

What is the ToR?

The Terms of Reference (ToR) sets out the framework for the planning and decision-making process to be followed during the preparation of the EA.

A ToR is not an EA. It outlines what work and studies will be done during the EA stage. Stelco does not need to do the work or the studies at the ToR stage.

The ToR process commenced June 30, 2021.

What is the Environmental Assessment?

The EA is a study, which assesses the potential environmental effects (positive or negative) of this proposed landfill expansion.

Need for Landfill Expansion

Stelco recycles or re-uses approximately 93% of the secondary materials they generate but the remaining 7% of non-hazardous steel-making secondary material requires management.

ENVIRONMENTAL ASSESSMENT

An Environmental Assessment (EA) of the proposed Quarry Landfill expansion is being undertaken under the provincial *Environmental Assessment Act*.

In the previous Virtual Consultation Event #1 (November 2021), Stelco identified available and feasible waste management 'Alternatives To' and a series of environmental components and evaluation criteria and indicators to compare 'Alternatives To'.

COMPARISON OF 'ALTERNATIVES TO'

Since the Virtual Consultation Event #1, Stelco has completed a comparison of 'Alternatives To' and our assessment is provided below.

Environmental Component	Environmental Sub-Component	Alternative 1 ^A	Alternative 2 ^B	Public Ranking ^C
Atmosphere	Air quality/ Greenhouse Gas (GHG)	●	●	Very important
	Noise	●	●	Very important
Geology and Hydrogeology		●	●	Very important
Surface Water		●	●	Very important
Biology		●	●	Very important
Agriculture and Land Use		●	●	Very important
Cultural Heritage	Archaeology	●	●	Very important
	Cultural heritage landscapes, built heritage resources	●	●	Very important
Socio-Economic	Nuisance factors (i.e., dust, noise, visual)	●	●	Very important
Transportation	Traffic	●	●	Very important
Technical Considerations	Ability to operate	●	●	Important
	Technical risks	●	●	Important
	Cost and timing of approvals	●	●	Less Important
	Capital and operating costs	●	●	Less Important

Notes:

● represents equally preferred ● represents more preferred ● represents less preferred

A) Alternative 1: Landfill Site Closure and Export of Waste for Disposal

B) Alternative 2: Landfill Site Expansion

C) Three individuals or groups responded to the request for rankings from Virtual Consultation Event #1, this is the average.

Alternative 2: Landfill Site Expansion was identified by Stelco as the preferred 'Alternative To'.

What is the difference between 'Alternatives To' and 'Alternative Methods'?

'Alternatives To' are functionally different ways of dealing with the problem or opportunity (which in this case is to provide environmentally safe, long-term waste management).

'Alternative Methods' are different ways of doing the same activity. 'Alternative Methods' are different ways of doing the preferred 'Alternative To'. These will be developed in the EA.

Examples of 'Alternative Methods' for landfill expansion: horizontal expansion (including a separate footprint), vertical expansion, or a combination of vertical and horizontal expansion.

The next steps of the ToR are to: identify work plans for the various environmental components to describe existing conditions, assess 'Alternative Methods' of expanding the landfill, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects of the preferred method of landfill expansion. All of these steps will be conducted in the EA. This technical bulletin describes and requests public feedback about the proposed environmental component work plans.

A reminder that environmental components include the natural, social, economic / financial and technical environment. Small changes from the environmental components used to assess 'Alternatives To' to those proposed for the work plans are proposed as follows:

- Surface water will be split into two sub-components: quality and quantity
- Biology will be split into two sub-components: terrestrial and aquatic
- The land use and agriculture environmental component will be split into two main environmental components, namely: agriculture and land use
- The cultural heritage landscapes and built heritage resources sub-component will be further divided such that cultural heritage landscapes and built heritage resources are individual sub-components
- Socio-economic will be split into three sub-components: local economy, residents and community (nuisance), and visual
- Technical considerations will change from four sub-components to two sub-components: engineered containment and financial

