



Terms of Reference (Work Plan)

for

Development of the Assessment Report & Source Protection Plan:

Nottawasaga Valley Source Protection Area

by

South Georgian Bay-Lake Simcoe Source Protection Committee

Under the Clean Water Act, 2006

Approved on July 13, 2009

PROGRAM OVERSIGHT

Source Protection Plans, intended to prevent the overuse and contamination of Ontario's drinking water supplies, are being developed by multi-stakeholder Source Protection Committees, formed under the *Clean Water Act*, 2006. Locally, the South Georgian Bay-Lake Simcoe Source Protection Committee is comprised of 22 local stakeholders and a Chair, who are municipal, industry, First Nation and public representatives that act like a Board of Directors, and are responsible for the development of the Terms of Reference (work plan), technical Assessment Reports, and ultimately Source Protection Plans. Details pertaining to each of the Source Protection Committee members are located at <http://www.ourwatershed.ca/committees/spcmembers.php>.

It is the objective of the Source Protection Committee to develop Source Protection Plans that include policies and strategies to protect our drinking water by preventing, reducing or eliminating significant threats to those water resources. Through development of the Source Protection Plans, the role of the Committee is to:

- Ensure that public concerns are heard and taken into consideration;
- Consult with impacted landowners;
- Establish policies based on the best available science and mindful of the precautionary principle;
- Consider all economic impacts; and
- Make decisions that are fair and reasonable through an open and transparent process.

SOURCE PROTECTION COMMITTEE MISSION STATEMENT

The Source Protection Committee exists to ensure an open process is followed in the development of reasonable, science based policies that protect municipal sources of drinking water now and into the future.

NOTE:

The Ministry of the Environment has passed an additional regulation under the Clean Water Act that outline the technical requirements of the Assessment Report. It is anticipated that additional regulations will be drafted to outline the requirements of the Source Protection Plans. These regulations, once finalized may require amendments to be made to this Terms of Reference (Work Plan).

EXECUTIVE SUMMARY

BACKGROUND

The Clean Water Act was introduced by the Ontario Government in 2006. In July 2007, the Act, along with the first five associated regulations, came into effect. The intent of this legislation is to ensure communities are able to protect their municipal drinking water supplies now and in the future from overuse and contamination. These goals are to be pursued through the development of technical Assessment Reports describing vulnerable areas and risks to drinking water, and Source Protection Plans with recommendations regarding land use planning policies and risk reduction strategies.

In order to achieve these Source Protection Plans, Terms of Reference documents have been drafted and are presented in Appendix A in each of the three reports that represent the Source Protection Areas in the South Georgian Bay-Lake Simcoe Source Protection Region. These Terms of Reference documents are essentially the work plans to be followed, and describe the following program details:

1. The technical projects or tasks required to develop an understanding of the vulnerable areas and risks to drinking water sources;
2. The projects or tasks required to develop land use planning policies, risk reduction strategies, and monitoring activities that will be recommended in the source protection plans;
3. Consultation efforts with stakeholders and the public on the development and results of the technical and planning products completed;
4. Whether the tasks from 1, 2 and 3 above will be coordinated by municipalities, source protection / conservation authority staff, or some combination thereof (a partnership); and finally
5. Cost estimates and timelines for task completion.

GEOGRAPHY

The Province has organized the Source Protection Program using watershed boundaries as opposed to municipal boundaries, which is appropriate for a water management exercise given that water flows across municipalities. The South Georgian Bay-Lake Simcoe Source Protection Region is one of 19 watershed regions across the Province. Within the source protection region, there are smaller watershed units that are more manageable and less diverse than the large (>10,000 km²) source protection region. These smaller management units are referred to as Source Protection Areas in the Clean Water Act, and separate products will be established for each. As a result there are three sets of these Terms of Reference documents for the South Georgian Bay Lake Simcoe Source Protection Region. A separate document is drafted for each of:

- The Lakes Simcoe and Couchiching / Black River Source Protection Area;
- The Nottawasaga Valley Source Protection Area; and
- The Severn Sound Source Protection Area.

This document constitutes Draft 2 of the Terms of Reference for the Nottawasaga Valley Source Protection Area. The Terms of Reference documents for the other Source Protection Areas have been prepared under separate cover.

The Nottawasaga Valley Source Protection Area is comprised of the Nottawasaga watershed, the Pretty River, Black Ash Creek, Silver Creek and Batteaux River watersheds. The municipalities within this watershed include upper tier, lower tier and single tier municipalities.

Municipal drinking water supplies within this Source Protection Authority include both surface water (Georgian Bay) and groundwater (a series of municipal wells).

TERMS OF REFERENCE

PREPARATION

This Draft 2 of the Terms of Reference has been prepared in accordance with the Clean Water Act and Terms of Reference regulation with input from municipal staff regarding the status of relevant technical work, a municipal working group, and a technical working group. This document was prepared using an electronic tool developed by the MOE to ensure consistency between regions across the Province, and to ensure the document contains all required information.

PURPOSE AND ORGANIZATION

The Terms of Reference is a work plan that outlines who will be responsible for specific components of the source protection plan, how the work will be conducted, when various tasks/projects will be finished, and for what cost. The Draft 2 Terms of Reference is organized to outline the following items:

- What the technical, planning and communications tasks relevant to the completion of Source Protection Plans are (Tasks and Methodology);
- How the task will be completed (Tasks and Methodology);
- Who will be taking the lead on task coordination, either the municipality, source protection region / conservation authority staff, or some combination thereof (a partnership) (Task Lead);
- When the tasks will be conducted (Timeline); and
- Estimated cost associated with each of the tasks (Budget).

TASKS AND METHODOLOGY

The MOE previously published a series of Draft Guidance Modules, numbered 1 through 7, to assist in the development of the Assessment Report. The Guidance Modules were drafted to provide a level of standardization and consistency across the province in the way in which the technical tasks are completed. *Table 1* summarizes the MOE Draft Guidance Modules. It should be noted that, while these modules are good technical references, they have been formally replaced and are superseded by the Technical Rules: Assessment Report (December 12, 2008).

