

Terms of Reference for the Preparation of an Assessment Report and a Source Protection Plan: Cataraqui Source Protection Area



Cataraqui Source Protection Committee

June 30, 2008¹

¹ As revised by the Cataraqui Source Protection Authority in March 2009 and approved by the Ontario Minister of the Environment in May 2009.

Table of Contents

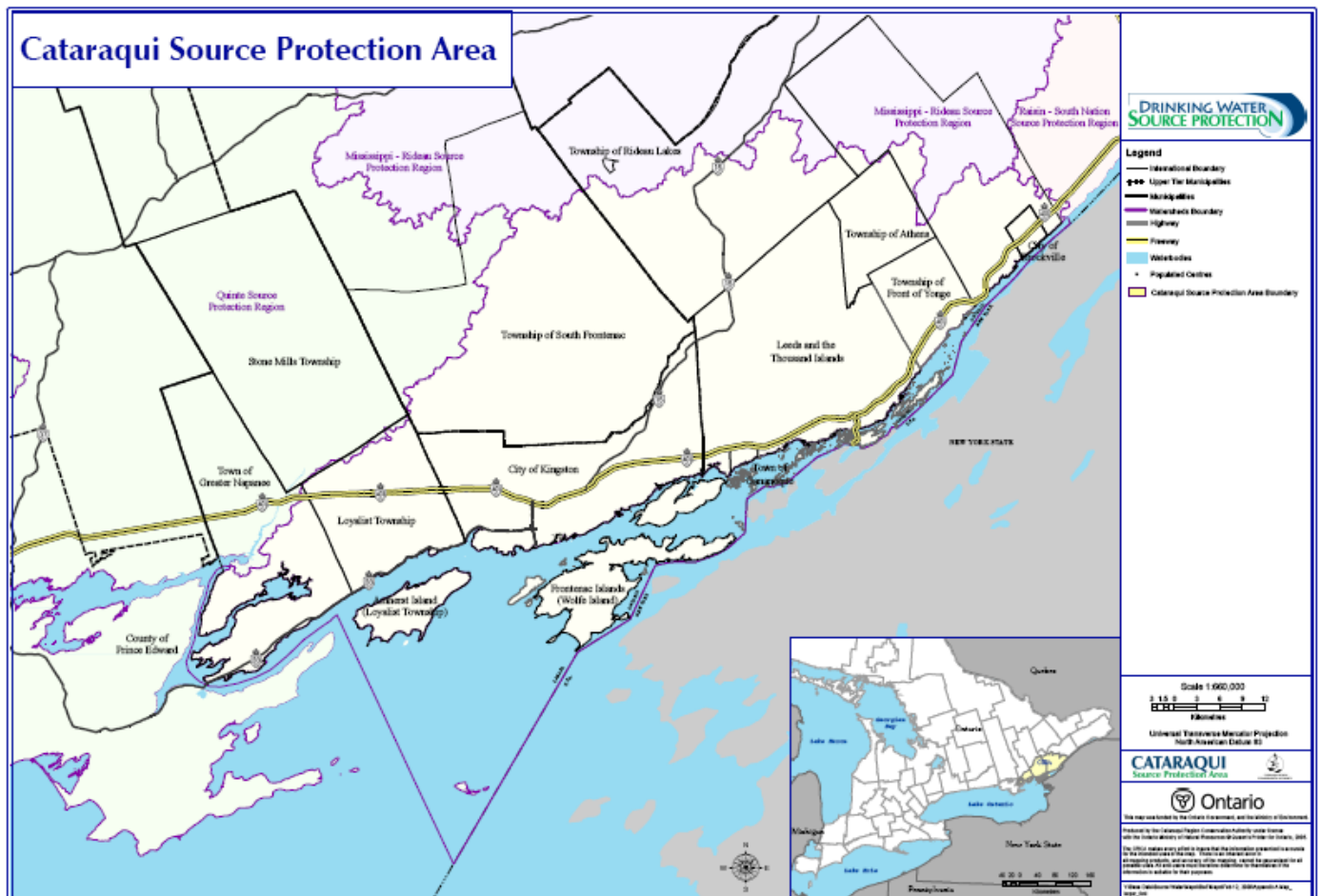
	<i>Page</i>
Executive Summary	
1.0 Introduction	1
2.0 Background	2
2.1 Clean Water Act Context	2
2.2 Cataraqui Source Protection Area	3
3.0 Scope of Assessment Report Work	6
3.1 Municipal Residential Drinking Water Systems	6
3.2 Other Drinking Water Systems	7
3.3 Groundwater Vulnerability	8
4.0 Frequently Asked Questions about Source Protection Planning	8
5.0 Conclusion	11
Glossary	
List of Appendices	
Appendices	

Executive Summary

Ontario's *Clean Water Act, 2006* was passed to prevent another drinking water contamination tragedy like the one that occurred at Walkerton. Its purpose is to protect public health by ensuring that clean and plentiful sources of drinking water are available now and in the future. Local plans to protect source water will be put in place to guide actions by all levels of government, businesses, property owners, and others to reduce or eliminate threats to our drinking water sources.

