TERMS OF REFERENCE

for the preparation of the
Assessment Report & Source Protection Plan for the

KAWARTHA-HALIBURTON SOURCE PROTECTION AREA

Completed in conjunction with the other Source Protection Areas
in the Trent River Watershed

Approved by the Minister of the Environment
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PREPARED BY:

Trent Conservation Coalition Source Protection Committee
c/o Lower Trent Conservation, 714 Murray Street, R.R. 1 Trenton, ON K8V 5P4

www.trentsourceprotection.on.ca

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SOURCE PROTECTION COMMITTEE COMMITMENT

The Trent Conservation Coalition Source Protection Committee is a multi-stakeholder committee selected to represent municipal, economic, general public and First Nations interests across the Source Protection Region.

The Committee's ultimate role is to develop a Source Protection Plan that establishes policies for preventing, reducing or eliminating threats to sources of drinking water. In developing the plan, the committee members are committed to:

- *Basing policies on the best available science, and where there is uncertainty, being mindful of the precautionary approach*
- *Considering and incorporating voluntarily contributed local and traditional knowledge*
- *Ensuring that public concerns are heard and taken into consideration*
- *Consulting with all stakeholders and in particular with impacted landowners/businesses*
- *Considering all economic impacts*
- *Making decisions that are fair and reasonable through an open and transparent process*
- *Advocating ongoing provincial funding to provide financial assistance to property/business owners, municipalities, agencies, and others for stewardship and other implementation measures*

Note: *The Ministry of the Environment is proposing to pass additional regulations under the Clean Water Act that outline the requirements of the Assessment Report and the Source Protection Plan. Once these regulations are in place, the Terms of Reference may need to be amended to meet the requirements of the regulation.*

EXECUTIVE SUMMARY

Why you should read this document:

This Terms of Reference is a requirement of the *Clean Water Act, 2006,* which was brought into effect by the Ontario government with the passing of the first set of regulations on July 3, 2007. The objective of the *Clean Water Act* is to protect municipal drinking water. The *Clean Water Act* also provides provisions for protecting private supplies of drinking water, through municipal resolutions or Minister of the Environment directives. Systems that can be included are clusters of six or more wells/surface water intakes, wells/intakes located within an area of settlement defined under the Planning Act, or private residences containing a facility regulated under the *Safe Drinking Water Act*. First Nations systems can also be included. Both water quality and water quantity are considered.

The Terms of Reference is a work plan that outlines the proposed work program. It estimates costs and timelines to undertake the necessary studies and develop a plan to protect the sources of drinking water supplies in the Trent River watershed and nearby watersheds that flow into Lake Ontario and the Bay of Quinte. The Source Protection Plan has the potential to affect municipalities, conservation authorities and watershed residents/business owners.

The Terms of Reference includes:

- A summary of the source protection planning process
- A description and maps of the Source Protection Region and Areas
- A description of the Source Protection Committee
- A list of municipalities in the Source Protection Areas
- A list of existing and planned municipal drinking water systems
- A list of matters that affect other source protection regions
- The work plan for completing the *Assessment Report*[1] and *Source Protection Plan.*[2] The work plan includes high level tasks, costs, timelines and indicates who will perform the work.

The Source Protection Committee is posting the draft proposed Terms of Reference for review and comment in late May/June, 2008. A revised draft will be posted for review in late August/September, 2008.

[1] *Assessment Report:* a science-based report, developed locally, which identifies vulnerable areas and summarizes drinking water quality and quantity threats in the Source Protection Areas in the Region.

[2] *Source Protection Plan:* an action plan, developed locally, which establishes policies for eliminating, reducing, and managing drinking water quantity and quality threats for the Source Protection Areas in the Region.

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1. SUMMARY OF SOURCE PROTECTION PLANNING PROCESS

The *Clean Water Act, 2006* was brought into effect by the Ontario government with the passing of the first set of regulations on July 3, 2007. The intent of the legislation is to ensure communities are able to protect their municipal drinking water supplies. Communities will identify potential threats to local water sources and take action to reduce or eliminate these threats. The task of developing a plan will involve watershed residents working with municipalities, conservation authorities, property owners, farmers, industry, health officials, community groups, and others. The Act allows for other systems to be considered, including First Nations systems, clusters of private wells, communal systems, and other non-municipal supplies.

The *Clean Water Act, 2006* and associated regulations puts in place a framework for the source protection planning process:

- Establishing Source Protection Regions and Areas
- Establishing Source Protection Authorities
- Establishing Source Protection Committees
- Preparing the Terms of Reference
- Preparing the Assessment Report
- Preparing the Source Protection Plan
- Timelines
- Consultation

The *Clean Water Act, 2006* establishes the Ontario Drinking Water Stewardship Program. The purpose of the program is to provide financial assistance to those whose activities and properties may be affected by the *Clean Water Act, 2006*, persons who administer incentive programs and education and outreach programs that are related to source protection plans, and to other persons or bodies in prescribed circumstances that are related to the protection of drinking water sources. The financial assistance is to be provided in accordance with regulations made under the *Clean Water Act, 2006.*

Source Protection Regions and Areas

Ontario Regulation 284/07 established 40 Source Protection Areas, based primarily on conservation authority watersheds. Thirty-two of these Source Protection Areas were grouped into 11 Source Protection Regions, leaving eight stand-alone Source Protection Areas. The Trent Conservation Coalition Source Protection Region (see Figure 1) is approximately 14,500 square kilometres. The Region includes the entire watershed of the Trent River, stretching from Algonquin Park to the Bay of Quinte, and the smaller watersheds in the Ganaraska Region and Lower Trent Region Conservation Authorities' areas of jurisdiction that flow directly into Lake Ontario and the Bay of Quinte.

The Source Protection Region is comprised of five Source Protection Areas:

- Crowe Valley
- Ganaraska Region
- Kawartha-Haliburton
- Lower Trent
- Otonabee-Peterborough

This Terms of Reference is centred around the Trent River watershed and applies to four of the five Source Protection Areas: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough (see Figure 2). A separate Terms of Reference is being prepared for the Ganaraska Region Source Protection Area.

More details about *Source Protection Regions and Areas* can be found in Ontario Regulation 284/07 (Source Protection Areas and Regions).

Source Protection Authorities

There are five Source Protection Authorities in the Trent Conservation Coalition Source Protection Region:

- Crowe Valley
- Ganaraska Region
- Kawartha-Haliburton
- Lower Trent
- Otonabee-Peterborough

Figure 1: Map of Trent Conservation Coalition Source Protection Region

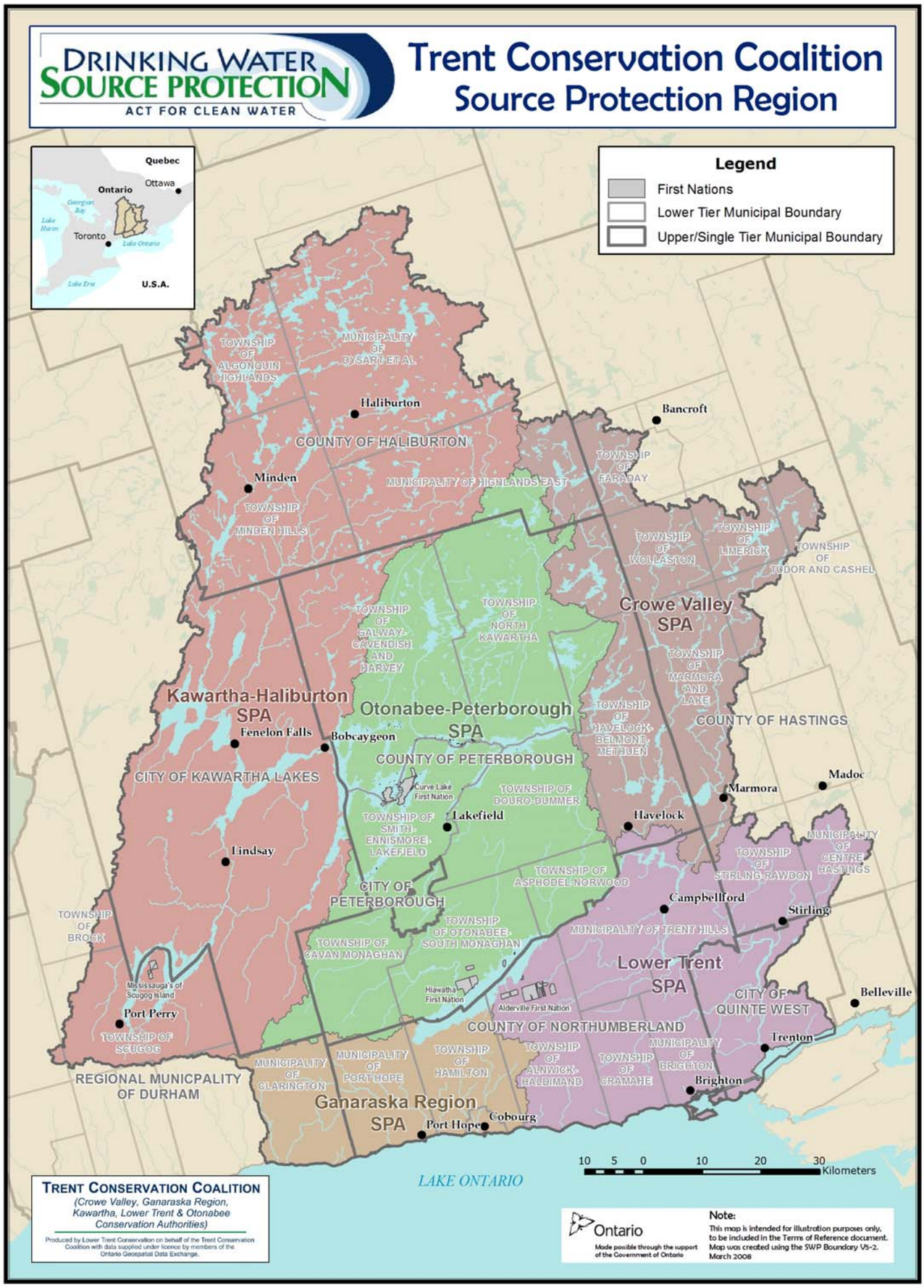
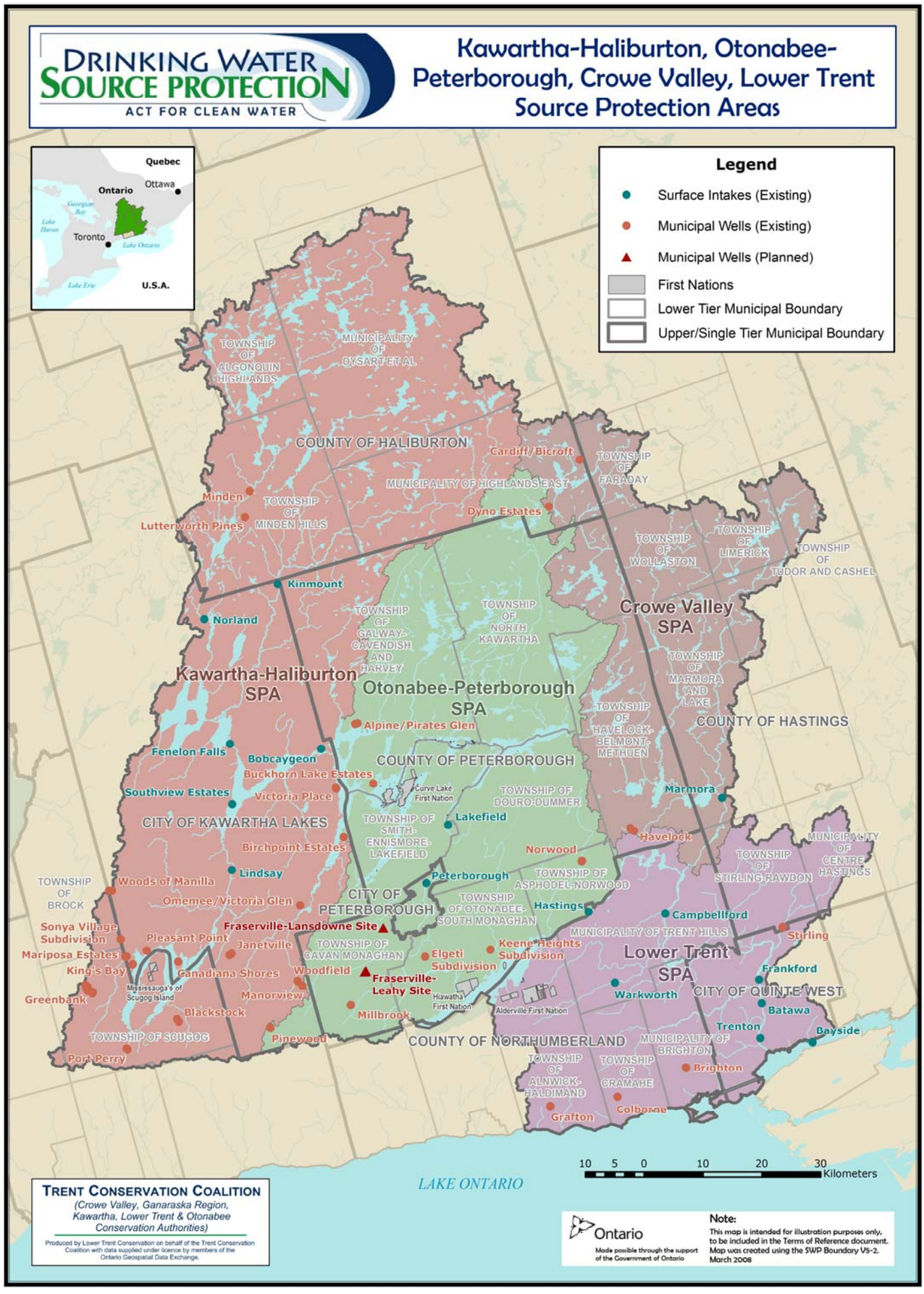


