds and the Thousand Islands which retained its responsibility. There are 97 existing drinking water threats to be addressed, the majority belonging to the Township. All RMPs were to be completed two years following the effective date of the Plan (April 1, 2017).

The establishment of 10 RMPs were the responsibility of the Regional Risk Management Office at CRCA. To date, all plans have been successfully negotiated, with the documentation for two to be finalized. Work to negotiate the estimated 60 RMPs in the Township of Leeds and the Thousand Islands is behind schedule and is planned to begin in earnest mid-2018.

To date, no orders, notices, or compliance inspections have been carried out.

5. Provincial Progress: Addressing Risks on the Ground

P: Progressing Well/On Target

Ontario ministries are reviewing provincial approvals (i.e. environmental compliance approvals), as indicated in the Plan, to address existing activities that may be a significant risk to drinking water sources. All reviews have a set timeline of 5 years to be completed with any necessary changes. Ontario ministries have completed review for 65% of previously issued approvals.

Within the Cataraqui area, 80% of 64 policies required for provincial implementation have been completed:

Implementing Body	Policy Completion
Ministry of Agriculture, Food, and Rural Affairs (OMAFRA)	62%
Ministry of Municipal Affairs (MMA)	33%
Ministry of Government and Consumer Services (MGCS)	67%
Ministry of Environment and Climate Change (MOECC)	93%
Ministry of Natural Resources and Forestry (MNRF)	100%
Ministry of Transportation (MTO)	100%

6. Source Protection Awareness and Change in Behaviour

P: Progressing Well/On Target



Nineteen drinking water protection zone road signs were planned for installation in the Cataraqui area to be completed two years following the effective date of the Plan. Ten of those signs have been installed; two on provincial highways, and eight signs on municipal and county roads. The remaining nine signs have been printed and are expected to be installed in 2018.

Source protection awareness is an ongoing effort to engage municipalities, other implementing bodies, and residents living in our highly vulnerable aquifer. Some of the targeted educational and outreach activities that have been accomplished since the Plan came into effect include the following:

Material	Target Audience
Guidance Documents	Municipalities
Groundwater Vulnerability Assessment Guideline	Land use planning authorities, development proponents, and consultants
Media Publications	Residents, landowners, business owners
Website Updates and Fact Sheets	Residents, landowners, business owners, municipalities, real estate agents , and others
Groundwater Vulnerability Forum	Implementing bodies and adjacent areas
Water Festival Engagement	Elementary school students
Risk Management Flyers/Fact Sheets	Landowners in vulnerable areas
Municipal Mural	Town of Gananoque residents and visitors

There is greater confidence since the Plan took effect that septic systems are being operated properly within the related significant drinking water threat areas. Also, fuel storage (e.g. home heating oil) is better managed compared prior to risk management plan negotiations.

Source Protection Committee members have noted an enhanced recognition of the importance to “protect source waters”, especially within the rural lake community. For example, several lake associations have collaborated to discuss and host workshops regarding algae blooms, septic system maintenance, and shoreline naturalization efforts.

A change in behaviour will take time to properly monitor across the Cataraqui area. However, it is positive to see local implementing bodies exhibit greater awareness of source water protection and their role in protecting drinking water systems in vulnerable areas.

7. Source Water Quality: Monitoring and Actions

P: Progressing Well/On Target

Below is a list of the drinking water systems in the Cataraqui area with identified drinking water issues in raw water (untreated) testing, as reported in the Cataraqui Region Assessment Report (2011) compared to results provided by water treatment plant operators in 2017.

Location	Parameter of Concern (2011)	Parameter of Concern (2017)
Brockville	<i>Escherichia coli</i> (E. coli)	E.coli
Fairfield (Amherstview)	Total coliform	None
Bath	Organic nitrogen and E.coli	Total coliform and E.coli
Cana (well supply)	Sodium, chloride, total coliform, and E.coli	None
Miller Manor (well supply)	Sodium, chloride, nitrate, E.coli, and total coliform	None

As seen above, six drinking water systems were identified to have issues at a municipal well or intake in 2011, however, only two have maintained similar trends. Drinking Water System Reports, as per the Ontario Regulation 170/03 made pursuant to the *Safe Drinking Water Act*, from 2017 indicate all other drinking water systems have no reported issues. Water treatment plant operators have indicated multiple efforts have been ongoing to ensure filtrations, equipment, monitoring, and reporting have been reviewed and improved where possible to ensure drinking water quality standards are met.