To accomplish this goal, 19 source protection areas or regions have been established across Ontario. The Cataraqui Source Protection Area has been established in southeastern Ontario. It includes the jurisdiction of the Cataraqui Region Conservation Authority (CRCA) plus the Township of Frontenac Islands and some additional areas along the St. Lawrence River.

Each area or region has two groups collaborating to implement the provisions in the *Act*. Locally, the first is the Cataraqui Source Protection Authority ("SP Authority"). This is composed of 17 members of the CRCA plus a member from the Township of Frontenac Islands. The second group is the Cataraqui Source Protection Committee ("Committee"). This includes a provincially appointed chair, 15 others appointed by the SP Authority to represent various community sectors, plus three non-voting members representing the SP Authority, public health units, and Ontario's environment ministry. All members, including the chair, are residents of the Source Protection Area. The SP Authority administers the process; the Committee conducts research and develops the proposed source protection plan in consultation with local communities.



The Committee has written this document, called “Terms of Reference” (ToR), as its proposed work plan and budget for development of an assessment report and a source protection plan. It defines the scope of research and planning, assigns roles and responsibilities, establishes timelines and estimates funding and is subject to public comment. The ToR must ultimately be approved by the Minister of the Environment. It may subsequently be amended to reflect new regulatory obligations or technical information. Depending on the scale of the amendment(s) it may be necessary to open the revised document to the general public for comment.

The Committee’s mission statement, included in the ToR, stresses cooperation with local communities and Ontario’s government to protect water quality and quantity. This happens through consensus-based decisions reached in an open and consultative manner. Consultation will involve the region’s 200,000 residents in all or part of 12 municipalities in three counties spanning 3,600 square kilometres of the Source Protection Area.

The Cataraqui Source Protection Area is geographically complex. It includes 12 major watersheds draining into Lake Ontario or the St. Lawrence River. About three-quarters of the area’s residents live in areas served by municipal residential drinking water systems. Outside these areas, a significant number of private systems are at risk from bacterial contamination and other threats.

The ToR outlines specific considerations for future research about source water within the Cataraqui Source Protection Area. The primary goal is to protect the source water for all twelve of the municipal residential drinking water systems. Vulnerable groundwater areas on the broader landscape are also being considered. Other drinking water systems may be included (under certain conditions) by either the Minister of the Environment or by a municipality.

Initial research about local drinking water threats and issues is expected to be complete by 2010. Work on the source protection plan will begin in 2009 by examining existing policies and programs; a proposed plan must be submitted to the province by 2012. The province covers the cost of the research and planning. Up to \$5.7 million is budgeted for local activities.

1.0 Introduction

The Clean Water Act, 2006 enables many communities across Ontario to create and carry out plans that will help to protect local *drinking water* sources. Each *source protection plan* will be approved by the Ontario Minister of the Environment. There are two major components to the work:

1. Produce an **assessment report** - a technical document, based on available scientific data, that identifies *risks* to drinking water sources within *vulnerable areas* and that assigns priority to those risks; and
2. Develop a **source protection plan** - a policy document (based on the findings in the Assessment Report, existing legislation, regulations, and programs, and best practices from other jurisdictions) that outlines policies to address risks to drinking water sources.

Some of the specific tasks that are required to prepare the above-noted documents include:

- Project management to ensure that the work is completed on time, on budget, and within a defined scope;
- Ongoing communication and consultation with local communities;
- The collection, organization, analysis, and secure storage of information about sources of drinking water and *watersheds*;
- Technical studies that will define areas of interest around sources of drinking water and identify risks to them;
- The development and evaluation of policies to address risks to drinking water sources and ensure that our progress is monitored over time.

The Cataraqui Source Protection Committee (SPC) has prepared these *Terms of Reference* (ToR) to guide the local drinking water source protection work that will occur within the Cataraqui Source Protection Area from 2009 to 2012. The ToR document is intended to define the scope of our research and planning work, assign roles and responsibilities, establish timelines, and estimate funding requirements for those four years. Terms that are defined in the Glossary are shown in *italics* when they are first used in the document.

We have prepared proposed ToR in accordance with the detailed requirements of the Clean Water Act, 2006 and Ontario Regulation 287/07. We have examined and discussed the comments that were received on draft versions, and we have strived to reflect them wherever possible.

This document is based on our current understanding of the provincial source protection initiative, which will continue to evolve as the Ontario government releases new regulations and technical standards. Updates to this document may become necessary over time, as additional regulations are released, new technical information becomes available, and/or where there are marked changes needed to our work plan.

Cataraqui Source Protection Committee Mission Statement

The Cataraqui SPC has prepared the following Mission Statement to communicate its intended purpose and role:

The overall objective of the Cataraqui Source Protection Committee in partnership with local communities and the Ontario government, is to protect the quality and quantity of present and future sources of drinking water in the Cataraqui Source Protection Area. We will work with others to gather technical knowledge on which well-informed, consensus-based decisions can be made in an open and consultative manner. We will aim to propose policies in the Cataraqui Source Protection Plan that are appropriate, effective, and economical for local communities. We will make use of the available science to assess drinking water threats and issues and where there is uncertainty we will be mindful of the precautionary approach.

