



**REVIEW OF THE CORPORATION OF THE  
TOWN OF MOOSONEE LANDFILL  
EXPANSION ENVIRONMENTAL  
ASSESSMENT**

**Review prepared pursuant to subsection 7(1) of the  
Environmental Assessment Act, R.S.O. 1990 Province of  
Ontario by the Ontario Ministry of the Environment,  
Environmental Assessment and Approvals Branch**

## NEED MORE INFORMATION?

### Public Record Locations

The public record for this environmental assessment can be reviewed during normal business hours at the following ministry office:

Ministry of the Environment  
Environmental Assessment and Approvals Branch  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario  
Voice: (416) 314-8001/1-800-461-6290  
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The Review and Notice of Completion are also available at the following locations:

Ministry of the Environment,  
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Branch  
2 St. Clair Avenue West, Floor 12A  
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This Review is subject to the provisions of Ontario Regulation 616/98 which sets out a deadline for the completion of this document. The deadline for the completion of the Review was January 29, 2010. This paragraph and the giving of the Notice of Completion are the notices required by subsection 7(3) of the *Environmental Assessment Act*.

The Review documents the ministry's evaluation of the EA and takes the comments of the government agencies, the public and Aboriginal communities into consideration.

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## Executive Summary

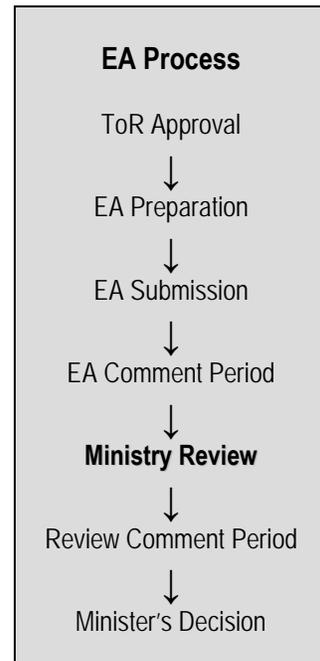
WHO	Corporation of the Town of Moosonee
WHAT	<p>Ministry Review of an Environmental Assessment (EA) for the proposed undertaking which includes:</p> <ul style="list-style-type: none"><li>• additional landfill capacity proposed for this expansion is approximately 363,000 cubic metres (m<sup>3</sup>);</li><li>• continued landfilling over top of the existing Moosonee Landfill, building the site vertically by landfilling on top of historic waste deposits;</li><li>• additional 40 year lifespan for the site; and</li><li>• a service area expansion to include existing users of the Moose Factory Island Landfill.</li></ul>
WHEN	<p>EA Submitted: October 30, 2009. EA Comment Period: October 30, 2009 to December 18, 2009. Ministry Review comment period: February 19, 2010 to March 26, 2010.</p>
WHERE	<p>The site is located on Lots 3, 4 &amp; 5, Concession 10 and parts of Lots 4 &amp; 5, Concession 9, Township of Horden, District of Cochrane. The landfill is located about 4 kilometres (km) southwest of the Town of Moosonee.</p>
WHY	<p>The Moosonee Landfill is currently over capacity and operates under an amended Certificate of Approval. The Moose Factory Island Landfill is nearing the end of its design life. The proponent would like to secure an expansion to the Moosonee Landfill to be able to provide long-term waste disposal for both communities.</p>
CONCLUSIONS	<p>The Ministry of the Environment's review of the EA concluded that it was prepared in accordance with the approved Terms of Reference and contained sufficient information to assess the environmental effects of the proposed undertaking.</p>

## 1. Environmental Assessment Process

Environmental Assessment (EA) is a proponent driven planning process designed to incorporate the consideration of the environment into decision-making by assessing the effects of an undertaking on the environment. In Ontario, the *Environmental Assessment Act* (EAA) sets out the general contents for the preparation of an EA, as well as the ministry's evaluation process. For those proponents and undertakings subject the EAA, approval under the EAA is required before the undertaking can proceed.

Proponents address a wide range of potential effects on the natural, social, cultural and economic environments to ensure the protection, conservation and wise management of the environment. An EA determines, on the basis of the environmental effects, if an undertaking should proceed, and if so, how environmental effects can be managed.

EAs may identify a problem or opportunity, consider alternative ways of addressing the problem or opportunity, evaluate the environmental effects of the alternatives and select a preferred undertaking from the alternatives. The proponent must consider actions to avoid, reduce and mitigate potential environmental effects. In preparing the EA, the proponent completes various studies and consults with interested stakeholders including government agencies, the public and affected Aboriginal communities to evaluate the alternatives and determine the preferred undertaking. Once the undertaking is approved, the proponent is required to monitor to demonstrate compliance with standards, regulations and the EAA approval.



### 1.1 Terms of Reference

Preparing an EA is a two-step application to the Minister of the Environment (Minister). The first step requires the proponent to prepare and submit a Terms of Reference (ToR) to the Ministry of the Environment (ministry) for review and approval. The ToR is the work plan or framework for how the EA will be prepared.

On July 9, 2001, the Minister approved the Corporation of the Town of Moosonee's (Moosonee) ToR. The ToR set out how Moosonee would assess alternative methods, evaluate environmental effects and consult with the public during the preparation of the EA. The ToR established the purpose of the undertaking and the preferred alternative to the undertaking. The ToR also outlined a consultation plan for the EA process.

## **1.2 Environmental Assessment**

Once the ToR is approved by the Minister, the proponent can proceed to the second step of the EA process and carry out the EA. The EA must be prepared in accordance with the approved ToR and the requirements of the EAA. Once the proponent has carried out the EA, including consultation, the EA is submitted to the ministry for review and approval.

On October 30, 2009, Moosonee submitted the Moosonee Landfill Expansion EA to the ministry for approval for the proposed landfill expansion. The EA was made available for inspection by interested persons for a seven-week period between October 30, 2009 and December 18, 2009.

## **1.3 Ministry Review**

The EA was circulated for review to a Government Review Team (GRT). The GRT, including federal, provincial and local agencies, reviewed the EA to ensure that the information and conclusions of the EA were valid, based on their agencies' mandates. The public and Aboriginal communities also had an opportunity to review the EA and submit their comments to the ministry. All comments received by the ministry are considered by the Minister before a decision is made about the EA undertaking.

The EAA requires the ministry to prepare a review of the EA, known simply as the ministry Review (Review). The Review is the ministry's evaluation of the EA. The purpose of the Review is to determine if the EA has been prepared in accordance with the approved ToR and therefore meets the requirements of the EAA and whether the evaluation in the EA is sufficient to allow the Minister to make a decision about the proposed undertaking.

The Review outlines whether the information contained in the EA supports the recommendations and conclusions for the selection of the proposed undertaking. Ministry staff, with input from the GRT, evaluated the technical merits of the proposed undertaking, including the anticipated environmental effects and the proposed mitigation measures. The Review also provides an overview and analysis of the public, agency and Aboriginal community comments on the EA and the proposed undertaking.

The Minister of the Environment considers the conclusion of the Review when making a decision; the Review itself is not the EA decision making mechanism. The Minister's decision will be made following the end of the five-week Review comment period. The Minister's decision is subject to the approval of the Lieutenant Governor in Council.

The Review comment period allows the GRT, the public and Aboriginal communities to see how their concerns with the EA and the proposed undertaking have been considered. During the Review comment period, anyone can submit comments on the EA, the undertaking and the Review. In addition, anyone can request that the Minister refer the

EA, or any matter relating to the EA, to the Environmental Review Tribunal for a hearing if they believe that there are significant outstanding environmental effects that the EA has not addressed. Requests for a hearing can only be made during this comment period. The Minister will consider all requests and determine if a hearing is necessary.

A Notice of Completion of the Review will be published in English in *The Northern Voice*, and in French in *L'Ours Noir* indicating that this Review has been completed and is available for a five-week comment period from February 19, 2010 to March 26, 2010. Copies of the Review will be placed in the same public record locations where the EA was available, and copies will be distributed to the GRT members and potentially interested Aboriginal communities.

## **2. The Proposed Undertaking**

Moosonee is seeking EAA approval for the proposed expansion of the total waste disposal capacity, and the service area of the existing Moosonee landfill (Figure 1), 4 kilometres (km) southwest outside the Town of Moosonee. The existing landfill is over capacity and has approximately 100,000 cubic metres (m<sup>3</sup>) of waste and cover. The existing landfill is operating under an amended Certificate of Approval which expires on June 1, 2011. The amended Certificate of Approval enables Moosonee to continue landfilling at the existing site while proceeding with the EA for the expansion of the landfill. The proposed expansion provides approximately 363,000 m<sup>3</sup> of additional landfill capacity to extend the lifespan of the landfill by 40 years. The existing landfill has been in operation since December 1980, and leachate has been treated through natural attenuation. The proposed undertaking is to continue landfilling over top of the existing Moosonee landfill, building the site vertically by landfilling on top of historic waste deposits.