LOCATION OF EXISTING LANDFILL AT LAKE ERIE WORKS (LEW) FACILITY



SUMMARIZED WORK PLANS

Environmental Component / Sub-Component	Data Collection and Field Work	Prediction of Potential Effects for the Preferred 'Alternative Method'*
Atmosphere / Air Quality and GHG	<ul style="list-style-type: none"> • Compile and interpret existing Environment and Climate Change Canada or Ministry of the Environment Conservation and Park's (MECP's) air quality monitoring data and meteorological data. • Review available air quality data from the LEW current landfill (if available) and at Ontario locations outside of the LEW facility in a similar setting with a landfill. • Review aerial photographic mapping and zoning maps. 	<ul style="list-style-type: none"> • Select air indicator compounds (including dust) appropriate for the landfill expansion. • Complete air emission estimates based on published emission factors and available literature. • Execute an air quality dispersion model for the currently approved landfill and for an expanded landfill. • Predict air quality effects for off-site receptors based on an expanded landfill operations scenario and compare them to applicable criteria. • Calculate GHG emissions based on the expanded landfill. • If required, identify mitigation or best management practices. • Develop monitoring, trigger and contingency plans, if relevant.
Atmosphere / Noise	<ul style="list-style-type: none"> • Review aerial imagery and zoning / land use mapping. • Review previously prepared noise studies (if available). • Undertake field program to quantify existing noise levels (if needed). 	<ul style="list-style-type: none"> • Noise emission estimates based on available project-specific information, manufacturer's noise data, and consultant's database of similar noise sources. • Establish applicable noise limits in accordance with accepted MECP practices. • Develop a project/site-specific three-dimensional noise prediction model. • Using the site-specific noise model described above, model the predictable noise levels from the preferred landfill expansion at identified off-site points of reception (existing or potential), and compare them to MECP noise guidelines. • If required, identify mitigation that can be implemented into the design. • Develop monitoring, trigger and contingency plans, if relevant.
Biology / Aquatic Ecosystems	<ul style="list-style-type: none"> • Wetland boundary surveys. • Headwater Drainage Features assessment, if necessary. • Fish habitat survey. • Fish communities survey. • Detailed work plan will be prepared and submitted to Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR) and MECP for review and concurrence. 	<ul style="list-style-type: none"> • Identify areas of potential disturbance including: <ul style="list-style-type: none"> • Potential direct habitat loss/disturbance. • Potential indirect habitat disturbance. • Potential impacts to aquatic species at risk habitat and species. • Identify appropriate mitigation measures, if needed. • Develop monitoring and contingency plans, if relevant.



Environmental Component / Sub-Component	Data Collection and Field Work	Prediction of Potential Effects for the Preferred 'Alternative Method'
Biology / Terrestrial Ecosystems	<ul style="list-style-type: none"> • Botanical surveys. • Ecological land classification. • Herpetile surveys. • Bat surveys. • Breeding Bird Surveys. • Wetland Community Boundary Delineation. • Wildlife habitat and visual encounter surveys. • Species at Risk screening. • Detailed work plan will be prepared and submitted to MNDMNR for review and concurrence. 	<ul style="list-style-type: none"> • Identify potential impacts to species at risk, significant wildlife habitat, wetlands, woodlands, and environmentally significant areas, including: <ul style="list-style-type: none"> • Potential direct habitat loss/disturbance. • Potential indirect habitat disturbance. • Potential impacts to terrestrial species at risk habitat and species. • Potential vegetation removal. • Potential impacts to species • Identify appropriate mitigation measures, if needed. • Develop monitoring, and contingency plans, if relevant.
Geology and Hydrogeology / Groundwater Quality	<ul style="list-style-type: none"> • Complete new leachability testing of waste materials • Review results of existing groundwater monitoring program. • Limited additional field work in the form of drilling in area of possible expansion for geological and hydrogeological testing. 	<ul style="list-style-type: none"> • Prepare a predictive model of landfill performance (contaminant transport model) as per <i>O. Reg. 232/98</i>. • Identify leachate indicator parameters. • Predict concentrations in the groundwater at the property boundary for identified leachate indicator parameters. • Compare the predicted concentrations in the groundwater to the Reasonable Use Criteria. • Evaluate potential for groundwater discharge to surface water and consider potential impacts on surface water quality. • Revise and update mitigation measures, if necessary. • Compare predictive results against approved trigger mechanism and contingency plan, if required. • Predict how long Stelco needs to operate engineering controls, in particular the leachate collections system, to prevent the discharge of potential contaminants.
Surface Water / Surface Water Quality	<ul style="list-style-type: none"> • Review the results of existing surface water monitoring program. • Limited additional field work related to municipal drains or surface water bodies. 	<ul style="list-style-type: none"> • Evaluation of required construction of new on-site facilities (pond(s)) and the facility's ability to mitigate potential changes to surface water quality. • Modeling of proposed surface water facilities (pond(s)) and comparison with MECP and watershed-specific design criteria. • Update trigger mechanism and contingency plan, if required. • Update surface water monitoring program, if required.

