DRAFT

May 2022

Volume 4

Environmental Assessment of the Township of North Dundas Waste Management Plan

GOLDER
MEMBER OF WSP

TOWNSHIP OF
North Dundas

Table of Contents

Volume 4 – Record of Consultation

APPENDIX F

Technical Bulletin #2 - 'Alternative To' Assessment

Appendix F1 Technical Bulletin #2 and Feedback Forms
Appendix F2 Technical Bulletin #2 Advertisements and Notices
Appendix F3 Comments from the GRT
Appendix F4 Comments from the Public

Appendix F1 Technical Bulletin #2 and Feedback Forms

TOWNSHIP OF
North Dundas

636 St. Lawrence Street, P.O. Box 489
Winchester, Ontario, K0C 2K0
TEL: 613.774.2105 FAX: 613.774.5699

TECHNICAL BULLETIN #2 | February 2021

What is the ToR?

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

What is the EA?

The EA is a study, which assesses the potential environmental effects (positive or negative) of this Waste Management Plan.

Did You Know?

The purpose of this EA is to provide environmentally safe and cost-effective long-term waste management for the Township of North Dundas for a 25 year planning period.

EA Process Tips

The Environmental Assessment Process requires the study to consider an option to "Do Nothing" along with the list of options being considered in the study.

Environmental Assessment

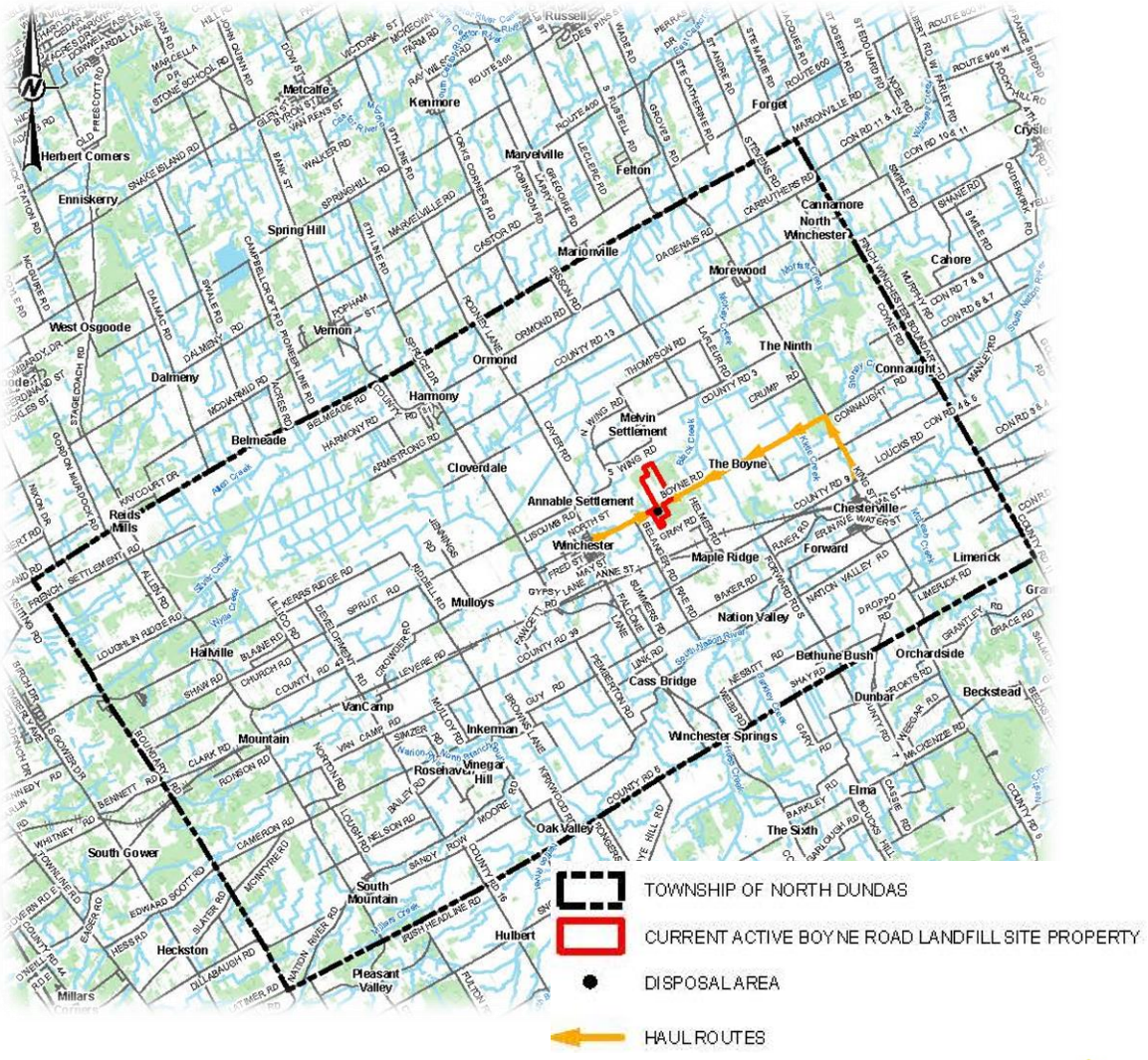
An Environmental Assessment (EA) of the Township of North Dundas (Township) Waste Management Plan (WMP) is being undertaken under the provincial *Environmental Assessment Act*.
As part of the EA Study, the Township will: evaluate 'Alternatives To' the Waste Management Plan, identify the preferred WMP, characterize the existing environmental conditions, identify and develop 'Alternative Methods' of waste management, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects.

Terms of Reference (ToR)

The ToR for the EA of the Township's Waste Management Plan was approved by the Minister of Environment, Conservation and Parks in July 2020.

Waste Management Plan Study Area

The study area for the Township's Waste Management Plan, consisting of the full Township land area, is shown below.



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Results of the Diversion Study:

A combination of waste diversion options is proposed for the preferred waste diversion system. The preferred combined waste diversion system includes:

- Backyard Composting of Food Organics
- Dual Stream Recycling Program
- Curbside Collection of Leaf and Yard Waste and Composting at the Boyne Road Landfill Site
- Use of Existing and New Waste Management Policies

What Environmental Components are Relevant to 'Alternatives To'?

Environmental components comprising the natural, social, economic / financial and technical environment were considered as follows:

- Atmosphere (air quality and noise)
- Geology and hydrogeology
- Surface water
- Biology (aquatic and terrestrial ecosystems)
- Agriculture and land use
- Archaeology
- Cultural heritage (landscapes and resources)
- Socio-economic (nuisance such as noise, litter, etc.; cost and timing of approvals; cost of implementation)
- Transportation (road network)
- Technical considerations (ability of Township to operate)

Criteria associated with these components to evaluate the 'Alternatives To' are suggested as follows:

What are 'Alternatives To'?

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

Environmental Components, Evaluation Criteria and Indicators for Evaluation of 'Alternatives To'

Environmental Component	Evaluation Criteria	Indicator(s)
Atmosphere	▪ Potential effects on air quality (including dust, odour, GHG) ▪ Potential effects on noise	▪ Qualitative amount and/or type of emissions generated/offset due to alternative. ▪ Qualitative amount of non-renewable resources conserved. ▪ Qualitative relative expected amount of noise from alternative.
Geology and Hydrogeology	▪ Potential effects on groundwater resources	▪ Qualitative expected effect on groundwater quality at the property boundary.

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Environmental Component	Evaluation Criteria	Indicator(s)
Surface Water	▪ Potential effects on surface water resources	▪ Qualitative expected effect on surface water quality within the site-vicinity. ▪ Qualitative expected change in peak flows (within the on-site surface water management system and at the property boundary). ▪ Qualitative expected degree of off-site effects on surface water quantity within the site-vicinity.
Biology	▪ Potential effects on natural environment features (aquatic and terrestrial ecosystems)	▪ Qualitative amount of disturbance of terrestrial and aquatic environment.
Agriculture and Land Use	▪ Potential effects on existing land use and agriculture	▪ Approximate number or types of land use conflicts.
Archaeology	▪ Potential effects on archaeology	▪ Approximate degree of archaeological potential.
Cultural Heritage	▪ Potential effects on cultural environment (cultural heritage landscapes, cultural heritage resources)	▪ Approximate degree of potential for built/cultural heritage resources.
Socio-Economic	▪ Potential site operational effects on sensitive off-site receptors (i.e., noise, litter, air quality) ▪ Relative costs and timing of approvals ▪ Relative cost of implementation (capital and operational costs)	▪ General attitude of public toward alternative. ▪ Approximate proximity of alternative to potential sensitive receptors. ▪ Approximate cost per tonne. ▪ Approximate type or amount of potential revenue offsets. ▪ Approximate types of approvals required for alternative and level of effort to attain the approval.
Transportation	▪ Potential effect on road network	▪ Qualitative assessment of additional tonnage and resulting number of trucks to site due to selected alternative.
Technical Considerations	▪ Relative ability of the Township to operate ▪ Relative technical risks associated with the operation of the alternative	▪ Availability of examples where technology used with similar waste tonnage. ▪ Types of barriers to implementation.

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Preliminary Results of Comparison of Long Term Waste Management 'Alternatives To'

Landfill Site Closure and Export Waste for Disposal
▪ Boyne Road Landfill would be closed, waste diversion activities would continue
▪ Waste transfer station to accept waste and export for disposal
▪ Two possible disposal options (both owned and operated by private sector):
  ▪ Green for Life's (GFL's) Moose Creek Landfill (operating)
  ▪ Waste Management's Ottawa (Carp) Landfill (currently closed)
	Less preferred overall
	(Most preferred for biology, agriculture/land use, archaeology, cultural heritage, relative cost of approvals, ability of the Township to operate and technical risk.
	Least preferred for noise criteria.)

Landfill Site Expansion ▪ Increase disposal capacity of the Boyne Road Landfill (estimated at 460,000 m^3) ▪ Waste diversion activities would likely continue at the site	**Most preferred overall** (Most preferred for atmosphere, transportation, cultural heritage,and nuissance, ability of the Township to operate and cost of implementation criteria. Not least preferred for any criterion.)
Establish New Landfill Site in the Township ▪ Search and identify a new location for a disposal site within the municipality	**Unreasonable to pursue** No reasonably suitable land available except near existing Boyne Road landfill
Alternative Waste Management Technologies ▪ Energy-from-Waste (high temperature combustion with energy recovery from heat produced) ▪ Search and identify a new site for this technology ▪ Private sector operator needed (beyond the Township capabilities)	**Least preferred overall** (Most preferred for noise, groundwater and surface water criteria. Least preferred for atmosphere, biology, agriculture/land use, archaeology, cultural heritage, socio-economic and technical criteria.)
Enhanced Waste Diversion ▪ Zero-waste solution not presently considered possible or available to the Township ▪ No control over Industrial, Commercial and Institutional (IC&I) waste generators (provincial jurisdiction) ▪ Implementing additional waste diversion programs would likely increase the residential waste diversion rate from approximately 23% to 33%	**Not a stand alone solution**
Do Nothing ▪ Benchmark alternative required in EAs for comparison purposes ▪ Boyne Road Landfill would be closed and any other solution for waste management for the Township would not be pursued (not a realistic option)	**Unreasonable to pursue** **Negative potential environmental and health impacts**

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What are 'Alternative Methods'?

'Alternatives Methods' are different ways of doing the same activity (landfill expansion).

What is a cumulative impact assessment?

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

Next Steps?

- Characterize existing environmental conditions at the Boyne Road Landfill for use in assessing the proposed expansion
- Collect feedback from stakeholders on the proposed 'Alternatives To' and the preferred 'Alternative To'
- Update the projected residual waste for 2022-2047 using the results of the diversion study
- Identify and develop the 'Alternative Methods' for the preferred 'Alternative To' – landfill expansion of the Boyne Road Landfill
- Compare 'Alternative Methods' and identify the preferred method of landfill expansion
- Determine net effects on the environment
- Consider climate change impacts
- Assess cumulative impacts

Climate change includes:

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

Next Consultation Activities:

Technical Bulletin #3: final results of the 'Alternatives To' assessment, describe each of the 'Alternative Methods' to be considered, the criteria for the comparative evaluation of those 'Alternative Methods' and the preliminary results of the comparison.

Open House #3: proposed EA and inform the public about the identification of the preferred Alternative Method, as well as inform them of the results of the existing conditions studies and the predicted effects on the environment, and the commitments the Township is making to mitigate any adverse effects.

Questions, Feedback and Comments?

We encourage you to let us know your thoughts by sending your comments to dfroats@northdundas.com and/or using the attached comment form by March 1, 2021.

Or contact us at 613-774-2105 ext. 235 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.

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Environmental Assessment of the Township of North Dundas
Waste Management Plan
Technical Bulletin #2 Feedback Form

Thank you for taking the time to provide us with your comments. This comment sheet should be completed after reading Technical Bulletin #2.

If you would like to be added to our project mailing list, please include the appropriate contact information below.