The current Moosonee landfill accepts domestic and commercial waste from the Town of Moosonee. As the Moose Factory Island landfill is nearing its design capacity, the proposed undertaking includes the expansion of the service area to include the existing users of the Moose Factory Island landfill. Moose Factory Island is situated in the Moose River and across the river from Moosonee.

The proposed landfill expansion design is a natural attenuation site. A natural attenuation landfill site relies on a natural process, ensured through monitoring and testing, to reduce the concentration of potential contaminants in soil or groundwater emanating from the landfill without human intervention. Moosonee's natural attenuation proposal is accomplished by means of an on-site natural organic peaty soil buffer zone.

As part of Moosonee's monitoring program for the existing landfill, hydrogeological studies were carried out at the site and adjacent properties in 1999, 2001 and 2002. Groundwater flow was found to be directed from the landfill towards an unnamed creek. The unnamed creek flows in a south easterly direction, paralleling the site entrance road,

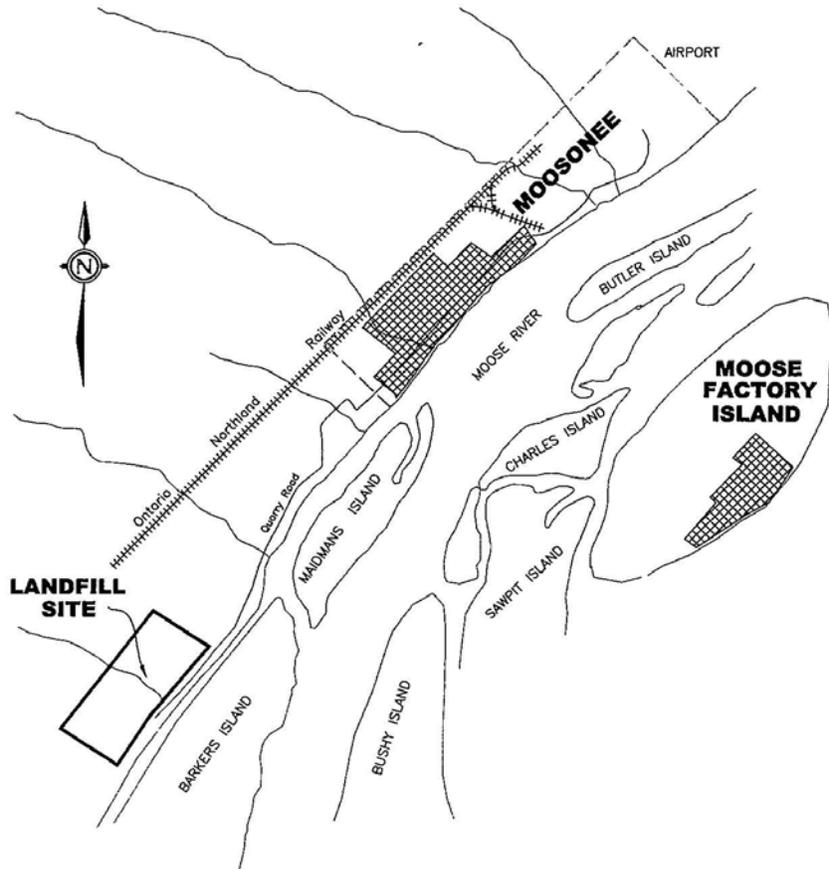
and discharges into Maidman's Creek. The groundwater monitoring indicated no exceedences of any health-related water quality parameters. Monitoring of the water quality in the unnamed creek, which passes along the eastern side of the existing landfill site, indicated only minor impacts due to the presence of the landfill site and showed no exceedences of the Provincial Water Quality Objectives. In its response to comments received by the GRT, Moosonee commits to developing a detailed monitoring program to determine the impact of historical and future landfill operations on the water quality of the adjacent unnamed creek and Maidman's Creek.

In addition to landfill expansion, Moosonee will encourage the current practice of stockpiling soils from remediation and construction sites as these can serve to augment either interim or final cover material. Composting opportunities were investigated at a conceptual level. The main composting activity focused on the removal of wood debris and slash materials from the waste area, which would be chipped and blended with segregated soils for use as interim or final cover on the landfill cells.

If EAA approval is granted, the landfill expansion will be completed in accordance with the terms and provisions outlined in the EA, and any proposed conditions of approval. In addition, Moosonee must still obtain all other legislative approvals it may require for the undertaking.

**Figure 1:**  
**Moosonee Landfill Expansion EA**

FIGURE 2  
SITE PLAN



### 3. Results of the Ministry Review

The Review provides the analysis of the EA. The Review is not intended to summarize the EA, nor present the information found in the EA. For information on the decision making process, refer to the EA itself. The EA and supporting documentation outlines the EA planning process and demonstrates how the proponent has selected the preferred undertaking and made the final decision.

The purpose of the Ministry Review is to determine whether:

- The EA has met the requirements of the ToR and the EAA.
- There are any outstanding issues with the EA.
- The proposed undertaking has technical merit.

#### 3.1 Conformance with ToR and EAA

##### 3.1.1 Ministry Analysis

The ministry coordinated an analysis of the EA with the Government Review Team (GRT) that, in part, looked at whether the requirements of the ToR have been met. The ministry concludes that the EA followed the framework set out in the approved ToR, addressed the commitments made in the approved ToR, and demonstrated how the required components of the EAA have been met.

Must Haves in the EA:

- The EA must be prepared in accordance with the approved ToR.
- EA must include all the basic EAA information requirements.
- EA demonstrates where all the additional commitments in the ToR were met, including studies and the consultation process.

Appendix A summarizes this analysis and identifies how the ToR requirements have been addressed in the EA.

##### 3.1.2 Consultation

One of the key requirements of the EAA is pre-submission consultation completed during the preparation of the EA. This consultation is the responsibility of the proponent and must be completed prior to the submission of the EA and in accordance with the consultation plan outlined in the ToR. The plan outlined by Moosonee in its EA included open houses, and public meetings, as well as consultation with GRT members.

Section 5.1 of the EAA states:

“When preparing proposed terms of reference and an environmental assessment, the proponent shall consult with such persons as may be interested.”

The ministry is satisfied with the level of consultation that occurred during the preparation of this EA and felt that it was appropriate for the proposed undertaking. The EA clearly documents the consultation methods utilized by Moosonee to engage the GRT, the general public, stakeholders, and Aboriginal communities in the EA process.

Once the EA is submitted to the ministry, additional ministry driven consultation occurs during the EA comment period. The GRT, the public and affected Aboriginal communities are provided with the opportunity to review the EA and to submit comments to the ministry on whether the requirements of the ToR had been met, on the EA itself and on the proposed undertaking. All comments received by the ministry during the EA comment period were forwarded to Moosonee for a response. Summaries of the all comments received along with Moosonee's responses are included in Tables 1-3. Copies of the submissions are also available in Appendix B.

### **Government Review Team**

Consultation with the GRT was conducted throughout the EA process. GRT members from various agencies were asked to provide input on the Draft EA. Comments received were incorporated into the October 2009 EA.

Members of the GRT were provided copies of the October 2009 EA for their review during the seven-week comment period. All comments received were forwarded by the ministry to Moosonee for a response. A summary of the comment's received and Moosonee's responses can be found in Table 1.

### **Public Consultation**

Public consultation played an important role in the process for this EA. Efforts were made to provide information to the communities of Moosonee and Moose Factory Island and keep the public informed, provide opportunity for people to obtain additional information and/or have their questions addressed, and provide opportunity for discussion of issues and exchange of information with the proponent. The consultation program for this EA included:

- Open houses;
- Public meetings;
- Newspaper notices/advertisements;
- Design concept briefs; and,
- Flyers distributed to local houses around the Moose Cree First Nation and the Town of Moosonee.

The public was also given the opportunity to review and comment on the October 2009 EA once it was submitted to the ministry. No comments were received from the public during the seven-week comment period.

## Aboriginal Community Consultation

In addition to the requirement in the EAA that interested persons be consulted, consultation with potentially affected Aboriginal communities is also required during the pre-submission period. Aboriginal communities may have special land and treaty rights that need to be considered.

Throughout all stages of the EA process, the most proximate Aboriginal community, the Moose Cree First Nation, has received notices and information regarding the status of the project and has received hard and digital copies of the EA. They have been invited to provide input and comments during the EA process.