Figure 2: **Map of Crowe Valley, Kawartha-Haliburton, Lower Trent and Otonabee - Peterborough Source Protection Areas**



Source Protection Authorities are generally the conservation authority boards of directors, which are composed of representatives appointed by municipal councils. Since some of the Trent Conservation Coalition Source Protection Region extends beyond conservation authority jurisdiction to include the entire Trent River watershed, additional representatives from those municipalities have been appointed to the Source Protection Authority boards (Kawartha-Haliburton, Lower Trent, and Otonabee-Peterborough Source Protection Authorities).

The Regulation designates the Lower Trent Source Protection Authority as the lead Source Protection Authority in the Region. The *Clean Water Act* sets out duties and responsibilities for the source protection authorities in the Region and additional duties and responsibilities for the lead Source Protection Authority. The lead Source Protection Authority has entered into an agreement with the other source protection authorities in the region, as required by the *Clean Water Act*, to identify the interrelationship and interaction among the five authorities. The agreement establishes an Administrative Committee and Management Committee, with representation from all five source protection authorities, which provide for overall project administration, coordination, and management, including allocating resources to the various source protection authorities to carry out source protection work.

The Source Protection Authorities are responsible for appointing the Source Protection Committee and providing support to the committee during the development of the Terms of Reference, Assessment Report and Source Protection Plan.

Source Protection Committee

The Chair of the Trent Conservation Coalition Source Protection Committee was appointed by the Minister of the Environment in August 2007. The Source Protection Committee was established in November 2007 following an open public process. The 24 member multi-stakeholder committee is comprised of the chair, 7 municipal representatives, 7 representatives from the economic/industrial sector, 7 members representing other interests, and 2 First Nations representatives. One additional First Nations seat remains open. Three non-voting liaison members also sit on the Committee, representing the Ministry of the Environment, the Source Protection Authorities and the Health Units. There is one Source Protection Committee for the entire Source Protection Region.

The Source Protection Committee is tasked with three major jobs:

1. Preparing the Terms of Reference
2. Preparing the Assessment Report
3. Preparing the Source Protection Plan

for the Source Protection Areas in the Region. In carrying out these tasks, the Committee will be consulting broadly with municipalities, First Nations, the public and various sectors.

A list of the Source Protection Committee members is provided in Table 1.

More details about *Source Protection Committees* can be found in Ontario Regulation 288/07 (Source Protection Committees).

Terms of Reference

The Terms of Reference outlines the steps to be taken and estimated costs to prepare the Assessment Report and Source Protection Plan. It sets out the roles and responsibilities of municipalities, source protection authorities, source protection committees and others. The Terms of Reference is prepared by a source protection committee and submitted for approval to the Ministry of the Environment by a source protection authority, following public consultation. The Minister of Environment approves, requires amendments, or amends the Terms of Reference.

More specifically, the Terms of Reference includes:

- Maps of the source protection region and areas
- A list of municipalities in the source protection areas
- A list of existing and planned municipal drinking water systems
- The work plan for completing the Assessment Report and Source Protection Plan. The work plan includes high level tasks, costs, timelines and indicates who will perform the work.

Ontario Regulation 287/07 (Terms of Reference) outlines the required contents for the *Terms of Reference* and the minimum consultation requirements.

Table 1: **Trent Conservation Coalition Source Protection Committee**		
Name	**Sector**	**Representing**
Jim Hunt	Chair	Appointed by the Minister of the Environment
Dave Golem	Municipal	Faraday, Havelock-Belmont-Methuen, Marmora and Lake, Wollaston, Limerick, Tudor and Cashel, Hastings County
Bruce Craig	Municipal	Port Hope, Hamilton, Cobourg, Clarington, Durham Region
Dave Burton	Municipal	Kawartha Lakes, Galway-Cavendish and Harvey, Scugog, Brock, Minden Hills, Dysart et al, Algonquin Highlands, Highlands East, Haliburton County
Gerald McGregor	Municipal	Kawartha Lakes, Galway-Cavendish and Harvey, Scugog, Brock, Minden Hills, Dysart et al, Algonquin Highlands, Highlands East, Haliburton County
Rosemary Kelleher-MacLennan	Municipal	Alnwick/Haldimand, Brighton, Trent Hills, Cramahe, Centre Hastings, Stirling-Rawdon, Quinte West, Northumberland County
Mary Smith	Municipal	Asphodel-Norwood, Cavan Monaghan, Douro-Dummer, Otonabee-South Monaghan, Peterborough, Smith-Ennismore-Lakefield, North Kawartha, Peterborough County
Richard Straka	Municipal	Asphodel-Norwood, Cavan Monaghan, Douro-Dummer, Otonabee-South Monaghan, Peterborough, Smith-Ennismore-Lakefield, North Kawartha, Peterborough County
Beverley Spencer	Commercial/Industrial	Agriculture
Edgar Cornish	Commercial/Industrial	Agriculture
Glenn Milne	Commercial/Industrial	Agriculture
Kerry Doughty	Commercial/Industrial	Aggregate/Mining
Monica Berdin	Commercial/Industrial	Recreation/Tourism
Rick Johnson	Commercial/Industrial	Large Non Municipal Water Users
Robert Lake	Commercial/Industrial	Economic Development
Mary Jane Conboy	Other Interests	Environmental Non Government Organization (ENGO)
Terry Rees	Other Interests	Waterfront Landowner
Wayne Stiver	Other Interests	Drinking Water Experts
William Cornfield	Other Interests	Drinking Water Experts
Alanna Boulton	Other Interests	Trent-Severn Waterway
Roberta Drew	Other Interests	Public - Rural
Matt Taft	Other Interests	Public - Urban

Table 1: **Trent Conservation Coalition Source Protection Committee**		
Name	**Sector**	**Representing**
Tracey Taylor	First Nations	Curve Lake
Pamela Crowe	First Nations	Alderville
Jim Kelleher	Liaison	Source Protection Authority
Debbie Scanlon (interim)	Liaison	Ministry of the Environment
Anne Alexander	Liaison	Health Unit

Assessment Report

The Assessment Report is a science-based report developed locally for each source protection area in a region. It identifies the threats to be addressed in Source Protection Plans. It documents vulnerable areas, including present and future municipal groundwater and surface water sources, areas where large regional aquifers are being recharged, and aquifers that are vulnerable to contamination. It also involves measuring how much water exists, both at the surface and below ground, how it moves, and how much water is withdrawn, so that it identifies areas where there are or may be water shortages. Studies required to complete an Assessment Report include:

- water quality assessments
- water budgets
- water quantity stress assessments
- vulnerability studies for municipal wells and surface water intakes
- groundwater studies to identify significant recharge areas and highly vulnerable areas
- threats and issues inventories and assessments
- water quality risks assessments.

More details on the requirements of the *Assessment Report* are provided in the *Clean Water Act* and will be detailed in anticipated regulations and technical rules.

Source Protection Plan

The Source Protection Plan establishes policies on how significant drinking water threats will be reduced or eliminated, identifies who is responsible for taking action, sets timelines for implementation, and describes how progress will be measured. Plans will build on work currently underway and will recognize or reinforce existing management practices that help protect source water quality and quantity.

More details on the requirements of the *Source Protection Plan* are provided in the *Clean Water Act* and will be detailed in anticipated regulations and technical rules.

Timelines

The *Clean Water Act* and its regulations establish timelines for the planning process:

Terms of Reference:
To be submitted to the Source Protection Authority within 12 months of the appointment of the Chair: by August 20, 2008.

To be submitted to Minister of the Environment within 14 months of the appointment of the Chair: by October 20, 2008.

Assessment Report:
To be submitted to Ministry of the Environment within 1 year of the approval of the Terms of Reference: anticipated to be early 2010.

Source Protection Plan:
To be submitted to the Minister of the Environment within 5 years of the appointment of the Chair: by August 20, 2012.

The Province has been providing funding to conservation authorities since 2005 to undertake specific source protection work (watershed studies and municipal technical studies). The work completed must be taken into consideration as the work plan is

developed. Diagram 1 illustrates the timelines for the work completed to date and the anticipated timelines for the work yet to be completed.

Diagram 1: Timeline for Source Protection Products

	2005	2006	2007	2008	2009	2010	2011	2012
Watershed Studies	→	→	→	→				
Municipal Technical Studies		→	→	→	→			
Terms of Reference				→	→			
Assessment Reports					→	→		
Source Protection Plans						→	→	→
Clean Water Act, July 3, 2007								

The Terms of Reference Regulation (Ontario Regulation 287/07) and the Time Limits Regulation (Ontario Regulation 285/07) set out the time frame for the preparation of the Terms of Reference, the Assessment Report and the Source Protection Plan.

Consultation

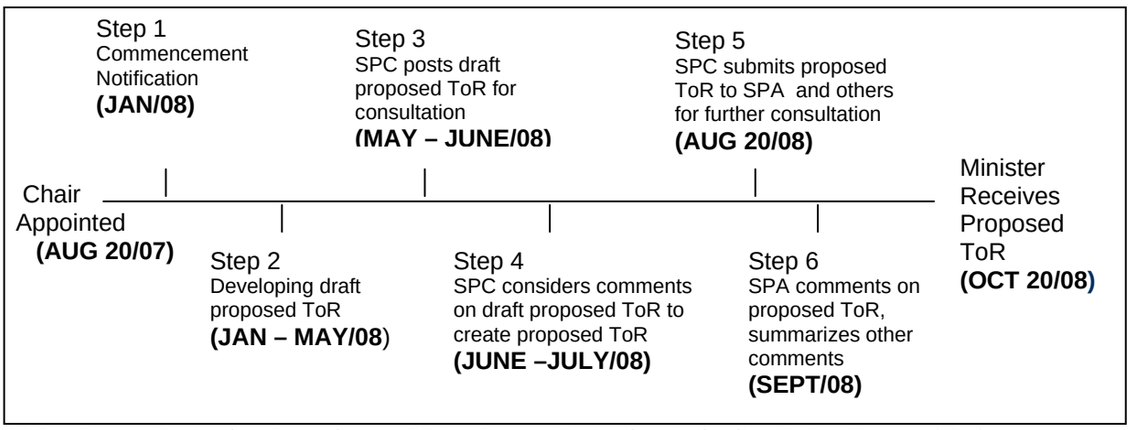
The Source Protection Committee will consult broadly across the watershed at three key stages during the preparation of the:

- Terms of Reference
- Assessment Report
- Source Protection Plan.

