Mississippi Valley Conservation

RIDEAU VALLEY CONSERVATION AUTHORITY

AGENDA

Mississippi-Rideau Source Protection Committee (MRSPC)
September 2, 2010
7 pm
Lanark & District Civitan Club
2144 Pine Grove Road, Lanark

		Pg.	
1.0	**Welcome and Introductions** a. Agenda Review b. Notice of Proxies c. Adoption of the Agenda (D) d. Declarations of Interest e. Approval of Minutes – August 12, 2010 (D) ► draft minutes attached as a separate document f. Status of Action Items – Staff Report Attached (D) …..…… g. Correspondence (I): ……..…… • Minister of Natural Resources re: Tritium	 1 3	*Chair Stavinga*
2.0	**Assessment Report Development** – Staff Report Attached (D) …...……. a. Chapter 6: Surface Water – Review revised IPZ-3 vulnerability scoring and modifications to some IPZ delineations b. Chapter 8: Data Gaps – Consider including "Knowledge Gaps" in Chapter 8 in addition to Data Gaps c. Draft Assessment Report – Committee will consider approving Draft Assessment Report for public consultation	5	*Sommer Casgrain-Robertson & Brian Stratton*
3.0	**Threats Prioritization for ODWSP Funding** – Staff Report Attached (D) …..... Prioritization of which types of drinking water threats will be eligible for funding under the Ontario Drinking Water Stewardship Program	40	*Sommer Casgrain-Robertson*
4.0	**Source Protection Plan Development** – Staff Report Attached (D) …….. Review of draft process for developing a Source Protection Plan	45	*Sommer Casgrain-Robertson*
5.0	**Community Outreach** – Staff Report Attached (D) ….....……. a. Members & staff report on activities since the last meeting b. Discuss upcoming events & opportunities	48	*Chair Stavinga*
6.0	**Other Business**		*Chair Stavinga*
7.0	**Member Inquiries**		*Chair Stavinga*
8.0	**Next Meeting** – October 7, 2010, 1pm Rideau Valley Conservation Authority (Monterey Boardroom) 3889 Rideau Valley Drive, Manotick		*Chair Stavinga*
9.0	**Adjournment**		*Chair Stavinga*

(I) = Information (D) = Decision

Delegations wishing to speak to an item on the Agenda are asked to contact Sommer Casgrain-Robertson at 613-692-3571 ext 1147 or sommer.robertson@mrsourcewater.ca before the meeting.

1.0 f) STATUS OF ACTION ITEMS

Date: August 24, 2010
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi – Rideau Source Protection Region

Recommendation:

1. That the Mississippi-Rideau Source Protection Committee receive the Status of Action Items staff report for information.

Staff & Chair Action Items:

	Issue	Action	Lead	Status
1	Vacant "Other Interest" seat on the MRSPC	Fill the vacancy on the MRSPC	Sommer Casgrain-Robertson	**In Progress** Position has been advertised, application deadline is September 24, 2010
2	Uranium	MVC and local Health Units work together to raise public awareness about naturally occurring uranium in drinking water	Sommer Casgrain-Robertson	**In Progress** Jean-Guy Albert will encourage Health Canada to release the "Uranium and Drinking Water" fact sheet they developed.
3	Ottawa River Watershed Inter-Jurisdictional Committee	Encourage MOE to take the lead role in establishing an Ottawa River watershed inter-jurisdictional committee	Mary Wooding	**Ongoing** Chair Stavinga and staff attended Ottawa River Summit on August 27. Chair Stavinga meeting with Ville de Gatineau on September 16 to discuss possible IPZ work in Quebec.
4	Geothermal Systems	Determine if geothermal systems should be considered a threat to drinking water sources	MOE	**Complete** Components of geothermal systems are in MOE's table of drinking water threats. Locally we lack data about where these systems are so we couldn't consider them in our enumeration of potential significant threats (this will be noted in the Assessment Report's data gaps section). Committee's can write a source protection policy for these systems.

Issue		Action	Lead	Status
5	Compensation Models	Staff to collect other compensation models (e.g. Ottawa wetland policy, Alternate Land Use Services).	Sommer Casgrain-Robertson	**In Progress** Staff will build this in to the Source Protection Plan work plan (begin late 2010).

MRSPC Member Action Items:

Issue		Action	Lead	Status
1	Drainage Act is under review	Follow the process to see if it will impact source protection work	Peter McLaren & Richard Fraser	**In Progress** Peter and Richard are following the review and will inform the Committee of any concerns they have.
2	Members were concerned that attendance might be low at Assessment Report open houses and groups who should be involved in the process are not	Members were asked to provide Sommer with contact information for groups they feel should be involved in the process – they will be added to our mailing list.	All Members	**Ongoing**
3	OFEC Conference Calls & Training Sessions	Richard Fraser will provide the MRSPC with updates on OFEC conference calls & training sessions	Richard Fraser	**Ongoing**
4	Community Outreach opportunities	Members to notify Sommer of potential events and opportunities to engage the public about source protection	All members	**Ongoing**

1.0 g) CORRESPONDENCE

Date: August 24, 2010
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi – Rideau Source Protection Region

Attached Correspondence:

Correspondence From:		Regarding:	Response:
1	The Honourable Christian Paradis, Federal Minister of Natural Resources	Letters sent to Canadian Nuclear Safety Commission (CNSC) and Atomic Energy of Canada Limited (AECL) about tritium	Chair Stavinga following up on responses from AECL and CNSC

Minister
of Natural Resources

Ministre
des Ressources naturelles

Ottawa, Canada K1A 0E4

AOUT AUG 16 2010

Ms. Janet Stavinga
Chair
Mississippi-Rideau Source Protection Committee
P.O. Box 599
Manotick, Ontario K4M 1A5

Dear Ms. Stavinga:

Thank you for your correspondence of June 10, 2010, providing me with a copy of your correspondence to Atomic Energy Canada Limited (AECL) and the Canadian Nuclear Safety Commission (CNSC) regarding the link between the current efforts of the Mississippi-Rideau Source Protection Committee and the activities of the AECL Chalk River Laboratories, as well as the CNSC's Tritium Studies Project.

I appreciate the committee's efforts and concerns regarding sources of municipal drinking water. It is my understanding that both AECL and the CNSC have already followed up, or will be following up, on the matters you have raised in your correspondence. I am certain it will be given every consideration.

Again, thank you for writing and bringing this matter to my attention.

Yours sincerely,

The Honourable Christian Paradis, P.C., M.P. (Mégantic–L'Érable)

c.c.: The Honourable Leona Aglukkaq, P.C., M.P.
Minister of Health

Mr. Hugh MacDiarmid
President and Chief Executive Officer
Atomic Energy of Canada Limited

Dr. Michael Binder
President
Canadian Nuclear Safety Commission

Canada

2.0 Assessment Report Development

Date: August 26, 2010
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi – Rideau Source Protection Region

Recommendation 1:

That the Mississippi-Rideau Source Protection Committee approve the following Surface Water study revisions and updates:

- revised IPZ delineation for the Britannia and Lemieux Island Intake Protection Zone studies;
- updated IPZ delineations for the Smiths Falls Intake Protection Zone study; and
- revised IPZ-3 vulnerability scores for the Britannia, Carleton Place, Lemieux Island, Perth and Smiths Falls Intake Protection Zone studies.

Recommendation 2:

That the Mississippi-Rideau Source Protection Committee direct staff to:

- include the approved updated and revised Surface Water study findings in the *Draft* Assessment Report;
- revise Managed Lands, Livestock Density and Significant Threat Inventory results accordingly; and
- revise Chapter 6 accordingly.

Recommendation 3:

That the Mississippi-Rideau Source Protection Committee approve the inclusion of Knowledge Gaps in Chapter 8 of the *Draft* Assessment Report:

Recommendation 4:

That the Mississippi-Rideau Source Protection Committee approve the following amendments to the *Draft* Assessment Report approved by Committee on June 3, 2010:

- inclusion of revised and updated Surface Water study findings;
- revised Managed Lands, Livestock Density and Significant Threat Inventory results to reflect revised and updated Surface Water studies;
- revised Chapter 6 to reflect revised and updated Surface Water studies; and
- inclusion of Knowledge Gaps in Chapter 8.

Recommendation 5:
That the Mississippi-Rideau Source Protection Committee direct staff to post the amended “Draft Assessment Report” for public consultation.

September 2, 2010 – MRSPC Meeting

2.0 a) Chapter 6: Surface Water – Recommendation 1 & 2

At their June 3, 2010 meeting the MRSPC approved a *Draft* Assessment Report without IPZ-3 vulnerability scores. This decision was based on advice from staff who felt the approach used to determine IPZ-3 vulnerability scores, and the results, could not be defended. Following the meeting MOE confirmed that the Committee could not post a *Draft* Assessment Report with missing vulnerability scores. As a result staff worked with MOE technical staff, the consultants, and surface water municipalities to develop a revised approach to determine vulnerability scores for IPZ-3. During this process IPZ delineations for Britannia, Lemieux Island and Smiths Falls were also revised. All these revisions and updates are outlined below and attached for the Committee's review and consideration.

1. **Revised IPZ Delineations for Smiths Falls**
   When MOE pre-screened our *preliminary draft* Assessment Report in April/May, 2010 they recommended separate IPZ delineations for Smiths Falls' back-up and main intakes. The consultants addressed the comment by creating separate IPZ-1 delineations for these two intakes (see attached map).