A number of other Aboriginal communities were identified and contacted during the EA process. The Ministry of Aboriginal Affairs (MAA) formerly the Ontario Secretariat for Aboriginal Affairs (OSAA) recommended that the Nishnawbe-Aski Nation be contacted and no response was received from this organisation. The October 2009 EA and supporting documentation was also provided by Moosonee to the Taykwa Tagamou Nation, Kashechewan First Nation, Fort Albany First Nation, Timmins Métis Council, the Northern Lights Métis Council, and the MoCreebec Council of the Cree Nation. The ministry followed up with the Aboriginal communities, and no comments have been received from any of these communities and councils.

### 3.1.3 Conclusion

The EAA requires a proponent to consult interested persons during the preparation of the EA and report on the results of those consultations. The ministry is satisfied that Moosonee appropriately followed the consultation plan outlined in the approved ToR. Overall, the ministry believes that Moosonee provided sufficient opportunities for the public, government agencies, and Aboriginal communities to be consulted during the preparation of the EA. The EA clearly documents the consultation methods utilized by Moosonee to engage the GRT, the general public and Aboriginal communities during the EA process. The EA clearly sets out the issues and concerns raised and how they were addressed or will be addressed in the future.

## 3.2 EA Process

EA is a planning process that requires the proponent to identify an existing problem or opportunity, consider alternative ways of addressing the problem or opportunity, evaluate the potential environmental effects of the alternatives and select a preferred alternative.

Aboriginal rights stem from practices, customs or traditions which are integral to the distinctive culture of the Aboriginal community claiming the right.

Treaty rights stem from the signing of treaties by Aboriginal peoples with the Crown.

Aboriginal rights and treaty rights are protected by section 35 of the Constitution Act, 1982.

The Moosonee landfill is currently over capacity. In addition, the nearby Moose Factory Island landfill is nearing its design capacity. Therefore, Moosonee initiated this planning process to secure a long-term solution for both communities' waste disposal needs.

Moosonee outlined its decision making process in the EA. The EA is focused on the expansion of the existing landfill and therefore, alternatives to landfilling were not considered. The EA provides an evaluation of a reasonable range of alternative methods of landfilling to address the problem and opportunity of providing for future waste disposal for the two communities.

The approved ToR required Moosonee to consider the following alternative methods:

- Alternative 1 – Existing: The continuation of landfilling over the existing Moosonee landfill, building the site vertically by landfilling on top of the existing waste deposits.
- Alternative 2 – North: The expansion of the existing landfill on municipal owned lands to the north of the existing site.
- Alternative 3 – West: The expansion of the existing landfill on Crown owned lands to the west of the existing site.

Moosonee evaluated the alternative methods based on criteria originally identified in the approved ToR. An ordinal ranking system was used to select the preferred alternative method. The overall score was based on the combined ranking of the five subcategories of the environment (natural environment, social environment, cultural environment, economic environment, and infrastructure environment) that were assessed in the EA process. The natural environment criterion contained five subcategories for evaluation: groundwater, surface water, air, fisheries and wildlife. Section 3.0 of the EA provides an overview of the evaluation of the alternative methods. Of the three alternative methods evaluated, 'Alternative 1 – Existing' was selected to be the preferred method.

Measures to manage potential environmental effects are described in the EA, as well as the means by which to determine the effectiveness of the mitigation measures and ensure potential negative environmental effects are minimized. The ministry and the GRT are generally satisfied with the proposed mitigation measures and proposed monitoring program; however, additional details and work will be required as part of the *Environmental Protection Act* (EPA) and the *Ontario Water Resources Act* (OWRA) approvals processes, should the Minister and Cabinet approve the undertaking.

### **3.2.1 Conclusion**

Overall, the ministry, in consultation with the GRT, is satisfied with the proponent's decision making process.

The EA contains an explanation of the problems and opportunities that prompted the study. Moosonee considered a reasonable range of alternatives methods to the undertaking and evaluated them in the study area using criteria that considered the EAA's broad definition of the environment (e.g. including natural, socio-economic, cultural, and infrastructure). The EA provides a description of the affected environment in the study area and identifies the elements of the environment that may be affected, either directly or indirectly, by the alternatives.

The EA further describes the advantages and disadvantages of the proposed undertaking based on those potential environmental effects.

### **3.3 Proposed Undertaking**

The proposed undertaking is described in section 3 of the EA (see also section 2 of this Review) and was evaluated based on the advantages and disadvantages to the environment. A broad definition of the environment was used to evaluate the potential effects of the proposed undertaking.

The proposed undertaking is the expansion of the total waste disposal capacity, and the service area of the existing Moosonee landfill. The landfill is located on Lots 3, 4 & 5, Concession 10 and parts of Lots 4 & 5, Concession 9, Township of Horden, District of Cochrane. The landfill is located about 4 km southwest of the Town of Moosonee set back approximately 1400 m from the northwest bank of the Moose River.

The proposed expansion provides approximately 363,000 m<sup>3</sup> of additional landfill capacity to expand the lifespan of the landfill by approximately 40 years. The proposed undertaking is to continue landfilling over top of the existing Moosonee landfill, building the site vertically by landfilling on top of historic waste deposits. The proposed service area expansion would add the users of the Moose Factory Island landfill (i.e. the Moose Cree First Nation, Local Services Board, the Moose Cree First Nation Education Board and the Hospital/Federal Compound).

While the procedural and legislative requirements of the approved ToR and EAA have been met, issues were raised during consultation with the GRT that need to be addressed before a decision about the undertaking can be made. A copy of each comment received is contained in Appendix B. Also, a summary of all comments, including Moosonee's responses and the ministry's level of satisfaction with those responses, can be found in Table 1.

The ministry is satisfied that all issues raised have been addressed or will be addressed by the commitments made by Moosonee and through additional work that will be completed in support of future approvals processes.

### **3.3.1 Key Issues**

Key issues regarding the EA process completed by Moosonee for the Moosonee Landfill Expansion EA were gathered during the pre-submission consultation and the EA review comment period. A number of issues were raised by the GRT. These submissions can be found in Appendix B. All comments, including Moosonee's responses and the ministry's level of satisfaction can be found in Tables 1-3. A summary of the key issue regarding surface water and groundwater raised by the ministry technical reviewers is summarized below.

#### **Surface Water and Groundwater**

The ministry's Surface Water Specialist and Hydrogeologist in the Technical Support Section for the Northern Region determined that the information provided by Moosonee was insufficient. In particular, the information provided was insufficient to determine surface water baseline conditions able to:

- characterize the water quality and hydrology of the unnamed creek and Maidman's Creek; and
- determine impact of historical and current landfill operations on the water quality of the unnamed creek and Maidman's Creek.

It has been recommended by the ministry's technical reviewers that Moosonee commit to the following:

- a monitoring program to be developed as part of the Certificate of Approval process which includes sampling to occur thrice yearly for three years following approval;
- a contingency plan to be developed to include trigger values for remedial action should local groundwater and surface water become impacted; and,
- suction lysimeters to be used to sample shallow groundwater flow off of the site.

Moosonee has committed to address these issues as part of its Certificate of Approval process for the site. Moosonee's full response to the above comments is included in Table 1. The ministry is satisfied with this response.

### **3.3.2 Conclusion**

Moosonee has provided responses to all comments received, including those not summarized above.

The ministry is satisfied that:

- the provisions of the EA;
- the commitments made by Moosonee in the EA and in the responses to comments received during the comment period;
- any proposed conditions of approval; and,

- the commitment by Moosonee to complete additional work in support of future approvals applications,
- will ensure that:
- technical concerns raised by the GRT during the agency and public comment period will be addressed by the proponent;
  - the landfill will be designed and operated to comply with the ministry's standards; and,
  - environmental effects can be managed.

#### **4. Summary of the Ministry Review**

This Review concludes that the EA complies with the requirements of the approved ToR and has been prepared in accordance with the EAA.

The EA has provided sufficient information to enable a decision to be made about the application to proceed with the undertaking.

Concerns raised by the GRT regarding technical issues have either been addressed by Moosonee or a commitment has been made by Moosonee to address them through additional work that will be completed as part of future approval processes.

The Review has explained Moosonee's analysis of the Moosonee Landfill Expansion EA. Alternative methods were assessed and evaluated to arrive at the preferred undertaking. The EA has assessed the potential environmental effects of the alternative methods and proposed undertaking. The ministry is satisfied that Moosonee provided sufficient time and opportunities for the GRT, public, stakeholders, and Aboriginal communities to comment on the October 2009 EA.

## 5. What Happens Now?

The Review will be made available for a five-week comment period. During this time, all interested parties, including the public, the GRT and Aboriginal communities can submit comments to the ministry about the proposed undertaking, the EA and/or the Ministry Review. At this time, anyone can request that the Minister refer either all or part of the EA to the Environmental Review Tribunal for a hearing if they believe that their concerns have not been addressed.