Consultation on the Terms of Reference will occur in two stages. The first period for public review will occur in late May/June on the draft proposed Terms of Reference. A second opportunity for public review will occur in late August/September, when the proposed Terms of Reference is submitted to the Source Protection Authorities.

Diagram 2 illustrates the timelines for developing the Terms of Reference and the opportunities for public review and comment.

Diagram 2: Timeline for Developing Terms of Reference



SPC – Source Protection Committee SPA – Source Protection Authority ToR – Terms of Reference

Details on the *consultation requirements* for preparing the Terms of Reference are set out in Ontario Regulation 287/07 (Terms of Reference). It is anticipated that details on the consultation requirements for the Assessment Report and Source Protection Plan will be set out in future regulations.

2. DESCRIPTION OF THE SOURCE PROTECTION AREAS

This Terms of Reference outlines the work plan, timelines, cost and responsibility for completing the Assessment Report and Source Protection Plan for the following Source Protection Areas (Figure 2):

- Crowe Valley
- Kawartha-Haliburton
- Lower Trent
- Otonabee-Peterborough

The Terms of Reference, Assessment Report and Source Protection Plan are being completed for the four Source Protection Areas to maintain a watershed perspective (Trent River) and linkages to the Trent-Severn Waterway. The Trent-Severn Waterway, a federal water corridor, currently manages all aspect of water flow through most of the lakes and rivers that make up the Trent watershed. Several of these lakes, the river and its tributaries are the water sources for the surface water systems in this Source Protection Region. The management decisions of the Trent-Severn Waterway have the potential to have a direct impact on water quantity and quality throughout the system. On April 29, 2008, the Panel on the Future of the Trent-Severn Waterway (appointed by the Federal Minister of the Environment) released its Report "It's All About the Water". The Panel Report contains 26 Recommendations any of which, if adopted, could impact the development of the watershed and use of the water throughout.

2.1 Crowe Valley Source Protection Area

The Crowe Valley Source Protection Area encompasses an area of approximately 2006 square kilometers and includes three subwatersheds: Beaver Creek, Crowe River, and the North River systems. Its diverse physiography includes wetlands and numerous lakes connected by small streams. It lies predominantly in the rugged terrain of the Canadian Shield, with the southernmost portion extending into rolling farmlands over an area of limestone bedrock that was formed within the Paleozoic era. The population is approximately 39,850 with a high seasonal fluctuation in population due to recreational activity. There is one municipal surface water intake and three municipal well systems in the area. A large portion of the population draws its drinking water from private sources (approximately 90%).

2.2 Kawartha-Haliburton Source Protection Area

The Kawartha-Haliburton Source Protection Area encompasses approximately 5,500 square kilometers, fringing on the Greater Toronto Area to the south and Algonquin Park to the north. It forms the upper most portion of the Trent River watershed. Kawartha Conservation's watershed occupies the southern portion of the Source Protection Area. The northern portion is outside of conservation authority jurisdiction and includes the watersheds of the Gull and Burnt Rivers. The physiography includes the typical rugged terrain associated with the Precambrian granite shield to the north and rolling hills over Paleozoic limestone bedrock to the south. The Oak Ridges Moraine and Peterborough Drumlin Field are distinct physical features in the south. The population of the area is approximately 84,000, and like the Crowe Valley area, population increases in the summer months. In this area there are six existing municipal drinking systems drawing surface water. There are also 16 municipal well systems. Approximately 50% of the population draws its water from private sources.

2.3 Lower Trent Source Protection Area

The Lower Trent Source Protection Area includes the area under Lower Trent Conservation's jurisdiction as well as a small area draining into the Trent River within the Township of Havelock-Belmont-Methuen outside conservation authority jurisdiction. It is located at the lower portion of the Trent River watershed. Encompassing 2,166 square kilometres, the Lower Trent Source Protection Area is bordered on the south by Lake Ontario and the Bay of Quinte; Rice Lake forms the north-western boundary. Predominant physical features include the rolling hills of the Oak Ridges Moraine and Peterborough Drumlin Field, as well as the flatter Lake Iroquois Plain. The population is approximately 71,000, with an estimated 40% of the population depending on private supplies. Municipal drinking water supplies include four well systems and six surface water systems.

2.4 Otonabee-Peterborough Source Protection Area

The Otonabee-Peterborough Source Protection Area is located in the Kawartha Lakes region of Ontario. To the south of the Kawartha Lakes is the watershed of Otonabee Conservation, which includes the Otonabee, Indian and Ouse Rivers. The area to the north of the lakes (outside of conservation authority jurisdiction) was included in the Source Protection Area. It includes several watersheds in northern Peterborough County (Eels Creek, Sandy Creek, Mississauga River, Deer Bay, Jack's Lake) as well as Buzzard Creek in Haliburton County. The total watershed area is 3,365 square kilometres. The Oak Ridges Moraine and Peterborough Drumlin Field are predominant physical features, with karst topography in the Indian and Ouse watersheds. The population is approximately 143,000, with 55% living in the City of Peterborough. Existing municipal water supplies include three surface water systems and eight well systems. There are two planned municipal well systems in the area. Approximately 30% of the population relies on private sources of drinking water.

3. FIRST NATIONS

Within the Trent River watershed, there are four First Nations:

- Alderville
- Curve Lake
- Hiawatha
- Mississaugas of Scugog Island

There are seven First Nations Reserves:

- Alderville First Nation
- Curve Lake First Nation 35
- Curve Lake First Nation 35A
- Hiawatha First Nation
- Islands in the Trent Waters 36A
- Mississaugas of Scugog Island
- Sugar Island 37A

Sugar Island 37A is uninhabited but managed by Alderville First Nation. Islands in the Trent Waters 36A is managed and inhabited by Curve Lake, Hiawatha and Mississaugas of Scugog Island First Nations.

4. MUNICIPALITIES IN THE SOURCE PROTECTION AREAS

Table 2 is a list of municipalities located in each of the four Source Protection Areas. Some of the municipalities fall into more than one Source Protection Area. Some fall only marginally within certain Source Protection Areas and do not form part of the Source Protection Area as defined in the regulation under the *Clean Water Act, 2006*. These have been noted in the table. There are a few additional municipalities located on the fringe of the Trent River watershed, not listed below, that have not been included in the Source Protection Region, as defined in the regulation.

Table 2: List of Municipalities located in Each Source Protection Area

Municipality	Source Protection Areas			
	Crowe Valley	Kawartha-Haliburton	Lower Trent	Otonabee-Peterborough
Algonquin Highlands, Township of				
Alnwick/Haldimand, Township of				
Asphodel-Norwood, Township of				
Brighton, Municipality of				
Brock, Township of				
Cavan Monaghan, Township of				
Centre Hastings, Municipality of				
Clarington, Municipality of				*
Cramahe, Township of				
Douro-Dummer, Township of	*			
Durham, Regional Municipality of				*
Dysart et al, United Townships of				
Faraday, Township of				
Galway-Cavendish and Harvey, Township of				
Haliburton, County of				
Hamilton, Township of			*	*
Hastings, County of				
Havelock-Belmont-Methuen, Township of				
Highlands East, Municipality of				
Kawartha Lakes, City of				
Limerick, Township of				
Marmora and Lake, Municipality of				
Minden Hills, Township of				
North Kawartha, Township of		*		
Northumberland, County of				

Table 2: List of Municipalities located in Each Source Protection Area				
	Source Protection Areas			
Municipality	Crowe Valley	Kawartha-Haliburton	Lower Trent	Otonabee-Peterborough
Otonabee-South Monaghan, Township of				■
Peterborough, City of				■
Peterborough, County of	■	■	■	■
Port Hope, Municipality of				* ■
Quinte West, City of			■	
Scugog, Township of		■		
Smith-Ennismore-Lakefield, Township of				■
Stirling-Rawdon, Township of	■		■	
Trent Hills, Municipality of	■		■	■
Tudor and Cashel, Township of	■			
Wollaston, Township of	■			

■ Shading indicates that a portion of the municipality is located within the Source Protection Area

* Located only marginally within the Source Protection Area and is not identified as part of the Source Protection Area in the 'Source Protection Areas and Regions Regulation' under the *Clean Water Act, 2006*

5. MUNICIPAL DRINKING WATER SYSTEMS BY SOURCE PROTECTION AREA

The following are lists and descriptions of the municipal drinking water systems by Source Protection Area. The list includes both existing and planned drinking water systems. No systems in the four source protection areas were identified as being exempt.[3]

5.1 Crowe Valley Source Protection Area

There are four existing drinking water systems in the Crowe Valley Source Protection Area (see Appendix A, Figure 2).

Cardiff/Bicroft Well Supply **Municipality of Highlands East**

The Cardiff/Bicroft well supply provides water to Bicroft Station & Bicroft Heights Subdivision. There are a total of 236 homes, 2 churches, a public school, community centre, post office, fire hall, public works yard and strip mall within the Cardiff town site. There is a total of 20 private residences in the Bicroft Heights portion of the distribution system. This well supply is designated a large Municipal Residential System (MOE Drinking Water Inspection Report, June 21, 2007).

In August, 2002, the Ministry's Environmental Assessment and Approvals Branch determined the municipal well to be *Groundwater Under the Direct Influence of Surface Water (GUDI)*, with effective in-situ filtration (MOE Drinking Water Inspection Report, June 21, 2007). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Dyno Estates Well Supply **Municipality of Highlands East**

Dyno Estates Water Works has been designated to be a Small Municipal Residential System. This system has 15 private residential service connections (MOE Drinking Water Inspection Report, July 30, 2007).

Havelock Well Supply **Township of Havelock-Belmont-Methuen**

The Havelock Wells provides water to approximately 1350 people (652 households and a few businesses) in the Havelock area (personal communications, Dianne Hill, CAO, Havelock-Belmont-Methuen, May 9, 2008). It is designated a Large Municipal Residential System (MOE Drinking Water Inspection Report, January 31, 2008).

[3] To be considered exempt, a council resolution is required indicating that the municipality intends to discontinue use of the system and apply to revoke the licence/permit; publish a notice of the resolution in a newspaper(s); and send a copy to the local source protection committee.

Well No. 3 is considered GUDI (*Groundwater Under the Direct Influence of Surface Water)*. Well No. 1 and 4 are considered to have effective in-situ filtration, but are currently under review (MOE Drinking Water Inspection Report, January 31, 2008). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Marmora Surface Water Supply **Municipality of Marmora and Lake**
The Marmora Water Treatment Plant draws water from the Crowe River and supplies drinking water to the community of Marmora which has a population of approximately 1300. It is a Large Municipal Residential System (Surface Water Intake Studies in the Trent Watershed, XCG, 2007).

5.2 Kawartha-Haliburton Source Protection Area

There are 22 existing drinking water systems in the Kawartha-Haliburton Source Protection Area (see Appendix A, Figure 2). A description of each is provided below.

Blackstock Well Supply **Regional Municipality of Durham**
The Blackstock Water Supply has been designated a Large Municipal Residential System. The water supply draws its water from one main production well, and includes a standby well and an emergency standby well. The system provides water to approximately 448 people (Durham Region Water Bill Accounts, April 2008).

Bobcaygeon Surface Water Supply **City of Kawartha Lakes**
The Bobcaygeon Drinking Water System has been designated a Large Municipal Residential System. The community includes numerous commercial operations with an estimated population of 2,600 persons. The raw water source is Big Bob River (near Sturgeon Lake).

Canadiana Shores Well Supply **City of Kawartha Lakes**
The Canadiana Shores Well Supply has been designated a Large Municipal Residential System (MOE Drinking Water Inspection Report, November 14, 2007).

The GUDI (*Groundwater Under the Direct Influence of Surface Water)* Assessment has determined that all three wells are under the influence of surface water and do not have effective in-situ filtration (MOE Drinking Water Inspection Report, November 14, 2007). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Fenelon Falls Surface Water Supply **City of Kawartha Lakes**
The Fenelon Falls Water Treatment Plant services Fenelon Falls, with a population of approximately 1,806 people. It is classified as a Large Municipal Residential System. The raw water source is Cameron Lake (MOE Drinking Water Inspection Report, October 11, 2007).