2.0 Background

2.1 Clean Water Act Context

The Government of Ontario passed the Clean Water Act, 2006 to support a new drinking water *source protection* initiative across settled areas of the province. The Act was introduced as part of the government's response to the contaminated water tragedy at Walkerton in 2000, and serious drinking water problems in other locations. Its purpose is to protect public health and safety by helping to maintain (or in some cases restore) clean and plentiful *source water*. Source water is untreated water that is found in underground aquifers and surface water lakes and rivers and that is used to supply a *drinking water system*. Source protection is the first key barrier in the multi-barrier approach to safe drinking water which also includes water treatment, distribution, testing, and corrective action.

The Clean Water Act, 2006 requires that the quality and quantity of source water be protected through actions by all levels of government, conservation authorities, businesses, community organizations, and individuals. Information about potential risks to source water is being recorded in a series of watershed-based *assessment reports*. Examples of potential risks include the overuse of water, spills, and ongoing pollution from a wide range of sources (see Section 4.0 below). The term *drinking water threat* is used to describe the known or potential cause of a problem; for example, a faulty septic system that is contaminating the groundwater. The assessment reports will include a risk assessment that will assign priority to specific threats. Measures to address those threats in an effective manner will be outlined in watershed-based source protection plans. The source protection plan for the Cataraqui Source Protection Area will be developed by the Cataraqui SPC with public consultation, and the plan will be submitted to Ontario's Minister of the Environment for review and approval.

The current priority for the Ontario's source protection initiative is to identify, assess, and protect the source water that is used by municipal residential drinking water systems; in other words, those systems that are owned and/or operated by a municipality and that provide potable water to a village, town, or city. The source water for existing and planned municipal residential systems must be considered within a source protection plan. Vulnerable areas will be defined around the source water for these systems through the delineation of surface water *intake protection zones* and groundwater *wellhead protection areas*. Our attention to drinking water risks will focus on these vulnerable areas.

The Clean Water Act, 2006 does allow for the consideration of source water in some other locations. First, there is ongoing research to identify *highly vulnerable aquifers* and *significant groundwater recharge areas* on the broader landscape. These are also classified as vulnerable areas in which risk assessment work may occur.

In addition, the Minister of the Environment or a municipal council may propose that the source water for certain 'other' drinking water systems be 'elevated' into the scope of work (this process is discussed

below in Section 3.2). Unless they are subject to these ‘elevation’ provisions, individual private intakes and wells are not directly included within Ontario’s source protection initiative. Some users of private facilities may benefit through work that is completed on the broader landscape. For example, the avoidance of chemical spills into the St. Lawrence River will help to prevent the contamination of all downstream intakes, whether they serve one private residence or an entire community.

The Ontario drinking water source protection initiative requires consideration for existing Great Lakes agreements, among them:

- The Great Lakes Water Quality Agreement (1978, as amended) between Canada and the United States of America;
- The Great Lakes Charter (1985, as amended) amongst the provinces and states in the Great Lakes Basin;
- The Canada – Ontario Agreement Respecting the Great Lakes Basin Ecosystem (2002, as amended); and
- The Great Lakes – St. Lawrence Sustainable Water Resources Agreement (2005, as amended).

Great Lakes agreements will be considered as part of efforts in the Cataraqui Source Protection Area. The Act also enables the Minister to set targets relating to the use of the Great Lakes as a source of drinking water.

The initial set of source protection plans must be submitted to the Ontario Ministry of the Environment by 2012. They will include local policies to eliminate “significant” drinking water threats to the source water that is used to supply the drinking water systems under consideration. Other policies will aim to prevent lesser threats from becoming significant in part by directing on-going monitoring programs for specific threats and issues.

Land use planning decisions made under the Ontario Planning Act will need to conform to source protection policies that speak to significant drinking water threats, and will need to have regard to source protection policies regarding other threats. Municipalities will therefore need to reflect the approved source protection plan(s) for their area in their official plans and zoning by-laws. They will also have the ability to enact risk management by-laws that provide for the development and enforcement of risk management plans on specific properties. The source protection plans will also be implemented using various tools (see Section 4.0 below). We anticipate that many of the policies in the plans will build on existing actions. The implementation work will include monitoring of local progress, and the publication of annual reports to the community and the province.

2.2 Cataraqui Source Protection Area

Ontario Regulation 284/07 created nineteen *source protection areas* and *source protection regions* across the province. The Cataraqui Source Protection Area in southeastern Ontario includes the jurisdictional area of the Cataraqui Region Conservation Authority (CRCA), plus the Township of Frontenac Islands and other lands and waters along the St. Lawrence River to the International Boundary (see Appendix ‘A’). We are located at the outlet of Lake Ontario, and therefore have an interest in water quantity and quality issues across a large upstream area in the Great Lakes Basin.

Compared to other source protection areas or regions, the Cataraqui can be considered to be ‘medium-sized’ when factors such as geographic area (about 3,600 square kilometres of land), resident population (about 200,000 people), the number of municipalities (12) and the number of municipal residential drinking water systems (12) are considered. It is also a diverse area, as described in Section 2.2.1 below. Following approval of the ToR, there will be one assessment report and one source protection plan

prepared under the Clean Water Act, 2006 for the Cataraqui area. By comparison, some of the smaller source protection areas in Ontario include only one or two municipal residential drinking water systems, while some of the larger and more complex areas include over fifty municipalities and numerous municipal residential systems.