   In addition, the consultants also acquired more accurate intake location information following completion of the new water treatment plant in Smiths Falls. They also acquired a more recent numerical flow model for the Rideau River upstream of Smiths Falls. This new information and flow model was used to refine the Smiths Falls IPZ delineations (see attached map).

2. **Revised IPZ Delineations for Britannia and Lemieux Island**
   City of Ottawa staff requested a change to the delineation of IPZ-3 for Britannia and Lemieux Island. The new approach is explained in the attached document (2.0a Revised IPZ Delineations for Britannia and Lemieux Island) and the results are shown on the attached maps.

   During public consultation on *preliminary* findings from the Britannia and Lemieux Island studies, a public comment was received recommending IPZ-2 be extended to include drainage from the "high tech" facilities near Moodie Drive/Carling Avenue and Moodie Drive/Corkstown Road. The consultants reviewed this comment and determined an adjustment to the IPZ-2 delineation was warranted adding two small areas to the IPZ-2 as shown on the attached map.

3. **Revised IPZ-3 Vulnerability Scores for all Systems**
   A new approach was developed to assign IPZ-3 vulnerability scores. It is explained in the attached document (2.0a Revised IPZ-3 Vulnerability Scores for all Systems) and the results are shown on the attached maps.

2.0 b) Chapter 8: Data Gaps – Recommendation 3

Before approving a *Draft* Assessment Report at their June 3, 2010 meeting, the MRSPC shortened the list of Data Gaps to those identified as allowable data gaps in an MOE memo dated October 8, 2009. This decision was based on direction from MOE. Since that meeting staff has reviewed a number of *Proposed* Assessment Reports posted by other regions and noted that they contain a much broader list of "Knowledge Gaps". After checking with MOE, staff recommends renaming the deleted data gaps as "Knowledge Gaps" and including them in the *Draft* Assessment Report. These proposed knowledge gaps are attached (2.0b Inclusion of Knowledge Gaps)

2.0c) *Draft* Assessment Report – Recommendation 4 & 5

It is essential that the MRSPC post a *Draft* Assessment Report by September 30, 2010 to ensure our region is eligible for Early Response funding under the Ontario Drinking Water Stewardship Program (see Agenda Item 3.0 for more details). Staff is confident they can meet the posting requirements by September 30 if on September 2, 2010 the Committee:

- approves the inclusion of revised and updated Surface Water study results;
- directs staff to work with the consultants to update Managed Lands, Livestock Density and Significant Threat Inventory results accordingly;
- direct staff to revise Chapter 6 accordingly; and
- approves the inclusion of Knowledge Gaps.

Past Meetings

June 3, 2010 – MRSPC Meeting

- The MRSPC reviewed the entire *preliminary draft* Assessment Report, comments from MOE on the *preliminary draft* Assessment Report and public comments on the *preliminary draft* surface water and groundwater studies (Wellhead Protection Area and Intake Protection Zone findings).
- The Committee approved a number of MOE's recommended changes and removed IPZ-3 vulnerability scores before approving a *Draft* Assessment Report to be posted for public consultation
- Following the meeting MOE confirmed that a *Draft* Assessment Report cannot be posted without IPZ-3 vulnerability scores.
- Staff informed Committee members and began working as quickly as possible with MOE technical staff, the consultants and surface water municipalities to develop a revised approach to assign IPZ-3 vulnerability scores.

May 6, 2010 – MRSPC Meeting

- The MRSPC reviewed *preliminary* Surface Water Threats and Issues information. They then reviewed a *preliminary draft* Assessment Report chapter: Chapter 6 (Surface Water Sources). The Committee also reviewed a *preliminary draft* summary of public comments on the municipal surface water studies.
- The Committee provided feedback and received the chapter as amended for inclusion in the *preliminary draft* Assessment Report that will be reviewed and considered by the Committee at their June 3 meeting.

April 1, 2010 – MRSPC Meeting

- The MRSPC received the revised IPZ-3 vulnerability scoring for Carleton Place, Perth and Smiths Falls.
- These summaries were provided to all relevant municipalities and presented to the Mississippi Valley and Rideau Valley Source Protection Authorities on April 21 and 22 respectively.
- Study findings were then presented to the public at open houses in Carleton Place (April 29), Perth (April 26) and Smiths Falls (April 27). The summaries were also posted on the web site for public review
- The MRSPC also reviewed a *preliminary draft* Assessment Report chapter: Chapter 7 (Climate Change).
- The Committee provided feedback and approved it as amended for inclusion in the *preliminary draft* Assessment Report that will be reviewed and considered by the Committee at their June 3 meeting.

March 4, 2010 – MRSPC Meeting

- The MRSPC reviewed three *preliminary draft* Assessment Report chapters: Chapter 1 (Introduction), Chapter 4 (Drinking Water Quality Threats and Issues Approach) and 5 (Groundwater Sources). The Committee also reviewed a *preliminary draft* summary of public comments on the municipal groundwater studies.
- The Committee provided feedback and approved them as amended for inclusion in the *preliminary draft* Assessment Report that will be reviewed and considered by the Committee at their June 3 meeting.
- The MRSPC also reviewed *preliminary draft* municipal surface water studies and summaries for Carleton Place, Perth and Smiths Falls and received them as *draft* for public consultation subject to staff discussing with the consultants why wetlands and woodlots were given a vulnerability score of 1 in IPZ-3 regardless of distance from the intake.
- Staff had a discussion with the consultants who decided to revise the IPZ-3 scoring and present revised *preliminary draft* studies and summaries to the Committee at their April 1 meeting.

February 4, 2010 – MRSPC Meeting

- The MRSPC reviewed a *preliminary draft* Assessment Report chapter: Chapter 2 (Watershed Characterization).
- The Committee provided feedback and approved it as amended for inclusion in the *preliminary draft* Assessment Report that will be reviewed and considered by the Committee at their June 3 meeting.
- The MRSPC also reviewed and provided feedback on a *preliminary* list of topics for inclusion in Chapter 8 (Data Gaps and Topics for Additional Research). MOE then held a conference call with Committee Chairs on March 9 and clarified that content outside of what is required to be included in an Assessment Report cannot be included in the Report because the Director would not be able to approve it.
- Staff has concluded that Chapter 8 will have to be limited to Assessment Report Data Gaps and an accompanying document will need to be developed to capture outstanding issues, concerns and topics for additional research. This additional document will not form part of the Assessment Report.

January 7, 2010 – MRSPC Meeting

- The MRSPC reviewed *preliminary draft* surface water studies and summaries for Britannia and Lemieux Island (the City of Ottawa's intakes on the Ottawa River) and received them as *draft* for public consultation.
- These summaries were provided to all relevant municipalities and presented to the Rideau Valley and Mississippi Valley Source Protection Authorities on January 28 and March 24 respectively.
- Study findings were then presented at public open houses near Lemieux Island (March 22 - Tom Brown Arena) and Britannia (March 31 - Ron Kolbus Lakeside Centre). The summaries are also posted on the web site for public review.

December 3, 2009 – MRSPC Meeting

- The MRSPC reviewed a *preliminary draft* Assessment Report chapter: Chapter 3 (Water Budget).
- The Committee provided feedback and approved it as amended for inclusion in the *preliminary draft* Assessment Report that will be reviewed and considered by the Committee at their June 3 meeting.

November 5, 2009 – MRSPC Meeting

- The MRSPC reviewed a *preliminary draft* Groundwater Threats and Issues study and summary and approved it as *draft* for public consultation.
- This summary was presented to the Rideau Valley and Mississippi Valley Source Protection Authorities on November 26 and December 2 respectively. The summary was also posted on the web site for municipal and public review.
- Once public consultation details for the draft Assessment Report are finalized, a notice will be sent to each property owner where a land use activity has been identified as a potential significant threat inviting them to review the report and talk to staff about their land use activities if they wish (completely voluntary).

September 3, 2009 – MRSPC Meeting

- The MRSPC reviewed *preliminary draft* studies and summaries that provided a Conceptual Water Budget (regional scale), Tier 1 Water Budget (subwatershed scale) and review of Climate Change knowledge. The Committee approved them as *draft* for public consultation.
- These summaries were presented to the Mississippi Valley and Rideau Valley Source Protection Authorities on September 16 and 24 respectively. The summaries were also posted on the web site for municipal and public review.

July 9, 2009 – MRSPC Meeting

- The MRSPC reviewed *preliminary draft* studies and summaries identifying Highly Vulnerable Aquifers and Significant Groundwater Recharge Areas at the regional scale and approved them as *draft* for public consultation.
- These summaries were provided to all municipalities and presented to the Mississippi Valley and Rideau Valley Source Protection Authorities on September 16 and August 27 respectively
- Study summaries are posted on the web site for public review.

June 4, 2009 – MRSPC Meeting

- The MRSPC reviewed *preliminary draft* municipal groundwater studies and summaries for Almonte, Munster, Richmond (King's Park) and Westport and approved them as *draft* for public consultation.
- These summaries were provided to all relevant municipalities and presented to the Rideau Valley and Mississippi Valley Source Protection Authorities on June 25 and July 15 respectively.
- Study results were then presented at public open houses in Richmond/Munster (July 20), Westport (July 21) and Almonte (July 22). The summaries are also posted on the web site for public review.