Greenbank Well Supply **Regional Municipality of Durham**
Greenbank Well Supply is designated a Large Municipal Residential System. There are five wells in use, serving a population of 512 (Durham Region Water Bill Accounts, April 2008).

Janetville Well Supply **City of Kawartha Lakes**
Janetville Water Works services the Janetville subdivision. The system includes three production wells with approximately 165 connections. It is classified as a Large Municipal Residential System (MOE Drinking Water Inspection Report, January 11, 2008).

King's Bay Well Supply **City of Kawartha Lakes**
The King's Bay Well Supply has three production wells and been designated a Small Municipal Residential System servicing approximately 78 residences (MOE Drinking Water Inspection Report, February 7, 2007).

Kinmount Surface Water Supply **City of Kawartha Lakes**
The Kinmount Treatment Plant services approximately 34 homes and is designated a Small Municipal Residential System. A new facility was constructed in 2006 to service the former Kinmount East Hill and Downtown distribution systems. Both East Hill and Downtown systems were decommissioned (MOE Drinking Water Inspection Report, April 7, 2008).

Lindsay Surface Water Supply **City of Kawartha Lakes**

The Lindsay Water Treatment Plant is classified as a Large Municipal Residential System and serves a population of approximately 17,500 (Drinking Water Information System, MOE, 2006). Raw water is drawn through twin screened pipes from the Scugog River (MOE Drinking Water Inspection Report, July 13, 2007).

Lutterworth Pines Well Supply **Township of Minden Hills**

Lutterworth Pines Well Supply is designated a Small Municipal Residential System and services the Lutterworth Pines Trailer Park which has approximately 28 private residences and two commercial operations (MOE Drinking Water Inspection Report, February 19, 2008).

Although the existing well is located less than 100 metres from surface water, it is considered to be true groundwater (not under the direct influence of surface water) because of its low pumping capacity (<0.58 l/s) (MOE Drinking Water Inspection Report, February 19, 2008).

Two new drilled wells were constructed in January 2008. The Township expects the new system to be fully operational prior to the end of 2008 (MOE Drinking Water Inspection Report, February 19, 2008).

Manorview Well Supply **City of Kawartha Lakes**

Manorview Well Supply has been designated a Small Municipal Residential System. The water supply draws its water from two wells: a primary supply well and standby well. The system supplies water to approximately 45 residences (Source: MOE Drinking Water Inspection Report, January 27, 2005).

A GUDI (*Groundwater Under the Direct Influence of Surface Water)* assessment has not been completed on these wells; therefore they are considered GUDI and are being treated by filtration and UV disinfection (Source: MOE Drinking Water Inspection Report, January 27, 2005). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Mariposa Estates Well Supply **City of Kawartha Lakes**

The Mariposa Estates Well Supply provides water to approximately 80 residents and has been designated a Small Municipal Residential System. The system draws water from two wells both of which have elevated nitrate levels, one exceeding the Ontario Drinking Water Quality Objective (MOE Drinking Water Inspection Report, November 5, 2007).

Minden Well Supply **Township of Minden Hills**

Minden Water Works has been designated a large Municipal Residential System. There is a primary production well and a standby well. This system supplies drinking water to a population of approximately 2,300 residents (MOE Drinking Water Inspection Report, September 4, 2007).

Norland Surface Water Supply **City of Kawartha Lakes**

The Norland Water Works draws water from the Gull River through a single pipe and services the community of Norland, with a population of approximately 200. This is a Small Municipal Residential System with 97 service connections (MOE Drinking Water Inspection Report, September 26, 2007).

Omemee/Victoria Glen Well Supply **City of Kawartha Lakes**

The Omemee/Victoria Glen Well Supply provides water to the Victoria Glen subdivision, which has a population of approximately 256. This system has been designated as a Small Municipal Residential System and includes two artesian wells. The system includes 71 connections and four hydrants which are solely used for flushing purposes (MOE Drinking Water Inspection Report, October 16, 2007).

Pleasant Point Well Supply **City of Kawartha Lakes**

Pleasant Point Well Supply is classified as a Large Municipal Residential System, serving approximately 365 people. It is located along the north shore of Lake Scugog (approximately 300 m north of the lake). Source water is derived from one of two drilled, overburden wells on a rotating basis (MOE Drinking Water Inspection Report, July 25, 2006).

Both wells have been classified as GUDI (*Groundwater Under the Direct Influence of Surface Water)* because of a lack of documentation of sealing and grouting (MOE

Drinking Water Inspection Report, July 25, 2006). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Port Perry Well Supply **Regional Municipality of Durham**
The Port Perry Water System is classified as a Large Municipal Residential System and serves Port Perry and Prince Albert. The population served by the three production wells is approximately 7,217 (Durham Region Water Bill Accounts, April 2008). Changes to this system are anticipated in the near future, as the Municipality is currently in the process of drilling new well(s).

Sonya Village Subdivision Well Supply **City of Kawartha Lakes**
The Sonya Village Subdivision system has been designated as a Small Municipal Residential System. The two production wells service 51 single family dwellings (MOE Drinking Water Inspection Report, February 19, 2008).

One of the wells is classified as GUDI (*Groundwater Under the Direct Influence of Surface Water)*. The water is passed through a cartridge filtration system (MOE Drinking Water Inspection Report, February 19, 2008). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Southview Estates Surface Water Supply **City of Kawartha Lakes**
The Southview Estates Drinking Water System has been designated a Large Municipal Residential System. The facility draws its raw water through a single pipe from Sturgeon Lake and, until recently, an infiltration-recharge pond adjacent to the pump house. The construction of the new treatment plant eliminated the infiltration-recharge pond as a source. This system supplies water to approximately 300 people (MOE Drinking Water Inspection Report, February 29, 2008).

Victoria Place Well Supply **City of Kawartha Lakes**
The Victoria Place Well Supply is classified as a Large Municipal Residential System and serves approximately 133 residences. The system includes four production wells (MOE Drinking Water Inspection Report, September 18, 2007).

A GUDI (*Groundwater Under the Direct Influence of Surface Water)* Assessment has been completed, classifying the wells as groundwater. However, there appears to be evidence of microbiological contamination in wells no. 1 and 3 (MOE Drinking Water Inspection Report, September 18, 2007).

A separate system for lawn watering provides untreated water from Pigeon Lake (MOE Drinking Water Inspection Report, September 18, 2007).

Woodfield Well Supply **City of Kawartha Lakes**
The Woodfield Well Supply has been designated as a Small Municipal Residential System. The system provides water to approximately 33 homes. This water supply draws its water from two wells which serve as alternating production wells. A third well is not connected to the system (MOE Drinking Water Inspection Report, July 4, 2007).

Woods of Manilla Well Supply **City of Kawartha Lakes**
The Woods of Manilla Well Supply has been designated a Small Municipal Residential System. The system provides water to approximately 74 residences. The water is drawn from one main well with one standby well (MOE Drinking Water Inspection Report, January 14, 2008).

5.3 Lower Trent Source Protection Area

There are 10 existing drinking water systems in the Lower Trent Source Protection Area (see Appendix A, Figure 2). A brief description of each drinking water system is provided below.

Batawa Surface Water System **City of Quinte West**
The Batawa Treatment Plant draws water through a single pipe from the Trent River and provides it to the community of Batawa which has a population of approximately 670 people. It is classified as a Large Municipal Residential System (MOE Drinking Water Inspection Report, June 27, 2007; Surface Water Intake Studies in the Trent Watershed, XCG, 2007).

Bayside Surface Water System **City of Quinte West**

The Bayside Water Treatment Plant draws water through a single pipe from the Bay of Quinte and services the "South Sidney" area with a population of approximately 3,500 (Drinking Water Information System, MOE, 2006). It is a Large Municipal Residential System (MOE Drinking Water Inspection Report, July 3, 2007; Surface Water Intake Studies in the Trent Watershed, XCG, 2007).

Brighton Well Supply **Municipality of Brighton**

The Brighton Well Supply is considered to be a Large Municipal Residential System. Three drilled wells provide water to approximately 5,600 residents (2,400 residential dwellings, 200 commercial accounts). The Municipality also provides water to Presqu'ile Provincial Park (MOE Drinking Water Inspection Report, January 15, 2008).

According to the Hydroterra report (November 2002) the source wells are not considered GUDI (*Groundwater Under the Direct Influence of Surface Water)* on the premise that an upward gradient may be maintained between the developed aquifer and the surface reservoir/watercourse (MOE Drinking Water Inspection Report, January 15, 2008).

Campbellford Surface Water System **Municipality of Trent Hills**

The Campbellford Water Treatment Plant draws water from the Trent River through a single pipe and services the Town of Campbellford that has a population of approximately 3,500 people as well as an additional population of 600 at the Warkworth Penitentiary. The facility is a Large Municipal Residential system (MOE Drinking Water Inspection Report, July 6, 2007).

Colborne Well Supply **Township of Cramahe**

The Colborne Well Supply is designated a Large Municipal Residential System. This system supplies water to 1,001 water connections and 114 hydrants (MOE Drinking Water Inspection Report, September 26, 2007). The Colborne Well Supply draws its water from one production well and has one well on standby.

Frankford Surface Water System **City of Quinte West**

The Frankford Water Treatment Plant services the community of Frankford, which has a population of approximately 2,200 people (Drinking Water Information System, MOE, 2006). Raw water is drawn from the Trent River through one intake pipe. It is a Large Municipal Residential System (MOE Drinking Water Inspection Report, July 13, 2007).

Grafton Well Supply **Township of Alnwick/Haldimand**

The Grafton Well Supply has been designated a Large Municipal Residential System. There are 289 service connections associated with this system (Jim McFarlane, Lakefront Utilities, personal communication). The Grafton Well Supply draws its water from two wells (MOE Drinking Water Inspection Report, December 4, 2007).

Stirling Well Supply **Township of Stirling-Rawdon**

The Stirling Water Treatment Facility services a connected population of approximately 1,877 persons and 79 fire hydrants. The system is classified as a Large Municipal Residential System and draws its water from four wells (MOE Drinking Water Inspection Report, September 19, 2007).

A GUDI (*Groundwater Under the Direct Influence of Surface Water)* assessment has been performed, which indicates that the wells are GUDI with effective in-situ filtration. The wells are situated near Rawdon Creek (MOE Drinking Water Inspection Report, September 19, 2007). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Trenton Surface Water System **City of Quinte West**

The Trenton Water Treatment Plant draws water from the Trent River through two intake pipes and services the community of Trenton, which has a population of approximately 16,000 people (Drinking Water Information System, MOE, 2006). It is a Large Municipal Residential System (MOE Drinking Water Inspection Report, December 18, 2007).

Warkworth Surface Water System **Municipality of Trent Hills**

The Warkworth Water Treatment Plant draws water from Burnley (Mill) Creek through an intake structure located on a concrete side wall of a dam and serves the village of Warkworth which has a population of approximately 725 people. It is a Large Municipal Residential System (MOE Drinking Water Inspection Report, January 14, 2008).

5.4 Otonabee-Peterborough Source Protection Area

In the Otonabee-Peterborough Source Protection Area, there are 11 existing drinking water systems (see Appendix A, Figure 2) and two planned systems. A brief description of each drinking water system is provided below.

Alpine/Pirates Glen Well Supply **Township of Galway-Cavendish and Harvey**

In 2003, the upgraded Alpine/Pirates Glen Well Supply began servicing the Alpine Village and Pirates Glen subdivisions. There are approximately 113 homes in Alpine Village and approximately 87 homes in Pirates Glen. This system is designated as a Large Residential Drinking Water System and is comprised of two production wells (MOE Drinking Water Inspection Report, June 5, 2007).

While the July 19, 2006 MOE Drinking Water Inspection Report identified the wells as GUDI (*Groundwater Under the Direct Influence of Surface Water)*, the most recent report indicates that they are true groundwater wells (not under the influence of surface water) (MOE Drinking Water Inspection Report, June 5, 2007).