TABLE 1

Table 1 summaries the tasks within the MOE Guidance Modules by providing a description of each as well as the methodologies utilized.

| Module | Tasks | Description | Methodologies |
|--------|---|--|--|
| 1 | Watershed Characterization | A description of the water use and hydrology within the watersheds in the source protection region, including natural characteristics, land uses, water quality, location of municipal drinking water systems and a preliminary list of threats. The development of the Assessment Report will be based on the watershed characterization. | Compile and analyze existing information provided by Conservation Authorities, Municipalities, Provincial Ministries, Federal Departments, and other non-governmental organizations. |
| 3 | Wellhead Protection Areas (WHPA) Delineation | A delineation of the location and extent of the vulnerable areas around a drinking water system (WHPAs for groundwater systems and IPZs for surface water systems) in a source protection area. A vulnerability score is applied to the WHPAs and IPZs according to their susceptibility to become contaminated. | Various - including: Regional-scaled, local-scaled, and sub-regional numerical models. Analytical solutions and fixed radius methods were used in data-poor portions of the region. |
| | Groundwater Vulnerability Ranking | | Various - Aquifer Vulnerability Index (AVI) and Intrinsic Susceptibility Index methods. Numerical model estimates of vertical travel time. Hydrogeological assessment. |
| 4 | Intake Protection Zones (IPZ) Delineation and Surface Water Vulnerability Ranking | For both groundwater and surface water, this task includes identifying preferential pathways. Some groundwater pathways include quarries, abandoned wells, underground utilities, karst topography, etc. Some surface water pathways include sewers, drainage areas, watercourses, subsurfacing tiling, etc. Essentially these pathways have the potential to allow (contaminated) groundwater and/or surface water to migrate at a faster rate towards the well and/or surface water intake. Highly vulnerable aquifer areas and significant recharge areas are also delineated in this module. | Numerical models. (GEMS or Mike 3 lake models) for surface water. |

TABLE 1

Table 1 summaries the tasks within the MOE Guidance Modules by providing a description of each as well as the methodologies utilized.

| Module | Tasks | Description | Methodologies |
|--------|---|---|--|
| 5 | Issues Evaluation | The identification and description of drinking water quality issues, inventory of threats and assessment of the hazards in vulnerable areas (WHPAs and IPZs). | Water quality trends and adverse impact analysis of raw water. |
| | Issues Assessment | Threats are defined as activities or conditions that have the potential to harm the quality or quantity of water that is or may be used as a source of drinking water. Threats and issues that require further assessment are conducted to determine if they represent a significant threat to a drinking water source. In which case, a policy in the source protection plan would be required to reduce or eliminate the threat. | |
| | Threats Inventory | | Assessment of existing information regarding potential contaminant sources. |
| | Hazard Ranking | | MOE has evaluated the potential hazard associated with various generic land uses. |
| 6 | Water Quality Risk Assessment Based on Threats | Identify threats in Wellhead Protection Areas and Intake Protection Zones based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA and IPZ. | Database calculation (vulnerability x hazard) scoring. |
| | | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | |
| | Water Quality Risk Assessment in Significant Groundwater Recharge Areas | The level of risk that an identified threat represents is determined and included on a map based on a vulnerability of high, medium, or low for significant groundwater recharge areas. | Assess existing information regarding potential contaminant sources. The MOE is proposing a semi-quantitative approach to evaluate drinking water threats to water quality in the delineated vulnerable areas. |
| | Water Quality Risk Assessment in Highly Vulnerable Aquifers | There is also a map of highly vulnerable aquifers based on high, medium, or low vulnerability. If a significant threat is found, a policy in the source protection plan would be required to address it. | |

TABLE 1

Table 1 summarizes the tasks within the MOE Guidance Modules by providing a description of each as well as the methodologies utilized.

| Module | Tasks | Description | Methodologies |
|---|--|--|--|
| 7 | Conceptual Water Budget | A description of the overall flow system dynamics for each watershed in the source protection area taking into consideration surface water and groundwater features, land cover (e.g. proportion of urban vs. rural uses), human-made structures (e.g. dams, channel diversions, water crossings) and water takings. | Compile and analyze existing information provided by Conservation Authorities, Municipalities, Provincial Ministries, Federal Departments, and other non-governmental organizations. |
| | Tier 1 Water Budget | A quantification of the various components of the hydrological cycle and estimation of water quantity stresses on a subwatershed basis. Significant recharge areas are estimated within this process. | Analyses using available monitoring data. |
| | Tier 2 Water Budget | In those subwatersheds where a quantity stress is identified, a Tier 2 Water Budget analysis involves using more sophisticated methods to estimate water supply and demand. This process also results in refining the delineation of significant recharge areas. | Numerical Modeling methods. |
| | Tier 3 Water Budget - Water Quantity Risk Assessment | If determined necessary from a Tier 2 Water Budget, this process examines the long-term viability of specific municipal water supplies. | Advanced numerical modeling. |
| No number associated with these tasks. | Coordinating and Supporting | Administrative support, staffing, management support, and training necessary to provide project coordination for the Assessment Report and Source Protection Plan components and direct support to the Source Protection Committee. | Per MOE guidance. |
| | Communication Initiatives | Local area engagement, outreach and creation of communications products that support the Assessment Report and Source Protection Plan processes. | Per MOE guidance. |
| | Information Management | Conduct overall data management, data sharing agreements, standards, mapping, software, maintenance and data upgrading for continual improvement. | Per MOE guidance. |

TASK LEADS

Of the municipalities within the Nottawasaga Valley Source Protection Area, the following municipalities have stated an interest in leading the development of Assessment Report components:

- The City of Barrie;
- The Regional Municipality of Peel (Town of Caledon);
- The Town of Mono (Dufferin County);
- The Town of Shelburne (Dufferin County);
- The Town of Amaranth (Dufferin County);
- The Township of Melancthon (Dufferin County);
- The Township of Mulmur (Dufferin County);
- The Town of Wasaga Beach (Simcoe County);
- The Township of Adjala-Tosorontio (Simcoe County); and
- The Township of Essa (Simcoe County).

The remaining municipalities within the Nottawasaga Valley Source Protection Area are participating in the Source Protection Plan development in various capacities, with the South Georgian Bay Lake Simcoe-Source Protection Region coordinating development of the Assessment Report and Source Protection Plan. These municipalities include:

- The Town of Bradford West-Gwillimbury (Simcoe County);
- The Town of New Tecumseth (Simcoe County);
- The Township of Oro-Medonte (Simcoe County);
- The Township of Clearview (Simcoe County);
- The Township of Springwater (Simcoe County);
- The Town of Innisfil (Simcoe County);
- The Town of Collingwood (Simcoe County);
- The Town of the Blue Mountains (Grey County); and
- The Municipality of Grey Highlands (Grey County).

TIMELINE

The timeline for the tasks presented above as well as the tasks that have been completed is presented in *Table 2*.

BUDGET

The estimated budget is summarized in *Table 3*.

TABLE 3

The estimated costs for the Nottawasaga Valley Source Protection Area and the estimated total cost is presented in Table 3.