2.2.1 Description of the Area

The Cataraqui Source Protection Area is characterized by its relative geographic complexity. It includes twelve individual major watersheds (with each one being greater than 50 square kilometres in size) that drain to either Lake Ontario or the St. Lawrence River. The Area includes about 1,000 kilometres of shoreline along these water bodies, when the shoreline around the numerous islands in the Lake and River is included.

The largely rural landscape features shallow soils and exposed and fractured bedrock that is vulnerable to contamination from the surface. The Frontenac Axis bisects the Area; this is a ridge of Precambrian rock that crosses the St. Lawrence River to connect Algonquin Park with the Adirondack Mountains. There are almost 200 inland lakes either on or adjacent to the Frontenac Axis. A World Biosphere Reserve has been identified in this vicinity by the United Nations. It includes part of the Rideau Canal National Historic Site (a World Heritage River) and the scenic Thousand Islands in the St. Lawrence River.

The Cataraqui area includes all or part of twelve municipalities in three counties (see Appendix 'B'). Although many residents live within the City of Kingston, there are many other distinct and prosperous communities such as Amherstview, Brockville, and Gananoque. Agriculture, industry, tourism, and recreation are key local economic activities.

Our drinking water sources include Lake Ontario and the St. Lawrence River, inland lakes and rivers, and groundwater. There appears to be a relative abundance of water resources to meet current drinking water needs in the Cataraqui area. However, low water conditions do result in localized shortages, and the full extent of climate change impacts on water quantity (and quality) within the Cataraqui area remains uncertain at this time.

About three quarters of the Cataraqui area residents live in an area that is served by a municipal residential drinking water system. As outlined in Appendices 'C-1' and 'C-2', nine of the twelve municipal residential drinking water systems are supplied by surface water, while three of those systems are supplied by groundwater. All other Cataraqui area residents obtain their drinking water using private intakes and wells in unserviced villages and hamlets, and in rural areas. Under the Clean Water Act, 2006, such systems may be 'elevated' for inclusion within Ontario's source protection initiative subject to eligibility criteria (see Section 3.2 below).

Unfortunately, source water quality problems, such as bacteria in groundwater and excess phosphorous in surface water, exist throughout the Cataraqui area. A recent survey of private wells in the western part of the Source Protection Area found that about 40 per cent of the wells that were sampled had levels of contamination by bacteria that exceeded health parameters (Trow Associates Inc. for CRCA, 2007). This suggests that the groundwater may be contaminated in portions of the Source Protection Area. The Bay of Quinte (at the west end of the Source Protection Area) was identified in 1986 by the International Joint Commission as an Area of Concern due to water quality problems and habitat loss. Work under a Remedial Action Plan over the past two decades has resulted in improved conditions in the Bay. We can learn from the Remedial Action Plan experience as we move forward with drinking water source protection.

2.2.2 Local Program Coordination

The source protection planning process in the settled parts of Ontario is being coordinated by two types of local entities established under the Act in 2007: *source protection authorities* and *source protection committees*:

- The **Cataraqui Source Protection Authority** is composed of the 17 members of the CRCA Board, plus one additional member from the Township of Frontenac Islands. It is responsible for ensuring that the process remains ‘on time and on budget’, and that draft documents are made available at appropriate times to municipalities, the public, and the Ontario Ministry of the Environment.
- **The Cataraqui Source Protection Committee** is composed of a provincially appointed Chair (Mr. John C. Williamson of Inverary), plus 15 other members who were appointed by the Source Protection Authority from the community. There are five members who represent municipalities, five who represent economic sectors such as agriculture, industry, and tourism, and five who represent other interests such as environmental organizations and the general public. The Source Protection Committee also includes three non-voting representatives from: (1) the Cataraqui Source Protection Authority, (2) Kingston Frontenac Lennox & Addington Public Health and the Leeds, Grenville & Lanark District Health Unit, and (3) the Ontario Ministry of the Environment. The SPC will work closely with local communities to develop the assessment and planning documents required under the Act.

2.2.3 Involved Parties

Although the Cataraqui Source Protection Authority and Committee are responsible for coordinating the source protection planning process, there are many others that contribute much needed information, guidance, and cooperation. Interested parties are welcome to share information, ask questions/make comments or attend meetings during the planning process. The potential role(s) of some of the other involved parties is described in the list below:

- First Nations – provide traditional knowledge of water resources and watersheds, comment on proposals;
- Local researchers – partner/cooperate to identify and fill data and knowledge gaps;
- Municipalities – provide data/comments and incorporate source protection policies in official plans, zoning by-laws and other land use planning documents;
- Non-governmental organizations – provide information and comments;
- Public utilities – provide data/comments and revise emergency planning documents, as required;
- Private landowners – participate in risk assessments and incorporate best management practices to protect municipal/residential drinking water sources;
- Provincial/federal ministries – provide data and/or guidance and funding;
- Transportation agencies – provide information on potential threats and help to implement policies and practices to protect drinking water; and
- United States and New York agencies – collaborate with and implement policies complimentary to those required to protect the drinking water intakes in Lake Ontario and the St. Lawrence River.

