



Cataraqui Source Protection Area Policy Implementation Progress Report 2015 – 2018

May 1, 2019

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, 2018.

Report contents are based on criteria provided by the Ontario Ministry of the Environment, Conservation and Parks (MECP) 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.

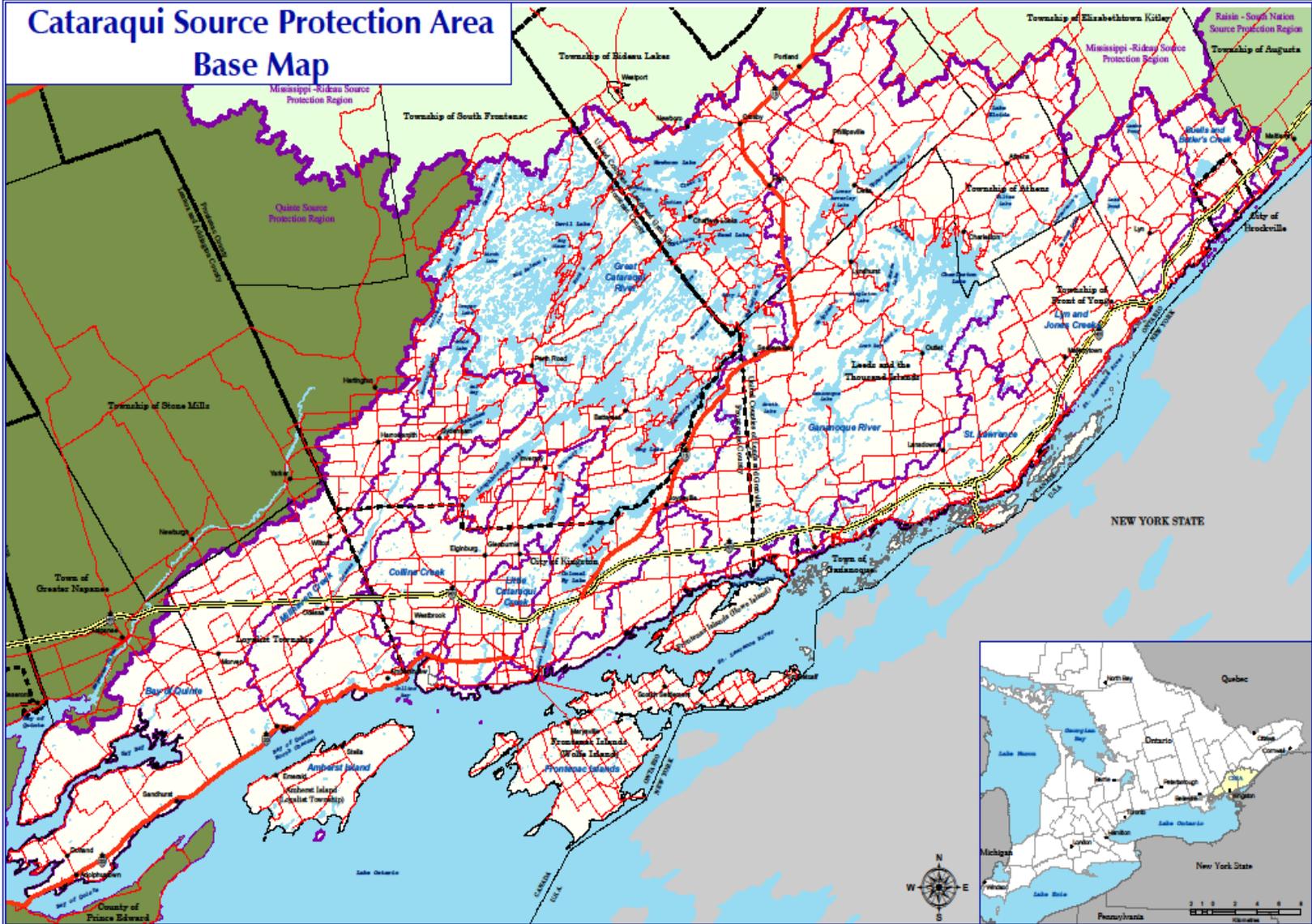
The Cataraqui area is comprised of 12 major watersheds that represent the jurisdiction of the CRCA, with the addition of the Frontenac Islands (Howe and Wolfe Islands), and about 1,800 smaller islands in the St. Lawrence River. Located at the eastern end of Lake Ontario and beginning of the St. Lawrence 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.

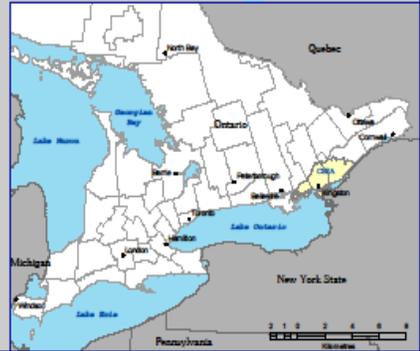
¹ Statistics Canada 2016 Census

Cataraqui Source Protection Area Base Map

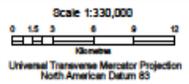


Legend

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



Created: November 12, 2009
Printed: February 23, 2011



Ontario
This document is based on the Ontario Assessment and the Ministry of Environment, Planning and the Greenhouse Gas Reduction Secretariat's work under the leadership of the Ontario Ministry of the Environment and Climate Change, 2008.
 Aerial Photography © Geopix Inc. 2009.
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 © 2009, Cataraqui Source Protection Area

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 ongoing.