May 7, 2009 – MRSPC Meeting

- The MRSPC reviewed *preliminary draft* municipal surface water studies and summaries for Carleton Place, Perth and Smiths Falls.
- They chose to continue their deliberations at a later meeting following a technical briefing in late August with MOE staff and the study consultants (see March 4, 2010 meeting).

April 2, 2009 – MRSPC Meeting

- The MRSPC reviewed *preliminary draft* municipal groundwater studies and summaries for Carp, Kemptville and Merrickville and approved them as *draft* for public consultation.
- These summaries were provided to all relevant municipalities and presented to the Mississippi Valley and Rideau Valley Source Protection Authorities on April 15 and 23 respectively.
- Study results were then presented at public open houses in Carp (June 8), Merrickville (June 10) and Kemptville (June 11). The summaries are also posted on the web site for public review.

Background

Source Protection Committees are required to produce Assessment Reports. These reports will map local sources of drinking water, determine how vulnerable they are to contamination and overuse, and identify what land uses and activities pose a risk. Committees will then use this science to develop Source Protection Plans because they will know where source protection policies are needed and what risks those policies need to address.

Assessment Reports must contain the following components:

- Watershed Characterization
- Water Budget
- Vulnerable Areas
    - Significant Groundwater Recharge Areas
    - Highly Vulnerable Aquifers
    - Wellhead Protection Areas for:
        - Almonte, Carp, Kemptville, Lanark (future planned system), Merrickville, Munster Hamlet, Richmond (King's Park subdivision) and Westport

    - Intake Protection Zones for:
        - Carleton Place, Ottawa (Britannia & Lemieux Island), Perth and Smiths Falls
- Prescribed Threats summary
- Inventory of existing Issues and Significant Threats for groundwater
- Inventory of existing Issues and Significant Threats for surface water
- Climate Change Review

Due Date
Source Protection Committees must submit *proposed* Assessment Reports to their Source Protection Authorities, who in turn submit them to MOE for approval. *Proposed* Assessment Reports must be submitted to the MOE one year after Terms of Reference are approved.

Terms of Reference were approved for the Mississippi Valley Source Protection Area on February 5, 2009, therefore, a *proposed* Assessment Report for the Mississippi watershed must be submitted to MOE by February 5, 2010. Terms of Reference were approved for the Rideau Valley Source Protection Area on March 16, 2009, therefore, a *proposed* Assessment Report for the Rideau watershed must be submitted to MOE by March 16, 2010.

In March 2009, the MRSPC notified MOE that they would need a due date extension. In January, 2010 the MRSPC submited a formal request and received an extension to **September 21, 2010**. The extension was required to enable staff to address:

- revised Technical Rules issued by the MOE; and
- Committee concerns with the surface water studies.

Unfortunately, the surface water studies continue to be delayed because of ongoing concerns with approaches and methodologies. This has resulted in the MRSPC not being able to submit a *proposed* Assessment Report to the MOE by their due date of September 21, 2010. The Committee will therefore be out of compliance. It is anticipated that a *draft* Assessment Report will be posted by the end of September meaning a *proposed* Assessment Report should be submitted to the MOE by late December, 2010 or early January, 2011.

Two Versions – One Report
The MRSPC is required to develop two Assessment Reports: one for the Mississippi watershed, and one for the Rideau watershed. Learning from the challenges they encountered creating two separate Terms of Reference, staff prepared Assessment Reports that are amalgamated within one document because:

- Much of the information is regional and would be repeated in both versions;
- Many municipalities are shared between the Mississippi and Rideau watersheds and it would be onerous for them to review, comment on, and use two stand alone documents;
- It is much more convenient for the public to consult on one report; and
- Creating two separate reports is an unnecessary waste of public money.

Future Amendment Required
The *proposed* Assessment Report that will be submitted to the MOE will not contain information about the future municipal drinking water system planned for Lanark Village. This information will be identified as a data gap and included in a revised Assessment Report to be submitted by June, 2011.

Work Plan and Timeline
The following work plan and timeline breaks the process of developing Assessment Reports into three phases.

Phase 1:
- Completion of background technical studies
- SPC, SPA, municipal and public review of preliminary draft findings
- Development of *preliminary draft* Assessment Report chapters
- SPC review of *preliminary draft* chapters

Phase 2:
- Consolidation of chapters into a *preliminary draft* Assessment Report
- SPC review, amendment and approval of *draft* Assessment Report
- SPA, municipal and public consultation on the *draft* Assessment Report

Phase 3:
- SPC review of public comments received on *draft* Assessment Report
- Development of *proposed* Assessment Report
- Public consultation on the *proposed* Assessment Report
- Submission of the *proposed* Assessment Report to MOE for approval

Phase 1 Technical Studies

Staff and consultants have been working on background technical studies since 2006. Many studies started based on draft technical guidance from MOE and were finalized after November, 2009 to meet the approved Technical Rules. These studies contain the scientific information the MRSPC needs to complete Assessment Reports.

Once technical studies are completed, and in many cases peer reviewed:
- Staff will develop a summary outlining the study's purpose, methodology and findings (some studies will be grouped into one summary).
- The summary will be presented to the MRSPC for review and possible amendment (the technical study will be provided on CD).
- The summary will be presented to the Source Protection Authorities, then circulated to municipalities, and then the public for review.
  - Summaries will be posted on the web site for comment
  - 11 public open houses will be held.
  - Each open house will focus on the local municipal drinking water system (wellhead protection area or intake protection zone) and provide an overview of regional information as available.
  - Full technical studies will be available to anyone on CD
- Everyone will be encouraged to provide feedback and traditional and local knowledge at this early stage so it can be considered when the *preliminary draft* Assessment Report is being developed.

Staff will develop a *preliminary draft* Assessment Report in collaboration with our neighbouring source protection regions to be consistent where possible. Individual *preliminary draft* chapters will be brought to the MRSPC for review and comment as soon as they are produced. Chapters will be amended to reflect MRSPC feedback and will be compiled into a *preliminary draft* Assessment Report.

Carp, Kemptville and Merrickville

Municipal Drinking Water Systems (groundwater)

Month	Task	Timeline
March 2009	Golder complete Wellhead Protection Area Studies	**Completed** Early March
	Staff complete Threats Summary	**Completed** Early March
	Staff develop study summaries (reviewed by municipal technical staff)	**Completed** March 16
April 2009	MRSPC review *preliminary draft* study summaries & technical studies (CD). Provide to municipalities before the meeting.	**Completed** April 2
May 2009	Send *draft* study summaries & technical studies (CD) to municipalities with invitation to attend open house	**Completed** May 21
	Advertise three open houses (Carp, Kemptville and Merrickville) and comment period	**Completed** May 21
	Send an open house invitation to every property in an area that could score significant threat	**Completed** May 22 - 25
	SPAs review study summaries	**Completed** April 15 & 23
	Make study summaries available at MVC & RVCA offices for public review	**Completed** May 22
June 2009	Hold Open houses for municipal staff & council (afternoon session) and public (evening session)	**Completed** June 8, 10 & 11
February 2010	Post study summaries on web site	**Completed** mid February
	Collect comments on study summaries	**Completed** mid February
	Staff compile comments received on technical study findings	**Completed** March 3
	Staff prepare *preliminary draft* AR chapter	**Completed** February 24
March 2010	MRSPC review summary of public comments and *preliminary draft* AR Chapter	**Completed** March 4

Almonte, Munster, Richmond (King's Park), and Westport

Municipal Drinking Water Systems (groundwater)

Month	Task	Timeline
May 2009	Malroz complete Wellhead Protection Area Study for Westport; Intera / Golder complete other three studies	**Completed** Early May

Month	Task	Timeline
	Staff complete Threats Summary	**Completed** Early March
	Staff develop study summaries (reviewed by municipal technical staff)	**Completed** May 19
June 2009	MRSPC review *preliminary draft* study summaries & technical studies (CD). Provide to municipalities before the meeting	**Completed** June 4
July 2009	Send *draft* study summaries & technical studies (CD) to municipalities with invitation to attend open house	**Completed** July 7
	Advertise three open houses (Almonte, Richmond and Westport) and comment period	**Completed** July 10
	Send an open house invitation to every property in an area that could score a significant threat	**Completed** July 7
	SPAs review study summaries	**Completed** June 25 & July 15
	Make study summaries available at MVC & RVCA offices for public review	**Completed** July 16
	Hold public Open Houses	**Completed** July 20, 21 & 22
February 2010	Post study summaries on web site	**Completed** mid February
	Collect comments on study summaries	**Completed** mid February
	Staff compile comments received on technical study findings	**Completed** March 3
	Staff prepare *preliminary draft* AR chapter	**Completed** February 24
March 2010	MRSPC review summary of public comments and *preliminary draft* AR Chapter	**Completed** March 4

Significant Groundwater Recharge Areas & Highly Vulnerable Aquifers

Month	Task	Timeline
June 2009	Intera / Golder complete studies	**Completed** Early June
	Staff complete Threats Summary	**Completed** Early June
	Staff develop study summaries (reviewed by municipal technical staff)	**Completed** Mid June
July 2009	MRSPC review *preliminary draft* study summaries & technical studies (CD).	**Completed** July 9
	Send *draft* study summaries & technical studies (CD) to municipalities for review	**Completed** July 29
August 2009	SPAs review study summaries	**Completed** August 27 & Sept 16