___ YES, BY MAIL ___ YES, BY EMAIL ___ NO

NAME: _____ EMAIL: _____

ADDRESS: _____ PHONE NUMBER: _____

1. Please provide any general comments regarding this Environmental Assessment Process.

_____

_____

_____

2. The purpose of this EA is to provide environmentally safe and cost-effective long-term waste management for the Township of North Dundas for a 25 year planning period. Do you agree with or have any comments on this purpose statement?

_____

_____

3. Various components of the environment have been used to assess potential effects of the 'Alternatives To' considered for the waste management plan. Similar components are also being considered to assess and compare the 'Alternative Methods' to implement the preferred long term approach to waste management. The following table lists proposed natural, social, economic / financial and technical components of the environment being considered for this EA.

   Please tell us how these rank in importance to you. Is there any aspect we may have missed?

_____

_____

_____

_____

Components to Assess 'Alternatives To':

Environmental Component	Sub-Component	Importance		
		Very Important	Important	Less Important
Atmosphere	Air quality/odour			
	Noise			
Geology and Hydrogeology				
Surface Water				
Biology				
Agriculture and Land Use				
Archaeology				
Cultural Heritage				
Socio-Economic	Nuisance factors (i.e., noise, litter, air quality)			
	Approval cost and timing			
	Implementation cost			
Transportation				
Technical Considerations	Ability to operate			
	Technical risks			

4. Do you agree with the identification of the preferred 'Alternative To' for this waste management plan – expansion of the Boyne Road Landfill site? If not, why not?

_____

_____

_____

_____

_____

_____

All personal information included in a submission – such as name, address, email, and telephone number – is collected, maintained and disclosed by the Ministry of the Environment, Conservation and Parks for the purpose of transparency and consultation. The information is collected under the authority of the *Environmental Assessment Act* or is collected and maintained for the purpose of creating a record that is available to the general public as described in s.37 of the *Freedom of Information and Protection of Privacy Act*. Personal information you submit will become part of a public record that is available to the general public unless you request that your personal information remain confidential. For more information, please contact the Project Officer at 437-244-9402 or the Ministry of the Environment Conservation and Park's Freedom of Information and Privacy Coordinator at 416-314-4075.

Veuillez noter qu'il vous est possible de nous communiquer vos commentaires ou vos questions sur le projet en français en les adressant à Yannick Marcerou au 613-592-9600 ext. 3318 ou par courriel à yannick_marcerou@golder.com.

You can provide your comments on the Environmental Assessment Technical Bulletin #2 or any questions you may have about this project by email, mail or fax to:

Doug Froats
Director of Waste Management
Township of North Dundas

636 St. Lawrence Street, P.O. Box 489
Winchester, ON K0C 2K0

Telephone: 613-774-2105 ext. 235
Fax: 613-774-5699

E-mail: dfroats@northdundas.com

or

Trish Edmond, P.Eng.
EA Project Manager
Golder Associates Ltd.

1931 Robertson Road
Ottawa, ON K2H 5B7

Telephone: 613-592-9600

E-mail: trish_edmond@golder.com

Appendix F2 Technical Bulletin #2 Advertisements and Notices

Nation Valley News
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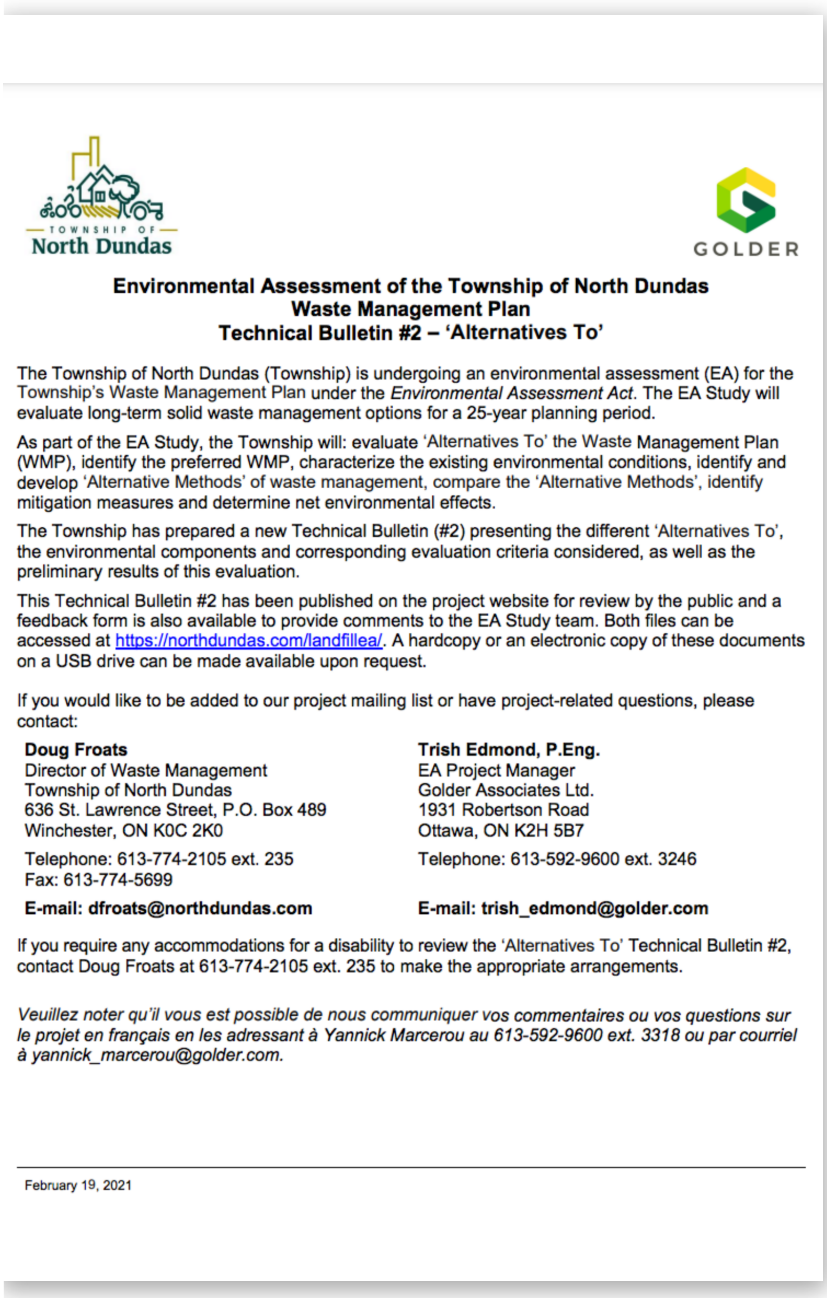
With thanks to the support of Perry's Autobody, Curran automotive, Winchester Automotive, D&D Performance, D's Collision Center, Mr. Radiator, Bills Towing & Recovery, and Troy Wilson Automotive.

NATIONVALLEYNEWS.COM

NATION VALLEY NEWS

Environmental Assessment of the Township of North Dundas Waste Management Plan Waste Diversion Technical Bulletin #2 — 'Alternatives To'

MARCH 2, 2021



Township of North Dundas

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Environmental Assessment of the Township of North Dundas
Waste Management Plan
Technical Bulletin #2 – 'Alternatives To'

The Township of North Dundas (Township) is undergoing an environmental assessment (EA) for the Township's Waste Management Plan under the *Environmental Assessment Act*. The EA Study will evaluate long-term solid waste management options for a 25-year planning period.

As part of the EA Study, the Township will: evaluate 'Alternatives To' the Waste Management Plan (WMP), identify the preferred WMP, characterize the existing environmental conditions, identify and develop 'Alternative Methods' of waste management, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects.

The Township has prepared a new Technical Bulletin (#2) presenting the different 'Alternatives To', the environmental components and corresponding evaluation criteria considered, as well as the preliminary results of this evaluation.

This Technical Bulletin #2 has been published on the project website for review by the public and a feedback form is also available to provide comments to the EA Study team. Both files can be accessed at https://northdundas.com/landfillea/. A hardcopy or an electronic copy of these documents on a USB drive can be made available upon request.

If you would like to be added to our project mailing list or have project-related questions, please contact:

Doug Froats
Director of Waste Management
Township of North Dundas
636 St. Lawrence Street, P.O. Box 489
Winchester, ON K0C 2K0

Telephone: 613-774-2105 ext. 235
Fax: 613-774-5699

E-mail: dfroats@northdundas.com

Trish Edmond, P.Eng.
EA Project Manager
Golder Associates Ltd.
1931 Robertson Road
Ottawa, ON K2H 5B7

Telephone: 613-592-9600 ext. 3246

E-mail: trish_edmond@golder.com

If you require any accommodations for a disability to review the 'Alternatives To' Technical Bulletin #2, contact Doug Froats at 613-774-2105 ext. 235 to make the appropriate arrangements.

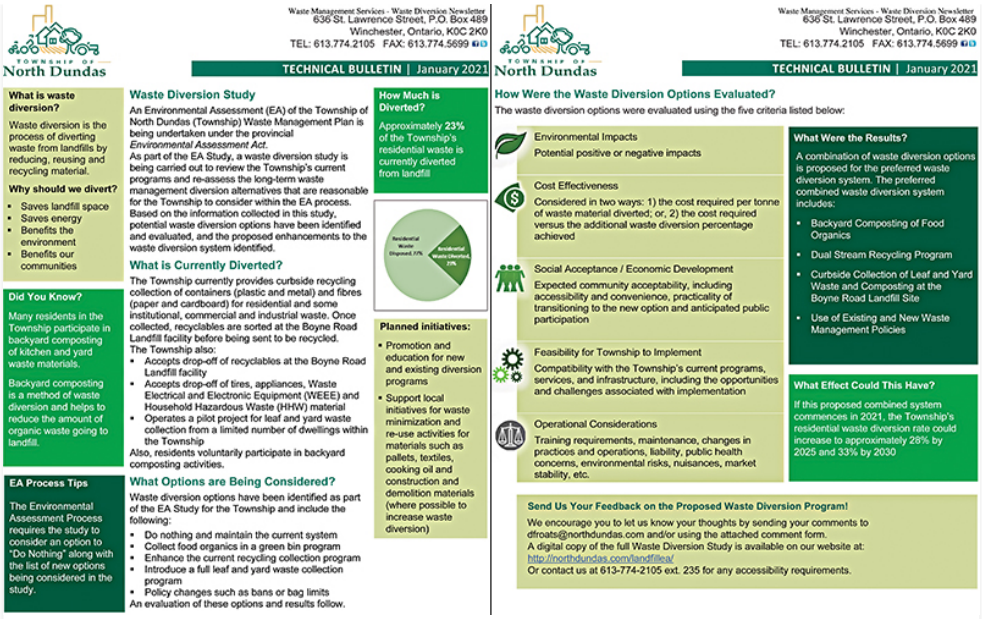
Veuillez noter qu'il vous est possible de nous communiquer vos commentaires ou vos questions sur le projet en français en les adressant à Yannick Marcerou au 613-592-9600 ext. 3318 ou par courriel à yannick_marcerou@golder.com.

February 19, 2021

THE CHESTERVILLE RECORD
Serving Stormont and Dundas Counties since 1894

ENVIRONMENTAL ASSESSMENT FOR NORTH DUNDAS LANDFILL SITE

Posted by Joseph Morin | Mar 11, 2021 | News | 0 |



Waste Management Services - Waste Diversion Newsletter
636 St. Lawrence Street, P.O. Box 489
Winchester, Ontario, K0C 2K0
TEL: 613.774.2105 FAX: 613.774.5699

TECHNICAL BULLETIN | January 2021

What is waste diversion?

Waste diversion is the process of diverting waste from landfills by reducing, reusing and recycling material.

Why should we divert?

- Saves landfill space
- Saves energy
- Benefits the environment
- Benefits our communities

Did You Know?

Many residents in the Township participate in backyard composting of kitchen and yard waste materials.

Backyard composting is a method of waste diversion and helps to reduce the amount of organic waste going to landfill.

EA Process Tips

The Environmental Assessment Process requires the study to consider an option to "Do Nothing" along with the list of new options being considered in the study.

Waste Diversion Study

An Environmental Assessment (EA) of the Township of North Dundas (Township) Waste Management Plan is being undertaken under the provincial *Environmental Assessment Act*.

As part of the EA Study, a waste diversion study is being carried out to review the Township's current programs and re-assess the long-term waste management diversion alternatives that are reasonable for the Township to consider within the EA process. Based on the information collected in this study, potential waste diversion options have been identified and evaluated, and the proposed enhancements to the waste diversion system identified.

What is Currently Diverted?

The Township currently provides curbside recycling collection of containers (plastic and metal) and fibres (paper and cardboard) for residential and some institutional, commercial and industrial waste. Once collected, recyclables are sorted at the Boyne Road Landfill facility before being sent to be recycled.

The Township also:

- Accepts drop-off of recyclables at the Boyne Road Landfill facility
- Accepts drop-off of tires, appliances, Waste Electrical and Electronic Equipment (WEEE) and Household Hazardous Waste (HHW) material
- Operates a pilot project for leaf and yard waste collection from a limited number of dwellings within the Township

Also, residents voluntarily participate in backyard composting activities.