Birch Point Estates Well Supply **City of Kawartha Lakes**

The Birch Point Estates System services two subdivisions, Birch Point Estates and Highview Acres, through an interconnecting water main. Birch Point Estates consists of 71 residential lots (estimated population 190); Highview Acres Subdivision consists of 73 residential lots (estimated population 204). This amalgamated system is comprised of two production wells and is classified as a Large Municipal Residential Drinking Water System (MOE Drinking Water Inspection Report, January 15, 2008).

Buckhorn Lake Estates Well Supply **Township of Galway-Cavendish and Harvey**

The Buckhorn Lake Estates system is designated as a Small Residential Drinking Water System. The single well serves approximately 84 residential units (MOE Drinking Water Inspection Report, February 22, 2008).

The GUDI (*Groundwater Under the Direct Influence of Surface Water)* Assessment indicates that the well is under the direct influence of surface water without effective in-situ filtration (MOE Drinking Water Inspection Report, February 22, 2008). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Elgeti Subdivision Well Supply **Township of Otonabee-South Monaghan**

Elgeti Subdivision Well Supply services the Elgeti and Crystal Springs Subdivision. The facility is designated a Small Municipal Residential system and provides water to 102 service connections. The system draws its water from one main well with one well used as a standby (MOE Drinking Water Inspection Report, November 9, 2006).

Both wells are considered potentially GUDI (*Groundwater Under the Direct Influence of Surface Water)* (MOE Drinking Water Inspection Report, November 9, 2006). In Appendix A, the source has been noted as "Surface Water and Groundwater" because of its GUDI status.

Fraserville – Lansdowne Site (Planned) **Township of Cavan Monaghan**

This system is one of two planned municipal residential drinking water systems within the Township of Cavan Monaghan. It is located on Lansdowne Street, Peterborough. The Township has completed a Master Plan under the Municipal Environmental Assessment Process for the establishment of this well (personal communication, Karen Ellis, Township of Cavan Monaghan).

Fraserville – Leahy Site (Planned) **Township of Cavan Monaghan**

This system is one of two planned municipal residential drinking water systems within the Township of Cavan Monaghan. It is located at Concession 8, Part Lot 17 (east part). The Township has completed a Master Plan under the Municipal Environmental Assessment Process for the establishment of this well. The system will service lands south of Highway 115 near Fraserville (personal communication, Karen Ellis, Township of Cavan Monaghan).

Hastings Surface Water System **Municipality of Trent Hills**

The Hastings Water Treatment Plant supplies water to the village of Hastings and the Trentview Subdivision and is a Large Municipal Residential System. This plant services a population of approximately 1,250 people. Water is drawn through a single intake pipe (MOE Drinking Water Inspection Report, February 22, 2007.)

This system is located in the Otonabee-Peterborough Source Protection Area and also serves the south part of the village which is in the Lower Trent Source Protection Area.

Keene Heights Subdivision Well Supply **Township of Otonabee-South Monaghan**
Keene Heights Subdivision Supply has been designated as a Small Municipal Residential System and services 37 households in the Keene Heights Subdivision. Previously, the water supply consisted of four wells but three have been abandoned (MOE Drinking Water Inspection Report, January 15, 2007).

Lakefield Surface Water System **Township of Smith-Ennismore-Lakefield**
The Lakefield Water Treatment Plant serves a population of approximately 2,900. This facility has been designated a Large Municipal Residential System. Water is drawn from twin pipes from the Otonabee River, approximately 300 m downstream of the mouth of Lake Katchewanooka (MOE Drinking Water Inspection Report, July 27, 2007; Surface Water Intake Studies in the Trent Watershed, XCG, 2007).

Millbrook Well Supply **Township of Cavan Monaghan**
The Millbrook Well Supply is considered a Large Municipal Drinking Water System. The three artesian production wells provide drinking water to a connected population of 1,299 residents (MOE Drinking Water Inspection Report, October 15, 2007).

Norwood Well Supply **Municipality of Asphodel-Norwood**
The Norwood Municipal System is designated as a Large Residential Drinking Water System. It serves approximately 1,700 people. The three production wells are located in the Norwood Esker that is also used as an aggregate supply (MOE Drinking Water Inspection Report, October 27, 2006).

While it has not been identified as GUDI (*Groundwater Under the Direct Influence of Surface Water)*, the shape of the wellhead protection area is influenced by the seasonal flows in the Ouse River and Mill Pond (Wellhead Protection Study for Norwood Municipal Drinking Water System, XCG, 2006).

Peterborough Surface Water Supply **City of Peterborough**
The Peterborough Water Treatment Plant serves the City of Peterborough, the development of Woodland Acres (within the Township of Smith-Ennismore-Lakefield) and the Peterborough Airport (in the Township of Cavan Monaghan). Water is drawn through twin pipes from a single intake crib in the Otonabee River. It is a Large Municipal Residential System and serves a population of approximately 77,500 (24,695 connections) (MOE Drinking Water Inspection Report, April 27, 2006; Surface Water Intake Studies in the Trent Watershed, XCG, 2007).

Pinewood Well Supply **City of Kawartha Lakes**
The Pinewood Well Supply is a Large Municipal Residential System, servicing the Pinewood Subdivision. Pinewood Subdivision consists of 178 private residences constructed in four phases between 1971 and 1982 with an estimated population of 640 persons. The Municipality provides municipally-treated water, but homeowners are responsible for operation and maintenance of their septic systems. There are three production wells (well no. 4 is the lead production supply) (MOE Drinking Water Inspection Report, January 28, 2008; Drinking Water Information System, MOE, 2006).

This system has previously been referred to as Pontypool.

6. OTHER DRINKING WATER SYSTEMS

The *Clean Water Act* allows for other Drinking Water Systems to be included in the Terms of Reference:

- Drinking Water Systems included by Municipal Council Resolution
- Drinking Water Systems Serving Reserve(s)
- Drinking Water Systems included by the Minister.

No such systems are currently proposed to be included in this Terms of Reference

7. MATTERS THAT AFFECT OTHER SOURCE PROTECTION COMMITTEES

The Trent Conservation Coalition Source Protection Region is bordered to the west by the CTC and South Georgian Bay – Lake Simcoe Source Protection Regions and to the east by the Quinte Source Protection Region. The Region also shares Lake Ontario as a source of drinking water with several other Source Protection Regions/Areas: Niagara Region, Halton-Hamilton, CTC, Quinte, and Cataraqui. In some cases, sources of drinking water (well head protection areas and intake protection zones) extend into or from neighbouring source protection regions. The Source Protection Committee will need to work with neighbouring committees to ensure that all sources of drinking water are protected.

There also is a need for a coordinated approach to communications, information management, technical assessment work, and policy development to assist municipalities that are shared between two or more source protection committees. Sharing methodologies, technical reports, and draft policies will help to collectively save time and effort and will result in more effective Source Protection Plans. It will also assist municipalities that fall into two or more source protection areas by contributing to common policy approaches for risks that occur in more than one area.

Table 3 is a list of specific matters that will necessitate consultation with other source protection committees.

Table 3: Matters Affecting Other Source Protection Committees

Source Protection Committee	Source Protection Area Or Region	Description Of The Matter
Quinte Source Protection Committee	Quinte Source Protection Region	The **intake protection zones for the Bayside intake** in the Bay of Quinte (in the Trent Conservation Coalition Source Protection Region--Lower Trent Source Protection Area) extend into the Quinte Source Protection Region (Municipality of Prince Edward County). Consultation between the two Source Protection Committees will be required to ensure that a common approach is taken at the Assessment Report and Source Protection Plan stages.
Quinte Source Protection Committee	Quinte Source Protection Region	**Intake Protection Zone 3 for the Belleville intake** in the Bay of Quinte (in the Quinte Source Protection Region) may extend into the Trent Conservation Coalition Source Protection Region (Lower Trent Source Protection Area). The Trent River watershed flows into the Bay of Quinte, where the Belleville intake is located. Consultation between the two Source Protection Committees will be required to ensure that a common approach is taken at the Assessment Report and Source Protection Plan stages.
Quinte Source Protection Committee	Quinte Source Protection Region	The **Trenton Water Treatment Plant** (Trent Conservation Coalition Source Protection Region--Lower Trent Source Protection Area) provides drinking water via a pipeline under the Bay of Quinte to a portion of the Municipality of Prince Edward County (Carrying Place to Consecon) in the Quinte Source Protection Region. Communication and consultation may be required if any issues arise from this arrangement.
Quinte Source Protection Committee	Quinte Source Protection Region	Preliminary modelling results indicate that the **Stirling Wellhead Protection Area** (Trent Conservation Coalition Source Protection Region--Lower Trent Source Protection Area) extends marginally into the Quinte Source Protection Region. The final Wellhead Protection Area mapping will need to be reviewed to determine if it extends into the Quinte Source Protection Region. If it does extend into this neighbouring region, consultation will need to occur with the Quinte Source Protection Committee to ensure that acceptable policies are included in their Source Protection Plan to protect the Stirling supply.
South Georgian Bay - Lake Simcoe	South Georgian Bay - Lake Simcoe	**Peer Review of Groundwater Vulnerability Studies** for municipal systems should be coordinated between the

Table 3: Matters Affecting Other Source Protection Committees		
Source Protection Committee	**Source Protection Area Or Region**	**Description Of The Matter**
and CTC Source Protection Committee	and CTC Source Protection Regions	three Source Protection Regions in Durham Region to ensure a consistent review and consistent products for the Municipality.
South Georgian Bay - Lake Simcoe Source Protection Committee	South Georgian Bay - Lake Simcoe Source Protection Region	The **Wellhead Protection Area for the Woodville** wells in the South Georgian Bay - Lake Simcoe Source Protection Region (Lake Simcoe and Couchiching/Black River Source Protection Area) may extend into the Trent Conservation Coalition Source Protection Region (Kawartha-Haliburton Source Protection Area). The final Wellhead Protection Area mapping will need to be reviewed to determine if it extends into the Trent Conservation Coalition Source Protection Region. If it does extend into this region, consultation will need to occur with the South Georgian Bay - Lake Simcoe Source Protection Committee to ensure that appropriate policies are in the Trent Conservation Coalition's Source Protection Plan to protect the Woodville water supply.
South Georgian Bay - Lake Simcoe Source Protection Committee	South Georgian Bay - Lake Simcoe Source Protection Region	The **Wellhead Protection Area for the Cannington** wells in the South Georgian Bay - Lake Simcoe Source Protection Region (Lake Simcoe and Couchiching/Black River Source Protection Area) may extend into the Trent Conservation Coalition Source Protection Region (Kawartha-Haliburton Source Protection Area). The final Wellhead Protection Area mapping will need to be reviewed to determine if it extends into the Trent Conservation Coalition Source Protection Region. If it does extend into this region, consultation will need to occur with the South Georgian Bay - Lake Simcoe Source Protection Committee to ensure that appropriate policies are in the Trent Conservation Coalition's Source Protection Plan to protect the Cannington water supply.
South Georgian Bay - Lake Simcoe Source Protection Committee	South Georgian Bay - Lake Simcoe Source Protection Region	The **Woods of Manilla wells** are located in both the South Georgian Bay - Lake Simcoe Source Protection Region (Lake Simcoe and Couchiching/Black River Source Protection Area) and the Trent Conservation Coalition Source Protection Region (Kawartha-Haliburton Source Protection Area). The main production well appears to be in the Trent Conservation Coalition Source Protection Region. The Wellhead Protection Area mapping extends into both regions. Policies will need to be in place in both Source Protection Plans, acceptable to both committees, to protect the Woods of Manilla water supply.
South Georgian Bay - Lake Simcoe Source Protection Committee	South Georgian Bay - Lake Simcoe Source Protection Region	The modelling results indicate that the **Greenbank Wellhead Protection Area** (Trent Conservation Coalition Source Protection Region--Kawartha-Haliburton Source Protection Area) extends marginally into the Georgian Bay - Lake Simcoe Source Protection Region (Lake Simcoe and Couchiching/Black River Source Protection Area). The final Wellhead Protection Area mapping will need to be reviewed to determine if it extends into South Georgian Bay - Lake Simcoe Source Protection Region. If it does extend into this neighbouring region, consultation will need to occur with the South Georgian Bay - Lake Simcoe Source Protection Committee to ensure that acceptable policies are in their Source Protection Plan to protect the Greenbank supplies.
South Georgian Bay - Lake Simcoe Source Protection Committee	South Georgian Bay - Lake Simcoe Source Protection Region	The Trent-Severn Waterway periodically directs water from Balsam Lake (in the Kawartha-Haliburton Source Protection Authority) into the Lake Simcoe watershed. This will need to be considered when mapping Intake Protection Zone 3 for the Trent River and Lake Simcoe.