| Tasks for Assessment Report Completion | Estimated NVSPA Subtotal | ESTIMATED REGIONAL SUBTOTAL |
|---|---------------------------------|------------------------------------|
| Coordinating and supporting projects for the assessment report | \$ 1,619,000 | \$ 4,857,000 |
| Undertaking communications initiatives for the assessment report | \$ - | \$ - |
| Information management for the assessment report preparation | \$ - | \$ - |
| Undertaking a watershed characterization | \$ 30,100 | \$ 90,300 |
| Completing a conceptual water budget | \$ 193,600 | \$ 580,800 |
| Conducting a Tier 1 water budget analysis | \$ 43,800 | \$ 131,400 |
| Conducting a Tier 2 water budget analysis (for those subwatersheds identified as stressed in Tier 1 analysis) | \$ 163,500 | \$ 679,000 |
| Conducting a Tier 3 Water Budget - Water Quantity Risk Assessment | \$ - | \$ 2,395,000 |
| Delineating and applying vulnerability scores to Highly Vulnerable Aquifer areas | \$ - | \$ - |
| Delineating and applying vulnerability scores for Significant Recharge Areas | \$ - | \$ - |
| Identifying issues, inventorying threats and assessing hazards in Significant Recharge Areas | \$ 66,700 | \$ 200,100 |
| Peer review of the Highly Vulnerable Aquifer Areas and Significant Recharge Areas | \$ 33,300 | \$ 99,900 |
| Planned well and associated Assessment Report tasks. | \$ - | \$ 58,400 |
| Planned surface water intake and associated Assessment Report tasks. | \$ - | \$ 60,000 |
| Delineating and applying vulnerability scores for Intake Protection Zones | \$ 76,200 | \$ 588,600 |
| Delineating and applying vulnerability scores to Wellhead Protection Areas | \$ 305,100 | \$ 882,900 |
| Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas or Intake Protection Zones | \$ 469,400 | \$ 1,403,500 |
| Identifying threats in Wellhead Protection Areas and Intake Protection Zones based on the regulated Tables of Drinking Water Threats and classifying them | \$ 150,300 | \$ 699,400 |
| Risk assessment in the event that a potential threat is not considered in the Tables of Drinking Water Threats. The SPC shall request that this assessment be conducted | \$ 270,000 | \$ 1,100,000 |
| Refine Wellhead Protection Areas for GUDI systems | \$ 40,000 | \$ 290,000 |
| ESTIMATED TOTAL COSTS - ASSESSMENT REPORT TASKS | \$ 3,461,000 | \$ 14,116,300 |

| Tasks for Source Protection Plan Completion | Estimated Subtotal | ESTIMATED REGIONAL SUBTOTAL |
|---|---------------------------|------------------------------------|
| Coordinating and supporting projects for the source protection plan (SPP) | \$ 1,200,000 | \$ 3,600,000 |
| Undertaking communications initiatives for the source protection plan | \$ - | \$ - |
| Undertaking an impact assessment to evaluate the social, economic and environmental impacts of proposed policies and risk reduction strategies. | \$ 100,000 | \$ 325,000 |
| Policy development to address existing drinking water threats and risks | \$ 133,300 | \$ 399,900 |
| Policy development for managing vulnerable areas | \$ - | \$ - |
| Establishing timelines for policy implementation | \$ - | \$ - |
| ESTIMATED TOTAL COSTS - SOURCE PROTECTION PLAN TASKS | \$ 1,433,300 | \$ 4,324,900 |
| | | \$ - |
| ESTIMATED TOTAL COSTS | \$ 4,894,300 | \$ 18,441,200 |

PUBLIC COMMENT

The first draft of the Terms of Reference / workplan was posted in early May and comments were received until July 4th, 2008. This document has been revised to reflect the Source Protection Committee's consideration of the comments submitted.

Comments on the proposed Terms of reference / workplan were invited between the posting (August 15th, 2008) and the **closing date of September 26, 2008**.

APPENDIX A

The following pages constitute the formatted version of the Terms of Reference / Workplan that was generated using the provincial template.

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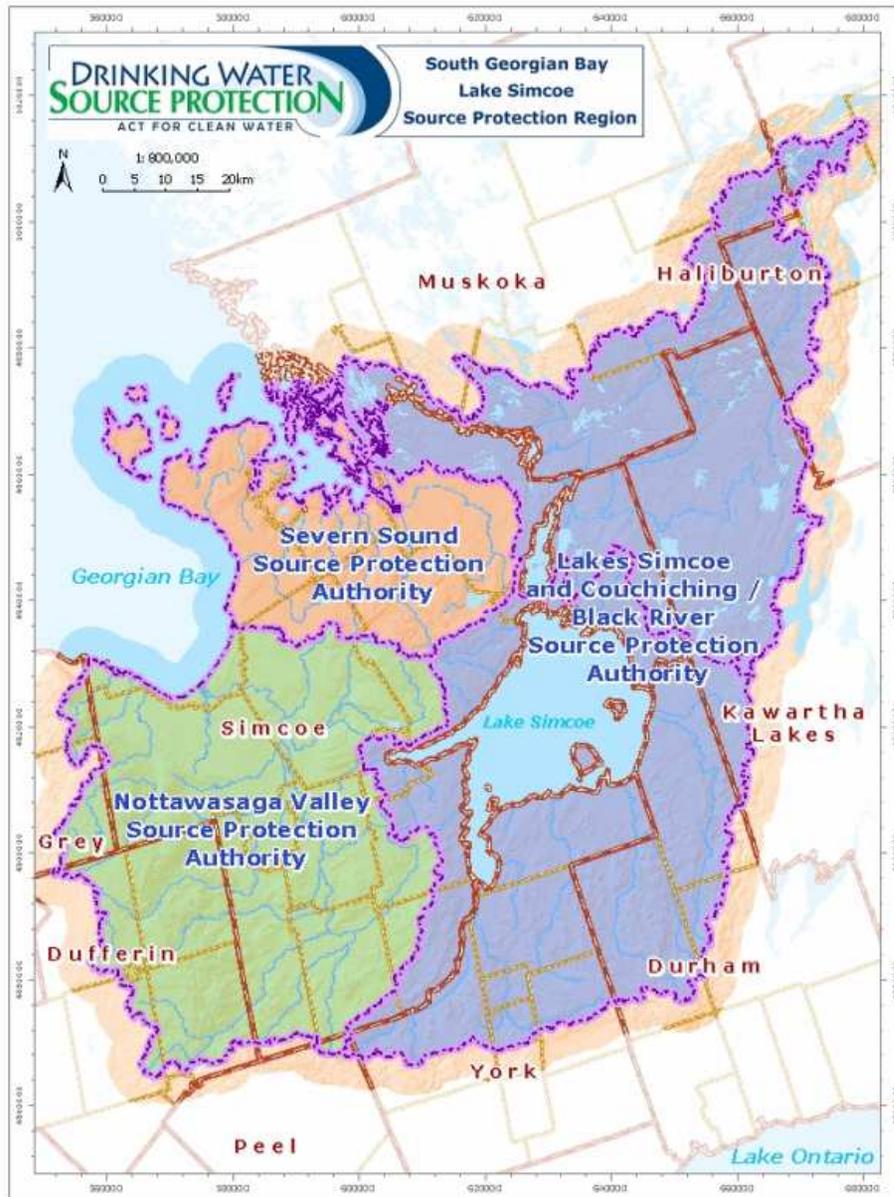
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Map of Source Protection Area



This map illustrates the Nottawasaga Source Protection Area in relation to the South Georgian Bay Lake Simcoe Source Protection Region.

Map of Source Protection Region



This map illustrates the three Source Protection Areas in the South Georgian Bay Lake Simcoe Source Protection Region. These three Areas are:

- Lakes Simcoe and Couchiching / Black River;
- Nottawasaga Valley; and
- Severn Sound.