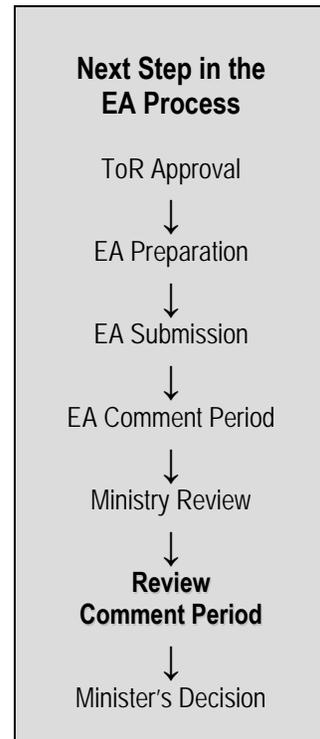
At the end of the Review comment period, ministry staff will make a recommendation to the Minister concerning whether the EA has been prepared in accordance with the ToR and the requirements of the EAA and whether the proposed undertaking should be approved. When making a decision, the Minister will consider the purpose of the EAA, the ToR, the EA, the Review, the comments submitted during the EA and the Review comment periods and any other matters the Minister may consider relevant.

The Minister will make one of the following decisions:

- Give approval to proceed with the undertaking;
- Give approval to proceed with the undertaking subject to conditions; or
- Refuse to give approval to proceed with the undertaking.

Prior to making that decision, the Minister may also refer either part of or the entire EA to mediation or refer either part of or the entire EA to the Environmental Review Tribunal for a decision.

The Minister's decision to approve, approve with conditions or refuse to give approval to proceed with the undertaking is subject to the approval of the Lieutenant Governor in Council.



## **5.1 Additional Approvals Required**

If EAA approval is granted, Moosonee will still require other legislative approvals to design, construct and operate this undertaking. Section 4.0 of the EA outlines additional approvals that may be required. These approvals include:

- *Environmental Protection Act* (EPA) approval; and,
- *Ontario Water Resources Act* (OWRA) approval.

If EAA approval is granted, the proponent must still obtain any other permits or approvals required to construct and operate this undertaking.

EPA and OWRA approvals cannot be issued until approval under the EAA is granted. Furthermore, EAA approval does not imply that other approvals will be granted.

APPENDIX A

*ENVIRONMENTAL ASSESSMENT ACT*  
REQUIREMENTS

**Appendix A: Environmental Assessment Act and Terms of Reference Requirements of the Environmental Assessment**

<b>EA Decision Making Process</b>	<b>EAA and ToR Requirements</b>	<b>Description and Characteristics of the Requirements</b>	<b>Analysis of the EA</b>
Problem/Opportunities	<p>Identify an existing problem or opportunity</p> <hr/> <p>Purpose of the Undertaking: s.6.1(2)(a)</p>	<p>The EA should contain a brief explanation of the problem or opportunity that prompted the proposed activity.</p> <p>If a specific undertaking has been identified provide a brief description.</p>	<ul style="list-style-type: none"> <li>• The Moosonee landfill is currently over capacity and operates under an emergency Certificate of Approval. The nearby Moose Factory Island landfill is nearing the end of its design life.</li> <li>• The purpose of the undertaking is to provide an additional 40 years of lifespan for the existing landfill by building the site vertically, and landfilling on top of historic waste deposits.</li> <li>• Moosonee provided a detailed description of the problem/opportunity. The EA adequately described its purpose.</li> </ul>
Alternatives	<p>Description and Statement of the Rationale for the Alternatives to:</p> <p>Alternative to s.6.1(2)(b)(iii)</p> <hr/> <p>Description and Statement of the Rationale for the Alternatives methods:</p>	<p>“Alternatives to” represent functionally different ways of addressing the problem or opportunity.</p> <p>A reasonable range of “alternatives to” should be identified and evaluated. The proponent should be able to justify that it has considered a reasonable range of alternatives.</p> <p>The “do nothing” alternative to should be included in the evaluation and will represent the “bench mark” situation.</p> <p>“Alternative methods” include a description of different ways of implementing the preferred “alternative to”</p>	<ul style="list-style-type: none"> <li>• The EA is focussed on the expansion of the existing landfill and therefore, alternatives to landfilling were not considered as part of the EA.</li> <li>• Section 1.5 of the EA presents and describes rationale for “alternative methods” as presented in the Terms of Reference (ToR).</li> </ul>

<b>EA Decision Making Process</b>	<b>EAA and ToR Requirements</b>	<b>Description and Characteristics of the Requirements</b>	<b>Analysis of the EA</b>
	Alternative Methods s.6.1(2)(b)(ii)	A reasonable range of “alternative methods” should be identified and outlined.	<ul style="list-style-type: none"> <li>• A reasonable range of “alternative methods” have been described in the EA to address the problem identified, and are within the capability of Moosonee to implement.</li> <li>• The EA clearly explains how Moosonee evaluated the “alternative methods” to determine the proposed undertaking.</li> </ul>
Evaluation	Description of the Environment s.6.1(2)(c)(i)	<p>Proponents must consider the broad definition of the environment including the natural, biophysical, social, economic, built and cultural conditions.</p> <p>The EA must provide a description of the existing environmental conditions in the study area.</p> <p>The EA must identify those elements of the environment that may be reasonably expected to be affected, either directly or indirectly, by the proposed undertaking and/or the alternatives.</p>	<ul style="list-style-type: none"> <li>• The study area includes the on-site footprint, and the immediate surrounding area. Information about the existing environment of the study area can be found in section 2.2.1 of the EA.</li> <li>• Moosonee considered a broad definition of the environment including the natural, social, cultural, economic, and infrastructure environment.</li> <li>• The EA provided a description of the existing environment within the study area to establish baseline conditions.</li> <li>• The EA identified the elements of the environment that may be reasonably expected to be affected by the proposed undertaking and the alternatives.</li> </ul>
	Description of Potential Environmental Effects s.6.1(2)(c)(ii)	<p>Both positive and negative environmental effects should be discussed.</p> <p>The EA must identify methods and studies used to analyze the potential environmental effects. The methods used are contingent on the type of project.</p> <p>Impact assessment methods and criteria used during the evaluation should be</p>	<ul style="list-style-type: none"> <li>• Potential environmental effects are evaluated throughout the EA.</li> <li>• The description included the potential for impacts on the following aspects of the environment: <ul style="list-style-type: none"> <li>• natural;</li> <li>• social;</li> <li>• cultural;</li> <li>• economic; and,</li> <li>• infrastructure.</li> </ul> </li> </ul>

EA Decision Making Process	EAA and ToR Requirements	Description and Characteristics of the Requirements	Analysis of the EA
		<p>identified.</p> <p>The methods chosen must be clear, traceable and replicable so that interested parties can understand the analysis and logic used throughout the EA.</p>	<ul style="list-style-type: none"> <li>The methods chosen to analyze the environmental effects are outlined in the EA.</li> </ul>
	<p>Description of the Actions Necessary to Prevent, Change, Mitigate or Remedy the Environmental Effects s.6.1(2)(c)(iii)</p>	<p>A description of future commitments, studies and a work plan may be included as part of the actions necessary to prevent, change, mitigate or remedy environmental effects for each alternative for the ultimate purpose of comparing them.</p>	<ul style="list-style-type: none"> <li>The potential environmental effects and mitigation measures for the preferred undertaking have been considered throughout the evaluation.</li> <li>A description of future commitments to prevent, change, mitigate or remedy environmental effects is provided in the EA. Commitments include: <ul style="list-style-type: none"> <li>mitigation measures;</li> <li>follow-up studies; and,</li> <li>compliance monitoring.</li> </ul> </li> </ul>
	<p>Evaluation of Advantages and Disadvantages to the Environment s.6.1(2)(d)</p>	<p>The preferred alternative should be identified through this evaluation.</p>	<ul style="list-style-type: none"> <li>Advantages and disadvantage to the environment are evaluated throughout the EA.</li> <li>The proponent's decision making is clear, traceable, and reproducible.</li> <li>The proponent clearly demonstrated why the preferred alternative was selected over the other alternatives.</li> </ul>
	<p>Description of Consultation with Interested Stakeholders s.6.1(2)(e)</p>	<p>A description of stakeholder consultation that occurred during the preparation of the EA needs be documented and should include consultation methods used, frequency of consultation, dates that events occurred, target audience, descriptions of key milestones for which stakeholders are providing input, comments received.</p>	<ul style="list-style-type: none"> <li>Section 7 of the EA provides a summary of the consultation program undertaken, which involved meetings with the municipality, First Nations, and the public. The program met the commitments in the approved ToR.</li> <li>The Aboriginal consultation process included the identification of interested communities and the on-going consultation of those communities</li> </ul>