What Options are Being Considered?

Waste diversion options have been identified as part of the EA Study for the Township and include the following:

- Do nothing and maintain the current system
- Collect food organics in a green bin program
- Enhance the current recycling collection program
- Introduce a full leaf and yard waste collection program
- Policy changes such as bans or bag limits

An evaluation of these options and results follow.

How Much is Diverted?

Approximately **23%** of the Township's residential waste is currently diverted from landfill

Planned initiatives:

- Promotion and education for new and existing diversion programs
- Support local initiatives for waste minimization and re-use activities for materials such as pallets, textiles, cooking oil and construction and demolition materials (where possible to increase waste diversion)

Waste Management Services - Waste Diversion Newsletter
636 St. Lawrence Street, P.O. Box 489
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TEL: 613.774.2105 FAX: 613.774.5699

TECHNICAL BULLETIN | January 2021

How Were the Waste Diversion Options Evaluated?

The waste diversion options were evaluated using the five criteria listed below:

Environmental Impacts
Potential positive or negative impacts

Cost Effectiveness
Considered in two ways: 1) the cost required per tonne of waste material diverted; or, 2) the cost required versus the additional waste diversion percentage achieved

Social Acceptance / Economic Development
Expected community acceptability, including accessibility and convenience, practicality of transitioning to the new option and anticipated public participation

Feasibility for Township to Implement
Compatibility with the Township's current programs, services, and infrastructure, including the opportunities and challenges associated with implementation

Operational Considerations
Training requirements, maintenance, changes in practices and operations, liability, public health concerns, environmental risks, nuisances, market stability, etc.

What Were the Results?

A combination of waste diversion options is proposed for the preferred waste diversion system. The preferred combined waste diversion system includes:

- Backyard Composting of Food Organics
- Dual Stream Recycling Program
- Curbside Collection of Leaf and Yard Waste and Composting at the Boyne Road Landfill Site
- Use of Existing and New Waste Management Policies

What Effect Could This Have?

If this proposed combined system commences in 2021, the Township's residential waste diversion rate could increase to approximately 28% by 2025 and 33% by 2030

Send Us Your Feedback on the Proposed Waste Diversion Program!

We encourage you to let us know your thoughts by sending your comments to dfroats@northdundas.com and/or using the attached comment form.
A digital copy of the full Waste Diversion Study is available on our website at:
http://northdundas.com/landfillea/
Or contact us at 613-774-2105 ext. 235 for any accessibility requirements.

WINCHESTER – The North Dundas landfill site is currently in the process of undertaking an environmental assessment.

The need to expand the existing landfill site sooner than later triggered the assessment which is being carried out by Golder Associates, partnered with the North Dundas waste management staff.

As the assessment moves along, one of its mandate is to provide information to residents and opportunities for residents to comment on what the study is all about and what it may recommend.

One way to ensure transparency and an exchange of information is the creation of a newsletter filled with facts about the landfill site, the assessment and waste management practices.

The Feb. 9 North Dundas council meeting featured the first and second installment of the newsletter.

The newsletter was not intended to be a permanent item or even a monthly one but because of the pandemic and the lack of an opportunity for residents

to hear what is going on with the assessment, this is the next best thing.

“There are lots of people concerned about waste and waste management. It speaks to the effort from staff and the municipality to ensure the message is delivered,” said Mayor Fraser.

He felt after reading the first two issues that the newsletter made for good reading.

Doug Froats is the director of waste management for the municipality.

“The technical bulletin, which was in January, that one is all about the waste diversion study,” he said.

The study is mandated by the environmental assessment.

“What we are trying to divert and what we are doing, as well as some options of what we might like to change or what direction we are going in.”

Froats said they look at other municipalities that are like North Grenville and see what they have done with their landfill sites. For example, the idea of having a dual collection truck where garbage is collected and stored on one side of the truck and the other side is reserved for recycling is a practice not used by most Ontario municipalities.

Normally we would have diverted 609 metric tons, but now we are able to divert around 670 metric tons.

“That’s a 20 to 30 per cent advancement already this year, that’s perfect,” he said.

Golder has created newsletters in the past and as a result has a lot of information they can put in the

newsletter in general, to make it more interesting to residents.

“If you read through it, it gives you a general idea of what we do and how we are trying to change,” said Froats.

This information has to be shared with a number of other organizations. “We send it out to other ministries, as well as Aboriginal groups.”

In the past, information has been collected from North Dundas residents and other municipalities who have the same rural urban background.

The technical bulletin for February is part of the environmental assessment also.

That newsletter deals mostly with the terms of reference for the environmental assessment and gives residents an opportunity to understand what the municipality is doing about their landfill site plans for the present and the future.

In the original environmental assessment plan, four open houses were to have been held to allow residents to see what was going on and to become involved.

“We have had two already,” said Froats.

“We are going to probably have another newsletter in early March because of Covid. We probably will not be able to have another open house. We will do another newsletter to replace the open house and give information to residents about what we are doing and what studies we are doing,” said Froats.

Other topics will include how the landfill site will be expanded, what it would look like and what other ideas there are to make it more efficient.

The expansion plan will hopefully allow the landfill site to continue to operate for another 25 years. The next newsletter could also include the different designs staff could implement for the landfill site.

“We will want to look at which design would give us the 25 years that have less influence on our surroundings, including trees and nearby properties. We want to do all that and have all that in one of our bulletins,” said Froats.

Residents who live within one kilometre of the landfill site get a copy of the technical bulletin mailed to them.

Froats said if someone else wants to be on that mailing list, he can add them as well.

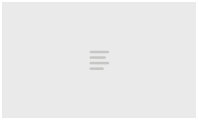
PREVIOUS

Moving forward in South Stormont

NEXT

Chamber of Commerce sees large drop in membership

RELATED POSTS



UCDSB relents on

Morrisburg ServiceOntar

Mike Barkley receives

Great food, great cause,

Special Meeting of Council

by Jocelyn Morley

The North Dundas Council met in a Special Meeting on February 23 at the Joel Steele Community Centre, immediately following the Public Meeting. Khurram Tunio, Director of Public Works, explained the proposed re-structuring of the Public Works Department. This will not cost the Municipality any extra, but will allow for increased efficiency.

A looming issue in the Township is water and sewer. Simply put, Winchester and Chesterville, both on the municipal water system, are growing very fast. At the Council meetings you will hear the Mayor, Council, and staff, talk about "water and sewer units." Each new build has to have enough water and sewage units assigned to it. There is a certain amount of water available, and a specific capacity to the sewage system. There has to be enough to allow a bit of wiggle room in case of a fire, or if there is a drought.

In rural areas, houses or developments have their own wells, and septic systems. The municipal system is similar, except on a much larger scale. At some point in the not-so-distant past, the Public Works Department calculated that, given the finite capacity of the wells and water system to provide water, and the sewage treatment system to deal with waste water, the township had 350 water and sewage units to allocate to development. That amount would have lasted quite a while, if growth in Winchester and Chesterville had continued on the same trajectory. It hasn't. The pandemic has made people want to live outside bigger cities. There has been an unprecedented demand for homes in most small town and rural areas, thus the demand for development. The 350 water and sewer units that were expected to last a few years aren't going to. Prior to the pandemic, the township had already begun to think about how to address the future need for more water and sewage capacity.

So, you are going to hear even more about water and sewage allocations in the very near future, and discussions about how to increase water and sewage capacity faster than previously anticipated. (There is detailed information, from page 21 onwards, in the Council meeting package, for the meeting of February 23, on the North Dundas website.)

Council agreed that the water and sewer allocation will be limited to 350 for both residential and commercial growth, and the capital charge (the amount paid by a developer to the township for water and sewer) will be set to $8,800 per unit. The other option presented at the meeting was to increase water and sewer allocation to 450, and set the capital charge at $10,300 per unit. Mr Tunio stressed that he doesn't want to see the current residents of Winchester and Chesterville burdened by the cost of the water and sewer expansion. Angela Rutley, Chief Administrative Officer (CAO), explained to Council that there is very little provincial assistance to expand water and sewer systems, but that when there is the opportunity to apply for such funding, it is very important to show that the township is collecting adequate capital charges, and that the municipal government is looking for funds within their own reserves. The population of North Dundas connected to municipal water and sewer is expected to increase from 4,355 in 2019 to 8,399 by 2040. Considering the unprecedented demand for housing outside of major cities since the pandemic began, this number may need to be adjusted. The sewage lagoons require maintenance immediately. Future growth will have a significant financial impact of a minimum of $45 million. Significant increase in capital charges, combined with short term support from Township reserves, and long term funding from upper levels of governments, are necessary. North Dundas cannot continue to grow without significant financing and funding. In the next three years, water and sewer requires $5.1 million. Capital charges will be limited to $8,800 per unit, and $2.186 million will come from Hydro reserve funds from 1998. The water and sewer expansion will be in the spotlight for the foreseeable future.

The positions for spring and summer employment are currently posted on the North Dundas website. The deadline to apply is March 4.

The Eastern Ontario Health Unit (EOHU) solicited municipal partner support as they begin planning to vaccinate the population, and requested that municipal facilities be identified that could be used to host mass vaccination clinics, such as arenas and community centres, other community locations that might be used, as well as facilities in the municipalities where specific vulnerable populations, such as the elderly, reside. The latter could include specific apartment buildings. The locations suitable for mass vaccination clinics must allow space for physical distancing, must be accessible to all, and must allow for ease of transport of individuals to the site, such as home-bound residents and residents with special needs.

Council authorised the EOHU to use municipal facilities free of charge for vaccination clinics and other relief efforts between February 24 and June 9, 2021. A representative from the EOHU contacted the Recreation Director and visited the Joel Steele Community Hall. The EOHU subsequently requested that the Community Hall be available for five vaccine clinics initially, begining on February 27, and most likely more in the future. The people slated for vaccination next include some high priority health care workers, those in assisted living or retirement homes, and indigenous adults. Specific instructions from the EOHU will be forthcoming.

The meeting package is posted on the North Dundas website in advance of the meetings. The regular meetings are held on the second and forth Tuesday of the month. Minutes of the previous meeting are posted right after the following Council meeting, as the Council must approve the minutes from the meeting prior to them being posted. This is your council.

Zoning changes considered at Public meeting

by Jocelyn Morley

The Township of North Dundas held a Public Meeting at the Joel Steele Community Centre on February 23 to consider two zoning by-law amendments. The meeting was held in-person, with strict Covid-19 protocols in place. The Planning Act requires that the neighbouring properties within a 120 metre radius be notified of an application for a zoning amendment. The Act also requires that a public meeting be held to allow for discussion.

The first request was to change the zoning from Rural (RU), to Rural-Exception Twenty Seven (RU-27) at 2190 Crowder Road, Mountain. This zoning by-law was amended as requested, and was formally passed at the Special Council Meeting immediately following the public meeting. The property in question is home to Klein Agri Services Ltd., which provides services to local farms, including manure spreading and harvesting. Rural zoning allowed the owners to operate a rural home operation. They requested the zoning change to allow for an agriculture related business with farm machinery storage. The owners can now expand the business on the site, which they could not do with the land zoned as Rural. The new zoning allows for an agricultural related business rather than simply a rural home operation.

The second request was to amend the zoning of a property in Chesterville, from General Commercial, to General Commercial Exception Twelve (CG-X12), to allow for residential space on the ground floor. The building currently has approximately 3,000 square feet of commercial space on the ground floor, with residential space above. The amendment requested would allow half of the commercial space to become residential. The proposed amendment specifically states that less than 50% of the commercial space would be allocated residential.

The proposed use for the building going forward is that half of the ground floor would be a residential unit, and the other half a laundromat. This would not affect the current residential unit on the second floor. There were no comments received about the proposed amendment prior to the public meeting, and no one spoke out at the meeting. Despite the lack of public feedback, Council deferred the passing of the proposed amendment to allow for discussion with the owner, as some members of council were concerned about the loss of commercial space, and would be more comfortable with a 60/40 split between commercial and residential. Lack of parking for residents was also a concern during the pre-consultation process of this application, as previous requests for zoning amendments on this property to change all of the ground floor to residential, have been denied, in part due to lack of available parking for residents. The owner has made arrangements with the owner of a nearby property to provide parking.

TOWNSHIP OF North Dundas

Environmental Assessment of the Township of North Dundas Waste Management Plan Technical Bulletin #2 – 'Alternatives To'

The Township of North Dundas (Township) is undergoing an environmental assessment (EA) for the Township's Waste Management Plan under the Environmental Assessment Act. The EA Study will evaluate long-term solid waste management options for a 25-year planning period.

As part of the EA Study, the Township will: evaluate 'Alternatives To' the Waste Management Plan (WMP), identify the preferred WMP, characterize the existing environmental conditions, identify and develop 'Alternative Methods' of waste management, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects.

The Township has prepared a new Technical Bulletin (#2) presenting the different 'Alternatives To', the environmental components and corresponding evaluation criteria considered, as well as the preliminary results of this evaluation.