Month	Task	Timeline
February 2010	Post study summaries on web site	**Completed** mid February
	Staff prepare *preliminary draft* AR chapter	**Completed** February 24
March 2010	MRSPC review *preliminary draft* AR Chapter	**Completed** March 4

Conceptual and Tier 1 Water Budget & Climate Change Review

Month	Task	Timeline
April 2008	MRSPC review preliminary Conceptual Water Budget completed by staff	**Completed** April 3
August 2009	Staff, Intera & Delcan complete Tier 1 Water Budget and staff revise Conceptual Water Budget. Jacqueline Oblak complete Climate Change Review	**Completed** August 14
	Staff develop summaries	**Completed** August 18
September 2009	MRSPC review technical studies (CD) and summaries	**Completed** September 3
	SPAs review summaries	**Completed** September 24
November 2009	Staff prepare *preliminary draft* Water Budget AR chapter	**Completed** November 16, 2009
December 2009	MRSPC review *preliminary draft* Water Budget AR Chapter	**Completed** December 3
February 2010	Post study summaries on web site	**Completed** February
March 2010	Send summaries to municipalities for review and comment	**Completed** March
	Staff prepare *preliminary draft* Climate Change AR chapter	**Completed** March 23
April 2010	MRSPC review *preliminary draft* Climate Change AR Chapter	**Completed** April 1

Groundwater Issues and Significant Threats Inventory

Month	Task	Timeline
October 2009	Dillon complete Threats & Issues Inventory for groundwater	**Completed** Early October
	Staff develop study summary (reviewed by municipal technical staff)	**Completed** October 20
November 2009	MRSPC review study summaries & technical studies (CD). Provide to municipalities before the meeting.	**Completed** November 5

Month	Task	Timeline
	SPAs review study summaries	**Completed** November 26 & December 2
February 2010	Post study summary on web site	**Completed** February
	Staff prepare *preliminary draft* AR chapter	**Completed** February 23
March 2010	MRSPC review *preliminary draft* AR chapter	**Completed** March 4
	Send study summaries to municipalities for review	**Completed** March

Watershed Characterization Report

Month	Task	Timeline
March 2008	MRSPC review preliminary Watershed Characterization report	**Completed** March 6, May 1 & June 5
January 2010	Staff complete Watershed Characterization report revisions and *preliminary draft* AR chapter	**Completed** January 23
February 2010	MRSPC review technical study revisions and *preliminary draft* AR chapter.	**Completed** February 4

Britannia & Lemieux Island (Urban Ottawa)

Municipal Drinking Water Systems (surface water)

Month	Task	Timeline
Winter 2009	Baird complete Intake Protection Zone Study	**Completed** December 21
	Staff complete Threats Summary	**Completed** April 2009
	Staff develop study summary (reviewed by municipal technical staff)	**Completed** December 22
January 2010	MRSPC review study summay & technical study (CD). Provide to relevant municipalities before the meeting.	**Completed** January 7
February 2010	Work with City of Ottawa staff to organize open houses	**Completed** February
	Advertise open houses (urban Ottawa) & comment period	**Completed** March
	SPAs review study summary	**Completed** January 28 & March 24
	Post study summary on web site and make available at MVC & RVCA offices for public review	**Completed** February
March 2010	Hold public open houses	**Completed** March 22 & 31
April 2010	Collect comments on study summaries	**Completed**

Month	Task	Timeline
		April 16
	Staff compile comments received on technical study findings and prepare *preliminary draft* AR chapter	**Completed** April 28
May 2010	MRSPC review summary of public comments and *preliminary draft* AR Chapter	**Completed** May 6
June 2010	MRSPC remove IPZ-3 vulnerability scores from *draft* Assessment Report	**Completed** June 3
July 2010	Staff, consultants and City of Ottawa staff develop new approach to assign IPZ-3 vulnerability scores and revise IPZ-3 delineation	June, July and August
September 2010	MRSPC review IPZ-3 revisions for inclusion in revised *draft* AR Chapter	September 2

Carleton Place, Perth and Smiths Falls

Municipal Drinking Water Systems (surface water)

Month	Task	Timeline
April 2009	J.F. Sabourin complete Intake Protection Zone Studies	**Completed** April 2009
	Staff complete Threats Summary	**Completed** April 2009
March 2010	J.F. Sabourin revise Intake Protection Zone Studies	**Completed** March 22
	Staff revised study summaries (reviewed by municipal technical staff)	**Completed** March 23
April 2010	MRSPC review revised *preliminary draft* study summaries & technical studies (CD). Provide to municipalities before the meeting.	**Completed** April 1
	Send link to *draft* study summaries to municipalities with invitation to attend open house	**Completed** April 14
	Advertise three open houses (Carleton Place, Perth and Smiths Falls) and comment period	**Completed** April 14
	Send an open house invitation to every property in an area that could score significant threat	**Completed** April 16
	SPAs review study summaries	**Completed** April 21 & 22
	Post study summaries on web site and make available at MVC & RVCA offices for public review	**Completed** April 13
	Hold public open houses	**Completed** April 26, 27 & 29
May 2010	Collect comments on study summaries	**Completed** May 5
	Staff compile comments received on technical study findings and prepare *preliminary draft* AR chapters	**Completed** May 5
	MRSPC review summary of public comments and *preliminary draft* AR Chapter	**Completed** May 6
June 2010	MRSPC remove IPZ-3 vulnerability scores from *draft*	**Completed**

Month	Task	Timeline
	Assessment Report	June 3
July 2010	Staff, consultants and municipal staff develop new approach to assign IPZ-3 vulnerability scores. Also update IPZ-1 and IPZ-2 delineations for Smiths Falls	June, July and August
September 2010	MRSPC review revisions for inclusion in revised *draft* AR Chapter	September 2

Surface Water Issues and Significant Threats Inventory

Month	Task	Timeline
May 2010	MRSPC review *preliminary* findings and *preliminary draft* AR chapter.	**Completed** May 6
May 2010	Dillon complete Threats & Issues Inventory for surface water	**Completed** May 18
September 2010	Dillon revise Signficant Threats Inventory to reflect changes in IPZ-3 vulnerability scoring and delineation	September 17

Phase 2 *Draft* Assessment Reports

Staff will compile all *draft* Assessment Report chapters into a *preliminary draft* Assessment Report. The MRSPC will review all public comments received on individual technical studies and will consider them when developing a *draft* Assessment Report for public consultation.

Month	Task	Timeline
June 2010	MRSPC review *preliminary draft* AR	**Completed** June 3
MRSPC removed IPZ-3 vulnerability scores from Draft AR (identified them as a data gap to be filled in amended AR). Unfortunately the Draft AR could not be posted for public consultation because IPZ-3 vulnerability scores are not an allowable data gap		
September 2010	MRSPC review amendments to *draft* AR, including revised IPZ-3 vulnerability scores	September 2
	SPC publish *draft* AR and notice* on web site	By September 30
	SPC publish notice* in newspapers	By September 30
	SPC give copy of notice* to SPAs	By September 30
	SPC make notice publically available at MVC, RVCA and all municipal offices	By September 30
	SPC make *draft* AR publically available at MVC, RVCA and some municipal offices	By early October
	SPC give copy of notice* to Algonquins of Ontario	By early October
	SPC give copy of notice* to neighbouring SPCs	By early October
October 2010	SPC courier hard copy of *draft* AR and notice* to each municipal clerk	By early October
	SPC give copy of notice* to each person known to be potentially engaging in a significant drinking water threat (identify potential threat)	By early October

Month	Task	Timeline
	SPC host 2 public meetings (one meeting in each Source Protection Area)	Late October
November 2010	SPC receive written comments on *draft* AR (35 day comment period)	Early November
	Staff prepare a summary of comments received on *draft* AR and prepare recommendations about how to address them	Early November

* **Notice** will:

- Inform people they can view the *draft* AR on the Internet
- Inform people of locations and times where they can view the *draft* AR
- Identify dates, times and locations of public meetings
- List due date to submit comments on *draft* AR

Phase 3 *Proposed* Assessment Reports

Staff will summarize all comments received on the *draft* Assessment Report during public consultation and make recommendations about how these comments could be addressed. The MRSPC will consider all comments when making final revisions to the *draft* Assessment Report.

The MRSPC will forward their *proposed* Assessment Report to the SPAs and post it for a final public consultation period. SPAs will submit the *proposed* Assessment Report to MOE for review and approval along with any public comments they receive or comments they wish to make.