EA Decision Making Process	EAA and ToR Requirements	Description and Characteristics of the Requirements	Analysis of the EA
		<p>The EA must identify any Aboriginal consultation efforts that have been made including methods for identifying potentially interested First Nations, who was consulted, when and how consultation occurred and any comments received from First Nations.</p> <p>The EA should include outline conflict resolution techniques to resolve issues used by the proponent to resolve outstanding issues with any stakeholders. There must be clear documentation as to how issues and concerns have been addressed.</p>	<p>throughout the EA process.</p> <ul style="list-style-type: none"> <li>• Throughout the development of the EA, interested persons were provided with opportunities to become involved in the process, access information, and were encouraged to participate in the identification and resolution of any issues.</li> <li>• Moosonee documented the stakeholder consultation program including the consultation methods used, frequency of consultation, and date that events occurred. Moosonee also described the key milestones where stakeholders provided input, and included comments received as part of the EA.</li> <li>• The EA identified Aboriginal consultation efforts including methods for identifying potentially interested Aboriginal communities, and described how consultation occurred.</li> <li>• Moosonee completed a comprehensive consultation program to ensure that interested persons, groups, organizations, agencies, and local Aboriginal communities had an opportunity to provide comment and input into the EA. Specific efforts are listed below. <ul style="list-style-type: none"> <li>• Media advertising was used to ensure interested parties were aware of consultation events.</li> <li>• Public meetings, and open houses were held.</li> </ul> </li> </ul>
Selection Process	Proposed Undertaking	The description of the undertaking should specify what the proponent is seeking approval for under the EAA.	<ul style="list-style-type: none"> <li>• The proposed undertaking is the vertical expansion of the Moosonee landfill and expansion of service area. This alternative was selected as the proposed</li> </ul>

<b>EA Decision Making Process</b>	<b>EAA and ToR Requirements</b>	<b>Description and Characteristics of the Requirements</b>	<b>Analysis of the EA</b>
	Description and Statement of the Rationale for the undertaking s.6.1(2)(b)(i)	The description should include information on the location, attributes, dimensions, emissions etc. The evaluation process should identify which is the preferred undertaking.	undertaking after a detailed evaluation and analysis of all alternative methods.  <ul style="list-style-type: none"> <li>• The proposed undertaking was selected because it was the alternative that, on balance, had the most advantages and least disadvantages.</li> <li>• The description of the proposed undertaking is provided in section 3 and includes information on the natural attenuation, generic design, site characteristics, and operation.</li> </ul>
Next Steps and Additional Commitments	Additional ToR Commitments	Outline any further commitments made by the proponent in the ToR.	<ul style="list-style-type: none"> <li>• A summary of the ToR commitments, as well as a description as to how the EA has addressed these commitments is provided in section 2 of the EA.</li> <li>• Future commitments are described in section 5 and 8 of the EA, and a summary of the mitigation measure commitments corresponding to each environmental element is provided in section 2.7 of the EA.</li> </ul>
	Additional Approvals	Outline additional approval requirements. Provide sufficient detail about the nature of the approval.	<ul style="list-style-type: none"> <li>• Additional approval requirements are listed in section 4 and include: <ul style="list-style-type: none"> <li>• An application under section 53 of the <i>Ontario Water Resources Act</i>.</li> <li>• An application under Part V (Waste Management) of the <i>Environmental Protection Act</i>.</li> </ul> </li> </ul>

## APPENDIX B

### SUBMISSIONS RECEIVED DURING INITIAL COMMENT PERIOD

Copies are available in hard copy at the  
Environmental Assessment and  
Approvals Branch

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# TABLES

**Table 1: Government Review Team Comment Summary Table**

**Proposal:** The Corporation of the Town of Moosonee Landfill Expansion, Environmental Assessment Report, October 2009  
**Proponent:** The Corporation of the Town of Moosonee

Submitter	Summary of Comments	Proponent’s Response	Status
<b>Provincial Agencies</b>			
<p>Air and Noise Unit, Environmental Assessment and Approvals Branch (EAAB), Ministry of the Environment (MOE) (December 9, 2009)</p>	<p>The EA documents normally place noise impact assessments under such headings as, for example, “Socio-Economic Impact”. The October 2009 EA places noise under “The Infrastructure Environment”, which is unusual, the issue being that the conclusions on noise impact might not be easily found by a concerned reader. “The Infrastructure Environment” section considers, not only the waste haul route, but also possible impacts of the landfill expansion upon the existing Hydro corridor, and upon the existing vegetative visual barrier for the area’s rail line.</p> <p>Given that noise impact has a more direct impact on people than these other two issues, it is suggested that the noise impact assessment be moved or copied to the “Social Environment” section of the EA.</p>	<p>Information on the noise analysis was provided under the waste haulage infrastructure section within the Infrastructure Environment portion of the EA. This section provides details on how the waste will be moved. It is the logical place to discuss related noise concerns and should be readily available to any reviewer.</p>	<p>The MOE is satisfied.</p>
<p>Water and Wastewater Unit, EAAB, MOE (December 7, 2009)</p>	<p>The preferred alternative does not require sewage works for leachate treatment and disposal. However, it will require sewage works for stormwater management and an</p>	<p>Comment noted. Approval for a stormwater management facility and surface water and groundwater monitoring will be required under Section 53 OWRA. Appropriate</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
	<p>approval under Section 53 of the <i>Ontario Water Resources Act</i> (OWRA). Therefore, the EA report needs to acknowledge the Section 53 OWRA approval requirement and the following section of the EA report will require changes:</p> <ul style="list-style-type: none"> <li>• Section 4 Other Approvals- add the following “A Certificate of Approval under Section 53 OWRA for stormwater management facilities and surface water and groundwater monitoring”</li> </ul> <p>The design of the stormwater management facility should be based on MOE Stormwater Management Planning and Design Manual – March 2003 and Ontario Regulation 232/98 – Landfill Design Standards.</p>	<p>documents will be submitted during detail design of the landfill and the Certificate of Approval (COA) process.</p> <p>Submissions and approvals under Section 53 OWRA for stormwater management will be completed during the final design of the landfill and the COA approval process.</p>	
<p>Timmins District Office, MOE (December 10, 2009)</p>	<p>There is a typo in the executive summary, where ‘Township of Horder’ should be ‘Township of Horden’.</p>	<p>The typos are located within references to documents prepared by others (Trow Engineering) which also have the typo. The proper spelling of the township will be used in future documents.</p>	<p>The MOE is satisfied.</p>
	<p>The Town has applied for an emergency expansion for a period of 18 months from the current expiry date of December 31, 2009.</p>	<p>Comment noted.</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
	<p>The Town has initiated surface and ground water sampling at the site in the fall of 2009. Prior to the sampling, the proposed sampling program was reviewed by both the groundwater and surface water unit of the Northern Region Technical Assessment Unit.</p>	<p>Comment noted.</p>	<p>The MOE is satisfied.</p>
	<p>The noise study did not seem to take into account that there is an existing quarry south of the landfill site. The volume of garbage trucks servicing the landfill site may actually represent less traffic than would be experienced when hauling aggregate material from the quarry to the Town of Moosonee by a private contractor. Therefore, the background noise may actually be greater than what was used in the noise assessment.</p>	<p>Traffic data used in the study was provided by the Town of Moosonee. At the time of the study, the Town of Moosonee did not include any allowance for quarry traffic as it is typically sporadic in nature. As the noise criterion is based on an hourly sound level, there is no guarantee that traffic from the quarry would even occur during the same hour as the landfill traffic. The worst case scenario, provided by the noise assessment, ignored the occasional trip from the quarry.</p>	<p>The MOE is satisfied.</p>
	<p>The report did not address the issue of the location and jurisdiction for the establishment of a waste transfer site on Moose Factory Island. The report should strive to at least identify the mechanism for the selection and establishment of the site. The following questions need to be resolved:</p> <ul style="list-style-type: none"> <li>• How will the site be selected?</li> <li>• Where will the site be located?</li> <li>• Who has jurisdiction to issue an approval document for the transfer site?</li> </ul>	<p>The following clarifications are provided regarding the establishment of a waste transfer station on Moose factory Island:</p> <ul style="list-style-type: none"> <li>• The site will be selected during the design of the waste transfer facility, at which time various options will be reviewed and ranked for their overall suitability.</li> <li>• The waste transfer site would most likely be located at the existing landfill facility located on Moose Factory Island.</li> <li>• A COA for a Waste Disposal Site will need to be obtained for the</li> </ul>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
		<p>waste transfer facility through the Ministry of the Environment.</p> <p>Details will be finalized during the approval process to obtain a COA to operate a Waste Transfer Station on Moose Factory Island.</p>	
	<p>Figure 2 of the conceptual site plan does not provide an area for the storage of segregated products such as recyclable metal products, tires or batteries. The site plan should also incorporate an area dedicated for the separation of clean wood and brush which can be burned under specified conditions.</p>	<p>Specific areas will be added to the site design for the storage of segregated recyclable metals products, tires and batteries. Previous comments from MOE have indicated that burning will not be allowed at the expanded landfill site.</p> <p>Stockpile areas for recyclable materials will be included in the final design of expanded landfill.</p>	<p>The MOE is satisfied.</p>
<p>Waste Unit, EAAB, MOE (December 8, 2009)</p>	<p>The assumed waste compaction rate of 450 kilogram (kg)/cubic meter is quite low. Typical waste compaction densities at landfills are in the range of 590 to 830 kg/cubic meter</p>	<p>The compaction rate used was based on a combination of historic compaction at the existing site (350 kg per cubic meter) and the MOE guideline of 600 kg per cubic meter.</p> <p>The design compaction rates will be reviewed during the final landfill design and COA approval process.</p>	<p>The MOE is satisfied.</p>
	<p>A detailed surface water assessment of the existing and expanded site shall be conducted prior to an increase in the total waste volume of an existing landfill site. The surface water assessment must meet the requirements of sections 9(1) and 9(2) of Ontario regulation 232/98 (O. Reg.</p>	<p>A detailed surface water assessment will be completed during the final landfill design and COA approval process.</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
	232/98) as a minimum.		
	A detailed hydrogeological assessment of the existing and expanded site shall be conducted prior to an increase in the total waste volume of an existing landfill site. The hydrogeological assessment must meet the requirements of sections 8(1) and 8(2) of O. Reg. 232/98 as a minimum.	A detailed hydrogeological assessment will be completed during the final landfill design and COA approval process.	The MOE is satisfied.
	A landfill gas assessment of the existing and expanded site shall be conducted prior to an increase in the total waste disposal volume of an existing landfill site. The landfill gas assessment must meet the requirements of section 14(1) and 14(2) O. Reg. 232/98 as a minimum.	A detailed landfill gas assessment will be completed during the final landfill design and the COA approval process.	The MOE is satisfied.
	<p>In general, the proposed expanded site will be required to comply with O. Reg. 232/98. In order to ensure compliance with this regulation, the following information will need to be provided:</p> <ul style="list-style-type: none"> <li>• A geotechnical assessment of the suitability of the site for the landfilling of municipal waste that considers bearing capacity, differential settlement and slope stability during construction, operation and after closure and that addresses the potential effects on any liner or leachate collection system.</li> </ul>	Geotechnical aspects will be fully considered during the final design of the landfill and the COA approval process.	The MOE is satisfied.