This Technical Bulletin #2 has been published on the project website for review by the public and a feedback form is also available to provide comments to the EA Study team. Both files can be accessed at *https://northdundas.com/landfillea/*. A hardcopy or an electronic copy of these documents on a USB drive can be made available upon request.

If you would like to be added to our project mailing list or have project-related questions, please contact:

Doug Froats
Director of Waste Management
Township of North Dundas
636 St. Lawrence Street, P.O. Box 489
Winchester, ON K0C 2K0
Telephone: 613-774-2105 ext. 235
Fax: 613-774-5699
E-mail: dfroats@northdundas.com

Trish Edmond, P.Eng.
EA Project Manager
Golder Associates Ltd.
1931 Robertson Road
Ottawa, ON K2H 5B7
Telephone: 613-592-9600 ext. 3246
E-mail: trish_edmond@golder.com

If you require any accommodations for a disability to review the 'Alternatives To' Technical Bulletin #2, contact Doug Froats at 613-774-2105 ext. 235 to make the appropriate arrangements.

Veuillez noter qu'il vous est possible de nous communiquer vos commentaires ou vos questions sur le projet en français en les adressant à Yannick Marcerou au 613-592-9600 ext. 3318 ou par courriel à yannick_marcerou@golder.com.

From:	Marcerou, Yannick
Cc:	Doug Froats (dfroats@northdundas.com); Edmond, Trish; adam.sanzo@ontario.ca; Marcerou, Yannick
Bcc:	1648253, Township of North Dundas Environmental Assessment; bonnie.norton@cdsbeo.on.ca; poulil@ecolecatholique.ca; marc.paquette@cepeo.on.ca; kcasselman@sdgcounties.ca; proumeliotis@eohu.ca; wesley.plant@canada.ca; winchesterfire@northdundas.com; michele.doncaster@ontario.ca; john.o"neill@ontario.ca; Robert.Greene@ontario.ca; mary.perry@ontario.ca; jennifer.paetz@ontario.ca; clare.pineau@ontario.ca; Lee, Scott (MNRF); andrea.pastori@ontario.ca; stephanie.rocca@ontario.ca; priya.tandon@ontario.ca; grant.karwacki@ontario.ca; Michael.elms@ontario.ca; kristen.wagner@ontario.ca; john.almond@ontario.ca; Cross, Annamaria (MECP); Evers, Andrew (MECP); McKay, Candice (MECP); karla.barboza@ontario.ca; Livingstone, Kimberly (MHSTCI); yvon.larochelle@yow.ca; club.pres@rvss.ca; jholland@nation.on.ca; jmccaslin@northdundas.com; peter.bosch@ucdsb.on.ca; Phil.Barnes@rrca.on.ca; cpol@northdundas.com
Subject:	Township of North Dundas EA - Technical Bulletin #2 on "Alternatives To" and Feedback Form
Date:	February 25, 2021 2:21:00 PM
Attachments:	Technical Bulletin #2 – 'Alternatives To' 2021 Feb.pdf Technical Bulletin #2 – Feedback Form 2021 Feb.pdf

Hello,

The Township of North Dundas (Township) is undergoing an environmental assessment (EA) for the Township's Waste Management Plan under the *Environmental Assessment Act*. The EA Study will evaluate long-term solid waste management options for a 25-year planning period.

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Please do not hesitate to contact us if you have any questions.

Regards,

Yannick

Yannick Marcerou (M.Eng., P.Eng.)
Environmental Engineer

1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **golder.com**
LinkedIn | Facebook | Twitter

North Dundas
May 26, 2021 ·

Waste Management Environmental Assessment (EA)

Technical Bulletin (#2) on 'Alternatives To' the Waste Management Plan has been prepared and it is provided for public review with a feedback form on the project website: https://northdundas.com/landfillea/

NORTHDUNDAS.COM

Environmental Assessment: North Dundas Waste Management Plan - Township of North Dundas

1

5 Comments 7 Shares

North Dundas @northdundas · May 26, 2021

Waste Management Environmental Assessment (EA)

Technical Bulletin (#2) on 'Alternatives To' the Waste Management Plan has been prepared and it is provided for public review with a feedback form on the project website: northdundas.com/landfillea/

Appendix F3 Comments from the GRT

From: James Holland
To: Marcerou, Yannick; Laura Crites
Cc: Doug Froats (dfroats@northdundas.com); Edmond, Trish; adam.sanzo@ontario.ca
Subject: RE: Township of North Dundas EA - Technical Bulletin #2 on "Alternatives To" and Feedback Form
Date: March 15, 2021 9:26:05 AM

EXTERNAL EMAIL

Dear Mr. Marcerou,

South Nation Conservation has received the Technical Bulletin and has no comments at this time.

We will review and may have comments on the characterization report and preferred alternative once they are completed. Please continue to include SNC in the circulation for this Environmental Assessment.

Kind regards,
James

From: Marcerou, Yannick <Yannick_Marcerou@golder.com>
Sent: February 25, 2021 2:22 PM
Cc: Doug Froats (dfroats@northdundas.com) <dfroats@northdundas.com>; Edmond, Trish <Trish_Edmond@golder.com>; adam.sanzo@ontario.ca; Marcerou, Yannick <Yannick_Marcerou@golder.com>
Subject: Township of North Dundas EA - Technical Bulletin #2 on 'Alternatives To' and Feedback Form

External email - if you don't know or can't confirm the identity of the sender, please exercise caution and do not open links or attachments.

Hello,

The Township of North Dundas (Township) is undergoing an environmental assessment (EA) for the Township's Waste Management Plan under the *Environmental Assessment Act*. The EA Study will evaluate long-term solid waste management options for a 25-year planning period.

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copy of these documents on a USB drive can be made available upon request.

Please do not hesitate to contact us if you have any questions.

Regards,

Yannick

Yannick Marcerou (M.Eng., P.Eng.)
Environmental Engineer

1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **golder.com**
LinkedIn | Facebook | Twitter

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James Holland | M.Sc. RPP, Watershed Planner
38 Victoria Street, Box 29, Finch, ON K0C 1K0
Tel: 613-984-2948 or 1-877-984-2948 | Fax: 613-984-2872
nation.on.ca | make a donation

Our local environment, we're in it together.
Notre environnement local, protégeons-le ensemble.

COVID-19 UPDATE: Our offices and facilities are closed to visitors and guests; some Conservation Areas remain open for passive recreation. More info at: www.nation.on.ca/coronavirus. Our staff are working during this time and we do not anticipate any service disruptions.

MISE À JOUR COVID-19: Nos bureaux et installations sont fermés aux visiteurs et invités; certaines aires de conservation restent ouvertes aux loisirs passifs. Plus d'informations sur: www.nation.on.ca/fr/coronavirus. Notre personnel travaille pendant cette période et nous ne prévoyons aucune interruption de service.

From:	Cote, Joff (MNRF)
To:	Marcerou, Yannick
Cc:	Doug Froats; Edmond, Trish; Sanzo, Adam (MECP); Cote, Joff (MNRF)
Subject:	FW: Township of North Dundas EA - Technical Bulletin #2 on "Alternatives To" and Feedback Form
Date:	March 8, 2021 8:51:19 AM
Attachments:	Technical Bulletin #2 – 'Alternatives To' 2021 Feb.pdf Technical Bulletin #2 – Feedback Form 2021 Feb.pdf

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EXTERNAL EMAIL

Good morning Mr. Marcerou,

We have no comments on Technical Bulletin #2 for this EA at this time, but we will more than likely have comments on Technical Bulletin #3. So we would like to remain on the project's distribution list.

Thanks,

Joffre Côté
Management Biologist / Biologiste, gestion des ressources
Ontario Ministry of Natural Resources and Forestry / Ministère des Richesses naturelles et des Forêts de l'Ontario
Kemptville District / District de Kemptville
10-1 Campus Drive / 10-1 Promenade Campus
Kemptville, ON K0G 1J0 / Kemptville ON KOG 1J0
613-504-2176

From: Marcerou, Yannick <Yannick_Marcerou@golder.com>
Sent: February-25-21 2:22 PM
Cc: Doug Froats (dfroats@northdundas.com) <dfroats@northdundas.com>; Edmond, Trish <Trish_Edmond@golder.com>; Sanzo, Adam (MECP) <Adam.Sanzo@ontario.ca>; Marcerou, Yannick <Yannick_Marcerou@golder.com>
Subject: Township of North Dundas EA - Technical Bulletin #2 on 'Alternatives To' and Feedback Form

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Please do not hesitate to contact us if you have any questions.

Regards,

Yannick

Yannick Marcerou (M.Eng., P.Eng.)
Environmental Engineer

1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **golder.com**
LinkedIn | Facebook | Twitter

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Ministry of Heritage, Sport, Tourism and Culture Industries

Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, ON M7A 0A7
Tel: 437-239-3404

Ministère des Industries du Patrimoine, du Sport, du Tourisme et de la Culture

Direction des programmes et des services
401, rue Bay, Bureau 1700
Toronto, ON M7A 0A7
Tél: 437-239-3404

Ontario

March 31, 2021 EMAIL ONLY

Trish Edmond, P.Eng.
EA Project Manager
Golder Associates Ltd.
1931 Robertson Road
Ottawa, ON K2H 5B7
trish_edmond@golder.com

MHSTCI File : **0006336**
Proponent : **Township of North Dundas**
Subject : **Technical Bulletin #2, Environmental Assessment for the Township of North Dundas Waste Management Plan**
Location : **Boyne Road Landfill Site, south of Boyne Road, Township of North Dundas, United Counties of Stormont, Dundas and Glengarry**

Dear Ms. Edmond:

Thank you for providing the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) with Technical Bulletin #2 for the above-referenced project. MHSTCI's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- Archaeological resources, including land and marine;
- Built heritage resources, including bridges and monuments; and,
- Cultural heritage landscapes.

Under the EA process, the proponent is required to determine a project's potential impact on cultural heritage resources. The comments and recommendations below are for an Individual EA project.

Project Summary
An Environmental Assessment (EA) of the Township of North Dundas (Township) Waste Management Plan (WMP) is being undertaken under the provincial *Environmental Assessment Act*. As part of the EA Study, the Township will: evaluate 'Alternatives To' the Waste Management Plan, identify the preferred WMP, characterize the existing environmental conditions, identify and develop 'Alternative Methods' of waste management, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects.

MHSTCI Comments
This Technical Bulletin outlined in a general way the Environmental Components, Evaluation Criteria and Indicators for Evaluation of 'Alternatives To'. Our comments focus on these aspects of the EA.

Environmental Components
MHSTCI supports the inclusion of 'Archaeology' and 'Cultural Heritage' as environmental components. We recommend that 'Cultural Heritage' is changed to say 'Built Heritage Resources and Cultural Heritage Landscapes' for consistency with terminology used in provincial legislation and policy.

Evaluation Criteria
For the evaluation criteria for 'Archaeology' and 'Cultural Heritage', it is unclear what "approximate degree of potential" means. It may be more appropriate to say "presence of known or potential" archaeological resources, built heritage resources, and cultural heritage landscapes. MHSTCI also suggests that in

addition to identifying the potential for archaeological resources, built heritage resources and cultural heritage landscapes, the criteria also speak to the potential impact to these resources.

It is my understanding that the Terms of Reference for this project included commitments to undertake screening and technical studies for cultural heritage resources, as required. Please advise whether these have been undertaken.

Thank you for consulting MHSTCI on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, do not hesitate to contact me.

Sincerely,

Laura Hatcher
Heritage Planner
laura.e.hatcher@ontario.ca

Copied to: Doug Froats, Township of North Dundas

Edmond, Trish

From: Edmond, Trish
Sent: April 21, 2021 3:57 PM
To: Hatcher, Laura (MHSTCI)
Cc: dfroats@northdundas.com; 1648253, Township of North Dundas Environmental Assessment
Subject: RE: File 0006336: Township of North Dundas EA - Technical Bulletin #2 on 'Alternatives To' and Feedback Form
Attachments: MHSTCI Response_North Dundas EA_April2021.pdf

Good afternoon Laura,

Please find attached a response to the MHSTCI comments provided on Technical Bulletin #2 for the Township of North Dundas Waste Management EA. We look forward to sharing more detailed project information with you in the future.

Trish

Trish Edmond (M.E.Sc., P.Eng.) (she, her)
Principal, Geoenvironmental Engineer

GOLDER
MEMBER OF WSP

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **D:** +1 613 592-9600 x3246 | **C:** +1 613 799-1960 | golder.com
LinkedIn | Instagram | Facebook | Twitter

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From: Hatcher, Laura (MHSTCI) <Laura.E.Hatcher@ontario.ca>
Sent: March 31, 2021 11:32 AM
To: Edmond, Trish <Trish_Edmond@golder.com>
Cc: dfroats@northdundas.com
Subject: RE: File 0006336: Township of North Dundas EA - Technical Bulletin #2 on 'Alternatives To' and Feedback Form

EXTERNAL EMAIL

Good morning,

Thank you for sharing Technical Bulletin #2 with MHSTCI. Please find our comments attached.