It should be noted that a coordinated approach to reach the involved parties will be used whenever possible. For example, contact with United States and New York authorities will likely be made in concert with the Raisin-South Nation Source Protection Committee and the Ontario Ministry of the Environment.

3.0 Scope of Assessment Report Work

The key objective of the assessment report is to identify and prioritize risks to the quality and amount of water that is available for drinking. Appendix 'D' outlines the types of technical studies that have been or will be undertaken to achieve this objective. The technical work is being undertaken by qualified professionals, and it will normally be subject to a peer review by others before it is endorsed by the Cataraqui Source Protection Committee for inclusion in the Cataraqui Assessment Report. This section of the ToR document discusses the scope of the assessment report work (i.e. which sources of drinking water will be considered in the Cataraqui Source Protection Area). Topics discussed below include: the source water for municipal residential drinking water systems; the potential inclusion of 'other' drinking water systems; and Area-wide groundwater vulnerability.

We anticipate that source water assessment work within the Cataraqui area will be administered by the Cataraqui Source Protection Authority. The Clean Water Act, 2006, requires municipalities and other bodies to share records, maps, information, and other relevant documents with the Cataraqui SPC. Private information obtained during the process will be kept in accordance with provincial legislation regarding freedom of information and protection of privacy.

Pending the completion of the necessary assessment work, the Cataraqui SPC will encourage early actions and voluntary programs by municipalities, property owners, and other stakeholders to reduce or eliminate drinking water threats within the Cataraqui area. After the Cataraqui Assessment Report has been approved, consideration may be given to the use of interim risk management plans under Section 56 of the Clean Water Act, 2006 to address significant drinking water threats in wellhead protection areas or intake protection zones.

Part of the Assessment Report will identify recommendations for additional research to help meet long-term data, knowledge, monitoring and reporting requirements. The work necessary to meet these needs could be a cooperative effort between Cataraqui Region Conservation Authority staff and researchers in the community (possibly at local post-secondary institutions such as Queens University, Royal Military College Kingston, and St. Lawrence College) and consultants.

3.1 Municipal Residential Drinking Water Systems

The source water for all municipal residential drinking water systems must be considered in the Cataraqui Assessment Report. The scope of work must include:

- Existing systems that will remain in operation for the next five years. We are not aware of intentions by any local municipalities to close any of the existing systems over the next five years.
- New "planned" systems. "Planned" systems are defined by Ontario Regulation 286/07 as those that have been approved through an Environmental Assessment (EA), or that have been identified as the preferred alternative in a completed EA. We are not aware of any planned systems that meet this definition, although we are aware that municipalities are considering additional systems for the future, along with upgrades to existing ones.

Research has commenced on ten of the twelve existing municipal residential systems; we will consider the need for further research about these systems as study findings and provincial technical standards are released during 2008. There is a need to consider additional studies related to the other two systems, as follows:

Proposed Cana Subdivision Wellhead Protection Area Study

The Cana Subdivision is a small residential neighbourhood in the northeastern part of the City of Kingston near Highway 15. The Subdivision is serviced by water and sewage treatment plants, both of which are owned by the City of Kingston and operated by Utilities Kingston. This groundwater system was the subject of a preliminary wellhead protection area report by Trow Associates Inc. as part of the Western Cataraqui Region Groundwater Study (Trow Associates Inc. for CRCA, 2007). The consultant's preliminary work used a basic method to delineate a protection area around the well. CRCA staff have recommended that a more detailed modelling method be employed in a Phase '2' study by a geoscientist, and also that vulnerability scoring be assigned to the wellhead protection area. This further work will be needed to meet the anticipated provincial technical standards.

Proposed Miller Manor Wellhead Protection Area Study

The Miller Manor in the village of Mallorytown is classified by the Ontario Ministry of the Environment as having a municipal residential drinking water system due to its size and public ownership. Mallorytown is located in the Township of Front of Yonge near Brockville. The Miller Manor is a 17 unit retirement home that is owned and operated by the United Counties of Leeds and Grenville. Drinking water for the Manor is obtained through a well on the property. We anticipate that the source for this well could be assessed through a small-scale wellhead protection area study by a geoscientist. This work will be needed to meet the anticipated provincial technical standards.

3.2 Other Drinking Water Systems

Sections 8 and 10 of the Clean Water Act, 2006 allow municipalities and the provincial Minister of the Environment, respectively, to 'elevate' the source water for 'other' drinking water systems into the scope of work in the proposed Terms of Reference. Within the parameters of Ontario Regulation 286/07, these other systems include: (a) clusters of six or more private intakes and wells, and (b) those that supply public and private facilities such as schools, community centres, health care facilities, children's camps, and trailer parks. Users of these systems are generally protected by the testing and treatment requirements of Ontario's Safe Drinking Water Act, 2002 and other laws and regulations such as the Ontario Water Resources Act.

Without an 'elevation', however, the source water that supplies these other systems may not be directly considered by Ontario's source protection initiative. At this time, there are no municipal council resolutions to elevate any of these other systems for inclusion within the Cataraqui source protection planning process. The Ministry of the Environment has recently cautioned municipalities against elevating other systems until further direction is released by the province on the implications of such elevations. The findings that are forthcoming from ongoing technical studies may also help to determine whether or not a system should be elevated.

