AGENDA

Mississippi-Rideau Source Protection Committee

Date: April 7, 2011
Time: 1 pm

Location: Rideau Valley Conservation Authority
3889 Rideau Valley Drive, Manotick

Welcome and Introductions			
1.0	a. Agenda Review b. Notice of Proxies c. Adoption of the Agenda (D) d. Declarations of Interest e. Approval of Minutes – March 3, 2011 (D) ► draft minutes attached as a separate document f. Status of Action Items – Staff Report Attached (D) …… g. Correspondence (D) ……	**Pg.** 1 3	*Chair Stavinga*
Source Protection Plan			
2.0	**Home Heating Oil Presentation** (I) A fuel distributor expert will outline how the handling and storage of fuel oil is currently regulated and local observations and lessons learned.		*Bob Herres (W.O. Stinson & Son Ltd.)*
3.0	**Draft Policy Ideas –** Staff Report Attached (D) …….. Members will consider approving draft policy concepts for the following drinking water threat and directing staff to undertake preliminary consultation. a. Handling and Storage of Fuel Oil (furnace and generator fuel oil)	5	*Sommer Casgrain-Robertson*
Stewardship Program			
4.0	**Ontario Drinking Water Stewardship Program Update** (I) …… Staff will summarize the grant dollars delivered to property owners in 2007 to 2011 and how they will be delivered in 2011 to 2013.	15	*Derek Matheson (RVCA)*
Assessment Report			
5.0	**Ottawa IPZ-3 Vulnerability Scores –** Staff Report Attached (D) …….. Members will consider approving an alternative approach for determining IPZ-3 vulnerability scores for Ottawa's intakes, proposed by City of Ottawa staff.	17	*Ryan Polkinghorne (City of Ottawa)*
Other			
6.0	**Community Outreach** – Staff Report Attached (D) …… Members & staff report on past activities and upcoming events and opportunities	31	*Sommer Casgrain-Robertson*
7.0	**Other Business**		*Chair Stavinga*
8.0	**Member Inquiries**		*Chair Stavinga*
9.0	**Next Meeting** – May 5, 2011, 1pm Rideau Valley Conservation Authority (Monterey Boardroom) 3889 Rideau Valley Drive, Manotick		*Chair Stavinga*
10.0	**Adjournment**		*Chair Stavinga*

(I) = Information (D) = Decision

Delegations: If you wish to speak to an item on the Agenda please contact Sommer Casgrain-Robertson before the meeting (sommer.robertson@mrsourcewater.ca or 613-692-3571 / 1-800-267-3504 x 1147)

1.0 f) STATUS OF ACTION ITEMS

Date: March 28, 2011
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 receive the Status of Action Items staff report for information.

Staff & Chair Action Items:

	Issue	Action	Lead	Status
1	Questions for OMAFRA	OMAFRA staff will provide responses to some outstanding questions following their presentation on January 6, 2011	Sommer Casgrain-Robertson	**In Progress** OMAFRA staff is currently gathering responses. They will be sent to Sommer for distribution to members.
2	Vacant "City of Ottawa" seat on the MRSPC	Fill the vacancy on the MRSPC	City of Ottawa staff	**In Progress** City of Ottawa staff are in the process of filling this seat
3	Ottawa River Watershed Inter-Jurisdictional Committee	Encourage MOE to take the lead role in establishing an Ottawa River watershed inter-jurisdictional committee	Chair Stavinga & Brian Stratton	**Ongoing** Baird completed a proposal to revise Ottawa's IPZ-2s and delineate IPZ-1s and IPZ-2s for Gatineau's intakes. Chair Stavinga is drafting a letter to send this proposal to the MOE.
4	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 continue to encourage Health Canada to release their "Uranium and Drinking Water" fact sheet they developed.
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.

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	**Complete** Peter McLaren informed members that the review involved administrative changes and there were to source water concerns.
2	Members were concerned that attendance might be low at public 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: March 28, 2011
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 receive the Correspondence for information.

Attached Correspondence:

	Correspondence From:	Regarding:	Response:
1	MOE, Ian Smith March 22, 2011	EBR Posting: proposed amendments to Assessment Report Technical Rules. Comment deadline is May 6, 2011	Staff reviewed the proposed amendments and do not have any EBR comments to submit.

From: SPPB, Coordinator (ENE) [mailto:SPPB.Coordinator.moe@ontario.ca]
On Behalf Of Smith, Ian (ENE)
Sent: Tuesday, March 22, 2011 11:25 AM
Subject: Proposed amendments to the Director's Technical Rules governing the content of an assessment report under the Clean Water Act, 2006

Sent on Behalf of Ian Smith, Director, Source Protection Programs Branch—Ministry of the Environment.

To all General Managers and Project Managers,

The Ministry of the Environment has posted on the Environmental Registry proposed amendments to the Director's Technical Rules, which govern the content of the assessment report. The posting provides 45 days for stakeholders, including the source protection committees, and members of the public to comment. The proposed amendments can be found through the following link:

http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTExODYz&statusId=MTY3ODg2&language=en

The amendments include updates to the Tier 2 Subwatershed Stress Assessments for drought, the contents of the Tier 3 Local Area Risk Level, and a rule to enable the inclusion of climate change projections.

The amendments to the Tier 2 Director Technical Rules are reflective of the surface water and groundwater Technical Bulletins issued by MOE and MNR dated April 2010 and July 2009 respectively.

The Director Technical Rules amendments to the Tier 3 Part IX – Local Area Risk Level are meant to convey the messaging provided in a Technical Bulletin dated April 2010 and the lessons learned from a recent Tier 3 pilot study. These changes are being made to reflect the methodology already underway for any new Tier 3 water budgets.

The province has been working with the Project Managers and their technical teams in the application of the Technical Bulletins. Most the Tier 3 Water Budget and Local Area Risk Assessments are underway and are following these bulletins; therefore, there should not be any impact on these projects. There may be some minor changes in terminology used when these water budgets are integrated into assessment reports.

The proposed addition of a technical rule on integrating climate change projections is an enabling rule only. If passed, the Director could direct a Source Protection Committee to update a component of the assessment report to incorporate a climate change data set. Training materials are being developed with Toronto and Region Conservation Authority and York University to prepare source protection committees for this work in the future. In addition, data sets are being developed by the Ministry of Natural Resources to support this future work.

Staff will be available to help you understand the proposed amendments. You can get this support through your liaison officers, who can either get you answers to questions, or arrange to have someone from our source protection planning section meet with you directly. We ask that if you are working with consultants and/or municipalities on your water budgets that you take the opportunity to invite them to comment on these draft proposals also.

Thanks for your attention to this proposal.

Sincerely,

Ian Smith, Director
Source Protection Programs Branch
Ministry of the Environment

3.0 Draft Policy Ideas: Handling and Storage of Fuel Oil

Date: March 28, 2011
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 Draft Policy Ideas for the handling and storage of fuel oil and direct staff to undertake pre-consultation with potential policy implementers and engage potentially affected persons and bodies.

Background

Across Ontario, Source Protection Committees (SPC) are working with municipalities, farmers, property owners, businesses, industries, First Nations, environmental groups, Provincial Ministries and the general public. Together they are developing policies to prevent the contamination or overuse of lakes, rivers and aquifers that supply municipal drinking water.

Most source protection policies will manage land use activities that could contaminate sources of drinking water, although prohibition can be used as a tool of last resort. All policies will be compiled into Source Protection Plans which will undergo thorough public consultation.

Source Protection Plans:

- Must contain policies to address significant drinking water threats; and
- May contain policies to address moderate and/or low drinking water threats.

Policy Tools

Policies addressing significant threats can use one or more of the following tools:

- Education and Outreach
- Incentives
- Monitoring
- Provincial instruments (add conditions/requirements to a provincial approval)
- Land Use Planning (restrict or manage land uses)
- Risk Management Plans (require risk mitigation strategies to be implemented)
- Prohibition
- Other
    - Specify Actions (that would help implement the Plan or achieve it's objectives)
    - Stewardship Programs
    - Best Management Practices
    - Pilot Programs
    - Research

Mississippi-Rideau Plan Development

In the Mississippi-Rideau region, policies will be developed in four stages:

1. Draft Policy Ideas:
    - A municipal working group, local experts and staff will develop initial policy ideas
    - These ideas will be vetted by the SPC who can approve them as draft concepts
2. Draft Policy Concepts
    - Staff will seek input from those people/bodies who would be affected by the policy concepts and who have been tasked with implementing policy concepts
    - The SPC will consider all input and may amend the concepts (draft policies)
3. Draft Source Protection Plan
    - Will be posted for a 35 day public comment period (including public meetings)
    - The SPC will consider all comments and may amend the policies (proposed policies)
4. Proposed Source Protection Plan
    - Will be posted for a 30 day comment period
    - All comments will be submitted to the MOE for their consideration when reviewing the proposed Source Protection Plan for possible approval

Drinking Water Threats

Certain land use activities involving chemicals or pathogens (e.g. bacteria) are considered a drinking water threat if they take place close to a municipal well or upstream of a municipal water treatment plant intake. This is because a leak, spill or runoff could soak into the ground and contaminate groundwater or runoff property and contaminate a lake or river. If this happened near a municipal well or intake, municipal drinking water could become contaminated.