Month	Task	Timeline
November 2010	SPC review comments received on *draft* AR and consider revising the document to address them Consider submitting *proposed* AR to SPAs for public consultation	Mid November
	Staff prepare summary of public comments received on *draft* AR and how they were addressed	Mid November
	SPC publish *proposed* AR, comment summary and notice* on website and make available at MVC and RVCA offices	Mid November
	SPC submit *proposed* AR, notice* and summary of comments to SPAs	Mid November
	SPC submit *proposed* AR, notice* and summary of comments to each municipal clerk	Mid November
	SPC send notice* to the Algonquins of Ontario	Mid November
	SPC send notice* to neighbouring SPCs	Mid November
	SPC issue notice* in newspapers and at MVC, RVCA and municipal offices	Mid November
December 2010	SPAs receive written comments on *proposed* AR	Mid December

Month	Task	Timeline
	SPAs submit to the Director (MOE): - p*roposed* AR - summary of comments received on *draft* AR and how they were addressed; and - new comments received on *proposed* AR	Late December
January 2011	Provide SPC with copy of comments received on *proposed* AR	Early January
Spring 2011	Minister will review the package and approve *proposed* AR or require SPAs to amend them and resubmit	Late spring
	Once approved the Minister will publish a notice on the Environmental Bill of Rights Registry	Soon after approval
	SPAs publish *approved* AR on web site and make available at other locations	Soon after approval

* **Notice** will:

- Inform people they can view the *draft* AR on the Internet
- Inform people of locations and times where they can view the *draft* AR
- Identify dates, times and locations of public meetings
- List due date to submit comments on *draft* AR

Assessment Reports will be prepared in accordance with:

- *Clean Water Act, 2006*
- Ontario Regulation 287/07 "General" (amended by O.Reg. 386/08)
- *Technical Rules: Assessment Report* (dated November 16, 2009)

Attachments:

- 2.0 a) Revised IPZ delineations for Britannia and Lemieux Island (report)
- 2.0 a) Revised IPZ-3 vulnerability scores for all systems (report)
- Vulnerability Scores for Britannia (maps)
- Vulnerability Scores for Lemieux Island (maps)
- Vulnerability Score for Carleton Place (maps)
- Vulnerability Scores for Perth (maps)
- Vulnerability Scores for Smiths Falls (maps)
- 2.0 b) Inclusion of Knowledge Gaps (report)

2.0 a) Revised IPZ delineations for Britannia and Lemieux Island

The Technical Rules and the associated Technical Bulletin: Delineation of Intake Protection Zone 3 Using the Event Based Approach (MOE, 2009) prescribe a different approach for municipal surface water intakes on the Ottawa River, called the event-based approach (EBA).

The EBA allows for the use of one of three methods to delineate IPZ-3:

i) Contaminant Transport Approach; or
ii) Boundary Approach; or
iii) A Combined Approach (Option 1 and 2)

IPZ-3 for the two Ottawa River intakes was originally delineated using the Contaminant Transport Approach. Using this approach, the consultant developed theoretical events consisting of a contaminant spill along Hwy 417 and at railway crossings of surface water upstream of the intakes. Contaminant modeling demonstrated that a major spill at these locations could cause a drinking water threat. As a result, the boundary of IPZ-3 was established using the 417 transportation corridor and specific railway crossing locations.

Upon further review, the contaminant transport approach was questioned by City of Ottawa Staff based on interpretation of the EBA Technical Bulletin. Guidance provided in the Technical Bulletin states that the contaminant transport approach can be used if there are concerns about specific activities being carried out upstream of the surface water intake. This guidance was interpreted such that this approach could be applied if there are existing activities of concern upstream of the intake. As this is not the case for Ottawa, it was determined that using a theoretical event to delineate IPZ-3 was not a defendable approach. Also, City staff believe that it would be incorrect to use such an incident to delineate IPZ-3 and to regulate land therein, because regulating land within IPZ-3 would not mitigate a transportation incident. Furthermore, the Boundary Approach discussed below is very consistent with the IPZ-3 delineation method used for the inland rivers studies.

The Boundary Approach was used to delineate IPZ-3 for the Ottawa River intakes based on the assumption that whatever is released in the environment would reach the intake during an extreme event. The most extreme event has been assumed to occur during the spring freshet for the Ottawa, Mississippi and Carp Rivers. The consultant has determined that the duration of the freshet event combined with the peak flow rates results in IPZ-3 encompassing the entire Source Protection Region that drains into the Ottawa River above the intake locations.

Maps are attached which show the limits of IPZ-3 for the Britannia and Lemieux Island Intakes.

2.0 a) Revised IPZ-3 Vulnerability Scoring

IPZ-3 Vulnerability Scoring

The Technical Rules set out a process for assessing the vulnerability of each intake protection zone. A final vulnerability score is based on the following equation:

V = B x C

Where:

V is the vulnerability score

B is the area vulnerability factor

C is the source vulnerability factor

Determining the Area Vulnerability Factor (B) for IPZ-3

The Technical Rules require that the following be considered when determining area vulnerability factors (B) within IPZ-3:

1. percentage of the area IPZ-3 that is composed of land;
2. land cover, soil type, permeability of the land and the slope of any setbacks;
3. hydrological and hydrogeological conditions of the area where the transport pathway is located; and
4. proximity of the area of the IPZ-3 to the intake.

The Technical Rules allow for more than one area vulnerability factor (B) to be assigned within IPZ-3, based on differences in the characteristics noted above including distance from the intake. According to the Technical Rules, no area vulnerability factor in IPZ-3 can be higher than the area vulnerability factor assigned to IPZ-2.

Determining IPZ-3 Area Vulnerability Factors for Mississippi-Rideau

As noted in the staff report, the Mississippi-Rideau Source Protection Committee (MRSPC) removed IPZ-3 vulnerability scores from the *draft* Assessment Report they approved on June 3, 2010. This decision was based on advice from staff who felt the approach used to assign the area vulnerability factors, and the resulting vulnerability scores, could not be defended. Staff has since been working with MOE technical staff, the consultants and surface water municipalities to develop a revised approach to determine area vulnerability factors for IPZ-3.

Time of Travel

There are no predominant changes in the physical characteristics within our IPZ-3 areas so it was decided that time of travel would be the best way to define areas within the IPZ-3 that would receive different area vulnerability factors. Time of travel is simply the time it takes for runoff to reach the municipal intake. This means that proximity to the intake was the major consideration in determining area vulnerability factors. However, determining time of travel takes into account land cover, soil type, permeability of the land, slope of any setbacks and hydrological conditions of the area where the transport pathways are located – all of which are considerations listed above.

Time of travel in the main channel was determined using:

- river velocities estimated by numerical models, and/or
- an event based approach as outlined in MOE guidance which uses existing flow records from the source river's flow gauges.

Choosing which method to use was determined by what models and/or data were available for each intake. Velocities of the 1:2 year return period flows were used for the calculations in the main river channel. Determining time of travel this way takes into consideration the hydrological conditions of the main channel.

Time of travel in the tributaries and transport pathways was determined by delineating subwatershed boundaries within IPZ-3 using GIS mapping and tools (e.g. ArcHydro). Next, the time required for flow in the subwatershed tributaries to reach the subwatershed outlet was determined using a well known hydrologic equation called the SCS lag time of concentration formula. This time of concentration formula takes into consideration land cover, soil type, land surface permeability and slope conditions within the subwatersheds.

Four Hour Intervals

Once time of travel was determined in IPZ-3, area vulnerability factors needed to be assigned. It was decided that all IPZ-3s would have a starting area vulnerability factor of 8, regardless of what area vulnerability factor a particular IPZ-2 may have (Table 1 shows Smiths Falls' IPZ-2 and the beginning of IPZ-3 both share an area vulnerability factor of 8). Choosing 8 as the starting value is in keeping with the trend set by MOE's Technical Rules. The Technical Rules dictate an area vulnerability factor of 10 for IPZ-1 and an area vulnerability factor of 9, 8 or 7 for IPZ-2 (based on the local characteristics). The Rules therefore dictate a drop of at least one factor from IPZ-1 to IPZ-2 (10 to 9).

It was then decided that within IPZ-3, the area vulnerability factor would drop by one every four hour time of travel interval. Four hour intervals were chosen as double the protection of IPZ-2. The Technical Rules dictate that IPZ-2 must be a two hour time of travel interval and this is viewed as a critical protection zone. As such the consultants decided to double this interval and apply it within IPZ-3 to determine where the area vulnerability factor would be reduced by one (e.g. 2 hours to 6 hours would have a factor of 8; 6 hours to 10 hours would have a factor of 7, etc.).

The area vulnerability factor becomes lower the farther away from the intake you get. The consultants decided that four would be the lowest area vulnerability factor they would assign. This means that at the 18 hour time of travel point, an area vulnerability factor of four is assigned to the remaining IPZ-3. It was decided that given the local conditions the lowest area vulnerability factor should be a four allowing land use activities with the highest hazard rating to be identified as low drinking water threats.

Table 1 below, identifies the new IPZ-3 area vulnerability factors. The table also shows the IPZ-1 and IPZ-2 area vulnerability factors for reference

Table 1: IPZ Area Vulnerability Factors

Intake Protection Zone	Time of Travel (hours)	Area Vulnerability Factors				
		Carleton Place	Perth	Smiths Falls	Britannia	Lemieux
IPZ-1	NA	10	10	10	10	10
IPZ-2	2	9	9	8	9	9
IPZ-3	**2 to 6**	**8**	**8**	**8**	**8**	**8**
	6 to 10	**7**	**7**	**7**	**7**	**7**
	10 to 14	**6**	**6**	**6**	**6**	**6**
	14 to 18	**5**	**5**	**5**	**5**	**5**
	>18	**4**	**4**	**4**	**4**	**4**

Determining the Source Vulnerability Factor (C) for IPZ-3

Once area vulnerability factors are determined they are multiplied with the source vulnerability factor to determine a final vulnerability score. The approach used to determine source vulnerability factors has not been revised.