List of Municipalities Located in the Nottawasaga Valley Source Protection Area

This section lists the Municipalities located within the Nottawasaga Valley Source Protection Area and whether they are upper tier, lower tier or single tier. Lower tier municipalities are a part of a higher level of municipal or upper tier government such as a county, region or district. A single tier municipality exists when there is only one level of municipal government in an area.

| Legal Name of Municipality and Tier | |
|--|---------------|
| CITY OF BARRIE | (single tier) |
| COUNTY OF DUFFERIN | (upper tier) |
| TOWN OF MONO | (lower tier) |
| TOWNSHIP OF AMARANTH | (lower tier) |
| TOWNSHIP OF MELANCTHON | (lower tier) |
| TOWNSHIP OF MULMUR | (lower tier) |
| TOWN OF SHELBURNE | (lower tier) |
| COUNTY OF GREY | (upper tier) |
| TOWN OF THE BLUE MOUNTAINS | (lower tier) |
| MUNICIPALITY OF GREY HIGHLANDS | (lower tier) |
| COUNTY OF SIMCOE | (upper tier) |
| TOWNSHIP OF ADJALA-TOSORONTIO | (lower tier) |
| TOWN OF BRADFORD WEST GWILLIMBURY | (lower tier) |
| TOWNSHIP OF CLEARVIEW | (lower tier) |
| TOWN OF COLLINGWOOD | (lower tier) |
| TOWNSHIP OF ESSA | (lower tier) |
| TOWN OF INNISFIL | (lower tier) |
| TOWN OF NEW TECUMSETH | (lower tier) |
| TOWNSHIP OF ORO-MEDONTE | (lower tier) |
| TOWNSHIP OF SPRINGWATER | (lower tier) |
| TOWN OF WASAGA BEACH | (lower tier) |
| REGIONAL MUNICIPALITY OF PEEL | (upper tier) |
| TOWN OF CALEDON | (lower tier) |

List of Municipal Residential Drinking Water System(s)

This section presents details pertaining to all the specific existing groundwater and surface drinking sources by listing the owner, operating authority drinking water system number, system name, number of wells for groundwater, number of intake cribs for surface water and the source of the water. There is one groundwater system that is referred to as a GUDI system, which is groundwater under direct influence of surface water (*note* * GUDI = groundwater under direct influence of surface water). Intake cribs are offshore structures that collect water from a surface water body.

| Type of System | Owner | Operating Authority | Drinking Water System Number | Drinking Water System Name | Number of Wells | Number of Intake Cribs | Type of Source Water |
|----------------|-------------------------------|-------------------------------|------------------------------|---|------------------------------------|------------------------|----------------------|
| Existing | CITY OF BARRIE | CITY OF BARRIE | 220001192 | BARRIE WELL SUPPLY | 14 (11 in LSC-BR SPA & 3 in NVSPA) | 0 | Groundwater |
| Planned | | | | | 1 | 0 | Groundwater |
| Planned | | | | | 0 | 1 (* in LSC-BR SPA) | Surface water |
| Existing | REGIONAL MUNICIPALITY OF PEEL | REGIONAL MUNICIPALITY OF PEEL | 220003993 | PALGRAVE WELL SUPPLY | 3 (only 1 in NVSPA) | 0 | Groundwater |
| Existing | COLLINGWOOD PUBLIC UTILITIES | COLLINGWOOD PUBLIC UTILITIES | 220001165 | COLLINGWOOD (RAYMOND A. BARKER ULTRAFILTRATION PLANT) WATER TREATMENT PLANT | 0 | 1 | Surface Water |
| Existing | TOWN OF INNISFIL | TOWN OF INNISFIL | 220005063 | CHURCHILL WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 210000693 | COOKSTOWN WELL SUPPLY | 4 | 0 | Groundwater |
| Existing | TOWN OF MONO | TOWN OF ORANGEVILLE | 220008532 | CARDINAL WOODS SUBDIVISION WELL SUPPLY | 3 (only 1 in NVSPA) | 0 | Groundwater |
| Existing | TOWN OF NEW TECUMSETH | TOWN OF NEW TECUMSETH | 220001174 | ALLISTON WATER SUPPLY SYSTEM | 6 | 0 | Groundwater |

| Type of System | Owner | Operating Authority | Drinking Water System Number | Drinking Water System Name | Number of Wells | Number of Intake Cribs | Type of Source Water |
|----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------------|-----------------|------------------------|----------------------|
| Existing | TOWN OF NEW TECUMSETH | TOWN OF NEW TECUMSETH | 220006874 | HILLCREST SUBDIVISION WELL SUPPLY | 1 | 0 | Groundwater |
| Existing | | | 220001085 | TOTTENHAM WELL SUPPLY | 4 | 0 | Groundwater |
| Existing | TOWN OF SHELBURNE | ONTARIO CLEAN WATER AGENCY | 220004965 | SHELBURNE WELL SUPPLY | 5 | 0 | Groundwater (GUDI) |
| Existing | TOWN OF WASAGA BEACH | ONTARIO CLEAN WATER AGENCY | 220002137 | WASAGA BEACH WELL SUPPLY | 6 | 0 | Groundwater |
| Existing | TOWNSHIP OF ADJALA-TOSORONTIO | TOWNSHIP OF ADJALA-TOSORONTIO | 220009933 | COLGAN WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220011680 | EVERETT WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220005036 | HOCKLEY WELL SUPPLY | 1 | 0 | Groundwater |
| Existing | | | 220005438 | LISLE WELL SUPPLY | 2 | 0 | Groundwater |
| Existing | | | 220005045 | LORETTO HEIGHTS WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220003859 | ROSEMONT WELL SUPPLY | 2 | 0 | Groundwater |
| Existing | | | 220010048 | WECA WELL SUPPLY | 1 | 0 | Groundwater |
| Existing | TOWNSHIP OF CLEARVIEW | TOWNSHIP OF CLEARVIEW | 250001420 | BUCKINGHAM WOODS WELL SUPPLY | 2 | 0 | Groundwater |
| Existing | | | 260005398 | COLLING-WOODLANDS WELL SUPPLY | 5 | 0 | Groundwater |
| Existing | | | 220001101 | CREEMORE WELL SUPPLY | 2 | 0 | Groundwater |

| Type of System | Owner | Operating Authority | Drinking Water System Number | Drinking Water System Name | Number of Wells | Number of Intake Cribs | Type of Source Water |
|----------------|-------------------------|--|------------------------------|--------------------------------------|-----------------|------------------------|----------------------|
| Existing | TOWNSHIP OF CLEARVIEW | TOWNSHIP OF CLEARVIEW | 260005411 | MCKEAN SUBDIVISION WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220003706 | NEW LOWELL WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220001138 | STAYNER WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | TOWNSHIP OF ESSA | ONTARIO CLEAN WATER AGENCY | 260001026 | ANGUS WELL SUPPLY | 3 | 0 | Groundwater |
| Planned | | | 260001026 | ANGUS WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220006945 | GLEN AVE (THORNTON) WELL SUPPLY | 4 | 0 | Groundwater |
| Existing | TOWNSHIP OF MULMUR | TOWNSHIP OF ADJALA-TOSORONTIO | 260063661 | MANSFIELD WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | TOWNSHIP OF ORO-MEDONTE | TOWNSHIP OF ORO-MEDONTE | 250001322 | CRAIGHURST WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | TOWNSHIP OF SPRINGWATER | ONTARIO CLEAN WATER AGENCY, GEORGIAN BAY HUB | 220005447 | ANTEN MILLS WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 220005474 | MIDHURST WELL SUPPLY | 4 | 0 | Groundwater |
| Existing | | | 220005465 | MINESING WELL SUPPLY | 4 | 0 | Groundwater |
| Existing | | ONTARIO CLEAN WATER AGENCY | 220009149 | DEL TREND SUBDIVISION WELL SUPPLY | 3 | 0 | Groundwater |
| Existing | | | 260048282 | PHELPSTON WELL SUPPLY | 2 | 0 | Groundwater |
| Existing | | | 260048204 | SNOW VALLEY HIGHLANDS WELL SUPPLY | 4 | 0 | Groundwater |
| Existing | | | 260001786 | VESPRA DOWNS SUBDIVISION WELL SUPPLY | 2 | 0 | Groundwater |