The province has determined that under certain circumstances the following land use activities are considered drinking water threats. To be a threat most of the activities below must involve a minimum amount of material, be occurring on a minimum size area and/or involve a certain type of chemical. All the threat circumstances are listed in a provincial table accessible from the "Assessment Report" page of our website (www.mrsourcewater.ca).

The provincial drinking water threat categories are:

- Waste disposal sites or application of untreated septage to land
- Sewage storage, treatment, transmission or disposal
- Agricultural source material (e.g. manure) storage, management or application
- Non-agricultural source material (e.g. biosolids) storage, handling or application
- Farm animal pasturing, grazing, outdoor confinement areas or farm yards
- Fertilizer storage, handling or application
- Pesticide storage, handling or application
- **Fuel storage or handling**
- Dense Non-aqueous Phase Liquids (DNAPLSs) storage or handling
- Organic solvents storage or handling
- Road salt storage, handling or application
- Snow storage
- Airplane de-icing

Fuel Oil

The remainder of this staff report discusses fuel oil storage and handling as regulated by Ontario Regulation 213/01. The staff report provides:

- Background information about this drinking water threat; and
- Draft policy ideas for how it could be addressed in a Source Protection Plan.

The Threat

As noted above (in bold), one of the provincial threat categories is fuel, specifically:

- The handling and storage of fuel.

This staff report proposes draft policy ideas for **fuel oil** (often fuel for heating) which is regulated under Ontario Regulation 213/01 of the *Technical Standards and Safety Act, 2000*. Fuel oil can pertain to:

- Forced-air furnaces, boilers, water heaters or standby generators

Future staff reports will propose draft policy ideas for **liquid fuel** (often fuel for transportation) which is regulated under Ontario Regulation 217/01 of the *Technical Standards and Safety Act, 2000*. Liquid fuel can pertain to:

- Retail outlet, bulk plant, marina, cardlock / keylock, private outlet or farm (where gasoline or an associated product is handled other than in portable containers for subsequent transmission by pipeline or transportation or distribution by tank vessel, tank car or tank vehicle).

Where is it a Significant Threat?

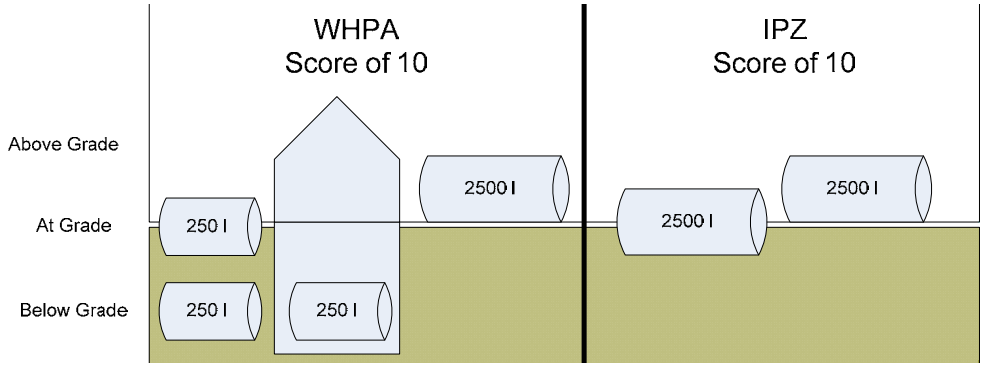
The handling and storage of fuel oil is a significant drinking water threat:

- In the following locations; and
- Under the following circumstances.

Locations	Circumstances
Wellhead Protection Areas (WHPA) with a vulnerability score of 10	Facility* storing: • > 250 litres of fuel – below or partly below grade • >2,500 litres of fuel – at or above grade Handling of fuel oil in relation to the storage of: • > 2,500 litres of fuel – above or below grade
Intake Protection Zones (IPZ) with a vulnerability score of 10	Facility* storing: • > 2,500 litres of fuel – partly below, at or above grade Handling of fuel oil in relation to the storage of: • > 2,500 litres of fuel – above grade

* “Facility” means installation (including homes) where fuel oil, or used oil when such oil is used as a fuel, is handled. This encompasses fuel oil storage for furnaces, boilers, water heaters and standby generators but excludes vehicles, lawnmowers or portable storage like jerry cans.

Illustration of the significant threat circumstances outlined above for fuel oil storage



Maps showing the location of WHPAs and IPZs and their vulnerability scores are available on the "Assessment Report" pages of our website (www.mrsourcewater.ca). In the Mississippi-Rideau region vulnerability scores of 10 are only found in:

Drinking Water System	WHPA			
	100 m	2 year	5 year	25 year
Almonte	whole area	partial area		
Carp	whole area	partial area		
Kemptville	whole area	partial area		
Merrickville	whole area	partial area		
Munster	whole area	partial area		
Richmond	whole area	partial area		
Westport	whole area	partial area		

Drinking Water System	IPZ		
	IPZ-1	IPZ-2	IPZ-3
Carleton Place	whole area		
Perth	whole area		
Smiths Falls	whole area		
Ottawa – Britannia & Lemieux Island			

Existing and Future Significant Threats

In the Mississippi-Rideau region there are some properties where existing fuel oil handling and storage is a significant drinking water threat. There are also some areas where future fuel oil handling and storage could be undertaken creating new significant threats.

Drinking Water System		Existing Significant Threats	Future Significant Threats
WHPA	Almonte	**60**	**Possible** In all areas
	Carp	**122**	
	Kemptville	**974***	
	Merrickville	**435***	
	Munster	**212**	
	Richmond	**104**	
	Westport	**49**	

* These two numbers will drop significantly if the municipal well casings are successfully deepened through the Ontario Drinking Water Stewardship Program grant.

Drinking Water System		Existing Significant Threats	Future Significant Threats
IPZ	Carleton Place	0	**Possible** In all areas
	Perth	0	
	Smiths Falls	0	
	Ottawa – Britannia & Lemieux Island	No vulnerability score of 10 so a significant threat is not possible	

Where is it a Moderate Threat?

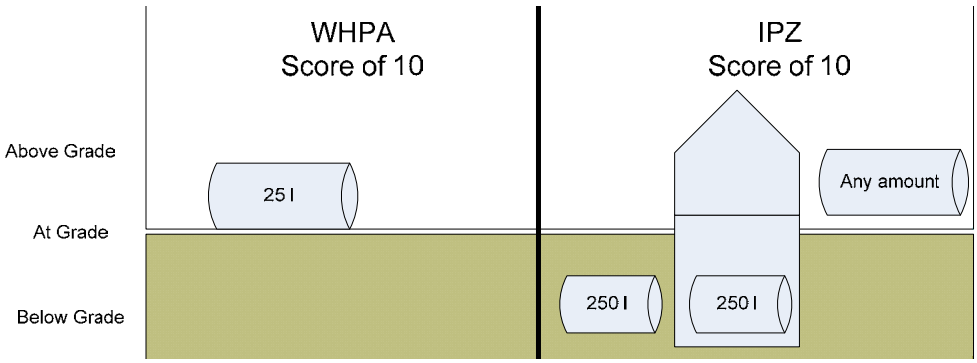
In areas of a WHPA or IPZ with a vulnerability score of 10, the handling and storage of fuel oil is a moderate drinking water threat:

- Under the following circumstances.

Locations	Circumstances
Wellhead Protection Areas (WHPA) with a vulnerability score of 10	Facility* storing: • > 25 litres of fuel – at or above grade Handling of fuel oil in relation to the storage of: • > any amount of fuel – above or below grade
Intake Protection Zones (IPZ) with a vulnerability score of 10	Facility* storing: • Any amount of fuel – at or above grade • >250 litres of fuel – below grade Handling of fuel oil in relation to the storage of: • Any amount of fuel – above grade • >250 litres of fuel – below grade

* "Facility" means installation (including homes) where fuel oil, or used oil when such oil is used as a fuel, is handled. This encompasses fuel oil storage for furnaces, boilers, water heaters and standby generators but excludes vehicles, lawnmowers or portable storage like jerry cans.

Illustration of the moderate threat circumstances outlined above for fuel oil storage



Maps showing the location of WHPAs and IPZs and their vulnerability scores are available on the "Assessment Report" pages of our website (www.mrsourcewater.ca). In the Mississippi-Rideau region vulnerability scores of 10 are only found in:

Existing Regulations

The Technical Standards and Safety Authority (TSSA) is a not-for-profit, self-funded corporation that was created in 1996 to deliver public safety services on behalf of the Government of Ontario. They administer and enforce public safety laws which include the transportation, storage, distribution and utilization of fuel. They do this through Ontario's *Technical Standards and Safety Act, 2000*.