The source vulnerability factor is an assessment of the location of the municipal surface water intake and how vulnerable it is to the impact of contaminants. The source vulnerability factor is assigned to each intake according to the following table from MOE's Technical Rules:

Table 2: Source Vulnerability Factor Ranges for Surface Water Intakes

Intake Type	Location	Source Vulnerability Factor (C)
A	Great Lakes	0.5 to 0.7
B	Connecting Channels	0.7 to 0.9
C*	Rivers	0.9 or 1
D	Other	0.8 to 1

* Intake Type for all Mississippi-Rideau Municipal Surface Water Intakes

All the intakes in the Mississippi-Rideau Source Protection Region are considered Type C intakes which means the source vulnerability factor can be 0.9 or 1, with 1 indicating a higher vulnerability.

A source vulnerability factor is chosen based on:

- the depth of the intake below the water surface - the deeper the intake, the lower the vulnerability;
- the distance of the intake from land - the further away from shore, the lower the vulnerability; and
- the number of recorded drinking water quality issues at the intake, if any.

Table 2 below, identifies all the IPZ source vulnerability factors.

Table 3: Source Vulnerability Factor Ranges for Surface Water Intakes

Municipal Intake	Source Vulnerability Factor (C)
Carleton Place	1
Perth	1
Smiths Falls	1
Britannia (Ottawa)	0.9
Lemieux Island (Ottawa)	0.9

Calculating IPZ Vulnerability Scores

Once the area (B) and source (C) vulnerability factors have been finalized, the final step is to complete the calculation of the final vulnerability scores, according to the prescribed equation:

$$V = B \times C$$

Where:

V is the vulnerability score

B is the area vulnerability factor

C is the source vulnerability factor

Table 4 below, identifies the final IPZ vulnerability scores. The attached maps also show final vulnerability scores for all five Intake Protection Zones.

Table 4: IPZ Vulnerability Scores

Intake Protection Zone	Time of Travel (hours)	Vulnerability Scores				
		Carleton Place	Perth	Smiths Falls	Britannia	Lemieux
IPZ-1	NA	10	10	10	9	9
IPZ-2	2	9	9	8	8.1	8.1
IPZ-3	2 to 6	8	8	8	7.2	7.2
	6 to 10	7	7	7	6.3	6.3
	10 to 14	6	6	6	5.4	5.4
	14 to 18	5	5	5	4.5	4.5
	>18	4	4	4	3.6	3.6

Pages 27 to 36 are maps

Due to their large file size, the maps referenced in the staff report for agenda item 2.0 had to be posted individually on the website. You will find them immediately below where this agenda package was posted.

2.0 b) Inclusion of Knowledge Gaps

Staff recommends adding the following section to Chapter 8 of the *draft* Assessment Report:

Identification of Knowledge Limitations for Continuous Improvement of Technical Studies

Some knowledge limitations are very minor and were filled with conservative assumptions. Others were more significant and may lead to further study and collection of more data. The following key limitations were identified during the completion of the background technical studies. Where available, a more detailed list of knowledge limitations is provided in each technical report.

Knowledge Limitations for Chapter 2 – The Mississippi-Rideau Source Protection Region

Based on a review of the Watershed Characterization Report (see Appendix A-1), the following knowledge limitations were identified that if filled, would result in improved future technical studies.

Watershed Description

- Surficial geology mapping for a portion of Frontenac County and Lennox & Addington County is not available
- A database of Federal lands locations is not available
- Limited number of stream flow gauges in both the Mississippi Valley and Rideau Valley watersheds
- Limited coverage for shoreline conditions classification
- Limitations were identified with the provincial water well records (further discussed in Section 8.2.3)
- No active climate change stations are located at the north end of the Mississippi Watershed
- Limited population statistics to calculate the population of development areas, private services areas, and seasonal residents
- Digital Official Plan mapping for Addington Highlands, North Frontenac and South Frontenac is not available
- Limitations were identified with the Permit To Take Water (PTTW) provincial database (further discussed in Section 8.2.2)

Surface Water Quality

- Lack of surface water quality monitoring stations/programs in close proximity upstream of the municipal surface water intakes

Groundwater Quality

- Lack of groundwater quality monitoring locations/programs beyond the municipal groundwater systems

Knowledge Limitations for Chapter 3 – Water Budget

Based on a review of the water budget technical studies (see Appendix A-1), the following knowledge limitations were identified that if filled, would result in improved future technical studies.

- Lack of actual water takings from Permit to Take Water (PTTW) database. For example, the current PTTW database only includes permitted (maximum) water taking data, and not actual takings
- Lack of water taking data from private wells, agricultural water users, and other non-permitted water users
- Limited number of stream flow gauges in both the Mississippi Valley and Rideau Valley watersheds, especially for the Tay River subwatershed and the Mississippi River downstream of Appleton
- Lack of information about groundwater recharge and discharge, and evapotranspiration
- Water discharged via sewers was reported to be significantly higher than water consumed via potable water systems. This issue warrants additional research as, over time, sewer drainage of groundwater resources can become a water budget demand that is significant in those areas facing water supply challenges.

Knowledge Limitations for Chapter 5 - Groundwater Sources

Based on a review of the groundwater technical studies (see Appendix A-1), the following knowledge limitations were identified that if filled, would result in improved future technical studies.

Groundwater Studies

Highly Vulnerable Aquifers, Significant Groundwater Recharge Areas, and Wellhead Protection Areas

- limitations were identified with the provincial water well records. For example, better static water levels, well locations and geologic descriptions would greatly improve the understanding of sub-surface conditions and calibration of groundwater models
- lack of detailed information about aquifer properties such as hydraulic conductivity, porosity, transmissivity, storativity, and water levels in the aquifer
- limited amount of information is known about the Nepean Aquifer system
- lack of detailed information is available on the overburden conditions in Carp and Kemptville
- limited amount of information is known about bedrock faults
- lack of information about groundwater recharge and discharge, and evapotranspiration
- the characterization of groundwater movement in fractured bedrock is not known
- lack of information about the location of abandoned wells

Managed Land and Livestock Density

- limited amount of livestock density data available at local and regional scales

Threats and Issues

- limited documentation available to confirm conditions. For example, the provincial spills database may indicate that a spill has occurred on a property, but there is no additional information with regard to the status of the spill.

Knowledge Limitations for Chapter 6 - Surface Water Sources

Based on a review of the surface water technical studies (see Appendix A-1), the following knowledge limitations were identified that if filled, would result in improved future technical studies.

Ottawa River IPZ-2

Though some preliminary work has been done in delineating the IPZ-2 for Britannia and Lemieux Island water intakes on the Quebec side of the Ottawa River, further information is needed.

Inland Rivers Surface Water Studies for Intake Protection Zones

- Limited bathymetric (river bottom) information is available
- Limited raw water quality data available upstream of the intakes
- Additional review and 'ground-truthing' the transport pathways within IPZ-2 would be beneficial, especially on private land
- Limited information is available for transport pathways in IPZ-3. For example, extent of drains, trenches, tile drains (also for IPZ-2), and karst features must be determined.
- Incomplete hydrologic and hydraulic information upstream and in the vicinity of each intake

Managed Land and Livestock Density

- Limited amount of livestock density data available at local and regional scales.

Threats and Issues

- Limited documentation available to confirm conditions. For example, the provincial spills database may indicate that a spill has occurred on a property, but there is no additional information with regard to the status of the spill.

Knowledge Limitations for Chapter 7 – Climate Change

Based on a review of the climate change technical studies (see Appendix A-1), the following knowledge limitations were identified that if filled, would result in improved future technical studies.

- Flow projection information for Rideau watershed, similar to the Mississippi data
- Development of uncertainty analysis for available local level precipitation and temperature projections
- Effects of climate change on water budget (precipitation, ET) for Rideau watershed, similar to Mississippi data

3.0 Threats Prioritization for ODWSP Funding

Date: August 26, 2010
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi – Rideau Source Protection Region

Recommendation:

Whereas, the Mississippi-Rideau Source Protection Committee has always strongly advocated for provincial funding to assist persons and bodies whose activities or properties are affected by the *Clean Water Act*; and

Whereas, the Mississippi-Rideau Source Protection Committee recognizes that there is limited provincial funding available so Committees must prioritize which significant drinking water threats, vulnerable pathways and/or Interim Risk Management Plans will be eligible to receive funding;

Therefore, be it resolved that the Mississippi-Rideau Source Protection Committee prioritize the following significant threats, vulnerable pathways and/or Interim Risk Management Plans to receive funding through the Early Response program:

1. Pathways that increase vulnerability scores;
2. The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage;
3. The handling and storage of a dense non-aqueous phase liquid;
4. The handling and storage of fuel;
5. The use of land as livestock grazing or pasture land, an outdoor confinement area or a farm-animal yard. O. Reg. 385/08, s. 3;
6. The application of pesticide to land;
7. The application of agricultural source material to land;
8. The storage of agricultural source material;
9. The handling and storage of pesticide;
10. The application of commercial fertilizer to land; and
11. The handling and storage of commercial fertilizer.

Be it further resolved that the Mississippi-Rideau Source Protection Committee stress the need for flexibility in the Ontario Ministry of the Environment's Early Response grant funding agreements. Flexibility is needed to ensure that all mitigation measures for prioritized threats and pathways are eligible for funding, not just those measures specifically identified in the Early Response application. This will include new measures added to future versions of the Risk Management Catalogue or measures already in the catalogue that were not specifically listed in the application form.

Background

The *Clean Water Act* established the *Ontario Drinking Water Stewardship Program* (ODWSP) to provide financial assistance to people whose activities or properties are affected by the *Clean Water Act*. The province committed $7 million dollars per year in funding from 2007 to 2012 for a total of $28 million dollars.