The Committee arrived at the above grade based on implementation efforts to date and compliance with noted timelines in the Plan. Members noted a score of “satisfactory” is warranted as the majority of the Cataraqui Source Protection Plan is implemented but there remain significant drinking water threat policies outstanding and out of compliance pertaining to establishing risk management plans with the Lansdowne Wellhead Protection Area. Efforts are underway to ensure risk management is addressed to achieve the program’s objectives in 2019.

Committee members are committed to engage municipalities and other implementing bodies to ensure the success of the source protection program moving forward.

At a Glance: 2015 – 2018 Implementation Progress

1. Source Protection Plan Policies

P: Progressing Well/On Target

Eighty-five 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 11% 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.

2. Municipal Progress: Addressing Risks on the Ground

P: Progressing Well/On Target

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. 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*. All seven municipalities required to update planning documents are in the process of amending their Official Plan, with four completed. Five municipalities are in the process of updating their Zoning By-Laws and two have completed this process as of December 31, 2018.

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. One inspection remains within the Lansdowne Wellhead Protection Area to be completed in 2019. 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.

CRCA staff attended local septic installer meetings to speak to operators regarding the sensitivity of groundwater within the region and discussed how to provide source protection key messages to local landowners across the watershed.

4. Risk Management Plans (RMPs)

L: Limited progress

In 2018, six of seven municipalities where Part IV policies apply removed themselves from a joint Regional Risk Management Office hosted by the Cataraqui Region Conservation Authority and retained their responsibility for risk management efforts in-house or through a third-party. Through this process there are now four Risk Management Offices within the Cataraqui Source Protection Area, as shown in Table 1. There are 81 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).

Table 1: Risk Management Offices in the Cataraqui Source Protection Area

| Municipality with Part IV Responsibility | Risk Management Office |
|--|--------------------------------------|
| Township of Front of Yonge | In-house: Township staff |
| Township of | In-house: Township staff |
| Township of Leeds and the Thousand Islands | Third party: Malroz Engineering Ltd. |
| City of Kingston | Third party: Cambium Inc. |
| City of Brockville | |
| Township of Elizabethtown-Kitley | |
| Township of Front of Yonge | |

There have been 10 RMPs established across the Cataraqui Source Protection Area, with two of these plans being updated in 2018. Work to negotiate the estimated 60 parcels of land where significant drinking water threats were identified in the Township of Leeds and the Thousand Islands is ongoing. In 2018, the Township developed an action plan to address this legislated requirement and in 2018 conducted 10 threat assessment inspections and two open houses for the community within the Lansdowne Wellhead Protection Area. The threat assessment for the 10 properties noted handling and storage of fuel oil was no longer an activity of concern as the landowners transitioned to propane. These properties no longer require RMPs, however, the remaining 50 parcels will need to be assessed to determine the remaining plans that may need to be negotiated. This work will occur in earnest in 2019.

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 100% of previously issued approvals.

Within the Cataraqui area, 81% of 64 policies required for provincial implementation have been completed (Table 2). The remaining policies are non-binding and will be assessed in 2019.

Table 2:

| Implementing Body | Policy Completion |
|---|-------------------|
| Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) | 85% |
| Ministry of Municipal Affairs (MMA) | 33% |
| Ministry of Government and Consumer Services (MGCS) | 67% |
| Ministry of Environment, Conservation and Parks (MECP) | 100% |
| Ministry of Natural Resources and Forestry (MNRF) | 100% |
| Ministry of Transportation (MTO) | 100% |

6. Source Protection Awareness

P: Progressing Well/On Target



Seventeen drinking water protection zone road signs were planned for installation within vulnerable areas with significant drinking water threat activities in the Cataraqui Source Protection Area and three in other locations (Table 3). Installation was planned to be completed two years following the effective date of the Plan. A total of fourteen signs have been installed. Three additional signs were installed in other locations; two Provincial signs along highway 33 due to traffic along the road corridor, and one in the Town of Gananoque. The remaining four signs have been printed and are expected to be installed in 2019.

Table 3: Road Sign Installations in the Cataraqui Source Protection Area

| Timeframe | Provincial Signs | Municipal Signs | Other Locations | Sings to be Installed |
|-----------|------------------|-----------------|-----------------|-----------------------|
| 2015-2018 | 2 | 9 | 3 | 6 |

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:

Table 4: Implementation and Program Resources

| 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, Conservation Ontario Communications Material, and Fact Sheets | Residents, landowners, business owners, municipalities, real estate agents , and others |
| Groundwater Protection Plan | Implementing bodies and adjacent areas, landowners well and septic systems |
| Water Festival Engagement | Elementary school students |
| Risk Management Flyers and Fact Sheets | Landowners in vulnerable areas |
| Municipal Mural | Town of Gananoque residents and visitors |
| Municipal Working Group Meetings | Municipalities |
| DWSP Banners and Local Videos | Municipalities and other implementing bodies, lake associations, and local groups |

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. Across the watershed, many landowners are transitioning to propane.