Legislation

There are two regulations under the *Technical Standards and Safety Act* pertaining to fuel:

- Ontario Regulation 213/01 – Fuel Oil
- Ontario Regulation 217/01 – Liquid Fuel

In addition to Ontario Regulation 213/01, the requirements for the installation, testing, maintenance, repair, removal, replacement, inspection and use of appliances, equipment, components and accessories that use fuel oil are found in the:

- *Ontario Installation Code for Oil-Burning Equipment (Based on Canadian Standards Association B139, with Ontario amendments) 2006*

It is our understanding that the *Technical Standards and Safety Act* Codes will be revised in the next couple of years. This could result in Ontario's Codes being brought up to Canadian Code standards in some areas. Some fuel suppliers and insurance companies are also requiring certain standards regarding fuel oil storage, distribution and utilization due to the high costs of a clean up in the event of a spill.

Inspections and Compliance

Fuel suppliers must perform an inspection of the installation of fuel oil appliances prior to supplying fuel and a minimum of every ten years there after to ensure compliance with codes and regulations. TSSA audits fuel distributors to ensure they comply with the requirements of the regulation. Homeowners are also obligated to have their fuel oil installation (e.g. furnace, boiler) inspected annually by a certified Oil Burner Technician. It seems many property owners are unaware of this requirement so compliance is very low and there is little enforcement.

Policy Options

There are many policy tools that can be used to address drinking water threats. Some are existing tools (education and outreach, incentives, monitoring, provincial instruments, and land use planning). Others were newly created under the *Clean Water Act* (Risk Management Plans and Prohibition).

The following chart shows what policy tools are available to address fuel oil regulated under Ontario Regulation 213/01 where it is a significant drinking water threat.

Policy Tool	Address Fuel Oil Where it is a Significant Threat
Education and Outreach	**Yes**
Incentives	**Yes**
Monitoring	**Yes**
Prescribed Instruments	**Yes** (for municipal drinking water system facilities)
Land Use Planning	**Yes**
Risk Management Plans	**Yes**
Prohibition (under the Clean Water Act)	**Yes**
Other	**Yes**

The following chart shows what policy tools are available to address fuel oil regulated under Ontario Regulation 213/01 where it is a moderate drinking water threat.

Policy Tool	Address Fuel Oil Where it is a Moderate Threat
Education and Outreach	**Yes**
Incentives	**Yes**
Monitoring	**Yes**
Prescribed Instruments	**Yes** (*have regard for*, not *must conform*)
Land Use Planning	**Yes** (*have regard for* not *must conform*)
Risk Management Plans	No
Prohibition (under the Clean Water Act)	No
Other	**Yes**

Draft Policy Ideas

Draft policy ideas have been developed to address fuel oil regulated under O. Reg. 213/01. These ideas were developed by staff in conjunction with:

- Local experts from the fuel distributor and insurance industries; and
- Our municipal working group
    - Meeting #2 (January 20, 2011) and Meeting #4 (March 24, 2011)

The draft policy ideas are outlined in the attached table.

Rationale

Each Source Protection Committee has to write an Explanatory Document to accompany their Source Protection Plan. This document must provide a rationale for each source protection policy. It will therefore be important to document at each stage of policy development, why Committees approve certain draft ideas, concepts and policies.

At their January 6, 2011 meeting, the Mississippi-Rideau Source Protection Committee approved a qualitative evaluation framework to help them evaluate different policy options and ultimately decide which ones to use. The framework has four categories: Impact/Effectiveness, Acceptance, Cost and Practicality. At each stage of our policy development process (draft policy ideas, draft policy concepts, draft policies and proposed policies) this evaluation framework will be used by the Committee to make decisions. This will form the content of their Explanatory Document.

Below, staff used the four main categories of the framework to do an initial review of the draft policy ideas being proposed for fuel oil:

Impact / Effectiveness

- According to local industry experts, the most common failures relating to fuel oil handling and storage are: corrosion of tanks, problems with oil lines and overfills. Since there are many risk mitigation measures that can effectively address these potential failures, prohibition was deemed unnecessary as the threat can be managed.
- However, the potential consequences of a failure can be severe with clean up costs exceeding a million dollars. Therefore, where fuel oil handling and storage is a significant threat, it was decided that a Risk Management Plan would be necessary to ensure: appropriate tanks are put in place; effective risk mitigation measures are undertaken to address tank corrosion, line failure and overfilling; an annual inspection is completed; property owners have pollution liability insurance; and property owners learn how to effectively respond to a spill.

- A policy idea has also been proposed that would require side feed tanks to be replaced immediately. This was proposed because side feed tanks are very problematic because the bottom of the tank does not completely drain. This leads to water accumulating in the bottom of the tank due to condensation which causes corrosion from the inside out. The risk is that the exterior of the tank can appear to be in good condition even at the point when a spill is imminent. Spills often occur when the tank has just been filled and weight and pressure are at their highest. Bottom feed tanks are now manufactured and installed at an angle toward the outlet. This does not allow water to accumulate in the tank which reduces corrosion. Since 2003, only bottom feed tanks have been installed which means any existing side feed tanks are at least 9 years old. Some fuel suppliers have also chosen to stop delivering fuel to side feed tanks.
- Local industry experts also indicated that outdoor single-walled fuel storage tanks (typically 900 litre volume) pose the greatest risk of failure. This is because outdoor tanks are exposed to weather and freeze/thaw cycles and are prone to damage from falling ice and snow and vehicles and equipment hitting them. Unfortunately, this size of outdoor tank is only considered a moderate drinking water threat in the Provincial Threats Tables. Therefore, it seemed necessary to include a policy to address this moderate threat in the vulnerable areas with a score of 10. Since mandatory Risk Management Plans cannot be used for moderate threats, an education and outreach policy that would encourage property owners to undertake risk reduction measures is proposed.

Cost

- The cost of administering Risk Management Plans falls to municipalities, however:
    - Under the *Clean Water Act*, municipalities may charge fees to recover the costs of administering Risk Management Plans. Therefore the cost could be borne by the property owner requiring the Risk Management Plan (like a permit fee) or could be paid for by those on municipal water services through an additional charge on their water bill.
    - Once our existing significant threats enumeration is refined we anticipate that the number of existing fuel oil significant threats will be relatively low. This means the cost of administering a Risk Management Plan program for this threat could be reasonable, although this will become clearer as further information about Risk Management Plans is received from the MOE.
- The measures required through the Risk Management Plan do have additional costs associated with them (better tanks, tank trays) but they are modest increases over the most basic fuel oil setup currently allowed under the Codes. This cost difference will also be offset by the reduced liability to the property owner who could lose their home, property and/or go bankrupt in the event of a spill.
- Insurance companies will be encouraged to reduce insurance premiums for property owners who have a Risk Management Plan or undertake the measures outlined in the education and outreach policy.

Acceptance

- The proposed policy ideas do not prevent existing or new development in vulnerable areas, nor do they force property owners to switch their heating methods.
- In many cases, the draft policy concepts are enforcing measures that are already mandatory or standards that are commonly required by local fuel suppliers or insurance companies. This means many property owners may have already undertaken some or all of these measures to maintain their fuel delivery or their insurance policy. The policy ideas are essentially standardizing common industry practices where fuel oil is a significant drinking water threat.
- Insurance companies will be encouraged to reduce the insurance premiums of property owners who have undertaken a Risk Management Plan or implemented the best management practices promoted through the education and outreach program as these actions will reduce the risk to insurance companies of having to clean up a spill.

- As outlined above, the additional costs for property owners to implement the risk mitigation measures required by the Risk Management Plan should be modest and these measures will help protect the property owner's most expensive asset – their home. A spill can bankrupt a property owner or cause them to lose their home and/or property even if they have insurance.
- Draft policy concepts will be provided to potentially affected property owners for review and their input and comments provided to the SPC prior to considering a draft policy for the draft Source Protection Plan.
- Fuel industry associations and insurance industry representatives will also be consulted to obtain input on draft policy concepts.

Practicality

- The proposed draft policy ideas are current best management practices and common industry standards or they are enforcing current regulatory requirements.
- There is a specify action that encourages TSSA to review their Codes which could standardize a higher level of protection across Ontario in the future and potentially eliminate the need for Risk Management Plans in the future.
- Best management practices also form the basis of an education and outreach program.
- Education and outreach targeted at fuel distributors and their drivers will build upon training initiatives that already exist within these companies where possible.
- A prescribed instrument was used to avoid regulatory duplication for municipal drinking water system facilities.
- Monitoring of the effectiveness of the policies would be achieved mainly through annual reports to the SPC from the Risk Management Official and the education and outreach program implementer.

