



# Draft Explanatory Document

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## Explanatory Document

The Explanatory Document is a necessary component of the Source Protection Plan as per Section 40 of O.Reg. 287/07. This document is standalone from the Plan as the public does not have the opportunity to comment on it. The information that is covered in this section is outlined in the Section 40 (2)-(5) of O. Reg. 287/07.

### Explanation of Policy Decisions

The Ontario *Clean Water Act* requires that all existing and future “would be” significant threats be addressed in the Source Protection Plan, regardless of the potential for them to occur. For each policy that was prepared by the Lakehead Source Protection Committee (SPC), rationale and notes were included to support the decisions that were made.

Section 22(2) of the *Clean Water Act* states that Source Protection Plans must contain policies that monitor the area where activities that are or would be significant drinking water threats might occur.

#### Policy RV.1.CW-PA – Land Use Planning Policy for Rosslyn Village

Policy RV.1.CW-PA will prohibit the future significant threats of establishing a waste disposal site, sewage treatment facilities (not including those under 10,000 litres a day), storage of organic solvents, storage of fuel, and the storage of pure dense non-aqueous liquids (DNAPLs).

This policy will address activities that would be significant threats in the WHPA-A, if they were to take place. This was based on the Ontario Ministry of Environment’s Tables of Drinking Water Threats (2009).

The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the *Environmental Protection Act* is a Significant Drinking Water Threat. Prohibition via land use planning is employed where it is logical to exclude entire categories of land uses from a particular area. These land uses do not and are unlikely to occur based on existing settlement pattern and the physical characteristics in the area. There is no anticipated significant economic impact on the community. Any activities that involve the storage of large volumes of contaminants are not desirable in a wellhead protection area.

Sewage treatment facilities include combined sewer discharge from a stormwater outlet to surface water, discharge of untreated stormwater from a stormwater retention pond, industrial effluent discharges, sanitary sewers and related pipes, septic system holding tanks, sewage treatment plant bypass discharge to surface water, sewage treatment plant effluent discharges, and storage of sewage. It is unlikely that any of these activities will ever take place in WHPA-A, therefore there is negligible financial impact of using prohibition. Septic systems below 10,000

litres a day are still permitted, as there is no other option for sewage treatment in Rosslyn Village.

When considering policy options, the Source Protection Committee factored in cost implications for the Municipality. Considerations were made for the cost of employing a Risk Management Official and Inspector versus changes made to the Official Plan and Zoning By-law. At this time WHPA-A is comprised of a Residential Hamlet and a portion of one rural property. The Source Protection Committee has concluded that Land Use Planning will effectively achieve prohibition while maintaining the goal of protecting the source water and ensuring that these threats do not occur in the future.

The five year review cycle for Official Plans varies by Municipality. The Municipalities must conform to the significant threat policies regardless of whether or not they have been adopted into planning documents.

#### **Policy RV.2.M-PA – Land Use Planning Monitoring Policy for Rosslyn Village**

Policy RV.2.M-PA is used to monitor the implementation of RV.1.CW-PA under the Source Protection Plan. Through the monitoring, the Lakehead Source Protection Authority can monitor changes to the Official Plan and necessary Zoning By-laws. This will help to facilitate the monitoring process and advise the SPC of any issues related to the Land Use Planning Policy.

#### **Policy RV.3.CW-SP – Specify Action Policy for Rosslyn Village**

Policy RV.3.CW.SP manages the existing significant and future threat of septic systems under 10,000 litres a day and future significant threats of application, handling and storage of road salt and storage of snow.

There are 26 on-site wastewater treatment systems in the Rosslyn Village WHPA-A. As they are significant drinking water threats, they will be subject to the mandatory sewage maintenance inspection program.

Inspection of on-site sewage systems is regulated under the Ontario Building Code. A framework for these inspections has been included in the Ontario Building Code and an appendix has been added to the Code to guide how these inspections are to be undertaken. Inspections in the Wellhead Protection Area will be carried out every five years by the Thunder Bay District Health Unit.

The inspector has the ability to issue orders for maintenance, replacement, or upgrading of a system under the *Building Code Act*. The Lakehead Source Protection Authority (SPA) has received funding from the Ontario Drinking Water Stewardship Program (ODWSP) to partially fund septic system replacements within the WHPA-A. The Committee is of the opinion that

regular monitoring of the septic systems will encourage residents to maintain an efficient system and remediate any issues at an early stage before they contaminate the drinking water source.