Submitter	Summary of Comments	Proponent's Response	Status
	<ul style="list-style-type: none"> <li>• Other geotechnical considerations should be evaluated including:               <ul style="list-style-type: none"> <li>○ the effects of loading of waste and any other items on the liner and leachate collection system;</li> <li>○ the stability of slopes, liner, leachate collection system and the overall landfill under seismic conditions;</li> <li>○ blowout or basal heave; and,</li> <li>○ the stability of engineered systems on side slopes (if applicable).</li> </ul> </li> </ul>		
	<p>The Town of Moosonee must ensure that the final design of the landfill complies with the requirement to prevent waste from being deposited in a lake, as per section 3.1 and 3.2 of Section 27 of the <i>Environmental Protection Act</i>. No landfill waste shall be placed below the groundwater table elevation.</p>	<p>During the final design of the landfill and the COA approval process, all requirements of section 3.1 and 3.2 of Section 27 of the <i>Environmental Protection Act</i> will be complied with.</p>	<p>The MOE is satisfied.</p>
	<p>The Town of Moosonee must meet the requirements of section 10(2)(b) and 10(3) of O. Reg. 232/98. The Town must prove via a detailed groundwater modeling study that compliance with Guideline B-7 will be met at the down gradient property line for the existing and expanded portions of the landfill.</p>	<p>During the final design of the landfill and the COA approval process, all requirements of section 10(2)(b) and 10(3) of O. Reg. 232/98 will be complied with and a detailed groundwater model will be prepared illustrating how the site is in compliance with Guideline B-7.</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
	In accordance with Section 12 of O. Reg. 232/98, leachate contingency plans will have to be developed for the site involving the expected quality and quantity of leachate and developing contingency plans should the quality and/or quantity of leachate vary from expected values.	During the final design of the landfill and the COA approval process, all requirements of section 12 of O. Reg. 232/98, including a contingency plan should the quality and/or quantity of leachate vary from expected values, will be developed.	The MOE is satisfied.
	An estimate of the contaminating lifespan of the site with regards to subsurface migration of landfill gas and contaminants in leachate will have to be completed.	Contaminating lifespan of the site will be estimated during the final design of the landfill and the COA approval process.	The MOE is satisfied.
	Contingency plans will have to be developed to dispose of landfill gas migrating in the subsurface in a quantity greater than expected or with a quality worse than expected.	A contingency plan to dispose of excess or poor quality landfill gas will be developed during the final design of the landfill and the COA approval process.	The MOE is satisfied.
Surface Water Specialist, Technical Support Section, MOE (December 10, 2009)	There is insufficient data to determine baseline conditions. Additional effort should be undertaken to characterize the water quality and hydrology of the Unnamed Creek and Maidman's Creek. Flow should be measured at each sampling event. The details of the monitoring program can be developed as part of the COA process that would be required for the site should the expansion be approved. Sampling should occur thrice yearly over the next three years after which the need for this sampling frequency can be reviewed.	A detailed monitoring program to establish baseline conditions (water quality and hydrology) at the Unnamed Creek and Maidman's Creek will be developed as part of the COA process in conjunction with MOE. The sampling program will be a minimum of thrice yearly for three years after which the need for this sampling frequency can be reviewed.	The MOE is satisfied.

Submitter	Summary of Comments	Proponent's Response	Status
	<p>There is insufficient data to determine the impact of historical and current landfill operations on the water quality of the adjacent Unnamed Creek and Maidman's Creek. The details of the monitoring program can be developed as part of the COA process that would be required for the site should the expansion be approved. Sampling should occur thrice yearly over the next three years after which the need for this sampling frequency can be reviewed.</p>	<p>A detailed monitoring program to determine the impact of historical and current landfill operations on the water quality of the adjacent Unnamed Creek and Maidman's Creek will be developed as part of the COA process in conjunction with MOE. Sampling will occur thrice yearly over a three year period after which sampling frequency will be reviewed.</p>	<p>The MOE is satisfied.</p>
	<p>No issues of concern were identified that cannot be addressed as part of a monitoring program in a COA for the expanded site.</p>	<p>Comments noted.</p>	<p>The MOE is satisfied.</p>
	<p>A contingency plan needs to be developed for this site. The plan should include trigger values for remedial action should local groundwater and surface water become impacted.</p>	<p>A contingency plan will be developed as part of the COA approval process in conjunction with MOE.</p>	<p>The MOE is satisfied.</p>
	<p>Future reporting for this site should provide site plans that include all sampling locations and important features.</p>	<p>All future reporting will include a plan showing all sampling locations and other important features. Future monitoring and the reporting specifically associated with it will be defined within the new COA for the expanded landfill. The frequency and scope of future monitoring and reporting will be defined by the new COA for the expanded landfill. All monitoring reports are typically submitted to the District Office of the MOE for their review. District Office</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
		<p>staff subsequently refer the reports to either a surface or groundwater technical specialist for further review and comment.</p> <p>To be implemented during future monitoring and during the COA approval process</p>	
Hydrogeologist, Technical Support Section, MOE (December 11, 2009)	Indicates that the expansion information has been presented and reviewed in the past, with acceptance by MOE for the most part.	Comment noted.	The MOE is satisfied.
	Indicates that the hydrogeological information has been reviewed and accepted by hydrogeologists from the MOE office in Thunder Bay.	Comment noted.	The MOE is satisfied.
	Are in agreement with the preferred choice provided in the EA.	Comment noted.	The MOE is satisfied.
	The layout of the monitoring twice per year is correct and it has been noted that sampling and interpreted reporting is to be done yearly for the first three (3) years and then the reporting frequency can be reviewed.	Comment noted.	The MOE is satisfied.
	Suction lysimeters should be used to sample shallow groundwater flow off of the site and this should be included in the COA for the site.	Will be included in the COA application.	The MOE is satisfied.
	The EA application should go ahead as proposed.	Comment noted.	The MOE is satisfied.