Sincerely,
Laura

Laura Hatcher, MCIP, RPP
Heritage Planner
Heritage Planning Unit | Programs and Services Branch | Heritage, Tourism and Culture Division
Ministry of Heritage, Sport, Tourism and Culture Industries
401 Bay Street Suite 1700 Toronto ON M7A 0A7
Tel. 437-239-3404 New| email: laura.e.hatcher@ontario.ca

From: Marcerou, Yannick <Yannick_Marcerou@golder.com>
Sent: February-25-21 2:22 PM
Cc: Doug Froats (dfroats@northdundas.com) <dfroats@northdundas.com>; Edmond, Trish <Trish_Edmond@golder.com>; Sanzo, Adam (MECP) <Adam.Sanzo@ontario.ca>; Marcerou, Yannick <Yannick_Marcerou@golder.com>
Subject: Township of North Dundas EA - Technical Bulletin #2 on 'Alternatives To' and Feedback Form

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Please do not hesitate to contact us if you have any questions.

Regards,

Yannick

Yannick Marcerou (M.Eng., P.Eng.)
Environmental Engineer

1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **golder.com**
LinkedIn | Facebook | Twitter

Work Safe, Home Safe

April 21, 2021 Project No. 1648253

Laura Hatcher, Heritage Planner
Ministry of Heritage, Sport, Tourism and Culture Industries
Programs and Services Branch
401 Bay Street, Suite 1700
Toronto, ON
M7A 0A7

TECHNICAL BULLETIN #2 RESPONSE LETTER
ENVIRONMENTAL ASSESSMENT FOR THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN
MHSTCI FILE: 0006336

Dear Ms. Hatcher,

Thank you for providing comments and recommendations on behalf of the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) in response to Technical Bulletin #2 for the Environmental Assessment (EA) for the Township of North Dundas Waste Management Plan. This EA is somewhat different than more recent waste EAs in the province in that there has been an evaluation of 'Alternatives To' and will shortly be an evaluation of 'Alternative Methods' as part of the methodology during the EA. This is different from most of the recent waste EAs in the province that were able to select the preferred 'Alternative To' prior to or during the Terms of Reference stage and have only included an evaluation of 'Alternative Methods' in the EA. In the case of the Township of North Dundas, 'Alternatives To' include the alternatives: close the existing landfill and export the waste, expand the existing landfill, establish a new landfill in the Township, alternative waste management technologies (for example incineration), and enhanced diversion. The aspects of the environment considered to evaluate 'Alternatives To' are necessarily more generic, as the comparison is at a higher level and covers the broader study area of the entire Township lands. The identified preferred 'Alternative To' is the expansion of the existing Boyne Road Landfill that services the Township of North Dundas. When the EA proceeds to the evaluation of 'Alternative Methods' the plan is that the aspects of the environment being considered (that will include archaeology, built heritage resources and cultural heritage landscapes) will become more site-specific with more comprehensive and detailed evaluations of potential effects. 'Alternative Methods' that will be evaluated are different methods of landfill expansion of the existing Boyne Road Landfill and the study area is the existing Boyne Road Landfill and lands immediately around it. There has been no public consultation regarding the environmental components, indicators, 'Alternative Methods' and assessment of 'Alternative Methods' as of yet for the landfill expansion. As such, we have provided a response to your comments and recommendations in the Table below.

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, K2H 5B7, Canada T: +1 613 592 9600 F: +1 613 592 9601

Response to MHSTCI Comments Received March 31, 2021

MHSTCI Comment (Laura Hatcher, Heritage Planner)	Response
Environmental Components MHSTCI supports the inclusion of 'Archaeology' and 'Cultural Heritage' as environmental components. We recommend that 'Cultural Heritage' is changed to say 'Built Heritage Resources and Cultural Heritage Landscapes' for consistency with terminology used in provincial legislation and policy.	Technical Bulletin #2 summarized the evaluation of 'Alternatives To' and the study area of the Township of North Dundas and we feel the language describing the environmental components of archaeology and cultural heritage is appropriate for the 'Alternatives To" component of the study. As requested, future evaluation of 'Alternative Methods' will include environmental components 'Built Heritage Resources and Cultural Heritage Landscapes' and 'Archaeology'.
Evaluation Criteria For the evaluation criteria for 'Archaeology' and 'Cultural Heritage', it is unclear what "approximate degree of potential" means. It may be more appropriate to say "presence of known or potential" archaeological resources, built heritage resources, and cultural heritage landscapes. MHSTCI also suggests that in addition to identifying the potential for archaeological resources, built heritage resources and cultural heritage landscapes, the criteria also speak to the potential impact to these resources. It is my understanding that the Terms of Reference for this project included commitments to undertake screening and technical studies for cultural heritage resources, as required. Please advise whether these have been undertaken.	The submitted Technical Bulletin #2 was at the 'Alternatives To' stage of the EA Study. As such it is not possible to determine the presence or potential of archaeological resources, built heritage resources, and cultural heritage landscapes. The scope of the 'Alternatives To' study is limited to identifying, at a high level, the degree to which each 'Alternative To' may potentially pose in comparison to each other 'Alternative To' over the study area of the whole of the Township of North Dundas. For this reason, the more detailed and site-specific identification of potential resources and the potential impacts to these resources was neither possible nor required at this stage of the EA. It is correct that the Terms of Reference for this project included commitments to undertake screening and technical studies for cultural heritage resources. These studies have not yet been undertaken at this stage of the EA and will be commenced as part of evaluation of 'Alternative Methods' of landfill expansion and identification of the preferred 'Alternative Method'. There will be future consultation opportunities associated with the findings and results of these studies.

We trust these responses to your comments are satisfactory. Please contact the undersigned if additional clarity or response is required.

Golder Associates Ltd.

Trish Edmond, P.Eng.
GeoEnvironmental Engineer, Principal

RPM/PLE/PAS/ca

n:\active\2016\3 proj\1648253 township of north dundas boyne landfill exp ea\8 - consultation\8.13 - `alternatives to` technical bulletin\mhstci response\mhstci response_north dundas ea_april2021.docx

CC: Doug Froats, Township of North Dundas

Appendix F4 Comments from the Public

From: [redacted]
Sent: February 15, 2021 4:23 PM
To: dfroats@northdundas.com
Cc: Edmond, Trish <Trish_Edmond@golder.com>
Subject: EA for North Dundas' Waste Management - Landfill

Hello Doug and Trish,

I am a resident of North Dundas (living on [redacted]) and have recently received a notification in the mail regarding the EA and "Alternatives to" Winchester's Waste Management Plan.

From what I understand, a portion of this plan consists of expanding the current Boyne Rd Landfill. This is of concern to me as I have recently purchased a home very close to the landfill.

Would you be able to provide me with more information on this initiative? I would like to know what the implications are (where the landfill will be expanded to), where the project is in terms of implementation (are we in an assessment phase or is the plan going into action ASAP) and what the impacts are going to be for residents.

I'd be more than happy to set up a phone call with either of you if you could spare a few minutes of your time.

Thank you kindly,

[redacted]

GOLDER
MEMBER OF WSP

Record of Conversation

Inquiry following circulation of Technical Bulletin #2

Circa February 16, 2021
By Doug Froats, Director of Waste Management, Township of North Dundas
Phone 819-355-4895

Conversation Summary	
1.	Following receipt of the mail notification of circulation for comments of Technical Bulletin #2 to residents located within 1km of the Township of North Dundas Boyne Road Landfill, [redacted] contacted Doug Froats (Township of North Dundas) and cc'd Trish Edmond (Golder) via email on February 15, 2021 to express her concern with regard to the potential expansion of the landfill.
2.	Doug Froats called her back after receiving her email. He explained to her the project.
3.	[redacted] expressed that the information provided on the project was satisfactory and requested to be added to the consultation list.
4.	Golder added [redacted] to the consultation list and sent her an email to the address provided with the Technical Bulletin #2 and its feedback form on February 26, 2021.

From:	Marcerou, Yannick
To:	[redacted]
Cc:	Doug Froats (dfroats@northdundas.com); Edmond, Trish; adam.sanzo@ontario.ca
Bcc:	1648253, Township of North Dundas Environmental Assessment
Subject:	Township of North Dundas EA - Technical Bulletin #2 on "Alternatives To" and Feedback Form
Date:	February 26, 2021 3:02:00 PM
Attachments:	Technical Bulletin #2 – 'Alternatives To' 2021 Feb.pdf Technical Bulletin #2 – Feedback Form 2021 Feb.pdf

Hello,

The Township of North Dundas (Township) is undergoing an environmental assessment (EA) for the Township's Waste Management Plan under the *Environmental Assessment Act*. The EA Study will evaluate long-term solid waste management options for a 25-year planning period.

As part of the EA Study, the Township will: evaluate 'Alternatives To' the Waste Management Plan (WMP), identify the preferred WMP, characterize the existing environmental conditions, identify and develop 'Alternative Methods' of waste management, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects.

The Township has prepared a new Technical Bulletin (#2) presenting the different 'Alternatives To', the environmental components and corresponding evaluation criteria considered, as well as the preliminary results of this evaluation (see attached).

This Technical Bulletin #2 has been published on the project website for review by the public and a feedback form is also available to provide comments to the EA Study team. Both files can be accessed at https://northdundas.com/landfillea/. A hardcopy or an electronic copy of these documents on a USB drive can be made available upon request.

Please do not hesitate to contact us if you have any questions.

Regards,

Yannick

Yannick Marcerou (M.Eng., P.Eng.)
Environmental Engineer

1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **golder.com**
LinkedIn | Facebook | Twitter

Work Safe, Home Safe

From: Doug Froats
Sent: June 30, 2021 11:37 AM
To: [redacted]
Subject: RE: Boyne Road Landfill Environmental Assessment

Hi [redacted],
Sorry for taking so long to get back to you. My plan was to respond back on Monday past but I got side tracked.

1. Presently the Ministry of the Environment dictates how we communicate with the residents and zoom meetings are not part of the procedures that we have to follow.
   b) I am involved with the waste management project on the County level. We have included the EA in the SD&G waste collaboration project with hopes of expanding our services to our residents. We are still hinged on the response from the Minister on his decision of yes or no for the expansion. If its yes we go in the direction of utilizing our landfill. If its no then we are looking to partner up with other municipalities to obtain a better contract in shipping and disposing of our waste.
   c) Y We are not expanding the landfill capture area so growth is the only increase that we are predicting for the landfill.

2. The expansion is based on cubic meters by the Ministry not year which is somewhere around 300,000 cubic meters. With our annual usage and growth we calculated a 25 year period. With other diversion programs such as our new 60/40 split trucks, leaf and yard waste and etc we can expand the landfill further.

4. The first step after finding out that the landfill was near or over capacity was to implement a study to find out which direction that we should approach. We had Involvement with the Council, Ministry and Golder Associates. The Waste Management Alternatives Evaluation Report of November 2015 was completed by Golder. This report provided an evaluation of waste management alternatives using a combination of technical, approvability and financial factors to assist the Township in deciding on the preferred course of action to provide both short-term and long-term waste management services for the municipality. Options evaluated : Landfill Site Closure and Export Waste for Disposal, Landfill Site Expansion, Establish New Landfill Site in the Township and Alternative Waste Technologies (thermal treatment, eg Energy from Waste)
   b) By expanding across the Boyne Road the Ministry looks at this as establishing a new landfill. With this the cost escalated 10 fold. We had looked into this as one of the Establish New Landfill Sites in the Report. The land across the road is included in our Certificate of Approval as our Buffer Zone.

Hopefully I have attempted to answer your questions and concerns. If you require more specific information I can respond back or have Trish at Golder contact you.

Have a nice day
Doug

From: [redacted]
Sent: June 25, 2021 2:49 PM
To: Doug Froats <dfroats@northdundas.com>
Subject: Re: Boyne Road Landfill Environmental Assessment

Hi Doug,
I have made a few comments and added some questions in the attached feedback form, related to the EA technical bulletin#2.
If you have any questions or comments on this, please let me know.
Regards,
[redacted]

On Mon, Apr 26, 2021 at 4:48 PM Doug Froats <dfroats@northdundas.com> wrote:

> Golder is working on the studies required. You are on the mailing list so if there is anything that is pertinent to the EA it will be released.
>
> thank you for your continued interest,
>
> Doug
>
> Get Outlook for Android

From: [redacted]
Sent: Monday, April 26, 2021 4:10:32 PM
To: Doug Froats <dfroats@northdundas.com>
Subject: Re: Boyne Road Landfill Environmental Assessment

Hi Doug,

I was wondering if there have been any further updates on the Boyne Road landfill environmental assessment, in the past month. Has a third newsletter been published, or is it still planned to be published?