The Specify Action Policy focuses on prevention, will lessen the potential for future contamination and will be effective if the Salt Management Plan is prepared and followed. More than half of the road salt applied to roads is transported in surface runoff, the remainder infiltrates through soil into the groundwater. This is most noticeable in urbanized areas and along major roadways. The Plan will require monitoring and training by municipalities. From discussions with the Municipality of Oliver Paipoonge it was determined that they are already mandated to have a Plan, and therefore the financial impact was previously anticipated. Although the storage and handling of road salt is identified as a “would be” significant threat (i.e. if 5,000 tonnes were to be stored uncovered in WHPA-A), it is highly unlikely to ever occur in WHPA-A. The storage of snow will be included in this Salt Management Plan. The Rosslyn Village Subdivision is currently not used as a snow dump, and it is unlikely that it ever will be used for this purpose, as the area is mostly residential and adequate open space does not exist.

#### **Policy RV.4.M-SP – Specify Action Monitoring Policy for Rosslyn Village**

The threats listed in policy RV.3.CW-SP are considered Significant Drinking Water Threats. Policy RV.4.M.SP is the monitoring policy that has been put in place in order to monitor the actions and measures of the policy. It was decided by the SPC that the Thunder Bay District Health Unit would provide an Annual Report each year summarizing inspections completed, new septic installations and any issues with existing systems. This will provide the SPA with information in order to track the implementation of the inspection program.

The SPA will be able to track the actions of the Municipality of Oliver Paipoonge related to road salt application and snow storage through obtaining a copy of the Salt Management Plan that is implemented. The Municipality is also mandated by other bodies to follow the Salt Management Plan that they have adopted.

#### **Policy RV.5.CW-EO – Education and Outreach Policy for Rosslyn Village**

Policy RV.5.CW-EO is designed to educate the residents of WHPA-A on existing and possible future threats on their property. This policy manages all existing agricultural threats and future agricultural threats that could take place on properties that are zoned “Rural”, educates on the harmful effects of plane de-icer to the water supply and septic systems under 10,000 litres a day, as well as address the incidental volumes of DNAPLS, organic solvents and fuels stored and handled for personal domestic use. .

Due to the implications of a failed septic system under the Building Code (O. Reg. 315/10), it is important that the residents of Rosslyn Village understand that they live in a vulnerable area and that their septic systems are a potential contaminant to the water source. Since there are only

twenty-six on-site sewage systems that are rated as significant drinking water threats, it is logical to apply the education program to the entire WHPA-A.

Since there is currently no airport within WHPA-A and it is unlikely that one will ever exist here, the SPC has decided to apply the education and outreach tool to this “would be” threat. The Municipality of Oliver Paipoonge can discuss with the federal government what necessary precautions need to be taken in order to protect the Rosslyn Village WHPA if an airport were to be constructed within its proximity.

The Committee believes that education and outreach is a viable tool to use for the existing and future agricultural threats within WHPA-A. At this time, the property where the agricultural threats exist or could potentially exist, does not utilize the portion of the property in WHPA-A for farming purposes. It is treed land that is separated with a fence from the remaining property. The Committee feels that should this farmer continue his current practices “as is”, that the threats will be effectively managed.

All policies related to agriculture, both future and existing, will be dealt with via Education and Outreach. This is because there is only one property in WHPA-A that is zoned to allow for agriculture. Even if the Zoning By-law were amended to delete agriculture as a permitted use, the existing use would continue to be legally non-conforming. Cost implications were a major factor when determining which policy tool would be used to deal with the agricultural threats. This will be discussed more in Section 6.4 and 6.5.

#### **Policy RV.6.M-EO – Education and Outreach Monitoring Policy for Rosslyn Village**

The threats listed in policy RV.6.CW-EO are considered Significant Drinking Water Threats. Policy RV.6.M-EO is the monitoring policy that has been put forth to monitor the drinking water threats and actions addressed within policy RV.5.CW-EO. This will allow the Lakehead Source Protection Authority to track the actions and measures being carried out by the Municipality of Oliver Paipoonge to evaluate compliance with the Source Protection Plan. Through providing Annual Reports, the SPA will be able to track implementation by the Thunder Bay District Health Unit and the Municipality of Oliver Paipoonge each year.