Submitter	Summary of Comments	Proponent's Response	Status
Air, Pesticides, and Environmental Planning (APEP), MOE (December 14, 2009)	APEP has no comments or concerns with the Moosonee EA.	None required.	The MOE is satisfied.
Ministry of Health and Long Term Care (November 13, 2009)	Public Health & Prevention Branch, Environmental Health Section is interested in the public health aspects of this EA and wishes to be kept informed of any further developments. It is recommend that the proponent request input from the local Medical Officer of Health for the health unit in which the EA is located. (Dr. Susan Kaczmarek, Medical Officer of Health, Porcupine Health Unit.)	Great Lakes Environmental Services (GLES) staff spoke directly to Mr. Bob Bell at the Porcupine Health Unit on November 24, 2009 who indicated that the copy of the EA that had already been sent to his attention as part of EA consultation process would be sufficient to allow Dr. Susan Kaczmarek, Medical Officer of Health, Porcupine Health Unit to provide any comments.  No subsequent comments received.	The MOE is satisfied.
Ministry of Natural Resources (MNR), (December 18, 2009)	The waste disposal site is partially occupying Crown Land.	Agree that one alternative includes occupation of Crown Land.  Occupancy of Crown Land will be addressed during the final design of the landfill and the COA approval process.	The MOE is satisfied.
	The contaminant attenuation zone is not mapped out in any of the site plans.	Mapping of the contaminant attenuation zone will be completed during the final design of the landfill and the COA approval process.	The MOE is satisfied.
Environmental Assessment Project Coordination (EAPC), MOE (December 18, 2009)	The final study area description needs to be described including study area boundaries. It is important to clearly describe how and why the boundaries of the overall study area and the study area	The overall study area includes the area in and around the Town of Moosonee and Moose Factory Island and the general areas connecting the two sites. The study area for each individual	The MOE is satisfied.

Submitter	Summary of Comments	Proponent's Response	Status
	<p>for each alternative and/or effect were chosen. The study area for each alternative or for each component of the environment may vary depending on the alternatives or the geographic extent of the potential environmental effects.</p>	<p>alternative is the generally the same for each environmental component unless noted otherwise below.</p> <p>The study area for the analysis of each component of the environment is as follows:</p> <p><b>Natural Environment</b></p> <p><u>Groundwater and Surface Water Resources</u></p> <p>The study area includes groundwater resources in the immediate area of the existing landfill and expansion alternatives to the extent that could be impacted by landfill operations (based on scientific studies). In the June 18, 1999 Hydrogeological Evaluation prepared by Trow Consulting Engineers Inc., the furthest boreholes used to monitor groundwater around the existing landfill site were located about 150 metres (m) to the south, 700 m to the east and 50 m to the north of the existing landfill. In the July 12, 2001 Supplemental Hydrogeological Evaluation, also prepared by Trow Consulting Engineers Ltd, the furthest boreholes used to monitor groundwater around the existing landfill site were located about 50 m to the north, 700 m to the east, 150 m to the south and 20 m to the west of the existing landfill. In the February 7, 2002 Preliminary Hydrogeological Study, prepared by Trow Consulting Engineers Ltd, the furthest boreholes used to monitor</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		<p>groundwater conditions around the existing landfill site were about 50 m to the north, 100 m to the east, 150 m to the south and 850 m to the east of the existing landfill. This area was chosen to ensure that all potential impacts to groundwater resources could be properly assessed.</p> <p>The study areas includes all surface water resources in the immediate area of the existing landfill and expansion alternatives and downstream including the Unnamed Creek (which originates from an area to the northeast of the existing landfill and passes along the east side of the existing landfill with the edge of the creek varying between 55 m and 85 m from the edge of the existing fill, and then into Maidman's Creek at a point about 50 m downstream of the Quarry Road), Maidman's Creek (an estuary of the Moose River, which accepts discharge from the Unnamed Creek through a culvert under the Quarry Road and is located about 300 m to the southeast of the existing landfill site and flows in a northeast direction for about 1.5 kilometres (km) before entering the Moose River) and the Moose River located about 1.5 km to the southwest of the existing landfill site which flows to the northeast entering James Bay approximately 20 km further downstream. This study area was chosen to ensure that all potential</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		<p>impacts could be properly assessed.</p> <p><u>Air Resources</u>  The study area includes the area immediately surrounding the existing landfill and expansion alternatives extending to the entire Town of Moosonee and Moose Factory Island or the entire area within a radius of about 8 km from the center of the existing landfill site. The study area was chosen to ensure that all potential receptors could be fully evaluated.</p> <p><u>Fisheries Resources</u>  The study area includes all areas of potential fish habitat within the influence of the landfill and the expansion alternatives including the Unnamed Creek, Maidman's Creek and the Moose River. This study area ensures that any fisheries resources that could potentially be impacted by each alternative are properly assessed.</p> <p><u>Wildlife Resources</u>  The study area for flora includes the immediate area that could be disturbed by the infrastructure required for each of the alternatives. This would include the general area of the footprint of the existing landfill, and an area about 800 m to the northeast and 1,000 m to the southwest of the center of the existing landfill. This area was</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		<p>chosen as any impacts to flora would be limited to these specific areas of disturbance.</p> <p>The study area for wildlife includes the general area in and surrounding the existing landfill and the expansion alternatives or an approximate area within a radius of about 2 km from the centre of the existing landfill site. This study area was chosen to ensure that any wildlife resources that could be impacted in the vicinity of the landfill are assessed.</p> <p>The study area for bird populations included the general area of the landfill, the expansion alternatives and the Town of Moosonee and Moose Factory Island including the local airport (an area within a radius of about 8 km from the center of the existing landfill). This study area was chosen to ensure that the impact of the expansion alternatives includes any effects on the existing airport operations.</p> <p><b>Social Environment</b>  The study area included all communities within the general service area of the existing landfill and expansion alternatives and included the Town of Moosonee, the Moose Cree First Nation and other residents on Moose Factory Island. This area is</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		<p>contained within a radius of about 8 km from the centre of the existing landfill. This study area was chosen in order to include all communities that could be potentially impacted by the each of the alternatives.</p> <p><b>Cultural Environment</b>  The study area for the archaeological assessment was limited to the areas that could potentially be disturbed by the existing landfill and each of the three alternatives and their associated infrastructure. This would include the general area of the footprint of the existing landfill, and an area about 800 m to the northeast and 1,000 m to the southwest of the center of the existing landfill. This study area was chosen as this impact would be limited to the areas physically disturbed by each alternative.</p> <p><b>Economic Environment</b>  The study area for the economic environment was limited to the resources of the Town of Moosonee and the Moose Cree First Nation as both communities will be future economic supporters of the expanded landfill. This area is generally contained within an 8 km radius from the center of the existing landfill site.</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		<p><b>Infrastructure Environment</b></p> <p><u>Waste Haulage Infrastructure</u>  The study area for waste haulage infrastructure included all areas on Moose Factory Island and in and around the Town of Moosonee including the barge and winter road system between Moose Factory Island and the Town of Moosonee. This area is generally contained within an 8 km radius from the center of the existing landfill site. This study area was chosen to ensure that all areas that could potentially be impacted by the alternatives are properly assessed.</p> <p><u>Hydro One Infrastructure</u>  The study area is limited to the existing Hydro One corridor (about 60 m wide). The Hydro One corridor is located to the west and north of the existing landfill. The corridor runs in a general south to north direction until a point about 1,300 m to the west of the existing landfill. From this point, the corridor turns to the northeast, passing within about 800 m to the northeast of the existing landfill. The study area was limited to the actual area of the Hydro One corridor as any impacts of the alternatives for expansion would be limited to this corridor.</p> <p><u>Ontario Northland Railway</u>  The study area is limited to the existing</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		<p>Ontario Northland Railway Right-of-Way (about 20 m wide) which is located about 500 m, to the northwest of the existing landfill. The Right-of-Way runs in a generally southwest to northeast direction and is easily located on the Town of Moosonee Landfill Expansion Location of Undertaking figure which is included on the first page of the EA document. Any impacts from the alternative expansion options would be limited to this Right-of-Way which is owned by the Ontario Northland Railway. Therefore the study area is limited to the actual Right-of-Way occupied by the railway.</p>	
	<p>Provide a detailed definition of the purpose of the undertaking. Describe the lifespan, size and service area for the landfill expansion.</p>	<p>The EA is being undertaken to expand the capacity of the existing Moosonee Landfill in order to extend its lifespan for an additional 40 years which corresponds to an additional waste capacity of 363,000 m<sup>3</sup>. The service area for the landfill expansion includes the Town of Moosonee and Moose Factory Island.</p>	<p>The MOE is satisfied.</p>
	<p>Provide a rationale for choosing the three alternative methods that were chosen in Section 1.5.</p>	<p>The three alternatives (expand the site vertically on top of the existing site, expand on municipally owned lands to the north of the existing site and close the existing site or expand on Crown lands to the west of the existing site and close the existing site) were agreed to during the Terms of Reference stage. These specific alternatives were chosen as each is located adjacent to</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
		<p>the area of the existing landfill, sufficient room for expansion was available, land ownership was appropriate, haul routes were in place, surface and ground water conditions were suitable, the sites were isolated from any development, they were cost effective options, historic fill operations had taken place in the immediate vicinity which the service population had accepted and the options were acceptable to all parties consulted at the Terms of Reference stage.</p>	
	<p>Confirm that the EA was prepared in accordance with subsection 6(2)(c) of the <i>Environmental Assessment Act</i> and that the preferred “alternative to” was determined in the Terms of Reference (ToR) stage.</p>	<p>As outlined in section 1.6 of the EA, “The Terms of Reference (ToR) for the Environmental Assessment were developed in accordance with Section 6(2) of the Environmental Assessment Act, Revised Statutes of Ontario, 1990, Chapter E.18. The actual EA was also prepared in accordance with subsection 6(2)(c) of the <i>Environmental Assessment Act</i>.</p> <p>The ToR that was approved for the Moosonee Landfill Expansion was a focused ToR, meaning that the preferred “alternative to expand the existing landfill” was determined in the TOR stage. Therefore this focused EA did not have to assess alternatives to landfill expansion but rather just assess alternative methods to expand the existing landfill.</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
	<p>Provide two lists of studies as follows:</p> <ul style="list-style-type: none"> <li>• A list of studies and reports which are under the control of the proponent and which were done in connection with the undertaking or matters related to the undertaking.</li> <li>• A list of studies and reports done in connection with the undertaking or matters related to the undertaking of which the proponent is aware and that are not under the control of the proponent.</li> </ul>	<p><u>Studies/reports under control of the proponent:</u>  Terms of Reference, The Corporation of the Town of Moosonee, Environmental Assessment for a Landfill Expansion, MF Tulloch Engineering &amp; Surveying, March 2001</p> <p>Hydrogeological Evaluation, Moosonee/Moose Factory Landfill Expansion, Township of Horder, District of Cochrane, Trow Consulting Engineers Ltd., June 18, 1999</p> <p>Supplemental Hydrogeological Evaluation, Moosonee/Moose Factory Landfill Development, Township of Horder, District of Cochrane, Trow Consulting Engineers Ltd., July 12, 2001</p> <p>Preliminary Hydrogeological Study, Moosonee Landfill Development, Township of Horder, District of Cochrane, Trow Consulting Engineers Ltd., February 7, 2002</p> <p>Evaluation of the Proposed New Moosonee Landfill in Relation to Bird Hazards to Aircraft Safety at Moosonee Airport, Northern Ontario, LGL Limited, February 14, 2002</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
		<p>Stage One, Archaeological and Cultural Heritage Assessment, Proposed Moosonee Landfill Expansion Site, Corporation of the Town of Moosonee, Woodland Heritage Services Ltd., January 11, 2002</p> <p>Updated Noise Assessment, Landfill Expansion Environmental Assessment, Corporation of the Town of Moosonee, MMM Group, June 11, 2009</p> <p><u>Studies/reports not under control of the proponent.</u> Nil</p>	
	<p>In relation to Air Resources, Section 8.0 of the ToR states that the types of investigations include “an air quality assessment of the proposed landfill expansion, focusing on potential impacts related to air quality, dust and odor effects”. The EA does not include an air quality assessment. Explain why this was deemed not necessary and provide greater detail pertaining to advice given by the MOE regarding this issue. Provide specific documents and guidance given by MOE.</p>	<p>As documented in the EA, section 2.2.1, Existing Conditions, Air Resources, “Based on dialogue and written comments received from MOE, no specific air resources studies were requested.”</p> <p>On October 16, 2000, D.J. Racette, Air Quality Analyst, Air, Pesticides and Environmental Planning Unit, Technical Support Section, MOE, Northern Region, provided comments on the Terms of Reference for this scoped EA as follows “There should be little potential for complaints due to road dust or odor from the landfill site. If it does become a problem then a dust attenuation program should be implemented.”</p> <p>In February 2001 a revised Terms of Reference document was circulated to those</p>	<p>The MOE is satisfied.</p>