Source Protection Committee members have noted an enhanced recognition of the importance to protect source waters, especially within the rural lake community. Several lake associations have collaborated to discuss and host workshops regarding algae blooms, septic system maintenance, and shoreline naturalization efforts. There has been enhanced interest and engagement from well and septic system owners to better understand property-specific source protection considerations within highly vulnerable aquifers. In 2018, over 400 participants attended two workshops regarding the protection of groundwater on a landowner's property and there is interest for continued events.

A change in behaviour will take time to properly monitor across the Cataraqui area. Social media is one way to track ongoing conversations and will be a tool to continue engagement in 2019. Source Protection Committee members and municipalities will continue to be supported by the Cataraqui Source Protection Authority to be ambassadors to continued communication and source protection advocacy within the watershed.

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 (2018) |
|----------------------------|---|-----------------------------------|
| Brockville | <i>Escherichia coli</i> (E. coli) | None – bacteria closely monitored |
| Fairfield (Amherstview) | Total coliform | None |
| Bath | Organic nitrogen and E.coli | None – bacteria closely monitored |
| 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. Drinking Water System Reports, as per the Ontario Regulation 170/03 made pursuant to the *Safe Drinking Water Act*, from 2018 indicate all drinking water systems have no reported issues in the raw water. There are few occasions when E.coli and Total Coliform bacterial concentrations are exceeded within the raw water so there is an ongoing effort to monitor these occurrences to determine what best management practices may be available to address these concentrations. At the Bath Intake Total Coliform concentration exceedances may be linked to an increase in sedimentation from overland runoff. CRCA staff are working with Loyalist Township and adjacent landowners to further explore management options such as creek modifications, agricultural best management practices, and enhanced monitoring.



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 and distribution of clean water is conducted with a high level of confidence.

No Issues Contributing Areas (ICA) have been delineated.

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) Compliance with non-binding policies
 - 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 and determine whether sufficient consideration has been given to the policy for completion
 - When non-binding policies are considered, a rationale for not completing the recommendation will be required to complete the review and ensure compliance
 - Some municipalities have noted certain policies are redundant and no longer applicable. These have been reported as such and will be discussed as part of the source protection plan updates

- b) Risk Management Services
 - 81 existing significant drinking water threats require assessment and appropriate risk management
 - The majority of the remaining activities are within the Lansdowne Wellhead Protection Area. The risk management official and municipal staff have developed an action plan to address this work in 2019

| Prescribed threat | Number Remaining | Rationale for Delay | Future Actions |
|------------------------------|------------------|---|--|
| Handling and storage of fuel | 42 | Landowner negotiations and municipal staffing changes | One RMP requires an updated signature. Ten threats/parcels were verified by the Township of Leeds & the Thousand Islands and |

| | | | |
|---|----|---|--|
| | | | were determined to no longer require risk management considerations. |
| Transportation corridors | 18 | Lack of policy and guidance. | Develop a local risk management policy as part of the source protection plan updates. |
| Sewage system maintenance | 1 | 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 Source Protection Area Assessment Report.

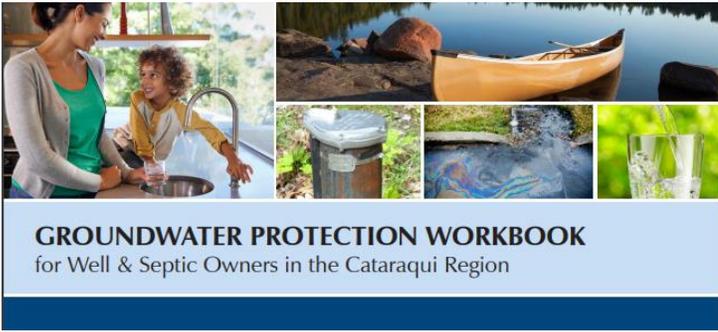
More from the Cataraqui Source Protection Area

To learn more about the Cataraqui Source Protection Area and receive updates on ongoing projects and other initiatives, visit us at <http://cleanwatercataraqui.ca/>.

In 2018, two Wells and Septic Workshops were organized by CRCA staff in cooperation with local Councilors, municipal staff, and community groups with over 400 participants from the surrounding communities. Guest speakers from local health units, Ministry of Environment, Conservation and Parks, and local conservation authorities spoke to topics such as groundwater vulnerability, how to properly maintain your septic systems and wells, and what signs to look for on your property. Presentations are available on the website noted above.



² DNAPLs – Dense None-Aqueous Phase Liquids



The workshops also launched the availability of the Cataraqui Source Protection Area's Groundwater Protection Workbook, a self-assessment toolkit for property owners to understand the vulnerability of groundwater on their property and ensure best management practices are taken into consideration.