Nevertheless, it remains open to municipalities within the Cataraqui area to elevate some of these other systems in order to address known drinking water problems being experienced by their inhabitants at specific locations, or to protect local source water in order to prevent the costs associated with extending municipal servicing into the affected location(s) at a future date. If one or more 'elevations' occur once the Province releases further direction, then these ToR can be amended accordingly.

3.3 Groundwater Vulnerability

The previous groundwater studies covering the Area and draft work to-date on the Cataraqi Groundwater Vulnerability Analysis Report (forthcoming in 2008 by Dillon Consulting Ltd.) suggest that there are highly vulnerable aquifers across a large portion of the Cataraqi area; in these aquifers the groundwater is highly susceptible to contamination from activities on the surface. Similarly and as was previously mentioned, the Western Cataraqi Region Groundwater Study (Trow Associates Inc. for CRCA, 2007, volume 1, page 29) found that about 40 per cent of private wells that were sampled by the author in the western portion of the Cataraqi area were contaminated by bacteria (volume 1, page 29).

The draft Technical Rules for the Assessment Report (Ontario Ministry of the Environment, June 2008) suggest that the water quality risk assessment is to be completed in all highly vulnerable aquifers. The Committee and CRCA staff will work with the Ministry to refine the methods through which the assessment will be completed in the Cataraqi Source Protection Area. In addition, there may be an opportunity for additional ‘pilot’ research on this issue in the Cataraqi area, working in conjunction with the academic community, municipalities, and public health units.

4.0 Frequently Asked Questions about Source Protection Planning

The parameters for source protection planning in Ontario are outlined in the Clean Water Act, 2006. These general requirements will be supplemented by more specific direction in the forthcoming Source Protection Plan Regulation by the Ontario Ministry of the Environment, which is likely to be released during 2009.

The policies in the Cataraqi Source Protection Plan will address the drinking water threats and issues within vulnerable areas that were included in the Assessment Report. The priority and specific measures for addressing drinking water threats will be based on the outcome of a risk assessment which is expected to identify “significant”, “moderate”, “low”, and “negligible” threats. Many of the measures in the Cataraqi Source Protection Plan are expected to reinforce and/or refine existing actions by government, organizations, and individuals. Existing agreements and programs related to the Great Lakes Basin will be considered. If the Minister of the Environment sets targets for source water in Lake Ontario and/or the St. Lawrence River, then the Plan will also include policies related to achieving those targets. Policies will be developed in collaboration with the adjacent source protection regions, as discussed in Appendix ‘E’. We expect that the Plan will also recommend how each policy is to be implemented, and that it will identify potential sources of funding for source protection activities.

The sections below address some frequently asked questions about source protection planning:

What types of local drinking water threats will be identified and assessed within the Cataraqi Source Protection Area?

A drinking water threat refers to an activity or condition that adversely affects, or has the potential to adversely affect, the quality or quantity of water that is or may be used as a source of drinking water. It is anticipated that the Ontario government will release technical standards prescribing various types of threats to be considered within vulnerable areas under the source protection planning process. We anticipate that there will be consideration of:

- *Corridor threats*, such as spills from a railway;
- Point source threats at a specific location, such as leachate from a waste disposal site; and

- Non-point source threats on the broader landscape, such as the runoff of oils and greases from paved surfaces (such as parking lots) within a subwatershed.

The process will include consideration for existing threats (where a land use or activity either occurred in the past or is ongoing), and future ones (where a land use or activity is not currently ongoing, but is permitted under the municipal official plan and zoning by-law).

Which types of policies must be included within a source protection plan?

The Clean Water Act, 2006 requires that each source protection plan include policies regarding:

1. Actions to address drinking water threats, to ensure that significant ones cease to be significant, and that low and moderate threats do not become significant, along with monitoring of drinking water threats;
2. Actions to assist in achieving Great Lakes targets that may be set for the Cataraqui area by the Minister of the Environment under Section 85 of the Act, along with monitoring of the effectiveness of those actions; and
3. The monitoring of drinking water issues (exceedances of quality standards for source water) that are identified in the Assessment Report, as required.

Which tools are available to respond to drinking water threats and issues?

Communities across Ontario will address drinking water threats and issues using a variety of policy tools. They are expected to range from 'soft' tools (such as the posting of information about the proper disposal of hazardous waste) to more stringent ones (such as zoning to prevent the construction of an industrial facility in a vulnerable area). The Cataraqui SPC will work with local communities to develop practical solutions to source water problems. There will be recognition of ongoing risk management measures, the refinement of existing policies and programs, and consideration for a full suite of measures. Some of the tools that are available for use are listed below (in alphabetical order, with reference to relevant sections in the Clean Water Act, 2006):

Awareness and education programs (Section 22);
Provincial instruments (e.g. Permit to Take Water) (Section 43 and 44);
Land purchases by conservation authority or municipality (Section 92);
Land expropriations by a conservation authority or municipality (Section 92);
Municipal activities (e.g. road maintenance practices) (Sections 38 and 39);
Municipal infrastructure (e.g. stormwater management facilities) (Sections 38 and 39);
Municipal official plan policies and zoning by-law provisions (Sections 39 through 42);
Municipal risk management by-laws (Section 58);
Prohibition of activities (Section 57);
Restriction of land uses (Section 59);
Sewage system maintenance inspections (Section 112);
Voluntary stewardship projects (Section 22); and
Voluntary risk management measures (Section 22).