Submitter	Summary of Comments	Proponent's Response	Status
		<p>agencies that had expressed an interest in the Terms of Reference. There were no comments regarding air quality assessments at that time.</p> <p>There were no comments from the Government Review Team during any stage of the EA process concerning a lack of an air resources assessment.</p> <p>In addition, the review of the application for a COA under the <i>Environmental Protection Act</i> will involve additional input from Air Resources personnel of the MOE and at this stage, specific conditions on the operation of the proposed facility will be made. The imposition of conditions on the COA is a routine process and is complimentary to the current EA process.</p> <p>The location of the landfill is situated beyond all developed areas of the Town of Moosonee and as such meets all applicable MOE Guidelines for separation and buffer distances for potential odour and wind borne litter attenuation. In addition, MOE has indicated that the ongoing use of any landfill in Moosonee will not involve burning as a waste consolidation technique due to concerns for air pollution in the downstream direction.</p> <p>The EA ranking determined that any impacts to air resources would be similar for all three expansion alternatives.</p>	

Submitter	Summary of Comments	Proponent's Response	Status
		Any air resources studies required by MOE will be completed during the final design of the landfill and the COA approval process.	
<b>Federal Agencies</b>			
Canadian Environmental Assessment Agency	No comments.	No response required.	The MOE is satisfied.
CN Rail	No comments.	No response required.	The MOE is satisfied.
Department of Indian and Northern Affairs	No comments.	No response required.	The MOE is satisfied.
Environment Canada	No comments.	No response required.	The MOE is satisfied.
Fisheries and Oceans Canada	No comments.	No response required.	The MOE is satisfied.
Health Canada	No comments.	No response required.	The MOE is satisfied.
Transport Canada	No comments.	No response required.	The MOE is satisfied.
<b>Local Agencies</b>			
None			

**Table 2. Public Comment Summary Table**

**Proposal:** Proposed Environmental Assessment for the Moosonee Landfill Expansion

**Proponent:** Corporation of the Town of Moosonee

<b>Submitter</b>	<b>Summary of Comments</b>	<b>Proponent's Response</b>	<b>Status</b>
No public comments received.	N/A	N/A	No action required.

**Table 3. Aboriginal Communities Comment Summary Table**

**Proposal:** Proposed Environmental Assessment for the Moosonee Landfill Expansion

**Proponent:** Corporation of the Town of Moosonee

<b>Aboriginal Communities</b>	<b>Summary of Comments</b>	<b>Proponent's Response</b>	<b>Status</b>
MoCreebec Council of the Cree Nation	None received.	None required.	The MOE is satisfied.
Moose Cree First Nation	None received.	None required.	The MOE is satisfied.
Timmins Métis Council	None received.	None required.	The MOE is satisfied.
Northern Lights Métis Council	None received.	None required.	The MOE is satisfied.
Taykwa Tagamou Nation	None received.	None required.	The MOE is satisfied.
Kashechewan First Nation	None received.	None required.	The MOE is satisfied.
Fort Albany First Nation	None received.	None required.	The MOE is satisfied.
Nishnawbe-Aski Nation	None received.	None required.	The MOE is satisfied.
<b>Local Agencies</b>			
Weeneebayko Health Ahtushaywin	None received.	None required.	The MOE is satisfied.
Moose Cree Education Authority	None received.	None required.	The MOE is satisfied.

## **MAKING A SUBMISSION?**

A five-week public review period ending March 26, 2010 will follow publication of this Review. During this time, any interested parties can make submissions about the proposed undertaking, the environmental assessment or this Review. Should you wish to make a submission, please send it to:

Agatha Garcia-Wright, Director  
Environmental Assessment and Approvals Branch  
Ministry of the Environment  
2 St. Clair Avenue West, Floor 12A  
Toronto, Ontario M4V 1L5  
Fax: (416) 314-8452

Re: Moosonee Landfill Expansion Environmental Assessment  
Attention: Ms. Michelle Fromme-Marcellin, Project Officer

*Under the Freedom of Information and Protection of Privacy Act and the Environmental Assessment Act, unless otherwise stated in the submission, any personal information such as name, address, telephone number and property location included in all submissions become part of the public record files for this matter and can be released if requested.*