The Clean Water Act requires the inclusion of Municipal Residential Drinking Water Systems in the Source Protection Planning process, where the vulnerability of the water supply and risks to it are assessed. The Clean Water Act also allows for a variety of

systems that are not Municipal Residential Systems to be included either by the choice of Municipal or First Nations councils, and for systems to be excluded from the process if they are due to be decommissioned within a reasonable time frame. This page of the Terms of Reference describes the systems that are to be included and/or omitted from the process for the reasons listed.

List of Drinking Water System(s) Included by Municipal Council Resolution

(Not Municipal Residential Drinking Water Systems)

None included to date

List of Drinking Water Systems Serving Reserve(s)

(Not Municipal Residential Drinking Water Systems)

None included to date

List of Fully or Partially Exempted Municipal Residential Drinking Water System(s)

None included to date

List of Drinking Water System(s) Included by Minister of the Environment

(Not Municipal Residential Drinking Water Systems)

None included to date

List of Matter(s) that Affect Other Source Protection Committees

The following section identifies matters within the South Georgian Bay Lake Simcoe Source Protection Region that could affect neighbouring Source Protection Committees / Source Protection Regions and vice versa, which require some collaboration between source protection staff and Source Protection Committees.

| Source Protection Committees Affected | Source Protection Area | Description of Matters |
|---|---|---|
| Credit Valley, Toronto and Region, Central Lake Ontario Source Protection Committee | Credit Valley Source Protection Area | Well head protection area extends into Credit Valley, Toronto and Region, Central Lake Ontario Source Protection Region. Ensure that consultation takes place to develop policies acceptable to both source protection committees and that technical work and communications are aligned. |
| | | Significant recharge areas - Consultation regarding methods to ensure products are similar and allow edge matching for mapping products. |
| | | Highly vulnerable aquifers - Consultation regarding policies to ensure that they are in place and acceptable to both source protection committees as well as allow for edge matching of mapping products. |
| | Toronto and Region Source Protection Area | Significant recharge areas - Consultation regarding methods to ensure products are similar and allow for edge matching of mapping products. |
| | | Highly vulnerable aquifers - Consultation regarding policies to ensure that they are in place and acceptable to both source protection committees as well as allow for edge matching of mapping products. |
| | | Regional Municipality of Peel (Palgrave) well supply well head protection area in Credit Valley, Toronto and Region, Central Lake Ontario Source Protection Region extends into South Georgian Bay-Lake Simcoe Source Protection Region. Consultation regarding policies to ensure that they are in place and acceptable to both source protection committees as well as allow for edge matching of mapping products. |
| Lake Erie Source Protection Committee | Grand River Source Protection Area | Shelburne well supply well head protection area extends into Lake Erie Source Protection Region. Ensure that consultation takes place to develop policies acceptable to both source protection committees and that technical work and communications are aligned. |
| | | Highly vulnerable aquifers - Consultation regarding policies to ensure that they are in place and acceptable to both source protection committees as well as allow for edge matching of mapping products. |
| | | Significant recharge areas - Consultation regarding methods to ensure products are similar and allow for edge matching of mapping products. |

| Source Protection Committees Affected | Source Protection Area | Description of Matters |
|--|---------------------------------------|---|
| Saugeen, Grey Sauble, Northern Bruce Peninsula Source Protection Committee | Grey Sauble Source Protection Area | Significant recharge areas - Consultation regarding methods to ensure products are similar and allow for edge matching of mapping products. |
| | | Highly vulnerable aquifers - Consultation regarding policies to ensure that they are in place and acceptable to both source protection committees as well as allow for edge matching of mapping products. |
| | Saugeen Valley Source Protection Area | Significant recharge areas - Consultation regarding methods to ensure products are similar and allow for edge matching of mapping products. |
| | | Highly vulnerable aquifers - Consultation regarding policies to ensure that they are in place and acceptable to both source protection committees as well as allow for edge matching of mapping products. |

The Work Plan to Complete the Assessment Report

This section presents the components of the Assessment Report that will be led by the Lakes Simcoe and Couchiching/Black River Source Protection Area with support from the Nottawasaga Valley and Severn Sound Source Protection Areas. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| ASSESSMENT REPORT: WATERSHED-WIDE TASK DESCRIPTION Assigned Lead: Lakes Simcoe & Couchiching / Black River SPA with support from Nottawasaga Valley and Severn Sound SPAs | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|---|--|---|---|
| Coordinating and supporting projects for the assessment report. Undertaking administrative support, staffing, management support, and training necessary to provide project coordination for the Assessment Report components and direct support to the Source Protection Committee. The SPC operating funds are included in these costs. | \$819,000 | \$800,000 | 2005-Jan-01 to 2009-Sep-30 |
| Undertaking communications initiatives for the assessment report. Consultation on the overall proposed assessment report meeting the legislative and regulatory requirements on the consultation and submission process of the proposed Assessment Report as per regulation. (Local area engagement, outreach and creation of communications products that support the Assessment Report process). | Included in coordination costs above. | | |
| Information management for the assessment report preparation. Conducting overall data management, data sharing agreements, standards, mapping, software and maintenance. | | | |
| Undertaking a watershed characterization. Identifying and describing watersheds in the source protection area. | \$30,100 | \$ - | 2005-Jan-01 to 2008-Jun-30 |
| Completing a conceptual water budget. Describing the overall flow system for each watershed in the SPA, taking into consideration SW and GW features, land cover, human-made structures (dams, channel diversions, water crossings), and water takings. | \$193,600 | \$ - | 2005-Jan-1 to 2008-Mar-31 |
| Conducting a Tier 1 water budget analysis. Using simple methods, quantifying available water supply and demand using available information and assessing potential water quantity stress. | \$43,800 | \$ - | 2007-Dec-1 to 2008-Jul-31 |