The Source Protection Plan Regulation (expected in 2009) may place parameters around the extent to which each of the tools listed above can be applied.

How will the source protection policies be developed?

A conceptual framework for the planning effort is shown in Appendix 'F-1'. Policy development will begin with a review of the risks to source water, as well as the legislation, policies, programs and procedures that already apply in the Cataraqui Source Protection Area. Protection measures from other jurisdictions will also be considered, along with the policy 'tools' that are available. Initial policy writing will be undertaken by the Cataraqui Region Conservation Authority (CRCA) staff and consultants. There will be ongoing dialogue with the adjacent source protection committees. If a municipality wishes to administer planning work for their drinking water system, then it will prepare draft policies and submit them to the Committee (see Appendix 'F-2').

Working groups established by the Cataraqui SPC will review draft policies. It is currently proposed that there would be at least two working groups: one to address surface water sources and another to address groundwater sources (see Appendix 'F-3'). Additional working groups may be established to address particular topics or sectors where necessary. For example, it may be appropriate for a working group to focus on questions pertaining to implementation, such as responsibility, timelines, and funding sources. A working group may be created as we move forward at the planning stage to review the impacts of source protection plan policies on agricultural (and potentially other) property owners within vulnerable areas.

The working groups will be composed of SPC members and others from public agencies and the community. Each draft policy will be carefully evaluated using a set of criteria that will be developed by the Committee in accordance with provincial guidelines. Local events such as 'roundtables' will be held to gather input prior to the publication of a draft Cataraqui Source Protection Plan.

The Cataraqui SPC will then review draft policies that are proposed by the working groups; we will make use of the policy evaluation criteria during this review. We will strive to include policies in the Cataraqui Source Protection Plan that are appropriate, effective, and economical for local communities. The Committee will set priorities for policy implementation that will result in significant drinking water threats being addressed first. The Source Protection Plan will include policy and by-law examples for municipal consideration such that local municipalities are able to incorporate consistent language and protection for vulnerable areas. It will provide details about how the policies are to be implemented (i.e. water quality and quantity targets, area of interest, timing, responsibility) and the potential source(s) of funding to complete the work.

Our intent is for the planning process to be open and consultative. There will be extensive opportunities for municipalities, community organizations, businesses, and residents to comment on the draft policies. Upon review of those comments, the Committee will submit a proposed Source Protection Plan to the Cataraqui SPA, who will seek further comments from the community. The Ontario Minister of the Environment is responsible for final approval of the Plan.

When will the source protection plan be prepared?

The review of existing policies and programs is proposed to commence in 2009. Formal policy development would then begin in 2010 so that a proposed Plan could be submitted to the Minister during 2012 (see Appendix 'F-4'). The due date for submission of the Cataraqui Source Protection Plan is August 20, 2012.

How much will it cost to complete the Assessment Report and then prepare a Source Protection Plan?

The costs associated with preparing an assessment report and a source protection plan are being paid by the Ontario government. The total cost of the anticipated work in the Cataraqui Source Protection Area, including eight technical studies, the development of plan policies, and consultation, is up to about \$5.7

Million. Draft budget estimates for the upcoming April to March fiscal years (2009/10 through 2012/13) are included in Appendix 'F-5'. Additional financial details related to past, present, and future fiscal years are shown in Appendix 'G'. The actual amount of funding that is available in each fiscal year for drinking water source protection will be determined by the Ontario government.

What financial assistance will be made available for property owners?

The Clean Water Act, 2006 does not allow compensation to be paid to affected landowners. However, it has entrenched in law a financial assistance program called the Ontario Drinking Water Stewardship Program. This program currently has funding until 2011 to provide grants to assist private property owners in undertaking 'early actions' to address risks in very close proximity to municipal/residential intakes and supply wells in advance of approved source protection plans. The Cataraqui Region Conservation Authority is administering the program in the local area. More information about the program is available from the Ontario Ministry of the Environment website at:

www.ene.gov.on.ca/en/water/cleanwater/index.php.

5.0 Conclusion

The preparation of Terms of Reference for the Cataraqui Source Protection Area offers a collective opportunity for local communities to consider their drinking water source protection needs, priorities, and long-term objectives. The Cataraqui Source Protection Committee intends to maximize the local benefits of the current provincial initiative.

For More Information

We invite you to visit the following Internet websites for more information about drinking water source protection:

Ontario Ministry of the Environment – Drinking Water Portal

www.ontario.ca/ONT/portal51/drinkingwater

Ontario Ministry of the Environment – Clean Water Act

www.ene.gov.on.ca/en/water/cleanwater/index.php.

Conservation Ontario

www.conservationontario.ca

Cataraqui Source Protection Committee

www.cataraqueiregion.on.ca

Glossary

[Note: the abridged definitions in this glossary have been prepared to assist readers of this Terms of Reference document. For additional definitions, please refer to provincial legislation, regulations, and technical standards].

Assessment report means a technical document that is prepared by a source protection committee under Section 15 of the Clean Water Act, 2006 (and a forthcoming regulation) to record its knowledge of a source protection area, and to rank *risks* to *drinking water* within that area. Each report is approved by the Ontario Ministry of the Environment.