Additional Information

- MOE Bulletin: Technical Standards and Safety Association (January 2011)

Attached:

- Draft Policy Ideas for Fuel Oil Regulated under Ontario Regulation 213/01

Recommended Policy Concept for the Handling and Storage of Fuel
Regulated under the *Technical Standards and Safety Act, 2000,* O. Reg. 213/01 and *Installation Code for Oil Burning Equipment*

Situation	Description	Policy Tool and Concept	Monitoring Policy	Implementer	Legal Effect	Compliance Date
#1 Existing Significant Threat	Existing fuel **storage and handling** identified as a significant threat: • WHPA scored 10: >250 litres below or partly below grade or >2,500 litres at or above grade • IPZ scored 10: >2,500 litres partly below, at or above grade	**Risk Management Plan** with the following mandatory content: • Immediate replacement of single-walled steel tanks with side-feed (indoor and outdoor) • Replacement of single-walled steel tanks with bottom-feed at 15 years of age and double-bottom steel tanks with bottom-feed at 20 years of age • Replacement tanks that are a more leak resistant alternative to single-walled steel (e.g., fiberglass or double-bottomed steel for indoor; double-walled with leak detection for outdoor) • Replacement tanks outfitted with tank trays to capture product in the event of an overfill or small leak • Oil lines installed in a manner that protects them from physical damage • Annual inspections as per Section 13.2 to 13.5 of the *Ontario Installation Code for Oil-Burning Equipment* carried out by a certified Oil Burner Technician • Prompt repair or upgrade to address deficiencies noted in the inspection • Proof of pollution liability insurance policy held by the property owner • Procedures to follow in the event of a spill **Restricted Land Use** as an administrative tool to implement the Risk Management Plans	Municipality to provide an annual report from the Risk Management Official to the SPC with the following content: • Number of Risk Management Plans prepared and a summary of the general content • Number, types and dates of replacement tanks installed • Feedback regarding the effectiveness of the policy and recommendations for improvement	Municipality	Must comply	Upon Source Protection Plan taking effect.
#2 Existing Moderate Threat	Existing fuel **storage and handling** identified as a moderate threat: • WHPA scored 10: >25 litres at or above grade • IPZ scored 10: Any amount at or above grade; >250 litres below grade	**Education and Outreach** targeted at property owners to promote the following: • Immediate replacement of single-walled steel tanks with side-feed (indoor and outdoor) • Replacement of single-walled steel tanks with bottom-feed at 15 years of age and double-bottom steel tanks with bottom-feed at 20 years of age • Replacement tanks that are more leak resistant than single-walled steel tanks (e.g., fiberglass or double-bottomed for indoor; double-walled with leak detection for outdoor) • Installation of tank trays to capture product in the event of an overfill or small leak • Annual inspection conducted by a certified Oil Burner Technician • Prompt repair or upgrade of deficiencies noted as a result of the inspection • Pollution liability insurance policy held by the property owner • Procedures to follow in the event of a spill	Implementer to provide an annual report to the SPC on the education and outreach activities and their outcome.	To be determined	Strategic action	Within 6 months of Source Protection Plan taking effect
#3 Future Significant Threat	Proposed fuel **storage and handling** that would be a significant threat: • WHPA scored 10: >250 litres below or partly below grade or 2,500 litres at or above grade • IPZ scored 10: >2,500 litres partly below, at or above grade	**Risk Management Plan** with the following mandatory content: • Installation of tanks located above ground (not buried) and indoor if feasible • Installation of tanks that are a more leak resistant alternative to single-walled steel (e.g., fiberglass or double-bottomed steel for indoor; double-walled with leak detection for outdoor) • Installation of tank trays to capture product in the event of an overfill or small leak • Annual inspection as per Section 13.2 to 13.5 of the *Ontario Installation Code for Oil-Burning Equipment* conducted by a certified Oil Burner Technician • Prompt repair or upgrade to address deficiencies noted in the inspection • Proof of pollution liability insurance policy held by the property owner • Procedures to follow in the event of a spill **Restricted Land Use** as an administrative tool to implement the Risk Management Plans	Municipality to provide an annual report from the Risk Management Official to the SPC with the following content: • Number of Risk Management Plans prepared and a summary of the general content • Number, types and dates of replacement tanks installed • Feedback regarding the effectiveness of the policy and recommendations for improvement	Municipality	Must comply	Upon Source Protection Plan taking effect.
#4 Future Moderate Threat	Proposed fuel **storage and handling** that would be a moderate threat: • WHPA scored 10: >25 litres at or above grade in WHPA • IPZ scored 10: Any amount at or above grade; >250 litres below grade	**Education and Outreach** targeted at property owners to promote the following: • Installation of fuel oil tanks above ground (not buried) and indoor if feasible • Installation of fuel oil tanks that are a more leak resistant alternative to single-walled steel (e.g., fiberglass or double-bottomed steel for indoor; double-walled with leak detection for outdoor) • Installation of tank trays to capture product in the event of an overfill or small leak • Annual inspection conducted by a certified Oil Burner Technician • Prompt repair or upgrade to address deficiencies noted in the inspection • Pollution liability insurance policy held by the property owner • Procedures to follow in the event of a spill	Implementer to provide an annual report to the SPC on the education and outreach activities and their outcome.	To be determined	Strategic action	Within 6 months of Source Protection Plan taking effect
#5	Existing and proposed fuel **storage and handling** that would be a significant or moderate threat within WHPA and IPZ scored 10 **at municipal drinking water system facilities**	**Prescribed Instrument**: *Safe Drinking Water Act* License and/or Permits • Existing licenses / permits amended to require the standards outlined in the Risk Management Plan in Situation #1 for existing fuel storage and handling that would be a significant or moderate threat • Future licenses / permits issued shall contain minimum requirements as outlined in the Risk Management Plan in Situation #3 for future fuel storage and handling that would be a significant or moderate threat	Existing: MOE, Safe Drinking Water Branch to notify the SPC when all licenses and/or permits have been amended. Future: MOE, Safe Drinking Water Branch to add the SPC to their distribution list when they issue a license or permit.	MOE Safe Drinking Water Branch	Significant threat: Must Conform Moderate threat: Must have regard for	Upon Source Protection Plan taking effect.
#6	Existing and proposed fuel **handling** that would be a significant or moderate threat within WHPA and IPZ scored 10	**Education and Outreach** targeted at fuel distributors and fuel truck drivers to promote the following: • Awareness of the vulnerable areas • Adherence to basic filling precautions (Annex B of the *Ontario Installation Code for Oil-Burning Equipment*) • Procedures to follow in the event of a spill during handling	Implementer to provide an annual report to the SPC on the education and outreach activities and their outcome.	To be determined	Strategic action	Within 6 months of Source Protection Plan taking effect
#7	General recommendations to the **Technical Standard and Safety Authority (TSSA)**	**Specify Actions:** Recommend TSSA change the inspection and management of fuel requirements as follows: • Inspection conducted by fuel suppliers should be more frequent than every ten years • Regular maintenance to be conducted by owners as per Section 13.2 of *the Ontario Installation Code for Oil-burning Equipment* should be promoted by TSSA so that owners are aware of this requirement. • Require immediate replacement of single-walled steel tanks with side feed • Phase out Indoor and outdoor single-walled steel tanks and replace with more leak resistant technology	TSSA to provide a response to the SPC regarding their consideration of the amendments.	TSSA	Strategic action	Within 6 months of Source Protection Plan taking effect

Tables of Circumstance References: Significant Threats WHPA (scored 10) 1359-1408 (storage); 177-188 (handling)
Moderate Threats WHPA (scored 10) 1294-1388 (storage); 117-191 (handling)
Significant Threats IPZ (scored 10) 1384-1400 (storage); 177-188 (handling)
Moderate Threats IPZ (scored 10) 1294-1408 (storage); 117-191 (handling)

4.0 Ontario Drinking Water Stewardship Program Update

Date: March 28, 2011
To: Mississippi-Rideau Source Protection Committee
From: Derek Matheson, Manager
Rideau Valley Rural Clean Water Program

Recommendation:

That the Mississippi-Rideau Source Protection Committee receive the Ontario Drinking Water Stewardship Program staff report for information.

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 $28 million dollars in funding from 2007 to 2012.

- The first three cycles of the program focused on promoting best management practices near municipal drinking water sources (Early Actions Program).
- The final cycle of funding is focusing on addressing activities that are considered "significant drinking water threats" (Early Response Program).

Early Actions Program

From 2007 to present, Early Action funding was provided to property owners.

- Eligible Properties were:
  - Within 200 metres of a municipal surface water intake; or
  - Within the 2 year time-of-travel around a municipal well.
- Eligible Projects included:
  - Well upgrades/decommissioning;
  - Septic system repairs/replacements/decommissioning;
  - Pollution prevention reviews for businesses; and
  - Erosion and runoff prevention.