| <p align="center">ASSESSMENT REPORT: WATERSHED-WIDE TASK DESCRIPTION</p> <p align="center">Assigned Lead: Lakes Simcoe & Couchiching / Black River SPA with support from Nottawasaga Valley and Severn Sound SPAs</p> | <p align="center">Costs for work completed or In Progress</p> | <p align="center">Estimated Costs for remaining work</p> | <p align="center">Start Date & Estimated Completion Date</p> |
|---|---|--|--|
| <p>Conducting a Tier 2 water budget analysis (for those subwatersheds identified as stressed in Tier 1 analysis). Using complex methods (numerical groundwater and surface water models), refine the estimates of available water supply in each subwatershed, and an appropriate reserve value. Refine the demand estimate through consultation with water users. Finally, re-assess water quantity stress based on the refinements of available supply and demand.</p> | <p align="center">\$ -</p> | <p align="center">\$163,500</p> | <p align="center">2008-May-1 to 2009-Sep-30</p> |
| <p>Delineating and applying vulnerability scores to Highly Vulnerable Aquifer areas. The Aquifer vulnerability index methodology will be applied to interpreted geological surfaces to delineate vulnerable areas, with consideration of hydraulic setting. Vulnerability ranking Estimated Cost to be completed using methods described in Regulation and Technical Rules: Assessment Report.</p> | <p align="center">Included in Water Budget & coordination costs above.</p> | | <p align="center">2007-Jun-1 to 2008-Sep-30</p> |
| <p>Delineating and applying vulnerability scores for Significant Recharge Areas. Significant recharge areas will be estimated using a simple water balance approach (estimating recharge across a watershed, and designating as significant those portions where 15% above average recharge occurs. This estimation will be refined for those areas where a Tier 2 water budget is completed using the modeling tools developed/refined for those Tier 2 assessments.</p> | <p align="center">Included in Water Budget & coordination costs above.</p> | | <p align="center">2006-Jun-1 to 2009-Mar-31</p> |
| <p>Identifying issues, inventorying threats and assessing hazards in Significant Recharge Areas and Highly Vulnerable Aquifer Areas. Hazard ranking will be accomplished through the assessment of existing threats data (from municipal, provincial, and federal sources of information); using methods described in Regulation and Technical Rules: Assessment Report.</p> | <p align="center">\$ -</p> | <p align="center">\$66,700</p> | <p align="center">2008-Jun-1 to 2009-May-31</p> |
| <p>Assess Risk in Significant Recharge Areas and Highly Vulnerable Aquifer Areas.</p> | <p align="center">Included in Identifying Issues & Assessing Hazards costs above.</p> | | <p align="center">2008-Jun-1 to 2009-Aug-31</p> |
| <p>Peer review on the groundwater vulnerability analysis of Highly Vulnerable Aquifer areas and Significant Recharge Areas. A qualified expert will be retained to verify the estimations of Significant Recharge and Vulnerable Aquifer areas.</p> | <p align="center">\$ -</p> | <p align="center">\$33,300</p> | <p align="center">2009-Apr-1 to 2009-Jun-1</p> |

| <p align="center">ASSESSMENT REPORT: WATERSHED-WIDE TASK DESCRIPTION</p> <p align="center">Assigned Lead: Lakes Simcoe & Couchiching / Black River SPA with support from Severn Sound and Nottawasaga Valley SPAs</p> | <p align="center">Costs for work completed or In Progress</p> | <p align="center">Estimated Costs for remaining work</p> | <p align="center">Start Date & Estimated Completion Date</p> |
|--|---|--|--|
| <p>Delineating and applying vulnerability scores for Intake Protection Zones. For the intake in Georgian Bay the Intake Protection Zone was delineated using a hydrodynamic model. Vulnerability ranking will be completed using available provincial guidance material (scores assessed based upon proximity to intake and flow conditions). Preferential Pathways will be assessed for these Intake Protection Zones.</p> | <p align="center">\$66,200</p> | <p align="center">\$10,000</p> | <p align="center">2006-Jun-1 to 2008-Jul-31</p> |
| <p>Delineating and applying vulnerability scores to Wellhead Protection Areas. For the municipal residential groundwater supplies in Oro-Medonte, Springwater, Bradford West Gwillimbury, Clearview, Innisfil, and New Tecumseth, the vulnerability of Wellhead Protection Areas will be assessed using the aquifer vulnerability index methodology (using the vulnerability scores for the municipal aquifer).</p> <p>*The original delineations of these Wellhead Protection Areas were completed and funded through the 2002 municipal groundwater studies.</p> | <p align="center">\$ -</p> | <p align="center">\$80,000</p> | <p align="center">2007-Jun-1 to 2009-Jun-30</p> |
| <p>Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas or Intake Protection Zones. For the Wellhead Protection Areas in Oro-Medonte, Springwater, Bradford West Gwillimbury, Clearview, Innisfil, and New Tecumseth, and the Intake Protection Zone in Collingwood, a desktop assessment of existing threats data (from municipal, provincial, and federal sources of information) is underway. Also included in this study is an evaluation of existing raw water quality issues. Hazard rankings will be assigned to each threat using methods described in Regulation and Technical Rules: Assessment Report.</p> | <p align="center">\$143,500</p> | <p align="center">\$ -</p> | <p align="center">2006-Jun1 to 2009-Mar-31</p> |
| <p>Identify threats in Wellhead Protection Areas and Intake Protection Zones based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA in Oro-Medonte, Springwater, Bradford West Gwillimbury, Clearview, Innisfil, and New Tecumseth, and the IPZ in Collingwood.</p> | <p align="center">\$66,200</p> | <p align="center">\$ -</p> | |
| <p>In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low.</p> | <p align="center">\$ -</p> | <p align="center">\$125,000</p> | <p align="center">2009-Apr-1 to 2012-Mar-31</p> |

The Work Plan to Complete the Assessment Report:
Assigned Lead – City of Barrie

The table below outlines the tasks that the City of Barrie has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|------------------------------|---|--|------------------------------------|--|
| City of Barrie | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated using a regional-scaled numerical model (Feflow). Vulnerability ranking was completed using hydrogeologic assessment (consideration of geochemistry and geology). The final vulnerability ranking will reflect a preferential pathways assessment. | Costs included in the Lakes Simcoe and Couchiching/ Black River TOR. | | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Desktop assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings to be assigned using the MOE guidance module and database. | | | 2008-Aug-1 to 2009-Aug-31 |
| | New planned well. Delineating, applying vulnerability score, identifying issues, inventorying threats, assessing hazards and risks of the wellhead protection area of the new planned well. | | | 2007-Jun-1 to 2009-Mar-31 |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | | | 2009-Apr-1 to 2012-Mar-31 |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | | | 2009-Mar 1 to 2010-Mar 31 |
| | Tier 3 Water Quantity Risk Assessment. For groundwater supplies, a site scale investigation into the viability of the wells to supply future water demand will be completed. This assessment will be completed through refinement of the existing numerical modeling tool. This task is to be co-managed by the City of Barrie and the South Georgian Bay-Lake Simcoe Source Protection Region. | | | |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Regional Municipality of Peel

The table below outlines the tasks that the Region Municipality of Peel has requested to be the lead on with respect to groundwater supplies. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are included in the Central Lake Ontario, Toronto & Region and Credit Valley (CTC) Terms of Reference. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|-------------------------------|---|---|------------------------------------|--|
| Regional Municipality of Peel | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated using a numerical flow model (Modflow), and vulnerability ranking was completed with consideration for preferential pathways per the MOE guidance module. | Costs included in CTC Terms of Reference. | | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings to be assigned using the MOE guidance module and database. | | | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | | | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | | | 2009-Apr-1 to 2012-Mar-31 |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Township of Essa