2007 to 2010

The annual $7 million dollars in funding is currently broken into three components:

1. Early Actions: funding for a short list of best management practices within 200 metres of a municipal intake or the 2 year time-of-travel around a municipal well
    - Mississippi-Rideau received $501,500 to allocated to eligible projects
    - 20 projects have been approved receiving $114,731 in funding
2. Outreach & Education: funding for raising awareness about source protection and the ODWSP
    - Mississippi-Rideau received funding (in partnership with Cataraqui and Quinte) to undertake a variety of projects to raise awareness about drinking water source protection
    - Mississippi Valley Field Naturalists received funding to educate grade 8 students about source protection planning
3. Special Projects: funding for other projects that protect municipal source water
    - Village of Merrickville-Wolford and the Municipality of North Grenville applied for funding to deepen their municipal well casings to ensure the wells only drew water from the deeper, less vulnerable, Nepean Aquifer. Neither application was approved.

2011 to 2012

The annual $7 million dollars in funding will be broken into two components:

1. Early Response: funding for property owners to undertake projects and activities that address significant drinking water threats, vulnerable pathways, and Interim Risk Management Plans.
    - Approximately $4.8 million available province wide
2. Special Projects: funding for early response projects over $100,000 and municipal land securement (purchasing land within 100 m of a municipal well).
    - Approximately $1 million available province wide

Special Projects Details

- Application deadline is September 30, 2010
- Applications are for projects greater than $100,000

Early Response Details

- Regions must apply for Early Response funding by September 30, 2010
- Risk mitigation measures listed in the Risk Management Catalogue are eligible for funding – SPCs must prioritize which threats will be funded locally
- Funding will be available to property owners February 2011 to December 2012
- Maximum of $80,000 can be granted to a project, which may include one or more identified significant drinking water threat(s) and the application of one or more measure(s) on a parcel of land or parcels of land owned by one individual or municipality.
- Maximum grant rate is 80% (or 50% for large business or large municipalities) or the grant rate under Early Actions if it was a measure previously eligible for funding

Prioritization of Threats for Early Response Funding

The objective of Early Response funding is to provide an incentive program that financially assists landowners to carry out projects and activities that address:

- Significant drinking water threats identified in Assessment Reports;
- Vulnerable pathways identified in Assessment Reports; or
- Interim Risk Management Plans negotiated between municipalities and landowners.

The Early Response component has been designed to ensure:

- Funds are prioritized to address the greatest risks to our drinking water sources; and
- Funds are available as affected landowners are identified.

Source Protection Committees must prioritize which significant threats, pathways, Interim Risk Management Plans, or projects with large municipalities or businesses will be eligible to receive Early Response funding in their region. Prioritization should be given to those significant threats that:

- Present the highest risk, and
- Can be expected to be addressed through a voluntary funding assistance program in the near term, prior to source protection plans being in place.

The following tables show what significant threats have been identified in the Mississippi-Rideau region: Table 1 is potential significant threats for Intake Protection Zones and Table 2 is potential significant threats for Wellhead Protection Areas.

Table 1: IPZ Significant Threat Count

	Prescribed Drinking Water Quality Threat Category								
	The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard. O. Reg. 385/08, s. 3.	The storage of agricultural source material.	The application of pesticide to land.	The handling and storage of fuel.	The application of agricultural source material to land.	The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	The handling and storage of pesticide.	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.	TOTAL
MVC									
Carleton Place	4	4	-	1	-	-	1	-	10
TOTAL	4	4	0	1	0	0	1	0	10
RVCA									
Perth	6	6	1	-	-	-	-	-	13
Smiths Falls	-	-	1	2	-	1	-	1	5
Britannia (Ottawa)	1	1	2	-	2	-	-	-	6
Lemieux (Ottawa)	-	-	-	-	-	-	-	-	0
TOTAL	7	7	4	2	2	1	0	1	24
M-R SPR TOTAL	11	11	4	3	2	1	1	1	34

Table 2: WHPA Significant Threat Count

		Prescribed Drinking Water Quality Threat Category													
		The handling and storage of fuel.	The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage.	The handling and storage of a dense non-aqueous phase liquid.	The application of pesticide to land.	The application of agricultural source material to land.	The handling and storage of pesticide.	The application of commercial fertilizer to land.	The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard. O. Reg. 385/08, s. 3.	The handling and storage of commercial fertilizer.	The application of road salt.	The handling and storage of non-agricultural source material.	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.	The handling and storage of an organic solvent.	TOTAL
MVC															
	Almonte	68	9	1	3	3	3	-	3	3	-	-	-	-	93
	Carp	125	2	3	2	-	2	-	2	-	-	-	1	-	137
	TOTAL	193	11	4	5	3	5	0	5	3	0	0	1	0	230
RVCA															
	Kemptville	993	119	8	7	6	3	7	-	2	3	1	-	-	1149
	Merrickville	442	144	11	1	-	-	1	3	-	-	1	-	-	603
	Munster	212	4	-	1	1	-	-	-	-	-	1	-	-	219
	Richmond	104	2	6	1	1	-	-	-	-	-	-	-	-	114
	Westport	51	2	1	-	-	1	-	-	1	-	-	-	1	57
	TOTAL	1802	271	26	10	8	4	8	3	3	3	3	0	1	2142
M-R SPR	TOTAL	1995	282	30	15	11	9	8	8	6	3	3	1	1	2372

1. Pathways

Pathways that increase vulnerability scores have been proposed as the number one priority to address through Early Response. From our Assessment Report we know vulnerability scores for the municipal wells in North Grenville and Merrickville-Wolford could be dramatically reduced by deepening the solid portion of their municipal well casings.

- Currently these municipal wells draw water from two aquifers. The shallower Oxford Formation aquifer is located just below the Earth's surface and is considered "highly vulnerable" to surface contamination. The deeper Nepean aquifer is located deep beneath the Earth's surface and is well protected from surface contamination by a thick layer of soil and rock above it. The small amount of water entering the wells from the Oxford Formation significantly increases the intrinsic vulnerability of these wells.
- Extending the solid well casings down into the Nepean aquifer would prevent water from the Oxford Formation from entering the wells.
- This would ensure a less vulnerable source of drinking water resulting in a smaller area of high vulnerability and therefore fewer significant threats. In North Grenville, the number of properties in the area currently scored high enough to produce significant threats is approximately 1200. This number would drop to approximately 90 properties if the well casings were deepened. Similarly Merrickville-Wolford would see a drop from approximately 500 properties to approximately 25. Combined, North Grenville and Merrickville-Wolford could see the number of properties with significant threats decrease by over 90%.

2. Sewage

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage is proposed as the second priority. This threat category was given a high priority because there were a lot of sewage related significant threats identified in the Mississippi-Rideau. This number of sewage related significant threats poses a high level of risk to our municipal sources of drinking water. Best management practices addressing this threat category have shown the highest amount of uptake in the Early Actions program, and it is believed that this trend will continue with the Early Response Program.

3. DNAPLS

The handling and storage of a dense non-aqueous phase liquid (DNAPL) is proposed as the third priority. This threat category has the third highest number of significant threats identified in the Mississippi-Rideau. The consequences of a DNAPL entering a municipal water source can be quite severe as the nature of these substances makes them very difficult to remove. For these reasons the handling and storage of DNAPLs is a high risk threat which can be addressed through the Early Response Program.

4. Fuel

Based on Tables 1 and 2, the threat category with the highest number of significant threats is the handling and storage of fuel. This threat category was not given a higher priority because regulations are already in place that ensures outdated, unsafe, and/or damaged equipment or facilities do not pose a threat to human health or the environment. This is ensured through the following regulations:

- Ontario Regulation 213/01, "Fuel Oil" – requires inspection at least every 10 years. If a distributor is informed or finds, during delivery or inspection, that the facility, appliance, or tank does not meet Ontario Regulation 213/01 then fuel supply will cease immediately or cease within time period established if the condition is not corrected.
- Ontario Regulation 217/01, "Liquid Fuel" – If a fuel supplier, a certificate holder or a contractor finds that equipment or a facility does not meet Ontario Regulation 217/01 then fuel supply will cease immediately or cease within time period established if the condition is not corrected.

However, despite these regulations, the potential threat still exists. A risk management measure may be added to the Risk Management Catalogue that would fund property owners to switch from home heating oil to natural gas. Since a measure may be introduced that would eliminate this threat, the threat category has been proposed as high priority to be addressed through Early Response.

5 to 11. Other Significant Threats

The numbers of threats associated with priorities 5 to 11 is much lower than priorities 2 to 4, however they have been included because in many cases the use of one risk management measure could address multiple threats. This provides good value for money as it is efficient and effective. It is also believed that these significant threats can be addressed through the voluntary Early Response Program.

Remaining Threat Categories

The remaining threat categories have few significant threats associated with them and are not deemed a high risk to municipal source water. As such, it is not recommend that these threat categories be prioritized to receive Early Response funding.

4.0 Source Protection Plan Development

Date: August 24, 2010
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi – Rideau Source Protection Region

Recommendation:

That the Mississippi-Rideau Source Protection Committee approve the proposed process for developing a Source Protection Plan.

Background

Once an Assessment Report identifies land use activities that pose a threat to source water Source Protection Committees must write policies to address these threats. Policies can range from education and incentive programs to land use restrictions. All policies will be contained in a Source Protection Plan which will lay out implementation and monitoring requirements. Plans must be submitted to the MOE by August 20, 2012.