The Mississippi-Rideau received a total of **$441,237** in deliverable Early Action funding. In early 2011, the final Provincial payment of $62,775 was withheld and rolled into the Early Response Program by the MOE leaving $378,462.

- $351,113.03 has been allocated to date:

Municipal System	Septic Projects	Well Projects	Erosion and Runoff Projects
Almonte	11	0	0
Carp	0	0	1
Kemptville	15	10	0
Munster	3	0	0
Richmond	7	19	0
Westport	2	0	0
Total:	**38**	**29**	**1**
	$282,493.93	**$48,619.10**	**$20,000.00**

Early Response Program
Funding is now being directed to property owners who are undertaking projects and activities that address the most significant threats to municipal source water. The Mississippi-Rideau region received a total of **$230,642** in deliverable Early Response funding.

Eligible Projects:

- Each SPC has to prioritize local threats they will provide funding for, then the risk mitigation measures listed in the Risk Management Catalogue for those threats become eligible for funding.
- The Mississippi-Rideau Source Protection Committee prioritized the following threats which were identified in their Assessment Reports:
    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
    11. The handling and storage of commercial fertilizer

Maximum Grant Rate:

- Up to $80,000 can be granted to a project, which may include one or more significant drinking water threats and the application of one or more risk mitigation measures 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.

How to Apply

- Information about eligible areas, eligible projects and how to apply is on our website: www.mrsourcewater.ca
- People can contact Kellie Adams or Megan Watters at 613-692-3571 or 1-800-267-3504 ext 1128 or 1132 to apply or ask questions
- Projects must be completed, and documentation submitted, by **Dec 1, 2012**

Special Projects
In addition to the Early Actions and Early Response programs, applications were also accepted for Special Projects funding. In 2010, the Village of Merrickville-Wolford and the Municipality of North Grenville received $115,000 and $155,100 respectively to extend their municipal well casings. This will eliminate water entering from the shallower, more vulnerable, Oxford/March formation meaning the sole source of water will be the deeper more protected Nepean aquifer. The result will be lower vulnerability scores in the Wellhead Protection Areas meaning approximately 1500 fewer properties could be subject to source protection plan policies. These projects are currently underway.

5.0 Ottawa IPZ-3 Vulnerability Scores

Date: March 31, 2011
To: Mississippi-Rideau Source Protection Committee
From: Sommer Casgrain-Robertson, Co-Project Manager
Mississippi-Rideau Source Protection Region

Recommendation:

Whereas the City of Ottawa has expressed concerns with the approach used to determine IPZ-3 area vulnerability factors and are proposing an alternative;

And whereas source protection staff and the Source Protection Committee have identified that while current Intake Protection Zone studies are a reasonable first time assessment, further technical expert input is required to make the approaches and methodologies more scientifically defensible;

And whereas, all Assessment Reports in Ontario have been submitted to the Province and are currently under review by the Ministry of the Environment;

And whereas, many lessons learned and a growing body of knowledge will be available to draw from once Assessment Reports are approved;

And whereas, neither the current approach nor the alternative approach proposed by the City of Ottawa will result in significant drinking water threats in IPZ-3 meaning this area cannot be subject to any restrictions or prohibitions in the Source Protection Plan;

Therefore, be it resolved that the Mississippi-Rideau Source Protection Committee ask Conservation Ontario to coordinate a comprehensive review of all Intake Protection Zone studies in approved Assessment Reports and produce a report of lessons learned and recommended approaches for future Intake Protection Zone studies;

And that source protection staff and municipalities use this report and any other available knowledge and findings to reevaluate local Intake Protection Zone studies once Source Protection Plans are completed.

Background
Five Intake Protection Zone (IPZ) studies were completed for the Mississippi-Rideau Source Protection Region:

- Carleton Place
- Ottawa (Britannia and Lemieux Island)
- Perth
- Smiths Falls

Provincial Technical Rules
All technical studies, including IPZ studies, must meet the Ministry of the Environment's Technical Rules approved under the *Clean Water Act* (dated November 16, 2009).

Intake Protection Zones
In accordance with the Technical Rules, IPZ studies in Mississippi-Rideau region delineated three zones upstream of each municipal surface water intake:

- IPZ-1
  - In water – 200 metres upstream and 10 metres downstream
  - On land – 120 metres or the regulation limit, whichever is greater
- IPZ-2
  - In water – 2 hour time-of-travel (river, tributaries, ditches & storm sewers)
  - On land – 120 metres or the regulation limit, whichever is greater
- IPZ-3
  - In water – remainder of watershed (river, tributaries & adjacent wetlands)
  - On land – 120 metres or the regulation limit, whichever is greater

Vulnerability Scores
The Technical Rules then state that vulnerability scores must be determined for each of these zones. A process is set out in the Technical Rules to assess the vulnerability of each zone and determine a final vulnerability score using the following equation:

$$\mathbf{V = B \times C}$$

Where: V is the *vulnerability score*
B is the *area vulnerability factor*
C is the *source vulnerability factor*

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.

According to the Technical Rules:
- More than one area vulnerability factor (B) can be assigned within IPZ-3, based on differences in the characteristics noted above.
- The area vulnerability factor for IPZ-3 cannot be less than 1 or greater than 9
- No area vulnerability factor in IPZ-3 can be higher than the area vulnerability factor assigned to IPZ-2.

Mississippi-Rideau IPZ-3 Area Vulnerability Factors

Consultants (Baird and J.F. Sabourin), with input from surface water municipalities, MOE and source protection staff, developed the approach to determine area vulnerability factors for IPZ-3 areas in the Mississippi-Rideau Source Protection Region. A summary of the approach used by Baird for the City of Ottawa intakes is provided below.

Time of Travel

Since there are no predominant changes in the physical characteristics within our IPZ-3 areas, it was decided that time of travel would be used to define areas within the IPZ-3 that would receive different area vulnerability factors.

Time of travel is the time it takes for runoff to reach the municipal intake.

- Time of travel in the main channel was determined using river velocities estimated by numerical models or an event based approach 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. Next, the time required for flow in the subwatershed tributaries to reach the subwatershed outlet was determined by using one of two calculations. For 'headwater' sub-watersheds (those that had no channel flowing in from upstream), the SCS lag formula presented in the *EBA Technical Bulletin* (MOE, 2009) was used. For channelized subwatersheds, the Manning equation was used to determine flow velocities.
    - This time of concentration formula takes into consideration land cover, soil type, land surface permeability and slope conditions within the subwatersheds.

Using these methods to establish time of travel in IPZ-3 areas addresses the first three points in the Technical Rules (listed in the box above) that have to be considered when determining IPZ-3 area vulnerability factors.

Four Hour Intervals

Once time of travel was determined within IPZ-3, it was used to create sub-zones that would receive different area vulnerability factors based on proximity to the intake (as distance from the intake increased the area vulnerability factor decreased). Intake proximity is the fourth and final point in the Technical Rules to be considered when determining area vulnerability factors.

It was 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 because they are double the level of protection MOE assigned to IPZ-2. The Technical Rules state IPZ-2 must be a two hour time of travel interval and this is viewed as a critical protection zone because municipal water treatment plants may not have time to physically shut down in the event of a contaminant spill (all municipalities were required to confirm that they could shut down their water treatment plants within 2 hours otherwise IPZ-2 would be

increased). The consultants decided to double this 2 hour interval and apply it within IPZ-3 to determine where the area vulnerability factor would decrease by one.

- The 2 hour to 6 hour time of travel interval would have a factor of 8
- The 6 hour to 10 hour interval would have a factor of 7…

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 area. 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 where the source vulnerability factor is 1.

Area Vulnerability Factors – Using Current Approach

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**

Concerns from City of Ottawa Staff

In August, 2010 City of Ottawa staff expressed concerns with the approach used to determine area vulnerability factors for IPZ-3. At their September 2, 2010 meeting the Mississippi-Rideau Source Protection Committee passed the following motion before approving their draft Assessment Report.

Motion 5-08/10

Moved by: Tammy Rose
Seconded by: George Braithwaite

Whereas, the Ministry of the Environment permits (but does not require) the delineation of sub-zones within IPZ-3 for the assignment of vulnerability scores, since they can be used to reflect a change in vulnerability for an intake;

And whereas, the Technical Rules and accompanying Technical Bulletin provide no guidance on how to establish sub-zones, except to say that when assigning Area Vulnerability Factors to such areas that the following matters should be considered:

- Percentage of the area IPZ-3 that is composed of land;

- Land cover, soil type, permeability of the land, and the slope of any setbacks;
- Hydrological and hydrogeological conditions of the areas where the transport pathway is located; and
- Proximity of the area of the IPZ-3 to the intake.