Table 3: Matters Affecting Other Source Protection Committees		
Source Protection Committee	**Source Protection Area Or Region**	**Description Of The Matter**
Niagara Region, Halton-Hamilton, CTC, Quinte, Cataraqui Source Protection Committees	Niagara Region, Halton-Hamilton, CTC, Quinte, Cataraqui Source Protection Areas/Regions	The Trent Conservation Coalition Source Protection Region watersheds flow into **Lake Ontario** where there are several surface water intakes (from Niagara to Kingston). Three Lake Ontario intakes are in the Trent Conservation Coalition Source Protection Region (Ganaraska Region Source Protection Area). The regions will need to continue to work together on the Lake Ontario Collaborative project and with Source Protection Regions/Areas not in the Collaborative to ensure a consistent approach to assessing the risks and developing policies to protect the water supply. The regions will also need to consider any Provincial, Federal, International agreements/policies for the Great Lakes and any Remedial Action Plans, and consult with the responsible agencies/ministries. The committees should collectively develop policies to address Great Lakes agreements and targets.
Quinte and Cataraqui Source Protection Committees	Quinte Source Protection Region and Cataraqui Source Protection Areas	The Cataraqui, Quinte and Trent Conservation Coalition Source Protection Regions/Areas are partially located within the Bay of Quinte Area of Concern. There are surface water intakes in the Bay of Quinte (Bayside is in the Lower Trent Source Protection Area). Drinking water source protection research and planning may assist the communities around the Bay to achieve the objectives of the Remedial Action Plan for the Area of Concern. The committees should consult with one another on issues that relate to the Remedial Action Plan.
South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Committees	South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Regions	**Significant Groundwater Recharge Areas** are being identified as part of the Assessment Reports in each source protection area. These occur where there is a high volume of water moving from the surface into the ground, recharging the groundwater aquifer. Methodologies for mapping Significant Recharge Areas will need to be reviewed to ensure compatible, comparable products for all three neighbouring Source Protection Regions, and most specifically with the Source Protection Areas (Central Lake Ontario Source Protection Area, Lake Simcoe and Couchiching/Black River Source Protection Area, Quinte Source Protection Region). Vulnerability assessments and issues-based evaluations will also need to align. Edge matching for mapping products will be required to ensure a satisfactory product for the affected municipalities.
South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Committees	South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Regions	Methodologies for mapping **Highly Vulnerable Aquifers** will need to be reviewed to ensure that the products are similar for all three neighbouring Source Protection Areas/Regions (Central Lake Ontario Source Protection Area, Lake Simcoe and Couchiching/Black River Source Protection Area, Quinte Source Protection Region). Vulnerability assessments and issues-based evaluations will also need to align. Edge matching for mapping products will be required to ensure a satisfactory product for the affected municipalities.

Table 3: Matters Affecting Other Source Protection Committees		
Source Protection Committee	**Source Protection Area Or Region**	**Description Of The Matter**
South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Committees	South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Regions	There may be a need to discuss technical findings related to **water budgets/groundwater flow** with neighbouring source protection committees. Groundwater may cross surface watersheds, impacting the quantity of water available in a neighbouring region.
South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Committees	South Georgian Bay - Lake Simcoe, CTC, Quinte, Source Protection Regions	The Trent Conservation Coalition Source Protection Committee will work with neighbouring committees to **develop common approaches/policies** to address similar threats and to assist municipalities that lie within two or more Source Protection Regions.

8. DETAILED WORK PLAN TO COMPLETE ASSESSMENT REPORT

Background studies which will contribute to the completion of the Assessment Report have been underway since 2005. These include:

- Watershed Characterization Reports
- Conceptual Water Budgets
- Tier 1 Water Budget and Water Quantity Stress Assessments
- Delineation of Significant Recharge Areas
- Groundwater and Surface Water Vulnerability Studies (for municipal systems)
- Threats Inventories
- Water Quality Risk Assessments.

This ongoing work has and continues to be led by conservation authorities and municipalities with funding from the Province in accordance with draft Guidance Modules, prepared by the Ministry of the Environment. Consultants have been hired to undertake some of the work.

While the *Clean Water Act* and the draft Guidance Modules provide some direction for completion of the Assessment Report, the final requirements will be unknown until the Province passes Assessment Report regulations and technical rules. The tasks outlined in this work plan are high level and may meet the requirements of the regulations. Details on how to complete the tasks will be outlined in the Assessment Report regulation, technical rules, and provincial guidance documents. If changes are required when the regulations/rules are in place, an amendment to the Terms of Reference will be made.

The timelines, estimated costs, and assignment of responsibility are outlined in Appendix B. The funding to complete the work will be provided to the lead(s) assigned to the task (municipalities or source protection authorities). The costs identified in Appendix B are estimates only and will need to be finalized once the specific task details are available, through consultation and agreements between the lead Source Protection Authority in the Source Protection Region (Lower Trent), the Crowe Valley, Kawartha-Haliburton, and Otonabee-Peterborough Source Protection Authorities, and the municipalities undertaking the work.

The following is a brief summary of the work required to complete the Assessment Report:

Coordinating and Supporting Projects for the Assessment Report

- overall coordination (provided by regional staff working at Lower Trent Conservation on behalf of the Trent Conservation Coalition with assistance from local staff in the four conservation authorities in the Trent River watershed, e.g. staff time, office support and administration, travel, training)
- Source Protection Committee expenses
- if requested by a municipality, assist with identifying additional systems/well clusters in that municipality that should be included in future Source Protection work

- assist First Nations with identifying systems/well clusters that would benefit from assessment work and source protection planning
- consultation with Bay of Quinte Remedial Action Plan and other agencies responsible for managing the Great Lakes

Undertaking Communications Initiatives for the Assessment Report

- overall communications/messaging (coordinated by regional staff working at Lower Trent Conservation on behalf of Trent Conservation Coalition with local delivery by the staff in the four conservation authorities in the Trent River watershed)
- consideration of linkages with Great Lakes programs
- communications products (displays, publications)
- public events (to promote the protection of sources of drinking water)
- media monitoring
- an effective communications program taking into account the complexity of the area: four Source Protection Areas (including some areas outside of conservation authority jurisdiction, 36 municipalities (upper/lower/single tier), and a large geography with an urban/rural/seasonal mix.)

Information Management for the Assessment Report Preparation

- overall data management (provided by regional staff working at Lower Trent Conservation on behalf of Trent Conservation Coalition with assistance from local staff in the partner conservation authorities, e.g. preparing local maps and arranging data sharing agreements with local municipalities)
- software acquisition and maintenance (digital mapping software licencing is maintained in all four conservation authority offices for the Source Protection program)
- File Transfer Protocol (FTP) Site/Web Portal

Undertaking a Watershed Characterization

- reports for each Source Protection Area to characterize the watersheds based on existing information (includes physiography, geology, land use, water use, water quality, etc.)

Conducting a Conceptual Water Budget

- two conceptual water budget reports were prepared for this area: Trent River Watershed and Lower Trent Conservation's Lake Ontario/Bay of Quinte Tributaries
- the reports provide an examination of the water balance and flow paths within the watershed (surface water and groundwater)

Conducting a Tier 1 Water Budget and Stress Assessment

- more detailed examination of the hydrological cycle on a subwatershed basis
- water quantity stress assessment for all subwatersheds
- mapping Significant Recharge Areas

Conducting a Tier 2 Water Budget and Stress Assessment

- numerical modeling of potentially stressed watersheds, based on findings of the Tier 1 Water Budget

Conducting a Tier 3 Water Budget and Risk Assessment *(It is unlikely that Tier 3 water budgets will be required; therefore no costs have been identified.)*

- numerical modeling for individual municipal drinking water systems/watersheds that are undergoing stress
- risk assessment to determine if there are present or future water quantity risks

Delineating and applying vulnerability scores to Highly Vulnerable Aquifers

- mapping to identify highly vulnerable aquifers
- different approaches for Precambrian and Paleozoic areas
- assess degree of vulnerability within these areas
- review with neighbouring Source Protection Regions (edge mapping)

Identifying issues, inventorying threats, assessing hazards in Highly Vulnerable Aquifers

- identify issues based on available data/knowledge
- inventory threats and assess the hazards, as required

Assessing Risks in Highly Vulnerable Aquifers

- undertake risk assessment for identified hazards

Applying Vulnerability Scores in Significant Groundwater Recharge Areas

- assess degree of vulnerability within these areas

Identifying issues, inventorying threats, assessing hazards in Significant Groundwater Recharge Areas

- identify issues based on available data/knowledge
- inventory threats and assess the hazards, as required

Assessing Risks in Significant Groundwater Recharge Areas

- undertake risk assessment for identified hazards

Consultation on the overall proposed Assessment Report

- includes public notices in newspapers/internet, public meetings, meetings with impacted landowners
- includes consultation with 36 municipalities, four First Nations, three immediately adjacent Source Protection Regions and three additional Source Protection Regions whose watersheds drain into Lake Ontario.
- consultation will be required with regards to 47 existing and two planned drinking water systems and to a diverse population: urban, rural, seasonal.
- consultation will be required with Bay of Quinte Remedial Action Plan and other persons/bodies responsible for managing/implementing Great Lakes agreements.

Revise/Update Assessment Report

- incorporate additional drinking water systems that are brought forward after the Assessment Report is submitted to the Ministry
- incorporate findings from studies that are completed after the Assessment Report is submitted to the Ministry

Vulnerability, Threats/hazards, Risks for the following groups of Drinking Water Systems:

- **Trent Conservation Coalition Led Wellhead Projects**
  Alpine/Pirates Glen
  Brighton
  Buckhorn Lake Estates
  Cardiff/Bicroft
  Colborne
  Dyno Estates
  Elgeti Subdivision
  Grafton
  Havelock
  Keene Heights Subdivision
  Lutterworth Pines
  Millbrook
  Minden
  Norwood
  Stirling
- **City of Kawartha Lakes Wellhead Projects**
  Birch Point Estates
  Canadiana Shores
  Janetville
  King's Bay
  Manorview
  Mariposa Estates
  Omemee /Victoria Glen
  Pinewood
  Pleasant Point
  Sonya Village Subdivision
  Victoria Place
  Woodfield
  Woods of Manilla
- **Durham Wellhead Projects**
  Blackstock
  Greenbank

Port Perry

- **Trent Conservation Coalition Led Planned Groundwater Systems**
  Fraserville – Leahy Site
  Fraserville - Lansdowne Site
- **Trent Conservation Coalition Led Surface Water Intake Projects**
  Batawa
  Bayside
  Campbellford
  Frankford
  Hastings
  Lakefield
  Marmora
  Peterborough
  Trenton
  Warkworth
- **City of Kawartha Lakes Surface Water Intake Projects**
  Bobcaygeon
  Fenelon Falls
  Kinmount
  Lindsay
  Norland
  Southview Estates
- **First Nations Systems:**
  none at this time

Tasks Include:

- Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones; undertaking additional vulnerability studies for groundwater systems under the influence of groundwater (as required)
- Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones
- Assessing Risks in Wellhead Protection Areas/Intake Protection Zones

Peer Review of Vulnerability Studies

- Peer Review of Groundwater Vulnerability Studies for Municipal Systems (33)
- Peer Review of Surface Water Vulnerability Studies for Municipal Systems (16)
- Peer review of vulnerability studies for Durham Region systems to be done in conjunction with South Georgian Bay – Lake Simcoe and CTC Source Protection Regions) to ensure consistency for the Municipality.

9. DETAILED WORK PLAN TO COMPLETE SOURCE PROTECTION PLAN

Work on the Source Protection Plan will commence as the Assessment Report is being finalized. The Source Protection Plan will include policies to address the significant threats. The Province intends to pass Source Protection Plan regulations. The tasks to complete the Source Protection Plan, outlined in this work plan, may need to be revisited (amendment to the Terms of Reference) once the regulations are released. At that point, costs and assignment of responsibility can also be revisited.