#### **Policy TB.1.HR-SA – Specify Action Policy for the City of Thunder Bay**

Policy TB.1.HR-SA has been created after concerns were expressed by Bare Point Water Treatment Plant Employees and City Council about occasional shipping anchorage in proximity to the intake pipe at Bare Point. This policy encourages the City to update a Spill Prevention and Contingency Plan and place a buoy at the anchorage line, as found on Lake Superior, Port of Thunder Bay CHS Chart #2314. The intake pipe is located at a depth of 10.2 metres and sits roughly 3 metres above the lake bottom. Ships anchor occasionally there during the spring and fall, as storms are more prevalent and this area of the harbour is sheltered. This policy is in accordance with section 26(6) of Ontario Regulation 287/07, as amended.

This policy is strategic action; therefore, the City is not legally mandated to comply. This policy represents a good faith commitment on behalf of the body responsible for implementation. The City of Thunder Bay must have regard for this policy and must consider this policy when making decisions pertaining to its applicability.

### **Policy TB.2.M-SA – Strategic Action Monitoring Policy for the City of Thunder Bay**

Through providing a copy of the Spill Prevention and Contingency Plan, the Lakehead Source Protection Authority will be up to date on measures the City has taken to protect the source of drinking water.

### **Summary of Comments from Pre-Consultation**

The following is a summary of comments received from implementing bodies and interested parties during the Pre-Consultation phase of Source Protection Planning.

#### **Thunder Bay District Health Unit Comments**

Comments were received back on Draft Policies from the Thunder Bay District Health Unit on Thursday November 3, 2011. Five comments were made, all suggesting word changes in the text. Staff at the Thunder Bay District Health Unit suggested that the policy state that an Annual Report would be provided, rather than their organization “reporting back”. All changes were implemented as suggested, and the policy text can be seen in Chapter 4: Rosslyn Village Municipal Residential Drinking Water System.

#### **Municipality of Oliver Paipoonge Comments**

No comments received to date.

#### **Ministry of Municipal Affairs and Housing Comments**

Comments were received from the Ministry of Municipal Affairs and Housing (MMAH) on November 18, 2011. They provided comments on the Land Use Planning Policy developed by the SPC.

The Comments delivered by MMAH pertained to wording changes in order to achieve the desired outcome. Instead of prohibiting the activities, it is the Land Use that needs to be prohibited. Land Use Planning is not an effective mechanism to prohibit activities.

Other suggested revisions included:

- Reflecting the “conform with” standard from the Clean Water Act.
- Distinguish between land uses and activities

- Revise the implementation date with a timeline for revising Official Plan and Zoning By-laws.
- Remove the wording “continue to prohibit” from policy text.

MMAH also suggested that the clause about land division be revisited for wording and intent purposes.

With the assistance of the Planning Consultant and MOE Planners, changes have been made to the Land Use Planning Policy as suggested by MMAH.

### **Ontario Ministry of Food, Agricultural and Rural Affairs Comments**

Comments from the Ontario Ministry of Food, Agriculture and Rural Affairs (OMAFRA) were submitted on December 5, 2011. OMAFRA supports the Education and Outreach Policy that manages all drinking water threats related to agriculture. They do not have any concerns with the draft policy text.

### **City of Thunder Bay Comments**

No comments received to date.

### **Summary of Climate Change Considerations**

Climate change is a reality that is increasingly required to be considered in environmental protection planning. The impacts of climate change on the world’s water sources are a cause for concern. Since 1970, average global temperatures have increased by 0.2 degrees Celsius per decade. The cause has been hypothesized as a result of anthropogenic emissions of greenhouse gases.

Temperate mid-continent regions such as the shoreline regions of Lake Superior, not insulated by the buffering effects of ocean heat capacity or tropical moisture, have warmed even faster, and impacts on ecosystems and large lakes are starting to be felt. Lakes, especially large lakes, are known to be an important component of regional and possibly global biogeochemical cycles, yet little is known about the impact of climatic warming on large lake physical and biological environments. This is of particular importance to regions which rely on the Great Lakes as a source of drinking water.

### **Potential Impacts on Water Resources**

Climate change has the potential to impact water resources in the Lakehead Source Protection Area (LSPA). The Lakehead Source Protection Area Assessment Report states that the Canadian Regional Climate Change Model forecasts an overall increase in average precipitation (from 52.4 to 58.1 millimetres per month) over the LSPA. However, this increase is not evenly distributed

throughout the year. Analysis from the Assessment Report shows that the summers will be potentially dryer, resulting in lower water tables than those currently observed. By the end of August, a moisture deficit of 35 millimetres (on average) will have accumulated over the summer months due to increased evapotranspiration and decreased precipitation. More precipitation will fall as snow in the cold months, which combined with increased spring rains, could be expected to increase spring runoff.