Thank you,
[redacted]

On Tue., Mar. 23, 2021, 12:11 p.m. [redacted] > wrote:

> Hi Doug,
> Thanks for getting back to me.
> Regards,
> [redacted]
>
> On Mon., Mar. 22, 2021, 7:23 p.m. Doug Froats, <dfroats@northdundas.com> wrote:
>
> > Hi [redacted],
> >
> > Firstly, thank you for having interest in the Landfill expansion. We have enough space to operate till the Minister of the Environment gives us the yes or no for the expansion. Hopefully it's a yes. I have forwarded your information to our consultants so that you can be included in the distribution list. We have talked to the Ministry about Open Houses as we had planned to have 4 but with Covid, things have changed. The Ministry has a policy in place on how a Environmental Assessment has to operate such as Open Houses. To stop the possibility of stalling the EA, we had discussed with them that Newsletters could replace the Open House. I have forwarded your email about the video(zoom) type meeting, so this could be another possibility if accepted by the Ministry.
> >
> > Thanks for your input,
> >
> > Doug

From: [redacted]>
Sent: March 18, 2021 9:55 PM
To: Doug Froats <dfroats@northdundas.com>
Subject: Boyne Road Landfill Environmental Assessment

Dear Mr. Froats,

I recently read the article in The Chesterville Record about the status of the North Dundas landfill Environmental Assessment and what might be done in the future.

I was pleased to see this article, as I was wondering what was going on.

We have noticed that the edges of the landfill have been built up recently. Will that provide enough space until an extension or expansion can be done?

I would like to be added to the distribution list for updates on the Environmental Assessment. I prefer to receive these updates via email.

My email address is [redacted]

Also, since the pandemic makes it difficult to hold another open house on the EA, have you considered have a video (zoom) type of meeting, to help share the progress on the EA to residents, and what decisions are made? I think that this would help inform people in a more direct way.

Perhaps Nation Valley News could help, as they do for EOHU and other organizations.

Thank you very much.

Sincerely,

[redacted]

Environmental Assessment of the Township of North Dundas Waste Management Plan
Technical Bulletin #2 (Feb. 2021), Feedback Form

Thank you for taking the time to provide us with your comments. This comment sheet should be completed after reading Technical Bulletin #2.

If you would like to be added to our project mailing list, please include the appropriate contact information below.

YES, BY MAIL
X YES, BY EMAIL
NO

NAME: [redacted]

[redacted]

PHONE NUMBER: [redacted]

1. Please provide any general comments regarding this Environmental Assessment Process.

   Comments:

   a) *Due to the ongoing COVID-19 pandemic, some of the open houses were replaced with technical bulletins, with the opportunity for interested parties to send in any comments or questions that they may have. While this is a good approach, it may not provide the same level of participation and communication with residents and businesses in North Dundas Township. Are there any plans in the future for zoom type presentations, such as is often done for township meetings? This may provide for increased participation with residents and businesses of North Dundas Township.*

   b) *Will this EA or the eventual decision on the future of North Dundas Township's landfill consider activities taking place outside of the scope of ND? For example, the United Counties of SD&G have recently done a study on the various approaches to waste management across the counties, and potential for collaboration.*

   c) *Does this EA consider the projected population growth in North Dundas Township? With recent increases seen in the demand for water and sewer services beyond the normal projected growth, is it anticipated that the amount of waste destined to the landfill will also increase by the same amount?*

2. The purpose of this EA is to provide environmentally safe and cost-effective long-term waste management for the Township of North Dundas for a 25 year planning period. Do you agree with or have any comments on this purpose statement?

   Comment: Why is the planning period limited to 25 years? While 25 years is a good length of time, what will happen after 25 years? Will the expected lifetime of the "new" landfill be made clear in the resulting recommendations?

3. Various components of the environment have been used to assess potential effects of the 'Alternatives To' considered for the waste management plan. Similar components are also being considered to assess and compare the 'Alternative Methods' to implement the preferred long term approach to waste management. The following table lists proposed natural, social, economic /financial and technical components of the environment being considered for this EA.

Please tell us how these rank in importance to you. Is there any aspect we may have missed?
Please add "ongoing costs" to the Socio-Economic component.

Components to Assess 'Alternatives To':

Environmental Component	Sub-Component	Importance		
		Very Important	Important	Less Important
Atmosphere		X		
Geology and Hydrogeology		X		
Surface Water		X		
Biology		X		
Archaeology		X		
Cultural Heritage		X		
Socio-Economic	Nuisance factors (i.e., noise, litter, air quality)	X		
	Approval cost and timing	X		
	Implementation cost	X		
	Ongoing costs	X		
Transportation		X		
Technical Considerations	Ability to operate	X		
	Technical risks	X		

4. Do you agree with the identification of the preferred 'Alternative To' for this waste management plan – expansion of the Boyne Road Landfill site? If not, why not?

   Comments:

   a) *In the comparison of the various six alternatives, it is not clear as to why the expansion of the Boyne Road Landfill site has been selected. Was a scoring mechanism used for each component and sub component, for each of the alternatives? How do the scores compare between each of the alternatives?*

   b) *With regard to the alternative to "Establish New Landfill Site in the Township", why would the land on the north side of Boyne Road, near the existing site not be considered? How is that land used currently?*

Environmental Assessment of the Township of North Dundas Waste Management Plan
Technical Bulletin #2 (Feb. 2021), Feedback Form

All personal information included in a submission – such as name, address, email, and telephone number – is collected, maintained and disclosed by the Ministry of the Environment, Conservation and Parks for the purpose of transparency and consultation. The information is collected under the authority of the *Environmental Assessment Act* or is collected and maintained for the purpose of creating a record that is available to the general public as described in s.37 of the *Freedom of Information and Protection of Privacy Act*. Personal information you submit will become part of a public record that is available to the general public unless you request that your personal information remain confidential. For more information, please contact the Project Officer at 437-244-9402 or the Ministry of the Environment Conservation and Park's Freedom of Information and Privacy Coordinator at 416-314-4075.

Veuillez noter qu'il vous est possible de nous communiquer vos commentaires ou vos questions sur le projet en français en les adressant à Yannick Marcerou au 613-592-9600 ext. 3318 ou par courriel à yannick_marcerou@golder.com.

You can provide your comments on the Environmental Assessment Technical Bulletin #2 or any questions you may have about this project by email, mail or fax to:

Doug Froats
Director of Waste Management
Township of North Dundas
636 St. Lawrence Street, P.O. Box 489
Winchester, ON K0C 2K0
Telephone: 613-774-2105 ext. 235
Fax: 613-774-5699
E-mail: dfroats@northdundas.com

or

Trish Edmond, P.Eng.
EA Project Manager
Golder Associates Ltd.
1931 Robertson Road
Ottawa, ON K2H 5B7
Telephone: 613-592-9600
E-mail: trish_edmond@golder.com

[redacted] North Dundas
Hello, the referenced feedback form on Technical Bulletin #2, is dated February 19, 2021. Since it is now more than 3 months later, has anything changed in Technical Bulletin #2?
Also, what is the deadline date to provide comments on Technical Bulletin #2?
Thank you.

Like · Reply · Message · 20h

Author

North Dundas [redacted], We can confirm that Technical Bulletin #2 has not changed since it was published on the project website in February, nor its corresponding feedback form. Although there is no formal deadline to provide comments on this Bulletin, feedback is encouraged to be provided by June 25, 2021.
The contact information for the project team is provided on the feedback form if you want to reach out to them directly.
Take care.

Like · Reply · Commented on by North Dundas [?] · 1m

From: Doug Froats
To: Marcerou, Yannick
Subject: FW: EA of North Dundas Township WMP
Date: March 22, 2021 7:07:25 PM

EXTERNAL EMAIL

From: [redacted]
Sent: March 22, 2021 10:56 AM
To: Doug Froats <dfroats@northdundas.com>
Subject: EA of North Dundas Township WMP

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Hi there,

We would like to be added to the project mailing list for the environmental assessment of North Dundas' waste management plan, please.

Thanks so much,

[redacted]

APPENDIX G

Technical Work Plans

Appendix G1 Draft Work Plans
Appendix G2 Meeting Summaries, Comments
Appendix G3 Detailed Work Plans

Draft Report
May 2022

GOLDER
MEMBER OF WSP

TOWNSHIP OF
North Dundas

Appendix G1 Draft Work Plans

GOLDER
MEMBER OF WSP

May 27, 2021 Project No. 1648253

Ross Kircher, Air Quality Analyst
Ministry of Environment, Conservation and Parks
Via Email: ross.kircher@ontario.ca
Header Merza, Senior Noise Engineer
Ministry of Environment, Conservation and Parks
Via Email: header.merza@ontario.ca

ATMOSPHERE COMPONENT WORK PLAN, ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN

This document presents the proposed detailed work plan for the atmosphere component of the Environmental Assessment (EA) of the Township of North Dundas waste management plan (the Project). The work plan is being submitted for review and comment by the Ministry of the Environment, Conservation and Parks (MECP).

The EA of the Township of North Dundas waste management plan has advanced such that the 'Alternative To' of landfill expansion has been identified as the preferred alternative. Presently the 'Alternative Methods' of landfill expansion are being developed and this work plan presents actions required at this stage of the EA related to the atmosphere component of the environment. This work plan has been developed with consideration of the commitments made within the development of the Terms of Reference (ToR). The relevant commitment is provided below in Table 1.

Table 1: Project Commitment from ToR Relevant to Work Plan Development

ID	Commitment
9	During the EA, detailed technical work plans for each of the environmental components will be developed in consultation with the agencies, Indigenous communities and the public. Where relevant, the Township will provide the detailed work plans to the appropriate regulatory agency for review and concurrence prior to undertaking the work.

General Atmosphere Existing Conditions

The atmosphere component comprises air quality, odour, greenhouse gases (GHG), and noise. Within the site-vicinity, air quality is typical of eastern Ontario with transportation and agricultural activities contributing to baseline air quality/odour and noise levels. The nearest air monitoring stations will be reviewed and selected based on their data quality and how representative they are for the surrounding area of the project. The closest air monitoring stations are located in Ottawa and Cornwall. The current landfill operations are also considered an existing source of air, odour, greenhouse gases, and noise emissions and are included as part of the existing conditions.

In terms of odour, landfills can emit two types of odours: refuse odour and landfill gas odour. Refuse odour is generated by recently disposed waste, and landfill gas odour is generated during the anaerobic decomposition of organic waste material.

It is most appropriate to consider greenhouse gas emissions on a national or provincial scale. The primary sources of greenhouse gas emissions in Canada and Ontario are from anthropogenic sources that include the transportation sector (e.g., vehicles on 400 series highways in Ontario) and large industrial activities (e.g., manufacturing facilities) (ECCC 2017).

Study Areas for Assessment of 'Alternative Methods' of Landfill Expansion

Data for the EA will be collected and analyzed for generic study areas that will be confirmed and refined during the EA. Preliminary generic study areas considered for the work plan stage of the EA include:

Site Study Area – The existing Boyne Road Landfill Site, located at 12620 Boyne Road, Lot 8, Concession VI. The extent of the Site Study Area includes the lands owned by the Township of North Dundas that consist of the existing Boyne Road Landfill waste footprint and an area 300 metres to the south of the existing waste footprint (the identified potential area for landfill expansion).

Site-vicinity Study Area – The lands in the area immediately adjacent to the Site Study Area that have the potential to be directly affected by the landfill expansion and activities with the Site Study Area. The extent of the Site-vicinity Study Area will be determined for each of the environmental components. For most environmental components, a Site-vicinity Study Area of 500 metres from the Site Study Area is appropriate.

Wider Study Area – An area that takes on the broader community generally beyond the immediate site vicinity and for specific environmental components may include the entirety of the Township of North Dundas as appropriate.

The proposed preliminary study areas for the atmosphere component are presented in Table 2.

Table 2: Proposed Preliminary Study Areas for the Atmosphere Component

Environmental Component/Sub-component (Criteria)	Preliminary Area(s) to be Studied	Rationale
Atmosphere/Air Quality and Noise	Site and Site-vicinity	Air quality, odour and noise emissions are required to meet provincial requirements at the landfill site boundary or closest sensitive receptors. Since there are no existing structures with sensitive receptors within the 500 metres around the Site Study Area, the Site-vicinity Study Area will be nominally increased for air quality and odour to extend to the nearest sensitive receptors to the east, south and west. For noise the provincial requirements set out the need for an assessment at the closest sensitive receptors whether existing structure or vacant lands that are zoned to accommodate sensitive land use which is expected within the 500 metres around the Site Study Area.
Atmosphere/Noise	Site-vicinity	To assess haul route noise. Boyne Road between County Road 3 and the landfill and County Road 7 between County Road 9 and Boyne Road followed by Boyne Road between County Road 7 and the landfill as shown on Figure 9-1.

Atmosphere Work Plan

The atmosphere component will be assessed for the potential effects of the undertaking based on two criteria, indicators and methodology as presented in Table 3 below.

It is expected that the work plan, and associated criteria, indicators and data evaluation methods could be refined during the EA as a result of consultation activities and/or additional information.