Environmental Component / Sub-Component	Data Collection and Field Work	Prediction of Potential Effects for the Preferred 'Alternative Method'
Surface Water / Surface Water Quantity	<ul style="list-style-type: none"> • Field review of stormwater management and drainage outlet locations, if required. • Review existing surface water management features and practices. 	<ul style="list-style-type: none"> • Predict and assess future surface water peak flows and quantity conditions associated with the preferred landfill expansion alternative for a range of storm events (e.g., 2, 5, 10, 25, and 100 year) as required by O.Reg. 232/98, as well as consideration of climate change effects. • Evaluate the need for stormwater management infrastructure to meet O.Reg. 232/98. • Modelling of proposed stormwater management system and comparison with MECP specific design criteria.
Agriculture / Agriculture	<ul style="list-style-type: none"> • A field survey of the study areas to document types of farms, farm improvements, cropping patterns, buildings, etc. • Review aerial photographic mapping, Official Plans and Zoning By-law, Canada Land Inventory mapping and Soils of Haldimand-Norfolk County mapping. • Compile parcel fabric mapping from County. • Interviews with municipal staff, Ontario Ministry of Agriculture, Food and Rural Affairs, Federation of Agriculture and if necessary, property owners. 	<ul style="list-style-type: none"> • Based on the proposed landfill operational practices and/or results of predictive assessments of potential nuisance effects as carried out by other components; the technical and operational considerations component; and groundwater and surface water considerations, the potential effects of the preferred expansion method on existing and proposed on-site and off-site agricultural use will be assessed.
Cultural Heritage / Archaeology	<ul style="list-style-type: none"> • Review and update existing background research including archaeological, historical, and environmental literature. • Review updated list of registered archaeological sites within 1 km of the landfill site. • Complete Stage 1 Archaeology Assessment. If necessary, complete subsequent Stages of archaeological assessment. 	<ul style="list-style-type: none"> • Archaeological sites that will be impacted by the preferred expansion alternative may require further assessment to determine spatial extent, complete a full evaluation of significance, and determine the need for strategies to mitigate impacts and provide future conservation.

Environmental Component / Sub-Component	Data Collection and Field Work	Prediction of Potential Effects for the Preferred 'Alternative Method'*
Cultural Heritage / Cultural Heritage Landscapes	<ul style="list-style-type: none"> • Background research of archival, published and unpublished sources, municipal heritage policies, and historic maps and aerial imagery. • Consultation with municipal heritage planner, if available. • Review of identified cultural heritage resources as part of Official Plan. • Field investigations to document and evaluate existing conditions. 	<ul style="list-style-type: none"> • Determine the potential magnitude, reversibility, extent, duration, and frequency of each type of impact, if present. • Methods to predict potential effects following guidance provided in the Ministry of Heritage, Sport, Tourism, and Culture Industries (MCHSTCI) Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process. • Methods to consist of identifying key vistas and views, sources of direct and indirect impact resulting from construction and operation of the preferred landfill expansion and conservation measures to reduce or avoid impact to cultural heritage landscapes. • Complete a cultural heritage resources impact assessment.
Cultural Heritage / Built Heritage Resources	<ul style="list-style-type: none"> • Background research of archival, published and unpublished sources, municipal heritage policies, and historic maps and aerial imagery. • Consultation with municipal heritage planner, if available. • Review of identified cultural heritage resources as part of Official Plan. • Field investigations to document and evaluate existing conditions. 	<ul style="list-style-type: none"> • Determine the potential magnitude, reversibility, extent, duration, and frequency of each type of impact, if present. • Methods to predict potential effects will follow guidance provided in the (MCHSTCI) Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process. • Methods to consist of identifying resources, sources of direct and indirect impact resulting from construction and operation, and preferred options and conservation measures to reduce or avoid impact to protected heritage resources or newly identified resources of cultural heritage value or interest. • Complete a cultural heritage resources impact assessment.
Land Use / Current and Planned Future Land Use	<ul style="list-style-type: none"> • Review aerial photographic mapping, Official Plan and Zoning By-law. • Compile parcel fabric mapping from County. • Review Provincial Guidelines • Review Provincial Policy Statement 2020. • Interviews with municipal staff to confirm development activity planned in the site-vicinity. 	<ul style="list-style-type: none"> • Based on the proposed operational practices and/or results of predictive assessments of potential nuisance effects as carried out by other components and the design and operation component, the potential compatibility of the preferred method with existing and proposed surrounding land use will be assessed.
Socio-Economic / Local Economy	<ul style="list-style-type: none"> • Review of current and projected employment numbers (during both construction and operation phases). • Review of local business. 	<ul style="list-style-type: none"> • Qualitative assessment of impacts on local businesses from changes at the landfill site, (e.g., loss of patronage, operational impacts). • Impacts on employment as determined by change in employment numbers and resultant economic impact at the local level.