Whereas, the City of Ottawa has recently raised concerns with regards to the present IPZ-3 modeling and is requesting an opportunity for further examination and refinement in partnership with the MRSPR;

And whereas, the City of Ottawa appreciates that the level of effort to complete such an undertaking is measured in months not weeks;

And whereas, the City of Ottawa understands that the Draft Assessment Report must be posted by September 30, 2010 for our member municipalities and affected landowners to be able to access provincial funds to address potential significant threats under the Ontario Drinking Water Stewardship Program Early Response;

Therefore, be it resolved that the Mississippi-Rideau Source Protection Committee direct staff to work with the City of Ottawa, our consultants (Baird) and the Ontario Ministry of the Environment to further explore an alternative approach to the delineation of sub-zones and vulnerability scores for the two IPZ-3's for the City of Ottawa intakes that is in keeping with the Technical Rules.

And that staff report back to the Committee in sufficient time to allow consideration of this new information as part of an amendment/update to the Assessment Report.

Carried

Alternative Approach Proposed by City of Ottawa Staff

Since September, 2010 City of Ottawa staff and source protection staff have been discussing the current approach used to determine area vulnerability factors for IPZ-3 and the concerns City staff have with it. The outcome was:

- City of Ottawa staff developed an alternative approach.
- Source protection staff reviewed this approach and were unsure whether it would meet the Technical Rules.
- Source protection staff suggested a compromise approach.
- Upon receiving further clarification of the provincial Technical Rules, source protection staff are now uncertain whether either alternative approach (City of Ottawa's or the compromise) would meet the Technical Rules and be approvable by the MOE.

City of Ottawa Alternative Approach

The alternative approach developed by City of Ottawa staff is outlined in the attached letter dated March 28, 2011. This approach proposes dividing IPZ-3 into three subzones:

- Subzone 1 extends from the 2 hour time of travel to the urban boundary
  - Assign area vulnerability factor of 8
- Subzone 2 extends from the urban boundary to the 24 hour time of travel
  - Assign area vulnerability factor of 7
- Subzone 3 is the remainder of IPZ-3 beyond the 24 hour time of travel
  - Assign area vulnerability factor of 4

Area Vulnerability Factors – Using City of Ottawa Alternative Approach

Yellow denotes area vulnerability factors that differ from the current approach

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

Time of Travel (hours)	Area Vulnerability Factors	
	Britannia	Lemieux
NA	10	10
2	9	9
2 to urban boundary	**8**	**8**
Urban boundary to 24	**7**	**7**
> 24	**4**	**4**

Source Protection Staff Compromise Approach

The compromise approach proposed by source protection staff suggested dividing IPZ-3 into subzones as follows:

- Subzone 1 extends from the 2 hour time of travel to the urban boundary (as per the City of Ottawa's alternative approach)
- Remainder of IPZ-3 would be subdivided into 4 hour time of travel intervals up to the 18 hour time of travel (as per the current approach)

Area Vulnerability Factors – Using Compromise Alternative Approach

Yellow denotes area vulnerability factors that differ from the current approach

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

Time of Travel (hours)	Area Vulnerability Factors	
	Britannia	Lemieux
NA	10	10
2	9	9
2 to urban boundary	**8**	**8**
4 hr intervals	**7 to 4**	**7 to 4**
> 18	**4**	**4**

Meeting the Technical Rules

Based on their understanding of the Technical Rules, source protection staff are uncertain whether the City of Ottawa's Alternative Approach or the Compromise Approach would meet the Technical Rules and be approvable by the MOE.

- A rationale would need to be provided for either approach indicating how proximity to the intake was considered. Currently, both alternatives would result in properties 10 to 14 hours from the intake (based on time of travel) having a higher area vulnerability factor than properties 6 to 10 hours from the intake (based on travel time). Also, the second subzone is considered to be large with the time of travel ranging from 6 to 24 hours.
- A rationale would also need to be provided for either approach indicating that the use of the urban boundary to delineate a sub-zone within IPZ-3 does not consider for a second time land cover, soil type, permeability of the land, slope of any setbacks, and hydrological and hydrogeological conditions of the areas where the transport pathway is located. These points were all considered when time of travel was established. The methods used to determine time of travel took into account the physical characteristics of the urban area, and in some areas close to IPZ-2, a 'mannings approach' was used to estimate travel times.

Timeline

Proposed Assessment Reports have been submitted to the MOE for review. There is a deadline of June 30, 2011 to submit any final updates or revisions to be reviewed and considered by the MOE before they approve the reports later this year.

Once Assessment Reports are approved, future amendments can be submitted to the MOE for review and consideration as new information becomes available. It is unlikely Assessment Report amendments will be considered before 2013 as the MOE will be focused on supporting the development of proposed Source Protection Plans and then reviewing and approving them.

City of Ottawa Request

City of Ottawa staff are asking the Mississippi-Rideau Source Protection Committee to approve their proposed alternative method so that this change in approach can be applied immediately and appropriate updates and revisions to the proposed Assessment Reports be submitted to the MOE by the June 30, 2011 deadline.

Attachments:

- Letter from City of Ottawa, dated March 28, 2011

March 28, 2011

File Number: W0002

Brian Stratton, Co-Manager
Sommer Casgrain-Robertson, Co-Project Manager
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Re: City of Ottawa IPZ-3 Staff Report

The purpose of this letter is to summarize the City of Ottawa's position regarding the delineation of subzones within Ottawa's Intake Protection Zone 3 (IPZ-3) areas.

The Issue:
The City does not support the 4-hour time of travel subzones within IPZ-3 that were applied to Ottawa's two municipal surface water intakes for the following reasons:

- Based upon the scores assigned, any polices developed for IPZ-3 will be voluntary, therefore, there is no **need** for multiple subzones.
- There is no scientific or operational rationale for the 4-hour time of travel method, so the sub-zones will be difficult to **justify** to landowners.
- The multiple subzones do not take into account the City's existing urban and rural land use boundaries, which will make appropriate policy development and **administration** difficult.
- Source Protection staff and Committee members have indicated that policies will not be developed for the IPZ-3 zones at this time in favour of developing mandatory significant threat policies for IPZ-1 and IPZ-2. Therefore, the **value** of 4-hour subzones within IPZ-3 has yet to be demonstrated.

The City proposes a simplified approach for delineating subzones within IPZ-3, which respects the intent and technical guidelines of source water protection.

Background:
The City agreed to divide Ottawa's IPZ-3 into sub-zones based upon 4-hour "time of travel" intervals on an interim basis in order to allow the Committee to meet its September 30, 2010 Draft Assessment Report posting deadline. In recognition of such, on September 2, 2010 the Source Protection Committee carried Motion 5-08/10. In general, Motion 5-08/10 directed staff to work with City of Ottawa staff to further explore an alternative approach to the

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delineation of IPZ-3 subzones and vulnerability scores for the City's two surface water intakes.

Subsequently, City staff met with Source Protection (SP) staff and reached preliminary agreement that the IPZ-3 area within the City's urban boundary was distinct from the rural IPZ-3 area because of the presence of sewers, swales, ditches, and stormwater infrastructure, and as a result should be subject to one IPZ-3 vulnerability score. SP staff proposed that beyond the urban boundary, IPZ-3 continue with 4-hour time-of-travel intervals up to 18-hours time of travel. The City's preference is not to subdivide the IPZ-3 rural area into multiple subzones. The City's preference is to assign one vulnerability score to the rural area up to 24-hours time of travel.

As a result of staff's inability to reach a full consensus, this report presents the City's proposed IPZ-3 methodology and rationale to the Source Protection Committee for consideration.

What is the IPZ-3 methodology proposed by the City of Ottawa?

- Establish a 24-hour time of travel subzone within IPZ-3. The City's urban area (which is delineated by the urban boundary) and a portion of the rural area both exist within the 24-hour subzone. We recognize that the urban area consists mostly of urban transport pathways (sewers, swales, ditches), which are unique from the rural area. As a result, we propose to assign the urban area within the 24-hour subzone an area vulnerability factor of 8 (vulnerability score of 7.2) and assign the rural area a vulnerability factor of 7 (vulnerability score of 6.3) within the 24-hour subzone.

- Establish one zone for the entire area from the 24-hour time of travel subzone to the extents of the overall IPZ-3 boundary. Assign an area vulnerability factor of 4 (vulnerability score of 3.6) to this area in recognition of the fact that this area is largely rural and that the local hydrology and distance to the intakes significantly mitigate threats from that area.

- Refer to the map labeled "City of Ottawa Proposed IPZ-3 Methodology", which illustrates the City's proposed IPZ-3 subzones for the Britannia intake.

Why the City's proposed IPZ-3 subzones makes sense for the City of Ottawa?

- Based on the population of Ottawa, we believe a realistic length of time required to assess a spill and notify over 800,000 residents is 24-hours.