The funding to complete the work will be provided to the lead(s) assigned to the task. The costs identified in this Terms of Reference are estimates only and will need to be finalized, once the specific task details are available, through consultation and agreements between the lead Source Protection Authority in the Source Protection Region (Lower Trent), the Crowe Valley, Kawartha-Haliburton, and Otonabee-Peterborough Source Protection Authorities, and any municipalities who elect to undertake the work.

The following are some anticipated high level tasks which may need to be completed in the preparation of the Source Protection Plan. The timelines, estimated costs, and assignment of responsibility are outlined in Appendix C.

Coordinating and Supporting projects for the Source Protection Plan

- overall coordination (provided by regional staff working at Lower Trent Conservation on behalf of the Trent Conservation Coalition with assistance

from local staff in the four conservation authorities in the Trent River watershed, e.g. staff time, office support and administration, travel, training)
- Source Protection Committee expenses
- consultation with municipalities, First Nations, Bay of Quinte Remedial Action Plan and other agencies responsible for managing the Great Lakes, and other agencies

Undertaking Communications initiatives for the Source Protection Plan
- overall communications/messaging (coordinated by regional staff working at Lower Trent Conservation on behalf of Trent Conservation Coalition with local delivery by the staff in the four conservation authorities in the Trent River watershed)
- communications products (displays, publications)
- public events (to promote the protection of sources of drinking water).
- media monitoring
- the communications initiatives will be delivered in conjunction with outreach activities through the Ontario Drinking Water Stewardship Program to individuals with private supplies who make up a significant percentage of the region's population
- an effective communications program taking into account the complexity of the area: four Source Protection Areas (including some areas outside of conservation authority jurisdiction, 36 municipalities (upper/lower/single tier), and a large geography with an urban/rural/seasonal mix.)

Information Management for the Source Protection Plan Preparation
- overall data management (provided by regional staff working at Lower Trent Conservation on behalf of Trent Conservation Coalition with assistance from local staff in the partner conservation authorities, e.g. preparing local maps and arranging data sharing agreements with local municipalities)
- software acquisition and maintenance (digital mapping software licencing is maintained in all four conservation authority offices for the Source Protection program)
- File Transfer Protocol (FTP) Site/Web Portal

Policy Development to address threats (where required/permissible in *Clean Water Act*/Regulations)
- develop policies for eliminating, reducing, and managing drinking water quantity and quality threats
- the policies must take into account the environmental, social, and economic impacts—policies must be appropriate, affordable and effective in protecting sources of drinking water, now and into the future
- consideration must be given to potential sources of funding for implementation—the Ontario Drinking Water Stewardship Program makes provisions for providing financial assistance under the *Clean Water Act, 2006* to those whose activities and properties may be affected by the *Clean Water Act, 2006*
- consultation must take place before putting policies in place with any municipalities, other agencies, landowners that may be impacted by the policies

Policy Development for monitoring (where required/permissible in *Clean Water Act*/Regulations)
- preparation of policies for monitoring programs to fill data gaps, where additional data is required to understand the science
- policies will need to take financial implications into consideration
- policies will need to be developed in consultation with the bodies that will be responsible for monitoring

Policy Development for Great Lakes elements (where required/permissible in *Clean Water Act*/Regulations)
- policies will need to be developed to meet any targets for the Great Lakes, set by the Minister of the Environment, in consultation with other affected source protection regions
- policies will need to take financial implications into consideration

Policy Development Input from Durham Region

- Durham Region staff will develop policies for implementation and provide them as recommendations to the Source Protection Committee

Establishing timelines for policy implementation

- realistic timelines will be established that take into account matters that could affect implementation (schedules for Official Plan updates, financial implications, etc.)
- input will be required from municipalities, conservation authorities and others that may be responsible for implementation

Consultation on the overall proposed Source Protection Plan

- includes public notices in newspapers/internet, public meetings
- notification to impacted landowners in accordance with the regulations, as early as possible
- consultation will be required with regards to 47 existing and two planned drinking water systems and to a diverse population: urban, rural, seasonal
- includes consultation with 36 municipalities, four First Nations, three immediately adjacent Source Protection Regions and three additional Source Protection Regions whose watersheds drain into Lake Ontario
- consultation will be required with Bay of Quinte Remedial Action Plan and other persons/bodies responsible for managing/implementing Great Lakes agreements.

10. SOURCE PROTECTION PLAN SUBMISSION DATE

The Source Protection Authorities intend to submit the Source Protection Plan to the Minister of the Environment on or before August 20, 2012.

APPENDICES

APPENDIX A: SUMMARY OF MUNICIPAL DRINKING WATER SYSTEMS

APPENDIX B: ESTIMATED COSTS AND TIMELINES FOR ASSESSMENT REPORT

APPENDIX C: ESTIMATED COSTS AND TIMELINES FOR SOURCE PROTECTION PLAN

APPENDIX A: SUMMARY OF MUNICIPAL DRINKING WATER SYSTEMS

Municipal Drinking Water Systems in the Crowe Valley Source Protection Area

Water System Name	Drinking Water System Number	Water System Status	Source Water Type	Operating Authority	Owner	Number Of Wells	Number Of Intake Cribs**	Exemption Status***
Cardiff/Bicroft	220001682	Existing	Surface and Groundwater*	Highlands East, Municipality of	Highlands East, Municipality of	1	0	Not exempt
Dyno Estates	220013581	Existing	Groundwater	Highlands East, Municipality of	Highlands East, Municipality of	1	0	Not exempt
Havelock	210000595	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Havelock-Belmont-Methuen, Township of	3	0	Not exempt
Marmora	220004803	Existing	Surface Water	Marmora and Lake, Municipality of	Marmora and Lake, Municipality of	0	1	Not exempt

*indicates GUDI well (groundwater under direct influence of surface water)
**an offshore structure that surrounds and protects an intake pipe, which supplies water from a lake or river to a treatment plant onshore
*** to be considered exempt, a council resolution is required indicating that the municipality intends to discontinue use of the system and apply to revoke the licence/permit; publish a notice of the resolution in a newspaper(s); and send a copy to the local source protection committee

APPENDIX A: SUMMARY OF MUNICIPAL DRINKING WATER SYSTEMS

Municipal Drinking Water Systems in the Kawartha-Haliburton Source Protection Area								
Water System Name	**Drinking Water System Number**	**Water System Status**	**Source Water Type**	**Operating Authority**	**Owner**	**Number Of Wells**	**Number Of Intake Cribs****	**Exemption Status*****
Blackstock	220003751	Existing	Groundwater	Durham, Regional Municipality of	Durham, Regional Municipality of	3	0	Not exempt
Bobcaygeon	210000318	Existing	Surface Water	Ontario Clean Water Agency	Kawartha Lakes, City of	0	1	Not exempt
Canadiana Shores	220006491	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Kawartha Lakes, City of	3	0	Not exempt
Fenelon Falls	210000327	Existing	Surface Water	Ontario Clean Water Agency	Kawartha Lakes, City of	0	1	Not exempt
Greenbank	220003760	Existing	Groundwater	Durham, Regional Municipality of	Durham, Regional Municipality of	5	0	Not exempt
Janetville	220006455	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	3	0	Not exempt
King's Bay	260002954	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	3	0	Not exempt
Kinmount	260075231	Existing	Surface Water	Ontario Clean Water Agency	Kawartha Lakes, City of	0	1	Not exempt
Lindsay	220000175	Existing	Surface Water	Kawartha Lakes, City of	Kawartha Lakes, City of	0	1	Not exempt
Lutterworth Pines	260066079	Existing	Groundwater	Ontario Clean Water Agency	Minden Hills, Township of	2	0	Not exempt
Manorview	260001864	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Kawartha Lakes, City of	2	0	Not exempt
Mariposa Estates	220012322	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	2	0	Not exempt
Minden	210000194	Existing	Groundwater	Ontario Clean Water Agency	Minden Hills, Township of	2	0	Not exempt
Norland	250001910	Existing	Surface Water	Ontario Clean Water Agency	Kawartha Lakes, City of	0	1	Not exempt
Omemee/Victoria Glen	210002227	Existing	Groundwater	Ontario Clean Water	Kawartha Lakes, City of	2	0	Not exempt

Municipal Drinking Water Systems in the Kawartha-Haliburton Source Protection Area								
Water System Name	**Drinking Water System Number**	**Water System Status**	**Source Water Type**	**Operating Authority**	**Owner**	**Number Of Wells**	**Number Of Intake Cribs****	**Exemption Status*****
				Agency				
Pleasant Point	220006525	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Kawartha Lakes, City of	2	0	Not exempt
Port Perry	220004830	Existing	Groundwater	Durham, Regional Municipality of	Durham, Regional Municipality of	3	0	Not exempt
Sonya Village Subdivision	260006516	Existing	Surface and Groundwater*	Kawartha Lakes, City of	Kawartha Lakes, City of	2	0	Not exempt
Southview Estates	220012260	Existing	Surface Water	Ontario Clean Water Agency	Kawartha Lakes, City of	0	1	Not exempt
Victoria Place	220011895	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	4	0	Not exempt
Woodfield	220012251	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	2	0	Not exempt
Woods of Manilla	210002218	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	2	0	Not exempt

*indicates GUDI well (groundwater under direct influence of surface water)
**an offshore structure that surrounds and protects an intake pipe, which supplies water from a lake or river to a treatment plant onshore
*** to be considered exempt, a council resolution is required indicating that the municipality intends to discontinue use of the system and apply to revoke the licence/permit; publish a notice of the resolution in a newspaper(s); and send a copy to the local source protection committee

APPENDIX A: SUMMARY OF MUNICIPAL DRINKING WATER SYSTEMS

Municipal Residential Drinking Water Systems in Lower Trent Source Protection Area								
Water System Name	**Drinking Water System Number**	**Water System Status**	**Source Water Type**	**Operating Authority**	**Owner**	**Number Of Wells**	**Number Of Intake Cribs****	**Exemption Status*****
Batawa	220001548	Existing	Surface Water	Quinte West, City of	Quinte West, City of	0	1	Not exempt
Bayside	220008079	Existing	Surface Water	Quinte West, City of	Quinte West, City of	0	1	Not exempt
Brighton	220000807	Existing	Groundwater	Brighton, Municipality of	Brighton, Municipality of	3	0	Not exempt
Campbellford	220000834	Existing	Surface Water	Trent Hills, Municipality of	Trent Hills, Municipality of	0	1	Not exempt
Colborne	220000790	Existing	Groundwater	Lakefront Utilities Services Inc.	Cramahe, Township of	2	0	Not exempt
Frankford	210001889	Existing	Surface Water	Quinte West, City of	Quinte West, City of	0	1	Not exempt
Grafton	220009158	Existing	Groundwater	Lakefront Utilities Services Inc.	Alnwick/Haldimand, Township of	2	0	Not exempt
Stirling	220001566	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Stirling-Rawdon, Township of	4	0	Not exempt
Trenton	220001619	Existing	Surface Water	Quinte West, City of	Quinte West, City of	0	2	Not exempt
Warkworth	210000498	Existing	Surface Water	Trent Hills, Municipality of	Trent Hills, Municipality of	0	1	Not exempt

*indicates GUDI well (groundwater under direct influence of surface water)
**an offshore structure that surrounds and protects an intake pipe, which supplies water from a lake or river to a treatment plant onshore
*** to be considered exempt, a council resolution is required indicating that the municipality intends to discontinue use of the system and apply to revoke the licence/permit; publish a notice of the resolution in a newspaper(s); and send a copy to the local source protection committee