Environmental Component / Sub-Component	Data Collection and Field Work	Prediction of Potential Effects for the Preferred 'Alternative Method'*
Socio-Economic / Residents and Community	<ul style="list-style-type: none"> • Review aerial photography to identify closest residential properties. • Windshield survey of study area to identify residences and businesses (including farms) as well as any other community facilities in the site-vicinity. 	<ul style="list-style-type: none"> • Review of findings from other disciplines – noise, visual, air quality to ascertain potential nuisance effects on residential receptors from landfill expansion. • Evaluate level of potential nuisance effects once mitigation measures and best management practices have been implemented to determine change from baseline (current) conditions. • Evaluate if the preferred alternative could cause displacement of residents.
Socio-Economic / Visual	<ul style="list-style-type: none"> • Field investigations to identify key viewpoints and obtain photos. • Use software to produce representative 3D perspective images for each viewpoint. 	<ul style="list-style-type: none"> • Prepare 3D models from each viewpoint for the preferred landfill expansion 'Alternative Method' and render them with appropriate surface material / vegetation cover (turf, meadow, trees, etc.). • Compare the landfill expansion model of the preferred 'Alternative Method' with the existing site conditions model and describe potential impacts. • Apply conceptual level mitigation measures to preferred landfill expansion alternative, if required. Identify the degree of visual impact.
Transportation / Traffic	<ul style="list-style-type: none"> • Obtain available traffic data for selected intersections and corridors within haul route study area. • Conduct traffic count estimates if recent or sufficient data does not exist. 	<ul style="list-style-type: none"> • Assess existing hourly and daily carrying capacity of the haul route study area roads. • Assess existing intersection level of service and other performance metrics for the selected haul route study area intersections to confirm overall intersection and critical movement performance (capacity and delay) • Assess future traffic operation and safety requirements of defined study area (adjacent roadway and haul route) conditions. • Assess potential intersection geometric requirements for mitigation. Undertake warrants to confirm any required improvements, i.e., auxiliary lane and/or intersection control requirements, as necessary.

Technical Bulletin #1

June 2022



Environmental Component / Sub-Component	Data Collection and Field Work	Prediction of Potential Effects for the Preferred 'Alternative Method'
Design and Operations / Engineered Containment	<ul style="list-style-type: none"> • Calculate landfill footprint areas, excavation volumes, height, and airspace for each alternative. 	<ul style="list-style-type: none"> • Prepare overall materials balance (excavation, cover and fill requirements). • Establish a geotechnical model for the Site and complete a geotechnical assessment of preferred alternative (the expected settlement performance and stability of the landfill configuration). • Assess the effects that short and long-term settlements may have on the operations of the new cells. • Develop an estimate of the quantity of leachate generated from the expansion. • Prepare conceptual design of leachate collection system.
Design and Operations / Financial	<ul style="list-style-type: none"> • Estimated cost for alternative designs. 	<ul style="list-style-type: none"> • Develop an estimate of probable cost for construction and operation for the preferred alternative.

Notes:

After data collection and field work and before the prediction of potential effects for the preferred 'Alternative Method' the 'Alternative Methods' will be compared qualitatively for each environmental component and sub-component.

What are 'Monitoring and Contingency Plans'?

Monitoring plans are how Stelco will comply with the commitments made during this assessment such that the expected environmental effects are verified and meet regulations. (e.g., ongoing monitoring of groundwater and surface water quality).

Contingency plans are what Stelco will do to manage unexpected adverse environmental impacts discovered by the monitoring programs.

IN ADDITION TO THE WORK PLANS, WHAT ELSE WILL BE COMPLETED IN THE EA?

- Collect feedback from public and stakeholders on the proposed 'Alternative Methods' and the identified preferred 'Alternative Method'
- Determine net effects on the environment of the proposed 'Alternative Method' of landfill expansion including a comparison to 'Do Nothing'
- Develop mitigation measures for the preferred 'Alternative Method'
- Consider climate change impacts of the preferred 'Alternative Method'
- Assess cumulative impacts of the preferred 'Alternative Method'
- Develop Monitoring and Contingency Plans
- Prepare the Environmental Assessment Study Report

Climate change includes:

Potential impact of climate change on the landfill expansion (i.e., climate change adaptation) and the landfill expansion's potential impact on climate change (i.e., climate change mitigation).

What is a cumulative impact assessment?

A cumulative impact assessment reviews the potential qualitative effects of the proposed landfill expansion in combination with past, present, and reasonably foreseeable future activities, where possible.

NEXT CONSULTATION ACTIVITIES

Draft ToR: a summary document of the proposed Project, the Project need or rationale, environmental components considered, the existing environment, 'Alternatives To', how the 'Alternatives To' were considered, consultation undertaken and the results, future consultation during the EA, work plans for the EA and ToR commitments.

We will post information on the project website as it becomes available: <http://consultation.stelco.com>

QUESTIONS, FEEDBACK AND COMMENTS?

We encourage you to let us know your thoughts by sending your comments to consultation@stelco.com and/or using the attached comment form by June 24, 2022.

Or contact us at 1-905-577-4407 for any accessibility requirements.

If you would like to be notified of any Project updates, please let us know and provide either an email address or your mailing address.