The table below outlines the tasks that the Township of Essa has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|------------------------------|---|---|------------------------------------|--|
| Township of Essa | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated using a combination of numerical modeling (Modflow) where sufficient hydrogeological information was available and Analytical solutions where hydrogeological information was sparse. Vulnerability ranking is being completed with consideration of preferential pathways per the MOE guidance materials. | \$16,900 | \$ - | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings for these threats are to be assigned using the MOE guidance module and database. | \$97,200 | \$ - | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | \$17,900 | \$ - | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | \$ - | \$20,000 | 2009-Apr-1 to 2012-Mar-31 |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Township of Adjala Tosorontio

The table below outlines the tasks that the Township of Adjala Tosorontio has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|-------------------------------|---|---|------------------------------------|--|
| Township of Adjala-Tosorontio | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated using a combination of numerical modeling (Modflow) where sufficient hydrogeological information was available and Analytical solutions where hydrogeological information was sparse. Vulnerability ranking is being completed with consideration of preferential pathways per the MOE guidance materials. | \$86,600 | \$ - | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings for these threats are to be assigned using the MOE guidance module and database. | \$66,500 | \$ - | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | \$17,300 | \$ - | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | \$ - | \$20,000 | 2009-Apr-1 to 2012-Mar-31 |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Town of Wasaga Beach

The table below outlines the tasks that the Town of Wasaga Beach has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|------------------------------|---|--|------------------------------------|--|
| Town of Wasaga Beach | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated using numerical modeling (Modflow). Vulnerability ranking is being completed with consideration of preferential pathways per the MOE guidance materials. | Costs included in the Threats and Risk assessment tasks below. | | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings for these threats are to be assigned using the MOE guidance module and database. | \$81,400 | \$ - | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | \$20,000 | \$ - | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | \$ - | \$35,000 | 2009-Apr-1 to 2012-Mar-31 |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Town of Mono

The table below outlines the tasks that the Town of Mono has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|------------------------------|---|---|------------------------------------|--|
| Town of Mono | Delineating and applying vulnerability scores to Wellhead Protection Areas. Wellhead Protection Areas were delineated using numerical modeling (Modflow). Vulnerability ranking is being completed with consideration of preferential pathways per the MOE guidance materials. | Costs included in CTC Terms of Reference. | | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings for these threats are to be assigned using the MOE guidance module and database. | | | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | | | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | \$ - | \$25,000 | 2009-Mar-31 to 2012-Mar-31 |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Town of Shelburne

The table below outlines the tasks that the Town of Shelburne has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|------------------------------|---|---|------------------------------------|--|
| Town of Shelburne | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated, and vulnerability ranking is being completed with consideration of preferential pathways per the MOE guidance materials. | \$30,600 | \$ - | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings for these threats are to be assigned using the MOE guidance module and database. | \$55,600 | \$ - | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | \$17,600 | \$ - | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | \$ - | \$20,000 | 2009-Mar-31 to 2012-Mar-31 |
| | Refine Wellhead Protection Areas to Address Surface Water Influence (GUDI). Wellhead Protection Areas will be revised to include an Intake/add an Intake Protection Zone-2 for the surface water body influencing the well (Shelburne Well Supply). | \$ - | \$40,000 | 2008-Jun-1 to 2009-Jun-30 |

The Work Plan to Complete the Assessment Report:
Assigned Lead – Town of Mulmur

The table below outlines the tasks that the Town of Mulmur has requested to be the lead on. The tasks, costs for work completed or in progress, estimated costs for remaining work (rounded to the nearest \$100); start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Assessment Report regulation.

| Municipality / Assigned Lead | ASSESSMENT REPORT: MUNICIPALITY-SPECIFIC TASK DESCRIPTION | Costs for work completed or In Progress | Estimated Costs for remaining work | Start Date & Estimated Completion Date |
|------------------------------|---|---|------------------------------------|--|
| Township of Mulmur | Delineating and applying vulnerability scores to all Wellhead Protection Areas. Wellhead Protection Areas were delineated, and vulnerability ranking is being completed with consideration of preferential pathways per the MOE guidance materials. | \$91,000 | \$ - | 2007-Jun-1 to 2009-Mar-31 |
| | Identifying issues, inventorying threats and assessing hazards in Wellhead Protection Areas. Water quality trends and adverse impact analysis of raw water are underway to identify issues. Assessment of threats also underway using existing municipal, provincial and federal information. Hazard rankings for these threats are to be assigned using the MOE guidance module and database. | \$25,200 | \$ - | |
| | Identify threats in Wellhead Protection Areas based on the regulated Tables of Drinking Water Threats and classify the threats in terms of their potential to affect municipal drinking water source as significant, moderate, or low based on the vulnerability scores of each WHPA. | \$11,300 | \$ - | |
| | In the event that a potential threat to drinking water supplies that is not considered in the Tables of Drinking Water Threats is identified, the Source Protection Committee shall request that these threats be evaluated using the risk assessment methodology outlined in the Technical Rules: Assessment Report. The outcome of this evaluation will be a classification of additional threat(s) to municipal drinking water sources as significant, moderate, or low. | \$ - | \$25,000 | 2009-Mar-31 to 2012-Mar-31 |

The Work Plan to Complete the Source Protection Plan

This section presents the components of the Source Protection Plan, which will be led by the Lakes Simcoe and Couchiching/Black River Source Protection Area with support from the Nottawasaga Valley and Severn Sound Source Protection Areas for the entire Source Protection Region. The Source Protection Plan tasks are conducted following the completion of the Assessment Report. The tasks, estimated costs, start date and estimated completion date are presented below. The costs are estimated and may need to be revised following the enactment of the Source Protection Plan regulation.

| SOURCE PROTECTION PLAN: WATERSHED WIDE TASK DESCRIPTION Assigned Lead: Lakes Simcoe & Couchiching / Black River SPA with support from Severn Sound and Nottawasaga Valley SPAs | Estimated Costs | Start Date & Estimated Completion Date |
|--|--------------------------------------|---|
| Coordinating and supporting projects for the source protection plan (SPP). Undertaking administrative support, staffing, management support, and training necessary to provide project coordination for the Source Protection Plan components and direct support to the source protection committee. The SPC operating funds are included in these costs. | \$1,200,000 | |
| Undertaking communications initiatives for the source protection plan. Consultation on the overall proposed Source Protection Plan meeting the legislative and regulatory requirements on the consultation and submission process as per regulation (Local area engagement, outreach and creation of communications products that support the Source Protection Plan process). | Included in coordination cost above. | |
| Undertaking an impact assessment to evaluate the social, economic and environmental impacts of proposed policies and risk reduction strategies. This assessment would likely be undertaken by a consultant and working group to evaluate a range of policy options for consideration as well as aid in the selection process of the most appropriate and feasible strategy. | \$100,000 | 2009-Oct-1 to 2012-Aug-20 |
| Policy development to address existing drinking water threats and risks. A centrally coordinated planning study will be completed to compile and/or develop recommendations regarding best management practices, education initiatives, monitoring strategies, and other means to reduce existing risks identified with due consideration of impacted communities in the Assessment Report. This study will be directed by a planning working group comprised of municipal planners and members of the Source Protection Committee. The working group will consider the number and extent of identified risks relative to proposed risk reduction strategies, as well as forthcoming guidance in Regulation and Directors Rules to ensure that the recommendations included in the Plan can be effectively implemented. | Included in policy task cost above. | |

