AECOM

DILLON CONSULTING

Solid Waste Management Environmental Assessment

WELCOME to the Open House

THE CORPORATION OF THE CITY OF SAULT STE. MARIE CANADA

January, 2016

What Should I Do?

- Record your name and contact information on the sign-in sheet.
- Review the handouts and presentation boards with the project team.
- Ask questions and offer your opinions and suggestions.
- Record your comments and opinions on a comment sheet or send us an email or complete a questionnaire (available at this session or online through the City's website on Waste Management EA webpage).

Your input is important to us!

Objectives of the Open House

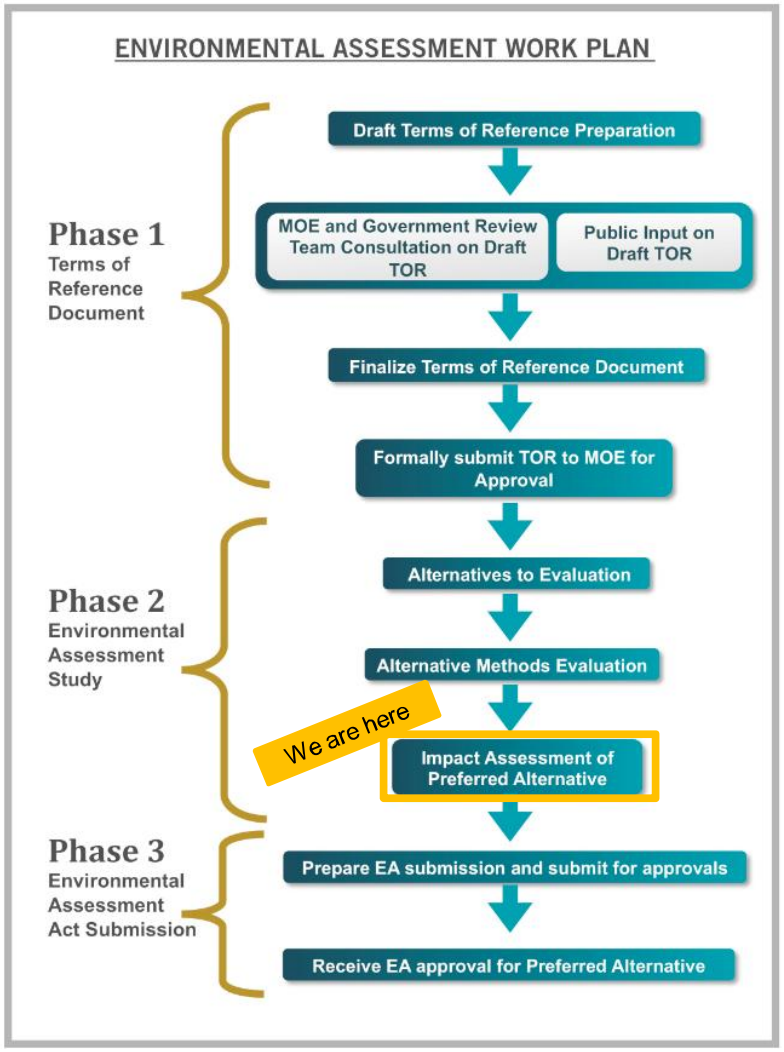
- Summarize the steps completed to date;
- Present the conclusions and recommendations from the Impact Assessment work for the preferred landfill expansion option;
- Answer questions;
- Solicit input and comments; and
- Identify next steps including the project timing.

What is an EA?

Purpose = ***"to protect the environment and quality of life of the people of the province; and facilitate the wise management of the natural resources of the province".***

- The EA Process is a transparent decision-making process used to promote good environmental planning by assessing potential effects of certain activities or projects on the natural and human environment. The EA process serves several important purposes:
  - Allowing projects to receive input from a wide variety of sources, including the federal, provincial and municipal levels of government, First Nations, stakeholders and the public.
  - Identifying potential problems prior to construction
  - Promoting good environmental planning practices
  - Improving community acceptance
  - Better protecting the environment

The EA Process



Consultation to date has included:

- Newsletters
- Public Input Sessions and meetings with First Nations and other stakeholders in the summer/fall of 2007
- Public Information Center and meetings with First Nations and other stakeholders in the summer of 2010
- Public Input Session and correspondence with First Nations and other stakeholders in April 2011
- Public Input Session and correspondence with First Nations and other stakeholders in March 2012

Project History

Diversion Improvements

2005

EA Terms of Reference Approved

2009

Agreement with Elementa

2010

Confirmed **Landfill & Increased 3Rs** as preferred way to manage waste (EA Step – "Alternatives To")

2012

Confirmed **landfill expansion** as the preferred landfill method (EA Step – "Alternative Methods")

Obtained community input on ways to expand the existing landfill (EA Step – "Alternative Methods")

2016

Seeking community input on:

- Proposed mitigation to minimize potential effects on the environment and community

Landfill & Increased 3Rs - Rationale

EA Step – "Alternatives to" Conclusion

Based on the results of the evaluation and input received the preferred long-term approach to managing waste in SSM is:

- Increased 3Rs (Reduce/Reuse/Recycle); and
- Landfilling residual waste.

Why?

- Can comply with regulations and policies.
- City is experienced with these waste management initiatives.
- Flexible to changes in the waste stream (e.g. population, waste generation, diversion).
- Can accept non-hazardous residual waste from a Waste-to-Energy facility.
- Cost efficient.

Landfill Expansion - Rationale

EA Step – "Alternative Methods" Conclusion

Based on the results of the evaluation and input received the preferred method of landfilling waste = expansion of an existing site.

Why?

- Likely less potential for displacement and disruption.
- Only one landfill site to manage and maintain.
- Cost effective.
- Community adaptation.
- Likely fewer challenges in gaining approvals.

North and West Expansion with Mining – Rationale

EA Step – "Alternative Methods" Conclusion

Based on the results of the evaluation and input received, the preferred expansion option = Option 3 - North and West Expansion B with Landfill Mining.

Why?

- Site development (i.e. geometry and storm water management) enhanced relative to Options 2 and 4.
- Reduced average excavation depth in west expansion area (i.e.11m).
- Includes a liner beneath the waste within the western portion of the existing disposal footprint enhancing long term ground water quality.
- Includes a liner over existing waste in areas of overlap to further enhance ground water quality.
- Meets target capacity at current estimated waste densities.

Preferred Option

A	Existing Landfill Area
B	Proposed Horizontal Expansion Area
C	Proposed Landfill Mining Area

Impact Assessment

What is it?

- Focused investigation and analysis to identify potential impacts to the environment resulting from the construction or changes in the operation of the expanded landfill.
- Also includes consideration of potential opportunities for enhanced mitigation that otherwise would not likely be implemented in the absence of the proposed expansion.

Impact Assessment

- The detailed impact assessment required expertise in the following disciplines:
  - ✓ Biology (terrestrial and aquatic);
  - ✓ Geotechnical;
  - ✓ Groundwater;
  - ✓ Atmospheric (acoustic and air quality);
  - ✓ Surface water;
  - ✓ Socio-economic;
  - ✓ Visual;
  - ✓ Traffic;
  - ✓ Archaeological/cultural; and
  - ✓ Planned land use.

Impact Assessment – Biology

The proposed expansion will require the removal of approximately12.7 ha on-site woodland and meadow vegetation.

Mitigation/Enhancements

- Erosion and sediment control (e.g. use silt fences to reduce risk of soil washing into watercourses)
- Woodland edge management (e.g. avoid using heavy machinery over roots of edge trees)
- Wildlife impact management during construction (e.g. avoiding bird nesting seasons when clearing)
- Environmental monitoring of proposed mitigation measures during construction
- Reforestation.

Potential Impact

- It is anticipated that the overall natural environment impact will be minimal.

Impact Assessment – Geotechnical

Review existing data and complete a geotechnical field investigation including test hole drilling, soil sampling and analyses to support engineering studies and stability assessments for possible landfill configurations.

Conclusions and Recommendations

- Bearing capacity of foundation soil is adequate.
- Waste settlement in the range of 10%-25% should be expected.
- Install 2 reinforcement layers (eg. geogrid) to protect liner.
- Incorporate settlement monitoring in initial cell(s) to provide guidance for the design of remaining cells.
- Maximum excavation side slope = 3H:1V.
- Maximum landfill waste slopes = 4:1 for 10m height, 5:1 for heights 10m-15m and 6:1 for heights >15m.