Table 3: Atmosphere Component Work Plan

Sub-Component (Criteria)	Rationale	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Air quality (health-related compounds and dust), odour, greenhouse gas [GHG])	Landfill expansion and associated operations can produce gases containing contaminants that degrade air quality if they are emitted to the atmosphere. Construction activities associated with landfill expansion and continued landfill operation can lead to levels of particulates (dust) in the air. Landfill operation can also result in odour effects.	• Expected concentrations of air quality indicator compounds (selected regulated air contaminants to represent this type of project), including dust, at the property boundary and nearby sensitive receptors. • Expected site-related odour at sensitive receptors. • Expected GHG emissions.	• Compile and interpret existing Environment Canada or MECP's air quality monitoring data and meteorological data. • Review aerial photographic mapping to identify sensitive receptors. • Review zoning maps. • It is not proposed to collect site-specific data.	• Identify the differences in potential air and odour concentrations from emission sources based on their distance and direction to nearest receptors, the property boundary, and site characteristics such as height of the landfill that will influence dispersion. • Identify difference in the alternatives that will impact GHG generation such as the landfill configuration. • Qualitatively evaluate the differences in potential air quality, odour and GHG. • Rank each alternative based on the differences. • Describe advantages and disadvantages of each 'Alternative Method'.	• Select air indicator compounds appropriate for the landfill expansion, expected to include SPM, PM_{10}, $PM_{2.5}$, NO_x, SO_2, CO, H_2S, C_2H_3Cl, Odour. • Complete air and odour emission estimates based on published emission factors and available literature, as well as site-specific landfill gas (LFG) generation model for input into the dispersion model. • Execute an air quality dispersion model for the currently approved landfill and for the proposed expanded landfill. • Predict worst-case air quality and odour effects for sensitive receptors based on an expanded landfill operation scenario. • Calculate GHG emissions based on the expanded landfill. • If required, identify mitigation or best management practices that can be implemented into the design of the preferred alternative to allow the landfill expansion to achieve compliance with applicable air quality limits.	• Environment Canada or MECP's regional air quality data, hourly meteorological data and climate normals. • Published emission factors (including odour). • Site-specific LFG generation model. • Preferred 'Alternative Method' landfill phasing plan. • Odour complaints history. • Applicable provincial regulations, standards and guidelines.

Sub-Component (Criteria)	Rationale	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Noise	Landfill expansion and associated operations will generate noise that will be emitted into the atmosphere and could impact neighbouring sensitive receptors.	• Noise Levels at neighbouring sensitive receptors, or vacant lots that may accommodate the future construction of sensitive receptors.	• Review of aerial imagery. • Review of zoning/land use mapping. • Undertake field program to quantify existing noise levels.	• Identify existing and potential sensitive receptors in the vicinity of the landfill. • Identify potential differences in expected noise levels based on the distance and potential line-of-site exposure of the sensitive receptors to the landfilling equipment/activities. • Review the direct interaction of the proposed 'Alternative Method' footprints and existing/potential sensitive receptors. • Rank each 'Alternative Method' based on the differences. • Describe advantages and disadvantages of each 'Alternative Method'.	• 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 in accordance with MECP and internationally accepted standards. • Using the site-specific noise model described above, model the predictable worst-case noise levels from the preferred landfill expansion at identified sensitive receptors (existing or potential), and compare them to MECP noise guidelines. • If required, identify mitigation measures that can be implemented into the design of the preferred alternative to allow the landfill expansion to achieve compliance with applicable noise limits. • Develop monitoring, trigger and contingency plans if relevant.	• Landfill equipment list and expected utilization. • Preferred 'Alternative Method' landfill phasing plan. • Existing noise studies for facilities in the vicinity (if available). • Baseline field program. • Manufacturer's noise data. • Consultant's database of similar noise studies. • Ministry of Transportation Ontario (MTO) / local municipal traffic count data or newer data collected to support this EA. • Applicable provincial guidelines

Closure

Golder is seeking concurrence and/or comments on the above described work plan for the evaluation of 'Alternative Methods' for the atmosphere component of the Township of North Dundas Waste Management Plan EA from the MECP. Golder will be in touch to coordinate a conference call to discuss the work plan.

Golder Associates Ltd.

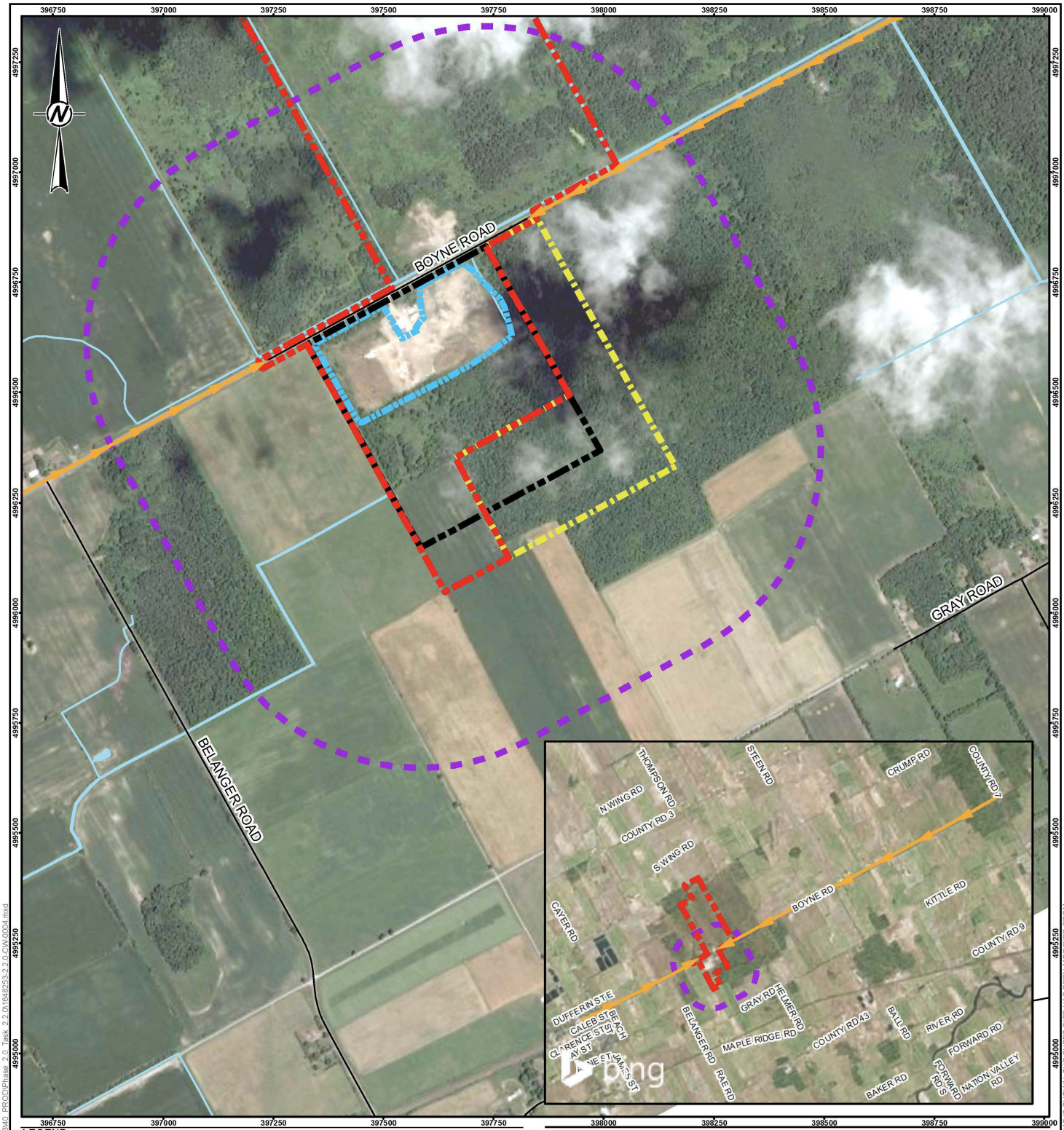
Jamie McEvoy, P.Eng.
Air Quality Engineer

Joe Tomaselli, M.Eng., P.Eng.
Associate, Acoustics Noise and Vibration Engineer

PLE/PAS/JM/JT/sg
\\golder.gds\gal\ottawa\active\2016\3 proj\1648253 township of north dundas boyne landfill exp ea\9 - ea technical studies\1a atmosphere\work plan\1648253-atmosphere work plan may 27 2021.docx

CC: Doug Froats, Township of North Dundas
Adam Sanzo, Project Officer, EA Services, MECP
Solange Desautels, Supervisor Central and East Unit, EA Services, MECP
Ruth Orwin, APEP Supervisor, Technical Support Section, Eastern Region, MECP
Candice McKay, Senior Environmental Officer, Cornwall Area Office, MECP

Attachments: Figure 9.1



LEGEND

- ROADWAY
- WATERCOURSE
- HAUL ROUTE
- EXISTING LANDFILL FILL AREA
- SITE STUDY AREA
- SITE-VICINITY STUDY AREA (MINIMUM 500 m)
- TOWNSHIP OWNED PROPERTY
- APPROXIMATE PROPERTY BOUNDARY OF LANDFILL SITE

DRAFT

0 125 250 500

1:12,500 METRES

REFERENCE(S)
1. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

CLIENT
TOWNSHIP OF NORTH DUNDAS

PROJECT
INDIVIDUAL ENVIRONMENTAL ASSESSMENT OF THE PROPOSED EXPANSION OF THE BOYNE ROAD LANDFILL

TITLE
STUDY AREAS

CONSULTANT
GOLDER
MEMBER OF WSP

YYYY-MM-DD	2021-05-27
DESIGNED	PLE
PREPARED	JEM
REVIEWED	YJM
APPROVED	PLE

PROJECT NO.	PHASE/TASK	REV.	FIGURE
1648253	2.0/2.2.0	0	**9-1**

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

Path: N:\Active\Sarlat_IM\Township of North Dundas\BoyneRoadLandfill\99 PROJ\1648253\Rpt 2.2.0\1648253-2.2.0-GIS-0004.mxd

October 29, 2019 Project No. 1648253

Mary Dillon, District Planner
Ministry of Natural Resources and Forestry
10 Campus Dr, PO Box 2002
Kemptville, ON K0G 1J0

SCOPE OF WORK FOR NATURAL ENVIRONMENT INVESTIGATIONS AT THE POSSIBLE BOYNE LANDFILL EXPANSION SITE, WINCHESTER, ONTARIO

Golder Associates Ltd. (Golder) has been retained by the Corporation of the Township of North Dundas (Township) to prepare an Environmental Assessment (EA) for the Township of North Dundas Waste Management Plan. As part of the EA, waste management alternatives will be evaluated including the potential expansion of the Boyne Landfill. Although the expansion of the Boyne Landfill has not yet been determined to be the preferred method for waste management by the Township, Golder has proposed a number of natural environment investigations in order to inform any landfill expansion design, recommend appropriate mitigation measures, and identify natural environment permitting requirements, if any. The area targeted for these investigations includes the existing landfill, and lands immediately south of the existing landfill (the Site; Figure 1). The scope of work outlined below was designed based on this Site; if a different alternative is chosen, a revised scope of work may need to be prepared. We request that the Ministry of Natural Resources and Forestry (MNRF) review this scope of work and provide comments, as necessary. A letter similar to this, focusing on Species at Risk (SAR), is being sent to the Ministry of the Environment, Conservation and Parks (MECP).

1.0 AGENCY CONSULTATION

Golder contacted the MNRF via a formal information request form in July 2017, with a response received in August 2017. The information provided related to natural heritage features on the Site or within 120 m of the Site (study area), such as wetlands, fish communities and SAR. Golder also provided the MNRF the draft Terms of Reference (ToR) for the EA to review noting that at the time of the draft ToR the EA was of the Expansion of the Boyne Landfill although the final EA is of the Township of North Dundas Waste Management Plan. Golder also provided the MNRF the final ToR. Comments on the draft and final ToR were provided by Mary Dillon (District Planner, MNRF), including the following field work comments:

1) Surveys should be completed to confirm the presence or absence of the species at risk identified as potentially occurring at the Site, or in proximity to it, unless the proposed development will not have any impact on a species or its habitat (*being discussed with the MECP directly*).

2) The adjacent woodland is considered Significant Woodland by the MNRF based on a desktop modelling exercise. The status of the woodland should be confirmed in the Official Plan for SD&G, on the ground, or both.

3) Potential or candidate Significant Wildlife Habitats that may be impacted by the proposed expansion should be confirmed through the EA. The no negative impact test applies.

4) There is an Evaluated non-PSW wetland at/adjacent to the landfill Site. The status of this wetland (and any other unevaluated wetland at the Site) should be reconsidered given the findings of the survey work at the site, especially the SAR survey work.

5) Given the confirmed presence of vernal pool habitats and the amphibian species within the deciduous swamp on Site (both confirmed or potential), Significant Wildlife Habitat (i.e., Amphibian Breeding Habitat) may be present and should be considered as part of the EA. The same may also be true for a number of species of Special Concern noted.

6) Risks associated with wildland fire should also be considered.