- We believe there are no significant changes in risk at 4-hour intervals; however, 24 hours is a more realistic interval of how risk is calculated on a large river such as the Ottawa River. Water treatment plant operations would prepare emergency response strategies based on 24-hour intervals. If a threat is within 24 hours of the plant intakes, the response strategy would be the same whether it's within 4 hours or 16 hours: prepare immediate emergency communications to the residents providing them with a Drinking Water Advisory issued by the Medical Officer of Health.

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- The City's urban area within IPZ-3 is distinct from the rural area based on the urban transport pathways (ditches, swales, sewers).

- The City wants to take a broader perspective on land use and spill vulnerability. Above and beyond the current Source Protection work, the City would like to assess vulnerability based on time of travel in a period of days, not 4-hour increments. Again, this reinforces the point that we believe there are no significant changes in risk at 4-hour intervals. This would be going above and beyond the expectations of the Clean Water Act.

- We believe the City's methodology respects the conditions outlined in the Technical Rules, and the Technical rules allow the City of Ottawa to have a different IPZ-3 methodology than other municipalities in the same SP Region.

- We feel this simplified approach can be easily explained, implemented, administered and defended to the public.

Potential Consultant costs to revise the Assessment Report.
The City recognizes that its proposed IPZ-3 methodology will require revisions to the Assessment Report. The City is willing to fund the cost of the Consultant fees required to make the proposed IPZ-3 changes.

Thank you for your consideration.

Yours truly,

Ryan Polkinghorne, P.Eng.
Project Manager, Environmental Programs
City of Ottawa

Attached Maps:
- Map labeled "City of Ottawa Proposed IPZ-3 Methodology" illustrates the City's proposed IPZ-3 subzones for the Britannia intake.
- Map labeled "Ottawa (Britannia) Vulnerability Scoring-One option for discussion…" illustrates SP staff's recommended option beyond the urban boundary.
- Figure 6-2i illustrates the current 4-hour IPZ-3 subzones for Ottawa's Britannia intake.

cc: Tammy Rose – Manager, Drinking Water Services

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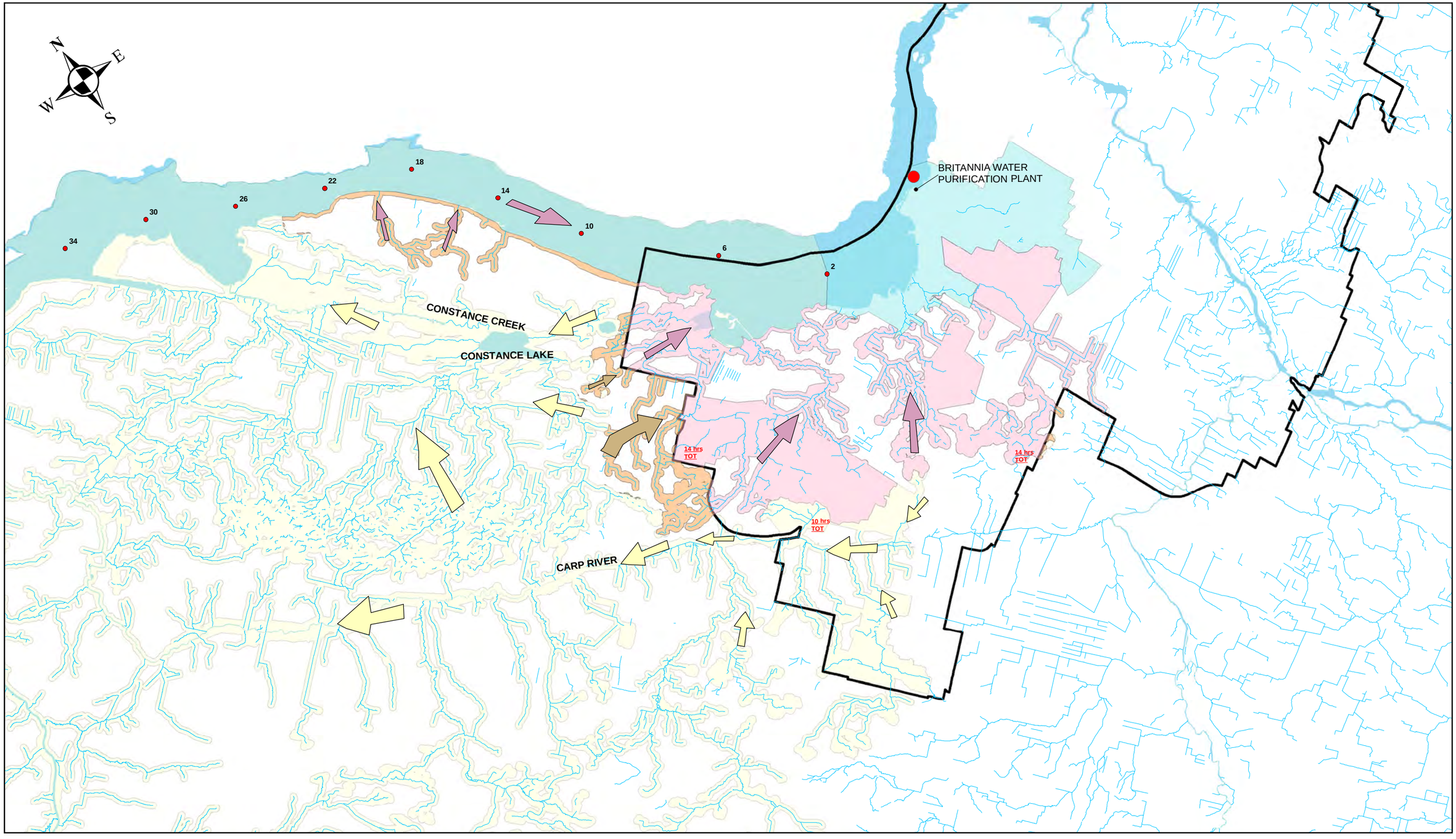


PUBLIC WORKS AND SERVICES
WATER DISTRIBUTION SYSTEM
APPROXIMATE SCALE = 1 : 2500

NOT FOR CONSTRUCTION

Ottawa ©

Legend:

City of Ottawa

PROPOSED IPZ-3 METHODOLOGY

- IPZ-1 Vulnerability Score=9.0
- IPZ-2 Vulnerability Score=8.1
- IPZ-3(a) Vulnerability Score=7.2 (TOT>2hrs and less than 24hrs & within Urban Boundary)
- IPZ-3(b) Vulnerability Score=6.3 (TOT Beyond Urban Boundary up to 24 hrs)
- IPZ-3(c) Vulnerability Score=3.6 (TOT> 24hrs)

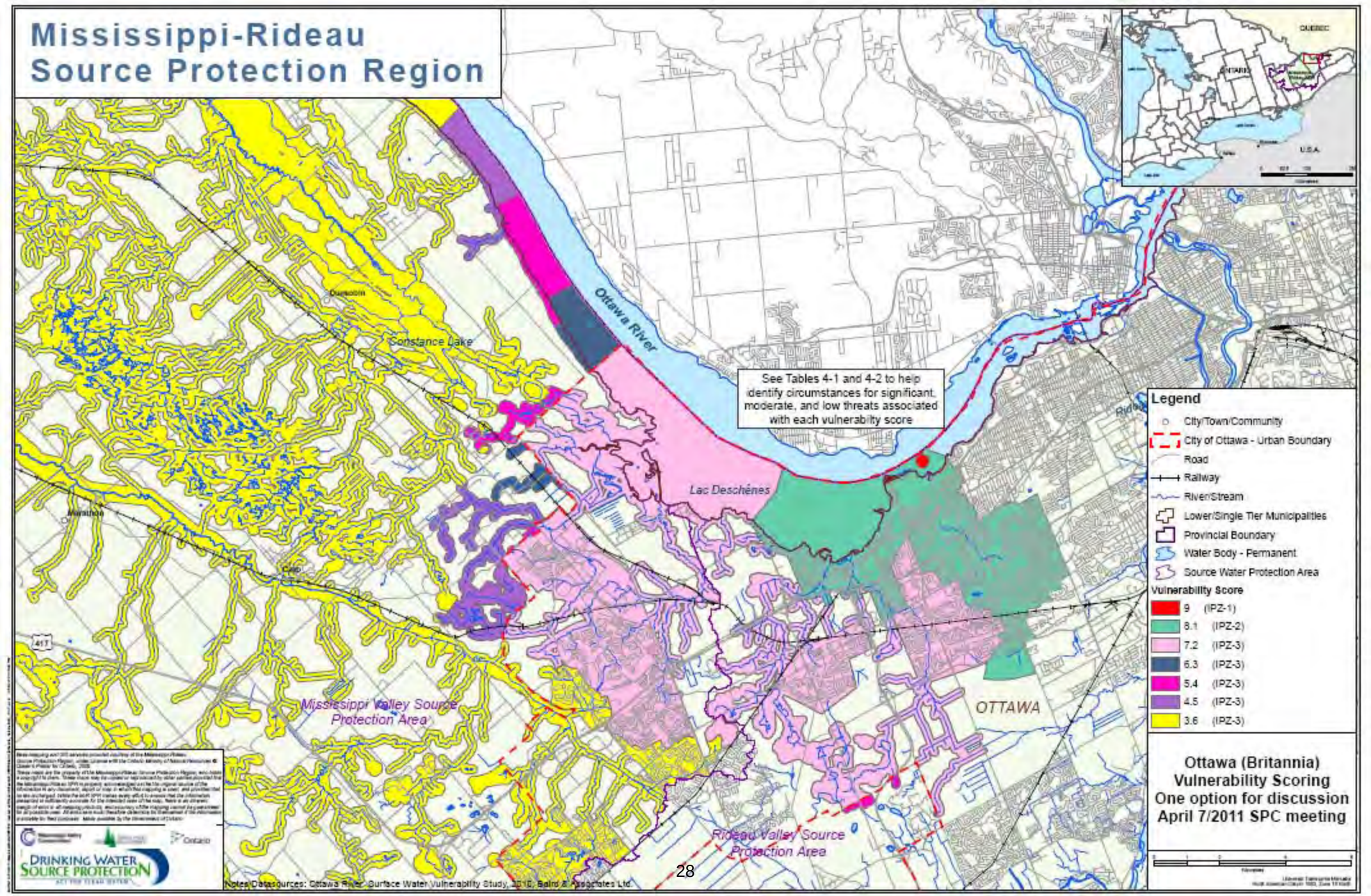
- City of Ottawa Urban Boundary
- Direction of flow