No Issues Contributing Areas (ICA) have been delineated. Loyalist Township is working with CRCA staff to monitor four stream outlets and upstream culverts for turbidity and activities causing sedimentation. This work will help inform whether an ICA will be required moving forward to reduce bacterial contamination as an issue at the Bath intake. It will be important to determine whether the parameters of interest are above background levels and/or from human activity.

8. Source Protection Plan Policies: Summary of Delays

There are few areas where policies have been delayed on implementation and progress is now out of compliance with the dates listed in the Plan. Below is a summary of those policies, a rationale for the delay, and potential future actions that will be ongoing to ensure implementation is initiated.

a) Local Plan Development

- Multiple non-binding policies direct municipalities to consider preparing a master drainage plan, monitoring plan for sewage lagoons, updating salt management plans, updating standard operating procedures, and considering local land purchasing strategies
- Municipalities have indicated policies that have not been addressed will be discussed at a later time due to staffing pressures and prioritizing projects with higher risk factors
- Municipal representatives are working with CRCA staff to initiate discussions and work out timelines for the respective policy requirements

b) Risk Management Services

- 97 existing significant drinking water threats require risk management

Prescribed threat	Number Remaining	Rationale for Delay	Future Actions
Handling and storage of fuel	52	Landowner negotiations and municipal staffing changes	Two RMPs waiting final signatures due to new ownership. The remainder to be determined when a new Risk Management Official is employed.
Transportation corridors	18	Lack of policy and guidance.	Develop a local policy.
Sewage system maintenance	5	Municipal staffing changes and reduced implementation efforts due re-training and knowledge transfer.	Two education and outreach packages to be developed.
Application and storage of agricultural source material	6		Work with responsible Township and new Risk Management Officials to develop a plan to address the threats.
Application of commercial fertilizer	4		
Application of pesticide	5		
Handling and storage of DNPALs ²	2		
Use of livestock	3		

9. Science-based Assessment Reports: Work Plans

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

More from the Cataraqui Source Protection Area

Efforts that were initiated since the Cataraqui Source Protection Plan came into effect and are ongoing include the following projects and documents. To learn more about the Cataraqui Source Protection Area and receive updates on these projects and other initiatives, visit us at <http://cleanwatercataraqui.ca/>.

1. Groundwater Vulnerability Assessment Guideline

- The guideline was created to assist land use planning authorities, development proponents and consultants within the CATARAQUI AREA to assess groundwater vulnerability
- The objectives are to assess the inherent vulnerability of the groundwater in a local area and identify the presence, extent and impact of karst features on a property
- Includes a decision-tree framework to assist with implementing the guideline

2. Groundwater Vulnerability Forum

- Hosted March 27, 2017, this initiative by CRCA staff on behalf of the CATARAQUI AREA highlighted the vulnerability of groundwater in our area and emphasized the need for more action to address potential contamination transport in regulations, education and outreach, and municipal decisions
- Multiple action priorities were identified as a follow-up of the forum, one of which included the

² DNAPLs – Dense Non-Aqueous Phase Liquids

development of well and septic workshops and a groundwater resource for landowners to better understand how wells and septic systems impact drinking water on their property and within vulnerable areas

3. Municipal Source Protection Mural

- The Town of Gananoque has designed a mural to be installed on the exterior wall of the James W. King Water Treatment Plant. Due to weather constraints and the mural adhesive material, the installation has not yet occurred but is planned for 2018.
- The intent of the mural is to engage residents on the importance of source protection and highlight potential threats in the community that may impact drinking water quality. The Town engaged the community through involving the local schools in a “name the drip icon” competition, an icon represented multiple times on the mural highlighting the potential drinking water threats within the area.
- The photo is a draft concept of the mural.