Corridor threat means a drinking water threat that has the potential to occur along a linear feature such as a pipeline, railway, sewer line, highway, shipping channel, etc.

Drinking water means (a) water intended for human consumption or (b) water that is required by an Act, regulation, order, municipal by-law or other document issued under the authority of an Act, (i) to be potable, or (ii) to meet or exceed the requirements of the prescribed drinking water quality standards.

Drinking water system means a system of works, excluding plumbing, that is established for the purpose of providing users of the system with *drinking water* and that includes, (a) any thing used for the collection, production, treatment, storage, supply or distribution of water, (b) any thing related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the treatment system, and (c) a well or intake that serves as the source or entry point of raw water supply for the system.

Drinking water threat means an activity or condition that adversely affects or has the potential to adversely affect the quality or quantity of any water that is or may be used as a source of *drinking water*.

Highly vulnerable aquifer (HVA) means an area where (a) water is conveyed through the ground and (b) pollutants on the surface could readily enter the groundwater and contaminate it.

Intake protection zone (IPZ) means the area of land and water that contributes *source water* to a *drinking water system* intake within a specified distance, period of flow time (for example, two hours), and/or watershed area.

Risk means the likelihood of a drinking water threat (a) rendering a drinking water source impaired, unusable or unsustainable, or (b) compromising the effectiveness of a drinking water treatment process, resulting in the potential for adverse human health effects.

Significant groundwater recharge area (SGRA) means an area in which (a) there is a high volume of water moving from the surface into the ground and (b) groundwater serves either as *source water* or the water that supplies a coldwater ecosystem such as a brook trout stream.

Source protection means a program of education, stewardship, planning, infrastructure, and regulation activities that together serve to help prevent the contamination or overuse of *source water*.

Source protection area means those lands and waters that have been defined under Ontario Regulation 284/07 as the “study area” for an *assessment report* and a *source protection plan* under the Clean Water Act, 2006.

Source protection authority means a conservation authority or other person or body that is required to exercise powers and duties under the Clean Water Act, 2006. The Cataraqui Source Protection Authority is composed of the 17 members of the Cataraqui Region Conservation Authority plus one additional member from the Township of Frontenac Islands.

Source protection committee means a group of individuals who have been appointed under the Clean Water Act, 2006 by a *source protection authority* to coordinate *source protection* activities for a *source protection area*. The Cataraqui Source Protection Committee is composed of a provincially appointed Chair (Mr. John C. Williamson of Inverary), plus 15 other members who were appointed by the Cataraqui Source Protection Authority from the community. There are five members who represent municipalities, five who represent economic sectors such as agriculture, industry, and tourism, and five who represent other interests such as environmental organizations and the general public. The Source Protection Committee also includes three non-voting representatives from: (1) the Cataraqui Source Protection Authority, (2) Kingston Frontenac Lennox & Addington Public Health and the Leeds, Grenville & Lanark District Health Unit, and (3) the Ontario Ministry of the Environment.

Source protection plan means a document that is prepared by a *source protection committee* under Section 22 of the Clean Water Act, 2006 (and a forthcoming regulation) to direct *source protection* activities in a *source protection area*. Each plan is approved by the Ontario Ministry of the Environment.

Source protection region means two or more *source protection areas* that have been grouped together under Ontario Regulation 284/07.

Source water means untreated water that is found in groundwater aquifers and surface water lakes and rivers that is used to supply a *drinking water system*.

Terms of Reference means the work plan and budget for development of the source protection plan that is subject to public comment and approval by the Ontario Minister of the Environment.

Vulnerable area means (a) a *significant groundwater recharge area*, (b) a *highly vulnerable aquifer*, (c) a *surface water intake protection zone*, or (d) a *wellhead protection area*.

Watershed means the area of land that contributes water to a lake, river, or stream.

Wellhead protection area means the surface and subsurface area surrounding a well that supplies a *drinking water system*, through which contaminants are reasonably likely to move so as to eventually reach the well.

List of Appendices

- Appendix 'A': Map of the Cataraqui Source Protection Area
- Appendix 'B': Municipalities in the Cataraqui Source Protection Area
- Appendix 'C': 'C-1' Drinking Water Systems Eligible for Assessment and Planning Work, Cataraqui Source Protection Area
- 'C-2' Map showing Source Protection Technical Studies (Municipal Residential Drinking Water Systems)
- Appendix 'D': Summary of Assessment Report Technical Studies
- Appendix 'E': Matters Requiring Consultation with Neighbouring Source Protection Committees and American Agencies
- Appendix 'F': Work Plan for 2009/10 through 2012/13
- 'F-1' Conceptual Framework for Source Protection Planning, Cataraqui Source Protection Area
- 'F-2' Responsibility for Administering Assessment and Planning Work
- 'F-3' Proposed Working Groups Structure, Cataraqui Source Protection Committee
- 'F-4' Proposed Timeline for Assessment Report and Source Protection Plan
- 'F-5' Summary of Proposed 2009/10 – 2012/13 Budget Estimates
- Appendix 'G': Detailed Work Plan Information (Ontario Ministry of the Environment format)