Impact Assessment – Groundwater

Leachate from landfills has the potential to contaminate groundwater; as such MOECC has strict groundwater criteria that must be met at all sites. It is noted that the expansion is outside of the wellhead protection zones established for the municipal groundwater supply.

Mitigation/Enhancements

- New expansion will be fully engineered with a liner and leachate collection system.
- Frequent groundwater and surface water monitoring will be undertaken and reported to MOECC.

Potential Impact

- With mitigation in place the expansion is expected to meet MOECC requirements and have minimal impact to groundwater.
- The proposed landfill mining has the benefit of being able to improve historical groundwater contamination on the west side of the existing fill area.

Impact Assessment – Noise

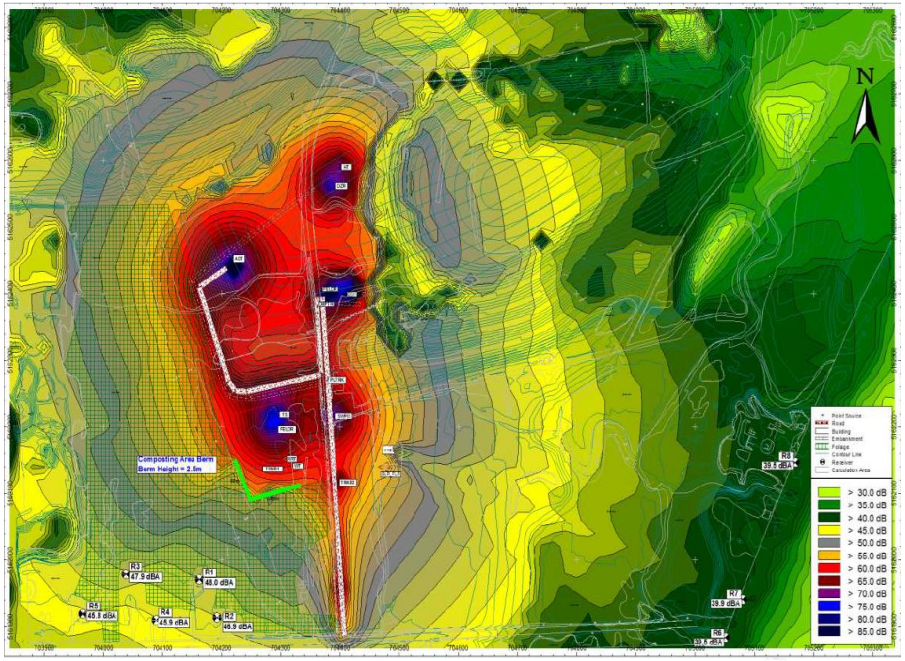
The noise assessment considered the potential impact of the worst-case noise emission scenarios on 8 receptors. MOECC Noise Guidelines for Landfills require that noise should be equal to or less than 50 dBA at these receptors.

Mitigation/Enhancement

- A 2.5 metre high berm around the proposed compost pad is planned to reduce noise from activities in this area

Potential Impact

Noise from the site is anticipated to be within the MOECC noise guidelines.



Impact Assessment – Air Quality

Typical Pollutants from landfill operations include nitrogen oxide from combustion of fuel and dust and finer particulate matter from the movement of vehicles. The air quality analysis looked at worst case scenarios to assess the potential for these contaminants.

Mitigation/Enhancements

- Best management practices were assumed in the assessment including:
  - Equipment will comply with up-to-date emissions standards
  - Dust mitigation practices such as watering will be used where necessary

Potential Impact

- No exceedances of MOECC air quality criteria are predicted.

Impact Assessment – Odour

Landfill sites, especially landfill mining has potential to cause odour effects.