MATERIALS

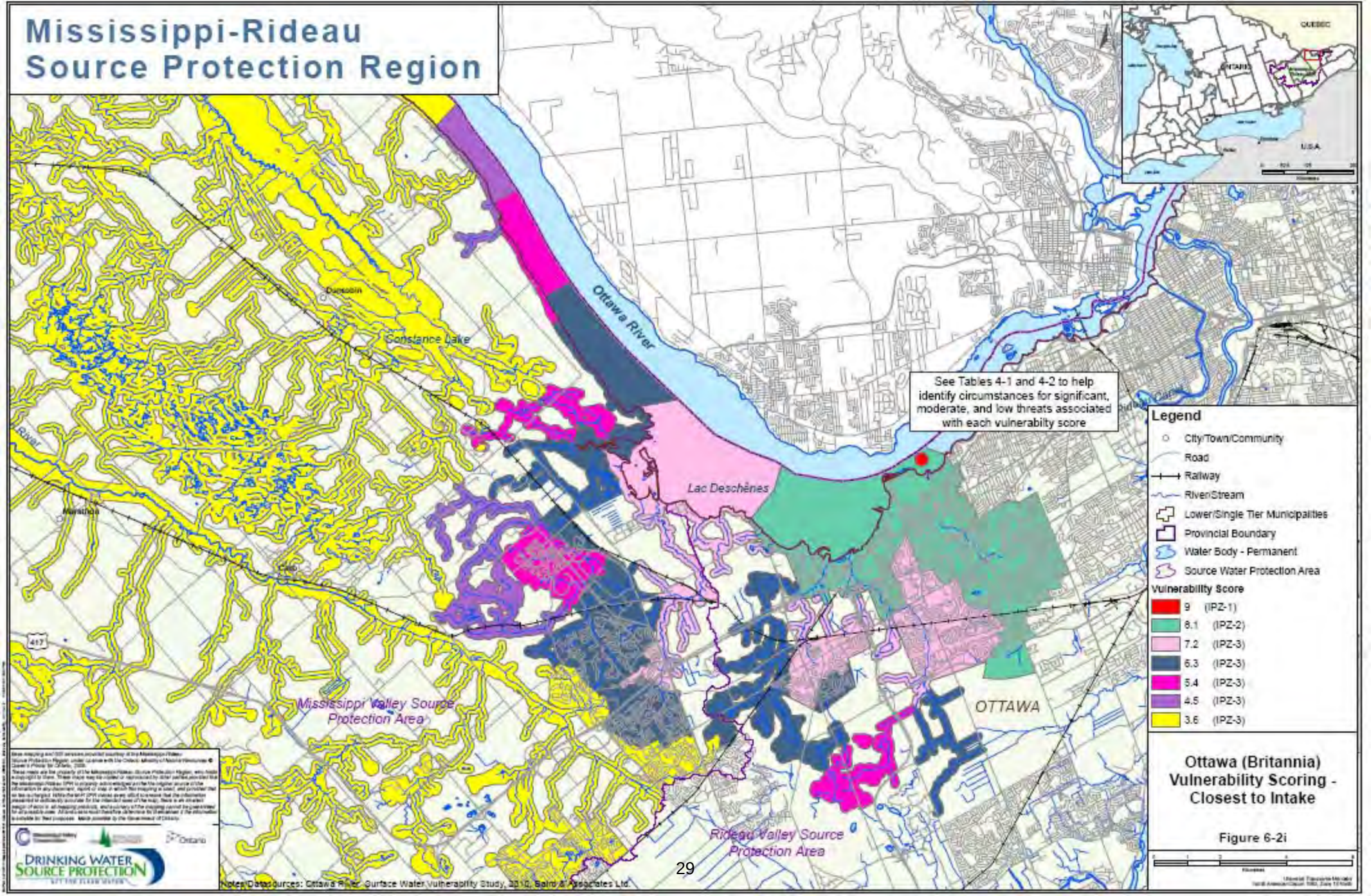
A	- ASBESTOS
CI	- CAST IRON
CO	- COPPER
C00	- AWWA C300
C01	- AWWA C301
C02	- AWWA C302
C03	- AWWA C303
DI	- DICTILE IRON
PE	- POLYETHYLENE (DR11 TO DR21)
PVC	- POLYVINYL CHLORIDE
STC	- CONCRETE LINED STEEL PIPE
UCI	- UNLINED CAST IRON

PIPE EQUIVALENTS

mm	inches	mm	inches
51	2	610	24
76	3	736	29
102	4	762	30
127	5	914	36
152	6	1067	42
203	8	1220	48
254	10	1295	51
305	12	1372	54
406	16	1524	60
457	18	1576	66
508	20		


Mississippi-Rideau
Source Protection Region
Ottawa River
Constance Lake
Lac Deschênes
See Tables 4-1 and 4-2 to help identify circumstances for significant, moderate, and low threats associated with each vulnerability score
Mississippi Valley Source Protection Area
Rideau Valley Source Protection Area
OTTAWA
Legend
City/Town/Community
City of Ottawa - Urban Boundary
Road
Railway
River/Stream
Lower/Single Tier Municipalities
Provincial Boundary
Water Body - Permanent
Source Water Protection Area
Vulnerability Score
9 (IPZ-1)
8.1 (IPZ-2)
7.2 (IPZ-3)
6.3 (IPZ-3)
5.4 (IPZ-3)
4.5 (IPZ-3)
3.6 (IPZ-3)
Ottawa (Britannia)
Vulnerability Scoring
One option for discussion
April 7/2011 SPC meeting
DRINKING WATER SOURCE PROTECTION
Notes/Datasources: Ottawa River Surface Water Vulnerability Study, 2010, Baird & Associates Ltd.

Mississippi-Rideau Source Protection Region



6.0 Community Outreach

Date: March 28, 2011
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 receive the Community Outreach staff report for information.

Background

Staff and MRSPC members participate in many different community outreach activities to raise awareness and understanding of 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 outreach covering 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. *Provincial Chairs Meeting*
    - March 7, Toronto (Chair Stavinga and Sommer attended)
2. *Source Protection Plan Advisory Committee Meeting*
    - March 8, Toronto (Sommer and Allison attended)
3. *Frontenac Joint Councils Meeting*
    - March 16, Glenburnie (Cataraqui Region Conservation Authority staff presented)
4. *Municipal Working Group Meeting*
    - March 24, Perth (Allison, Brian and Eleanor Renaud attended)
5. *Eastern Regions Meetings*
    - March 28, Brockville (Sommer and Brian attended)
6. *United Counties of Leeds and Grenville - Public Works Committee*
    - *April 6, Brockville (Sommer presented)*
7. *One-on-One Meetings with Municipal Staff*
    - Westport, Ottawa, North Grenville, Merrickville-Wolford

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. *Project Managers Meeting*
    - April 19, Toronto (Brian or Sommer attending)
2. *Municipal Working Group Meetings*
    - April 21 and May 19, Perth – *cancelled*
    - These meetings will resume in June

3. *Eastern Regions Meetings*
    - April 26, Brockville (Sommer, Brian and Allison attending)
    - May 30, Brockville (Sommer, Brian and Allison attending)
    - June 27, Brockville (Sommer, Brian and Allison attending)