| SOURCE PROTECTION PLAN: WATERSHED WIDE TASK DESCRIPTION Assigned Lead: Lakes Simcoe & Couchiching / Black River SPA with support from Severn Sound and Nottawasaga Valley SPAs | Estimated Costs | Start Date & Estimated Completion Date |
|---|--|---|
| <p>Policy development for managing vulnerable areas.</p> <p>A centrally coordinated planning study will be completed to compile and/or develop recommendations regarding land use planning policies to prevent new risks in the vulnerable areas identified in the Assessment Report. This study will be directed by a planning working group comprised of municipal planners and members of the Source Protection Committee. The working group will consider the number and extent of identified risks relative to proposed risk reduction strategies, as well as forthcoming guidance in Regulation and Directors Rules, to ensure that the recommendations can be effectively implemented with due consideration of impacted communities in the Assessment Report.</p> | <p>Included in policy task cost above.</p> | |
| <p>Policy development will be co-managed by the South Georgian Bay-Lake Simcoe Source Protection Region and a planning working group comprised of municipal staff, South Georgian Bay-Lake Simcoe staff and SPC members. This task will involve establishing and maintaining a municipal working group to provide input to the policy development tasks above.</p> | <p>Included in policy task cost above.</p> | <p>2009-Oct-1 to 2012-Aug-20</p> |
| <p>Policy Development for Great Lakes targets.</p> <p>In the event that the Minister sets water quality targets for Lake Huron, policy development to address those targets will be co-managed by the South Georgian Bay-Lake Simcoe Source Protection Region and a planning working group.</p> | | |
| <p>Establishing timelines for policy implementation.</p> <p>The Source Protection Plan will include recommendations regarding timelines for implementation, as well as timelines for plan updates per the Regulation and Directors Rules.</p> | | |

Summary of Costs

The following table summarizes the costs presented above for the Assessment Report and Source Protection Plan based on the estimated costs of the tasks led by Lakes Simcoe and Couchiching/Black River Source Protection Authority with support from the Nottawasaga Valley and Severn Sound Source Protection Authorities and the estimated costs of the municipally lead tasks.

| Tasks for Assessment Report Completion | Estimated Total Costs (Source Protection Authority Lead) | Estimated Total Costs (Municipal Lead) | Subtotal |
|--|---|---|---------------------|
| Coordinating and supporting projects for the assessment report. | \$ 1,619,000 | \$ - | \$ 1,619,000 |
| Undertaking communications initiatives for the assessment report. | \$ - | \$ - | \$ - |
| Information management for the assessment report preparation. | \$ - | \$ - | \$ - |
| Undertaking a watershed characterization. | \$ 30,100 | \$ - | \$ 30,100 |
| Completing a conceptual water budget. | \$ 193,600 | \$ - | \$ 193,600 |
| Conducting a Tier 1 water budget analysis. | \$ 43,800 | \$ - | \$ 43,800 |
| Conducting a Tier 2 water budget analysis (on the subwatersheds identified as stressed in Tier 1 analysis). | \$ 163,500 | \$ - | \$ 163,500 |
| Conducting a Tier 3 water budget analysis - water quantity risk assessment. | \$ - | \$ - | \$ - |
| Delineating and applying vulnerability scores to highly vulnerable aquifer areas. | \$ - | \$ - | \$ - |
| Delineating and applying vulnerability scores for significant recharge areas. | \$ - | \$ - | \$ - |
| Identifying issues, inventorying threats and assessing hazards in significant recharge areas. | \$ 66,700 | \$ - | \$ 66,700 |
| Peer review of the highly vulnerable aquifer areas and significant recharge areas. | \$ 33,300 | \$ - | \$ 33,300 |
| Delineating and applying vulnerability scores for intake protection zones. | \$ 76,200 | \$ - | \$ 76,200 |
| Delineating and applying vulnerability scores to wellhead protection areas. | \$ 80,000 | \$ 225,100 | \$ 305,100 |
| Identifying issues, inventorying threats and assessing hazards in wellhead protection areas or intake protection zones. | \$ 143,500 | \$ 325,900 | \$ 469,400 |
| Identifying threats in Wellhead Protection Areas and Intake Protection Zones based on the regulated Tables of Drinking Water Threats and classifying them. | \$ 66,200 | \$ 84,100 | \$ 150,300 |
| Risk assessment in the event that a potential threat is not considered in the Tables of Drinking Water Threats. The SPC shall request that this assessment be conducted. | \$ 125,000 | \$ 145,000 | \$ 270,000 |
| Refine wellhead protection areas for GUDI systems. | \$ - | \$ 40,000 | \$ 40,000 |
| TOTAL COSTS - ASSESSMENT REPORT | | | \$ 3,461,000 |

| Tasks for Source Protection Plan Completion | Estimated Costs (Source Protection Authority Lead) | Estimated Costs (Municipal Lead) | Subtotal |
|---|---|---|---------------------|
| Coordinating and supporting projects for the source protection plan (SPP) | \$ 1,200,000 | \$ - | \$ 1,200,000 |
| Undertaking communications initiatives for the source protection plan | \$ - | \$ - | \$ - |
| Undertaking an impact assessment to evaluate the social, economic and environmental impacts of proposed policies and risk reduction strategies. | \$ 100,000 | \$ - | \$ 100,000 |
| Policy development to address existing drinking water threats and risks | \$ 133,300 | \$ - | \$ 133,300 |
| Policy development for managing vulnerable areas | \$ - | \$ - | \$ - |
| Establishing timelines for policy implementation | \$ - | \$ - | \$ - |
| TOTAL COSTS - SOURCE PROTECTION PLAN | | | \$ 1,433,300 |

| | |
|---|---------------------|
| TOTAL COSTS - SOURCE PROTECTION AREA | \$ 4,894,300 |
|---|---------------------|

As presented in the table above, the estimated costs for the completion of the Assessment report are approximately \$3,461,000 and the costs for the completion of the Source Protection Plan are approximately \$1,433,300. In total, to complete both the Assessment Report and Source Protection Plan for the Lakes Simcoe and Couchiching / Black River Source Protection Authority, the cost is approximately \$4,894,300.

It is important to state that the regulations for the Assessment Report have been drafted and are currently under review, which may result in revisions for the final version. The regulations for the Source Protection Plan are not yet drafted by the MOE, as such additional funds may be required in order to adequately protection source water in the Nottawasaga Valley Source Protection Area.

This Terms of Reference was prepared as accurately as possible with the information available at the time of compiling this report in order to meet the timelines prescribed in Ontario Regulation 285/07 - Time Limits under the Clean Water Act. However, amendments may be required to this document based on the contents of the regulations to be drafted.