APPENDIX A: SUMMARY OF MUNICIPAL DRINKING WATER SYSTEMS

Municipal Drinking Water Systems in the Otonabee-Peterborough Source Protection Area								
Water System Name	**Drinking Water System Number**	**Water System Status**	**Source Water Type**	**Operating Authority**	**Owner**	**Number Of Wells**	**Number Of Intake Cribs****	**Exemption Status*****
Alpine/Pirates Glen	220011154	Existing	Groundwater	Ontario Clean Water Agency	Galway-Cavendish and Harvey, Township of	2	0	Not exempt
Birchpoint Estates	220012572	Existing	Groundwater	Kawartha Lakes, City of	Kawartha Lakes, City of	2	0	Not exempt
Buckhorn Lake Estates	220006437	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Galway-Cavendish and Harvey, Township of	1	0	Not exempt
Elgeti Subdivision	260064272	Existing	Surface and Groundwater*	Ontario Clean Water Agency	Otonabee-South Monaghan, Township of	2	0	Not exempt
Fraserville-Lansdowne Site		Planned	Groundwater		Cavan Monaghan, Township of			
Fraserville-Leahy Site		Planned	Groundwater		Cavan Monaghan, Township of			
Hastings	210000470	Existing	Surface Water	Trent Hills, Municipality of	Trent Hills, Municipality of	0	1	Not exempt
Keene Heights Subdivision	220006393	Existing	Groundwater	Ontario Clean Water Agency	Otonabee-South Monaghan, Township of	1	0	Not exempt
Lakefield	220000488	Existing	Surface Water	Peterborough Utilities Services Inc.	Smith-Ennismore-Lakefield, Township of	0	2	Not exempt
Millbrook	220000781	Existing	Groundwater	Cavan Monaghan, Township of	Cavan Monaghan, Township of	3	0	Not exempt
Norwood	220000479	Existing	Groundwater	Ontario Clean Water Agency	Asphodel-Norwood, Municipality of	3	0	Not exempt
Peterborough	220000497	Existing	Surface Water	Peterborough Utilities Services Inc.	Peterborough, City of	0	1	Not exempt
Pinewood	220006464	Existing	Groundwater	Ontario Clean Water Agency	Kawartha Lakes, City of	3	0	Not exempt
*indicates GUDI well (groundwater under direct influence of surface water) **an offshore structure that surrounds and protects an intake pipe, which supplies water from a lake or river to a treatment plant onshore *** to be considered exempt, a council resolution is required indicating that the municipality intends to discontinue use of the system and apply to revoke the licence/permit; publish a notice of the resolution in a newspaper(s); and send a copy to the local source protection committee								

APPENDIX B: ESTIMATED COSTS AND TIMELINES FOR ASSESSMENT REPORT

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Coordinating and Supporting projects for the Assessment Report	LT SPA (CV, K-H, O-P SPAs)	1-Apr-05	31-Dec-09	$441,099	$515,230	$568,188	$615,000	$555,000	$0	$0	
Undertaking Communications initiatives for the Assessment Report	LT SPA (CV, K-H, O-P SPAs)	1-Apr-05	31-Dec-09	$11,608.30	$107,048.18	$76,600	$285,000	$285,000	$0	$0	
Information Management for the Assessment Report Preparation	LT SPA (CV, K-H, O-P SPAs)	1-Apr-05	31-Dec-09	$186,824.14	$157,405.73	$64,439	$300,000	$300,000	$0	$0	
Undertaking a Watershed Characterization	CV, K-H, LT, O-P SPAs	1-Apr-05	30-Sep-08	$199,930.32	$403,862.04	$174,000	$0	$0	$0	$0	
Conducting a Conceptual Water Budget	LT SPA (CV, K-H, O-P SPAs)	1-Apr-05	30-Sep-07	$144,262	$158,086	$0	$0	$0	$0	$0	
Conducting a Tier 1 Water Budget and Stress Assessment	LT SPA (CV, K-H, O-P SPAs)	1-Apr-07	31-Dec-08	$0	$0	$402,499	$173,692	$0	$0	$0	
Conducting a Tier 2 Water Budget and Stress Assessment	LT SPA (CV, K-H, O-P SPAs)	1-Jul-08	30-Jun-09	$0	$0	$0	$280,000	$50,000	$0	$0	

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Conducting a Tier 3 Water Budget and Risk Assessment	LT SPA (CV, K-H, O-P SPAs)			$0	$0	$0	$0	$0	$0	$0	
Delineating and applying vulnerability scores to Highly Vulnerable Aquifers	LT SPA (CV, K-H, O-P SPAs)	1-Apr-09	31-Dec-09	$0	$0	$0	$0	$80,000	$0	$0	
Identifying issues, inventorying threats, assessing hazards in Highly Vulnerable Aquifers	LT SPA (CV, K-H, O-P SPAs)	1-Apr-09	31-Dec-09	$0	$0	$0	$0	$40,000	$0	$0	
Assessing Risks in Highly Vulnerable Aquifers	LT SPA (CV, K-H, O-P SPAs)	1-Apr-09	31-Dec-09	$0	$0	$0	$0	$4,000	$0	$0	
Applying Vulnerability Scores in Significant Groundwater Recharge Areas	LT SPA (CV, K-H, O-P SPAs)	1-Jan-09	31-Mar-09	$0	$0	$0	$12,000	$0	$0	$0	
Identifying issues, inventorying threats, assessing hazards in Significant Groundwater Recharge Areas	LT SPA (CV, K-H, O-P SPAs)	1-Jan-09	30-Jun-09	$0	$0	$0	$0	$40,000	$0	$0	
Assessing Risks in Significant Groundwater Recharge Areas	LT SPA (CV, K-H, O-P SPAs)	1-Jan-09	30-Jun-09	$0	$0	$0	$0	$4,000	$0	$0	
Consultation on the overall proposed Assessment Report	LT SPA	1-Apr-05	31-Dec-09	$0	$0	$0	$20,000	$20,000	$0	$0	

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Revise/Update Assessment Report	LT SPA (CV, K-H, O-P SPAs)	1-Jan-10	30-Jun-12	$0	$0	$0	$0	$0	$80,000	$80,000	
			sub-total	**$983,724**	**$1,341,632**	**$1,285,726**	**$1,685,692**	**$1,378,000**	**$80,000**	**$80,000**	**$6,834,774**
Trent Conservation Coalition Led Groundwater Projects											
Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-06	30-Jun-09	$0	$61,030	$523,741	$30,000	$30,000	$0	$0	
Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-06	30-Jun-09	$0	$13,850	$147,643	$146,750	$146,750	$0	$0	
Assessing Risks in Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-06	30-Jun-09	$0	$0	$83,841	$17,250	$17,250	$0	$0	
City of Kawartha Lakes Groundwater Projects											
Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones	City of Kawartha Lakes	1-Apr-07	30-Jun-09	$0	$0	$415,567	$25,000	$25,000	$0	$0	

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones	City of Kawartha Lakes	1-Apr-07	30-Jun-09	$0	$0	$93,600	$101,750	$101,750	$0	$0	
Assessing Risks in Wellhead Protection Areas/Intake Protection Zones	City of Kawartha Lakes	1-Apr-07	30-Jun-09	$0	$0	$53,733	$12,250	$12,250	$0	$0	
Durham Groundwater Projects											
Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones	Durham	1-Apr-07	30-Jun-09	$0	$0	$40,542	$19,000	$19,000	$0	$0	
Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones	Durham	1-Apr-07	30-Jun-09	$0	$0	$119,461	$10,000	$10,000	$0	$0	
Assessing Risks in Wellhead Protection Areas/Intake Protection Zones	Durham	1-Apr-07	30-Jun-09	$0	$0	$52,401	$5,000	$5,000	$0	$0	
Trent Conservation Coalition Led Planned Groundwater Systems											

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-08	31-Dec-11	$0	$0	$0	$0	$20,000	$10,000	$10,000	
Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-08	31-Dec-11	$0	$0	$0	$0	$10,000	$5,000	$5,000	
Assessing Risks in Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-08	31-Dec-11	$0	$0	$0	$0	$3,000	$1,500	$1,500	
Trent Conservation Coalition Led Surface Water Projects											
Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-06	30-Jun-09	$0	$200,625	$0	$10,000	$10,000	$0	$0	
Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-06	30-Jun-09	$0	$0	$129,375	$250,000	$250,000	$0	$0	

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Assessing Risks in Wellhead Protection Areas/Intake Protection Zones	LT SPA (CV, K-H, O-P SPAs)	1-Apr-06	30-Jun-09	$0	$0	$37,900	$35,000	$35,000	$0	$0	
City of Kawartha Lakes Surface Water Projects											
Delineating and applying vulnerability scores to Wellhead Protection Areas/Intake Protection Zones	City of Kawartha Lakes	1-Apr-07	30-Jun-09	$0	$0	$118,500	$10,000	$10,000	$0	$0	
Identifying issues, inventorying threats, assessing hazards in Wellhead Protection Areas/Intake Protection Zones	City of Kawartha Lakes	1-Apr-07	30-Jun-09	$0	$0	$95,000	$105,000	$105,000	$0	$0	
Assessing Risks in Wellhead Protection Areas/Intake Protection Zones	City of Kawartha Lakes	1-Apr-07	30-Jun-09	$0	$0	$25,500	$7,000	$7,000	$0	$0	
Peer Review of Vulnerability Studies											
Peer Review of Municipal Well Vulnerability Studies	LT SPA (CV, K-H, O-P SPAs)	1-Dec-08	30-Jun-09	$0	$0	$0	$85,000	$80,000	$0	$0	
Peer Review of Municipal Surface Water Intake Vulnerability Studies	LT SPA (CV, K-H, O-P SPAs)	1-Dec-08	30-Jun-09	$0	$0	$0	$45,000	$40,000	$0	$0	

Estimated Costs and Timelines for Assessment Report: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
First Nations Systems	LT SPA (K-H, O-P SPAs)			$0	$0	$0	$20,000	$20,000	$0	$0	
			sub-total	**$0**	**$275,505**	**$1,936,804**	**$934,000**	**$957,000**	**$16,500**	**$16,500**	**$4,136,309**
	LEGEND SPC - Source Protection Committee SPA - Source Protection Authority CV - Crowe Valley K-H - Kawartha-Haliburton LT - Lower Trent O-P Otonabee-Peterborough										

APPENDIX C: ESTIMATED COSTS AND TIMELINES FOR SOURCE PROTECTION PLAN

Estimated Costs and Timelines for Source Protection Plan: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Coordinating and Supporting projects for the Source Protection Plan	LT SPA (CV, K-H, O-P SPAs)	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$60,000	$615,000	$615,000	
Undertaking Communications initiatives for the Source Protection Plan	LT SPA (CV, K-H, O-P SPAs)	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$0	$285,000	$285,000	
Information Management for the Source Protection Plan Preparation	LT SPA (CV, K-H, O-P SPAs)	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$0	$300,000	$300,000	
Policy Development to address threats (where required/permissible in *Clean Water Act*/Regulations)	SPC and LT, CV, K-H, O-P SPAs	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$16,000	$40,000	$40,000	
Policy Development for monitoring (where required/permissible in *Clean Water Act*/Regulations)	LT SPA (CV, K-H, O-P SPAs)	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$0	$8,000	$8,000	
Policy Development for Great Lakes elements (where required/permissible in *Clean Water Act*/Regulations)	LT SPA (CV, K-H, O-P SPAs)	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$0	$8,000	$8,000	

Estimated Costs and Timelines for Source Protection Plan: Crowe Valley, Kawartha-Haliburton, Lower Trent, Otonabee-Peterborough Source Protection Areas											
TASKS	**LEAD**	**START DATE**	**END DATE**	**ESTIMATED COSTS**							**SUB-TOTAL**
				2005-2006	**2006-2007**	**2007-2008**	**2008-2009**	**2009-2010**	**2010-2011**	**2011-2012**	
Policy Development Input from Durham Region	Durham Region	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$10,000	$20,000	$15,000	
Establishing timelines for policy implementation	SPC and LT, CV, K-H, O-P SPAs	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$0	$16,000	$16,000	
Consultation on the overall proposed Source Protection Plan	LT SPA	1-Jan-10	20-Aug-12	$0	$0	$0	$0	$0	$40,000	$40,000	
			sub-total	**$0**	**$0**	**$0**	**$0**	**$86,000**	**$1,332,000**	**$1,327,000**	**$2,745,000**
	LEGEND SPC - Source Protection Committee SPA - Source Protection Authority CV - Crowe Valley K-H - Kawartha-Haliburton LT - Lower Trent O-P Otonabee-Peterborough										