### **Potential Impacts on Source Protection Plan Policy Consideration**

The projected changes in climate were not considered by the SPC when drafting policies for the LSPA. Because the LSPA has a large groundwater surplus, it is not anticipated that climate change will cause any groundwater shortages in the foreseeable future. The SPC did not feel that climate change would impact policy direction.

### **Climate Change Integrated Monitoring**

Future data regarding Climate Change will be collected by the LRCA as part of Canada Ontario Agreement (CAO) Climate Change Monitoring Program. In 2011, the existing Neebing River Gauge site was chosen as one of five provincial sites to start collecting data for climate change monitoring purposes. In addition to the existing data collected (ie: stream flow and precipitation) the following parameters will be collected: groundwater levels, groundwater quality, surface water quality, air temperature, water temperature, soil moisture and turbidity. The data collected will be useful in subsequent updates to the Source Protection Plan. In Rosslyn Village, a lower recharge rate of the aquifer due to dryer summers could potentially raise concentrations of dissolved parameters particularly fluoride and sodium. These parameters are tested every five years, and tracking their values over the next 10-20 years will determine if this does occur.

### **Summary of Financial Implications**

When drafting policies for the Source Protection Plan, financial considerations played an important role in determining which policy tool would be used. The Municipality of Oliver Paipooonge is a small municipality. Hiring, training and employing a Risk Management Official and Inspector would be costly, especially because few Risk Management Plans would be necessary. This was determined during the early engagement phase of Source Protection Planning. There is only one property within the WHPA-A which participates in agricultural practices and hosts the three existing agricultural threats for Rosslyn Village.

Official Plan and Zoning By-law changes will be undertaken by the Municipality of Oliver Paipooonge; therefore, many of the costs for these changes will be borne internally.

The costs for the mandatory on-site sewage system inspections for the Rosslyn Village WHPA-A would have been incurred regardless of the policy that was created in the Source Protection Plan as they were a requirement of the Ontario Building Code.

Through early engagement and pre-consultation it was determined that the Municipality of Oliver Paipoonge had been previously mandated to create a Salt Management Plan for their Municipality. The SPC decided to make this the Source Protection Plan policy, as the cost would be incurred by the Municipality regardless.

The Strategic Action Policy for the City of Thunder Bay is non-legally binding commitment; therefore the City of Thunder Bay is not forced to comply. Placing a buoy on the anchorage is estimated to cost at a minimum cost \$8,500.00.

### **Education and Outreach Policy for Agricultural Significant Threats**

The Lakehead Source Protection Committee has used only a non-regulatory or “soft tool” for all threats pertaining to agriculture and runoff of chemicals associated with plane de-icing. The Education and Outreach tool was chosen as Land Use Planning and prescribed instruments would not have captured the existing agricultural threats and was not feasible for managing plane de-icer. A Section 58 Risk Management Plan would have been extremely costly for the Municipality of Oliver Paipoonge to implement. According to the provisions of the Planning Act, the existing property owner would be allowed to continue to use the farm for agricultural purposes as a legal non-conforming use even if the land use was rezoned to prohibit agriculture regardless of ownership.

The Source Protection Committee is confident that using Education and Outreach for significant existing and future threats is adequate for the following reasons:

- Agriculture can only realistically occur on 2.4% of WHPA-A as the remainder of WHPA-A is developed into small residential lots.
- The 2.06 acres in WHPA-A is tree covered and the current farming practices take place outside WHPA-A on the opposite side of the property.
- The cattle are enclosed within a fence in the barn yard, which is outside of WHPA-A.
- The property owner only winters his cattle on this property, as they are moved to another parcel of land within the Municipality for the summer.
- The geology of the WHPA naturally protects the aquifer as there is a thick clay layer separating land use from the aquifer.
- The Municipality is moving towards rezoning the section of WHPA-A that exists within the agricultural property which will better protect the drinking water source. More details are expected at a later date.

The threat posed by plane de-icer runoff could only be dealt with via Education and Outreach as the construction of a regional airport falls under Federal jurisdiction and as such Municipal Land Use Planning would not be applicable. Using Section 57 Prohibition or a Section 58 Risk Management Plan would come at a very high cost for a small Municipality.