Developing a Source Protection Plan

On May 31, 2010 we hosted a meeting for all municipal staff in the Mississippi and Rideau watersheds; 22 municipal staff attended from 14 different municipalities. Attendees discussed how a local Source Protection Plan should be developed. The following draft process reflects their guidance.

It is important that municipalities play a key role in the development of source protection policies because policies will focus on protecting their municipal source water, policies will shape their Official Plans and Zoning by-laws, and many of the policies will be implemented by municipalities (e.g. through land use planning or a Risk Management Official).

Staff

- A Senior Planner will be hired to take the lead on developing a Source Protection Plan for the Mississippi-Rideau region.
- The Planner will work closely with municipal staff, Committee members, neighbouring regions and Conservation Ontario to draft policies for public consultation.
- This position has been posted and we hope to have it filled by late September, 2010. Municipal and Conservation Authority planning staff are involved in the hiring process.

Working Group

- A technical working group will be created to review and comment on preliminary policies prepared by the Planner prior to SPC review
- Working group will be open to all interested municipal staff throughout the process
    - Attendance may vary each meeting depending on the agenda / focus
    - Members may break into smaller sub-groups to work more closely with staff on a specific set of policies.
- Other members will include a couple CA planners, a couple SPC members and relevant district Ministry staff

- Each meeting will focus on policies for a particular sector (the 21 threat categories can be grouped into a small number of sectors: industry, residential, agriculture, municipal).
    - Sector experts or SPC reps will be invited to provide an overview of existing practices and regulatory requirements
    - Policy experts may be invited to provide advice on policy options (stewardship, public education, provincial instruments)
    - Preliminary policies prepared by staff to manage that sector will be reviewed
- Working Group will also review public comments after consultation sessions and make recommendations to the SPC about how to address them
- The group will also help keep municipal councils informed about progress and draft policies

Source Protection Committee

- The Committee will review and comment on draft policies recommended by the technical working group
- Will direct staff to consult with targeted stakeholder groups on preliminary policies (e.g. meet with farm groups to get feedback on preliminary policies affecting agriculture)
- Will review public comments and consider recommendations from the Working Group about how to address them.
- Will approve draft and proposed Source Protection Plans for formal public consultation

Source Protection Authorities

- Staff will keep both Authorities updated on policy development progress and will provide an overview of preliminary, draft and proposed policies prior to targeted and public consultation sessions

Stakeholder Groups and General Public

- Targeted consultation sessions will be held with potentially affected sectors to gather feedback on preliminary policies
- Formal public consultation (e.g. public meetings and commenting periods) will be undertaken twice on the Source Protection Plan (draft and proposed versions)

Source Protection Plans will be prepared in accordance with:

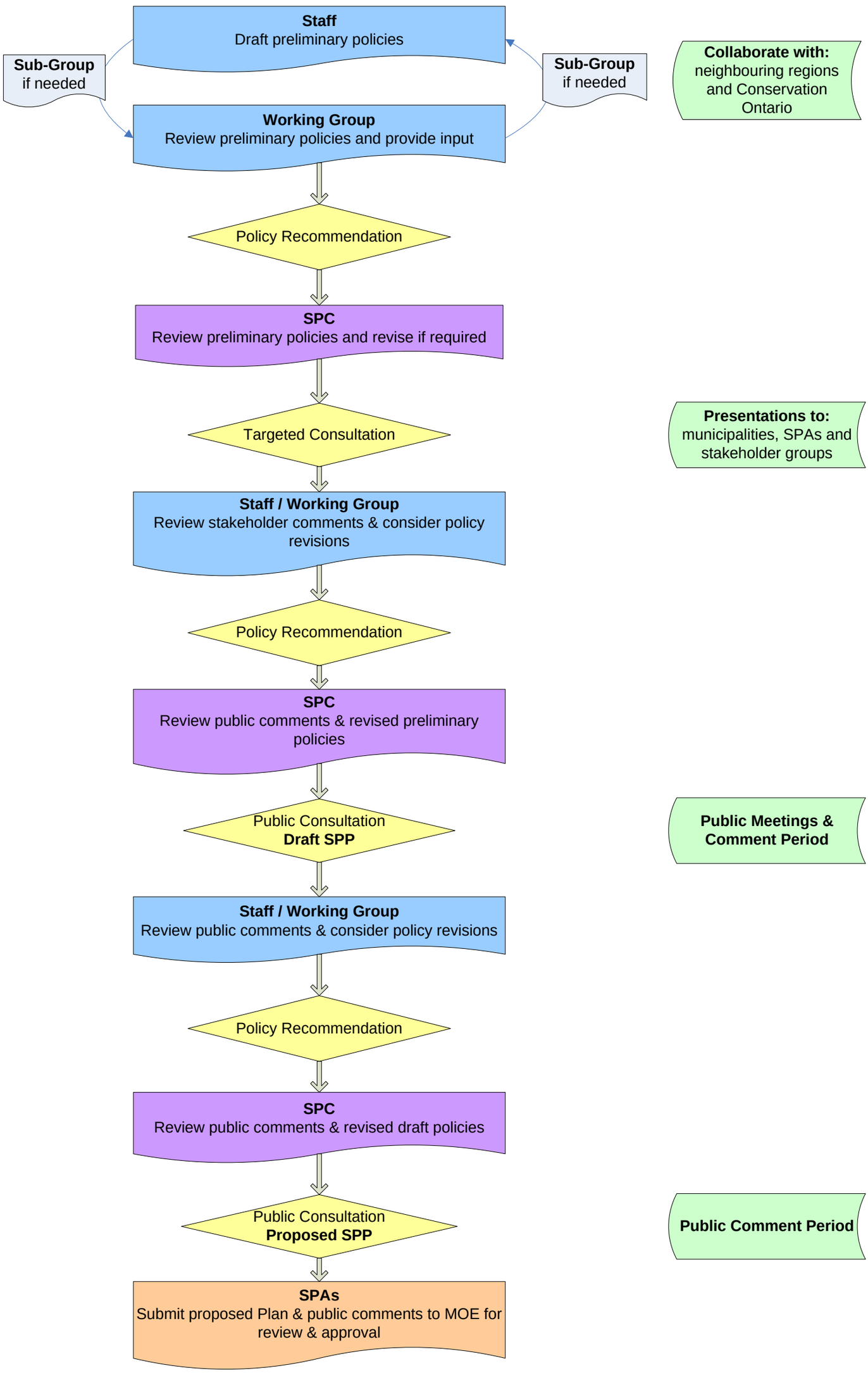
- *Clean Water Act, 2006*
- Ontario Regulation 287/07 “General”
- Future guidance provided by the MOE
- Future guidance provided by Conservation Ontario’s *Source Protection Plan Advisory Committee*

Attachments:

- *Process to Develop a Mississippi-Rideau Source Protection Plan* (July, 2010)

4.0 Process to Develop a Mississippi-Rideau Source Protection Plan

July, 2010



5.0 Community Outreach

Date: August 24, 2010
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi – Rideau Source Protection Region

Recommendation:

1. That the Mississippi-Rideau Source Protection Committee receive the Community Outreach staff report for information.

Background

Staff and MRSPC members participate in many different community outreach activities that raise awareness and promote the source protection planning process. These activities include information booths at events, presentations at meetings and articles in newsletters and local papers. It is important that staff and members keep each other informed about the activities they are involved in so that we can coordinate our participation and prepare appropriate materials in advance. This includes coordinating with our neighbouring regions for meetings and events that cover Eastern Ontario.

Past Activities

Members & staff are asked to give a verbal update on any other activities that took place in the past month related to source protection.

1. *Meeting with City of Ottawa re: Ottawa IPZ-3 Zones*
    - August 16, Manotick (Chair Stavinga and Brian attended)
2. *Ontario Drinking Water Stewardship Program teleconference*
    - August 18 (Sommer and Derek Matheson participated)
3. *Source Protection Plan Advisory Committee teleconference*
    - August 19 (Sommer and Chair Stavinga participated)
4. *Ottawa River Summit*
    - August 27 (Chair Stavinga, Sommer and other CA staff attended)

Upcoming Activities

Members & staff are asked to give a verbal update about any other activities they know about in the coming months related to source protection.

1. *Provincial Site Visit (MNR/MOE)*
    - September 8, Manotick (Chair, Project Managers, General Managers)
2. *Cities Plus Network conference*
    - September 13, Ottawa (Chair Stavinga presenting)
3. *Project Managers meeting*
    - September 14, Toronto (Brian attending)
4. *Ontario East Municpal Conference*
    - September 15, Kingston (Sommer presenting)
5. *Mississippi Valley Source Protection Authority*
    - Septenber 15, Almonte (Chair Stavinga attending)

6. *Chairs Quarterly meeting*
    - September 20-21, Toronto (Chair Stavinga attending)
7. *Rideau Valley Source Protection Authority*
    - September 23, Manotick (Sommer and Chair Stavinga attending)
8. *Eastern Ontario Muncipal Water Association Conference*
    - September 28, Smiths Falls (Sommer presenting)
9. *MOE Training Session – Source Protection Plan regulation*
    - October 13, Brockville (attendees to be determined)
10. *Eastern Ontario Muncipal Water Association Conference*
    - September 28, Smiths Falls (Sommer presenting)