Mitigation/Enhancements

- Staged expansion of landfill gas management system.
- Odour control spray system/ portable deodorizing system.
- Construction of a biosolids processing facility.
- Development of an Odour Management Plan for landfill mining including activities such as:
  - Management of operations based on meteorological conditions
  - Daily inspections to adjust and refine mining operations
  - Bypass screening of waste for highly odorous material
  - Use of chemical and biological treatment to reduce odour
  - Use of periphery odour misting system
  - Minimize size of active excavation
  - Cover applied to excavated area at the end of the day

Potential Impact

- It is anticipated that odour may occur during landfill mining. The City of Sault Ste. Marie will work with the community to minimize odour effects to the extent possible. A complaint procedure will be put in place.

Impact Assessment – Surface Water

The site expansion could result in increased peak storm water flows in receiving rivers and creeks and adversely impact water quality. The surface water assessment considered major storm events and developed an effective storm water management plan to protect water quality.

Mitigation/Enhancements

- Storm water to be collected in ditches adjacent to the perimeter road and conveyed to four storm water ponds to remove a minimum 80% total suspended solids.
- Ponds will also provide emergency leachate/spill containment.
- No increase in peak flows in Canon Creek or Root River.
- Regular inflow monitoring for contaminants will be undertaken by operations staff.

Potential Impact

- No impact on peak flows and potential to enhance water quality relative to existing conditions.

Impact Assessment – Socio-Economic

Complete studies and solicit input to understand and address potential effects on residents and businesses associated with the proposed expansion (i.e. displacement, disruption, nuisances, community character).

Mitigation/Enhancements

- Key local concerns include vermin/wildlife and odour.
- Vermin/wildlife management plan to be included in Design and Operations Report.
- Odour mitigation will be enhanced relative to current activities – refer to odour impact assessment.

Potential Impact

- Based on the feedback received and the results of impact assessment studies (eg. air quality, noise, traffic) effects are not expected to be significant relative to current levels provided mitigation is implemented.

Impact Assessment – Visual

The proposed expansion may impact the visual landscape in the site vicinity and beyond.

Mitigation/Enhancements

- No significant impact is anticipated due to the existing effective vegetative screening at and adjacent to the site.
- Proposed mitigation includes berms and vegetative buffers to further obscure the landform.
- Vegetative cap to be provided on final landform.
- Some reforestation proposed to compensate for removal of vegetation.

Potential Impact

- No significant change on the visual landscape is anticipated.

Impact Assessment – Traffic

The expansion could impact, traffic volumes, types, safety and the transportation network.

Mitigation/Enhancements

- Modest changes in traffic during construction and the operating life.
- Fifth Line/ Hwy.17 intersection geometrics, although adequate, are not ideal.
- Complete clearing, removal/relocation of signs to maximize sight lines from Fifth Line approaches.
- Maintain flashing amber/reduce speed sign and hidden intersection signage on Hwy.17 approaches to Fifth Line.
- Maintain left and through prohibitions for trucks and buses from Fifth Line approaches.
- Complete technical review to identify further enhancements.

Potential Impact

- Limited overall impact on the transportation network.
- Potential to enhance Hwy.17/Fifth Line safety.

Impact Assessment – Cultural

Portions of the landfill site were identified in the Official Plan as having potential for archaeological resources.

Mitigation/Enhancements

- Conducted a Phase 1 and 2 archaeological assessment to further explore the potential for on-site archaeological resources.
- Field work was completed by a licensed Archaeologist and no archaeological sites were found.

Potential Impact

- The report concludes no further archaeological assessments are required for this property.

Impact Assessment – Land Use

There are policies and guidelines that address land uses in the vicinity of landfills and on the City's groundwater recharge area. The assessment considered all policy and guideline requirements.

Mitigation/Enhancements

- 18 properties including within existing Area of Influence (AOI).
- 12 additional properties (8 sensitive) within the expanded AOI.
- Completed focused studies as required by MOECC Guidelines and City's Official Plan to assess impacts to sensitive uses and natural and heritage resources.
- Future development/redevelopment in the area will consider MOECC AOI guidelines.
- Rezoning SW portion of property to be undertaken following EA Act approval.

Potential Impact

- Potential impacts and mitigation are included with the individual impact assessment reports.

Next Steps

- Review all input received and modify impact mitigation as needed.
- Prepare the Design and Operation Report for the site.
- Prepare Environmental Assessment Document.
- Issue the EA Report including the D&O report to the MOECC.