The scope of work described in this scope of work is intended to address each of these items, with the exception of SAR, which is being discussed directly with the MECP.

2.0 DESKTOP ASSESSMENT

Golder conducted a desktop review of published natural heritage data and information available for the Site and the study area). This information served to identify significant natural features as well as S1 – S3 species known to be present. Information sources to be consulted include, but are not limited to:

- MNRF Natural Heritage Information Centre (NHIC) Make-a-Map geographic explorer for S1-S3 species reported in the study area, and natural areas information queries (MNRF, 2019)
- Existing and readily available information (including any watershed studies) and mapping available through the local Conservation Authority
- Atlas of Breeding Birds of Ontario (Cadman, et al. 2007)
- eBird online database (eBird, 2019)
- Atlas of the Mammals of Ontario (Dobbyn, 1994)
- Bat Conservation International (BCI, 2019)
- Ontario Odonate Atlas (MacNaughton et. al, 2019)
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Maps (DFO, 2019)
- Information contained in natural heritage related map layers from Ontario Base Map series, Natural Resource Values Information System (NRVIS) mapping and Land Information Ontario (LIO)
- Existing high-resolution aerial imagery and mapping

3.0 SITE INVESTIGATIONS

Site investigations were, and will be (assuming landfill expansion is identified as the preferred alternative), undertaken on the Site as outlined in Table 1.

Table 1: Survey Dates and Type

Year	Date(s)	Survey Type(s)
2018	May 30	Nocturnal Anuran Survey; Plant Community and Wetland Survey; Visual Encounter Survey (VES)
	June 3	Nocturnal Anuran Survey; VES
	June 8	Breeding Bird Survey; VES
	June 21	Breeding Bird Survey; Bat Detector Set-up and Bat Habitat Survey; Plant Community and Wetland Survey; VES
	June 26	Nocturnal Anuran Survey; VES
	October 4	Fish Habitat Survey; VES; Bat Detector Take-down
2020	TBD	Plant Community and Wetland Survey; Fish Community Assessment; Headwater Drainage Features Assessment; April Nocturnal Anuran Survey

3.1 Terrestrial Surveys

3.1.1 Botanical Surveys, Ecological Land Classification and Wetland Boundaries

Two plant community surveys were conducted between May and June 2018, with a third proposed for 2020. During these surveys, the Site was assessed using Ecological Land Classification (ELC) standard protocols (Lee et al. 1998) to map the plant communities. The plant community surveys were timed to capture the active period for the majority of native plant species, and a list of all plant species encountered at the Site was compiled. General notes on near-surface soil characteristics were collected, as per the methodologies of ELC.

Boundaries of the wetlands on the Site were determined according to the protocols of the Ontario Wetland Evaluation System (OWES) (MNRF, 2014).

In addition to the ELC and plant surveys, habitat structure and features specific to the habitat requirements of the S1-S3 species identified in the desktop SAR screening for the Site were also noted, if present.

These results will be confirmed through surveys in 2020.

3.1.2 Breeding Bird Surveys

Two early morning breeding bird surveys (BBS) were conducted on the Site in June 2018, following standard protocols (Sauer et al 2008; Cadman et al 2007). Surveys were conducted at point-count stations distributed throughout all habitats on the Site and occurred between 30 minutes before sunrise and 10:00 am to encompass the period of maximum bird song. A list of all species was compiled.

3.1.3 Herpetile Surveys

Two anuran (frog and toad) call-count surveys were conducted during early summer 2018 to capture mid- and late-season calling anurans. An April call-count survey will be conducted in 2020 to capture early-calling species. The surveys followed the point count methodology outlined in the Marsh Monitoring Program (Bird Studies Canada, 2003). Stations were distributed across the Site, based on the locations of potential breeding habitat, and following spacing requirements in the methodology.

3.1.4 Bat Surveys

Bat surveys were conducted on the Site and included the use of acoustic bat detectors (Wildlife Acoustics SM3BAT+®). Two bat detectors were deployed and programmed to record bat calls for at least 10 consecutive nights, as per MNRF recommended protocols (MNRF, 2011). Each station was located to provide coverage of the Site and target areas where bats would most likely be roosting, commuting or feeding. The microphones were programmed to record from 30 minutes before sunset to 30 minutes after sunrise. The data will be analyzed and auto-classified using SonoBat 4.2.1 nnE. The Sonobat program is specifically intended for discrimination of bats to the species level wherever possible, and validation of the species-level classification will be conducted by Golder's bat acoustic specialist.

3.2 Wildlife Habitat and Visual Encounter Surveys

During all site investigations, area searches for wildlife (VES) were conducted, including for those species groups not specifically targeted through the surveys described above. These VES have been, and will be, conducted following recommended procedures (McDiarmid 2012; Bookhout 1994; Pyle 1984), where possible. All species observed (including direct observations, calls, tracks and other signs) were recorded. Specific attention was paid to searching for suitable habitat for S1 – S3 species, as well as micro-habitats that may provide significant wildlife habitat (e.g. vernal pools, rock outcrops, seeps and springs, etc.).

3.3 Aquatic Surveys

3.3.1 Headwater Drainage Features Assessment

Golder will complete field investigations on the Site in 2020 (assuming the landfill expansion is identified as the preferred alternative) to confirm the flow and connection of the surface water features on the Site and to complete a Headwater Drainage Features (HDF) assessment. This assessment evaluates and classifies each feature following the Evaluation, Classification, and Management of Headwater Drainage Features Guidelines (the Guidelines) developed by the Toronto and Region Conservation Authority and Credit Valley Conservation (TRCA and CVC, 2014). The assessment is based on data collected in the on-Site surface water features according to Ontario Stream Assessment Protocol (OSAP) Section 4 Module 11 – Unconstrained Headwater Sampling (Gorenc and Stanfield, March 2017). Information to be gathered will include basic measurements (wetted width and depth; feature width; bankfull depth; flow rates; etc.) as well as information on substrates, sediment deposition, barriers to fish movement, riparian conditions, etc.

3.3.2 Fish Habitat Survey

Golder conducted a fisheries habitat assessment in the fall of 2018 to characterize aquatic features and potential fish habitat within the Site. A second spring habitat assessment will be performed in 2020, if landfill expansion is identified as the preferred alternative. Golder has developed technical procedures for measuring and characterizing fish habitat in watercourses and waterbodies. Field maps were used to document fish habitat characteristics at the ground level for the Site.

Examples of habitat features that were assessed are:

- channel unit type (riffle, run, pool, flat etc.)
- location of potential obstacles and barriers to fish passage
- representative bankfull widths, wetted widths and water depths
- evidence of groundwater seeps
- dominant substrate type
- in-stream cover, overhead cover
- aquatic macrophyte growth
- riparian cover and surrounding landuse

Habitat characteristics were documented through digital photographs of both typical and sensitive features. The field maps, ground observations, measurements and digital photographs were used to produce a series of maps illustrating fish habitat features at the Site. In-situ field water quality information was collected in each of the watercourses on the Site, and include temperature, dissolved oxygen, pH and conductivity.

3.3.3 Fish Community Surveys

The objective of the fish community survey is to identify fish species that utilize the watercourses at the Site and their relative abundance (proportion of catch). Prior to undertaking fish community surveys in 2020, Golder will obtain a licence to collect fish for scientific purposes from the MNRF. Golder will sample the fish community in the watercourses on the Site. The collection activities will be subject to conditions stipulated in the licence.

Captured fish will be enumerated, identified to species, measured, weighed, and life stage will be noted. In the case where large numbers of fish of any one species are captured, length and weight measurements will be limited to a portion of the catch. A minimum 25 individuals of each species will be weighed and measured in the case where many individuals are captured. Where possible, fish will be released alive near their capture location.

4.0 ANALYSIS OF RESULTS

Golder will summarize the results in the EA and supporting data will be appended to the EA for the landfill expansion, assuming that landfill expansion is selected as the preferred alternative. The results captured during the field investigations outlined in this letter will be reviewed to determine the presence / absence, extent and significance of natural features including:

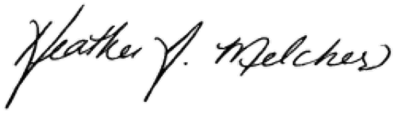
- Significant Natural Features listed in the *Provincial Policy Statement* (MMAH, 2014).
- No formal evaluation per OWES of unevaluated or evaluated non-Provincially Significant Wetlands (PSW) at or adjacent to the Site will be performed, however, if an endangered or threatened species is found to be utilizing the wetlands for life processes, the status of the wetlands will be reviewed.
- A general assessment of the wildlife risk associated with the Site per the *Wildland Fire Risk Assessment and Mitigation: A Guidebook in support of the Provincial Policy Statement, 2014* – DRAFT (MNRF, April 2016).

The impacts of the proposed landfill expansion, if determined to be the preferred alternative, on any significant natural feature will be assessed, and mitigation measures will be recommended.

We trust that the proposed scope of work meets with your approval. If you would like to discuss the program, please feel free to contact the undersigned.

Sincerely,

Golder Associates Ltd.



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Ecologist

Heather Melcher, M.Sc.
Senior Ecologist / Associate

GAW/HM/sg
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CC: Trish Edmond, Golder

Attachments: Figure 1 – Study Areas

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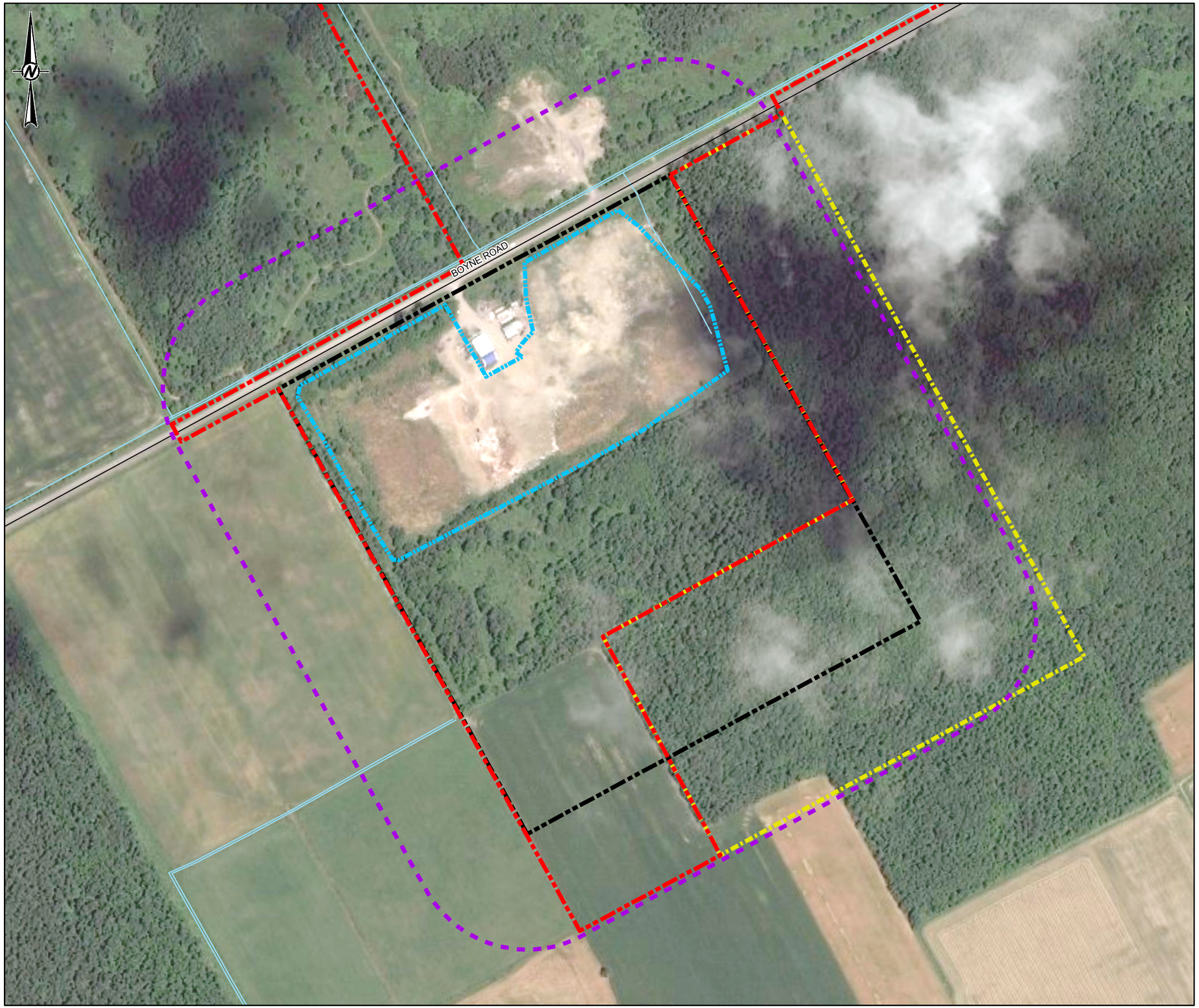

LEGEND

- ROADWAY
- WATERCOURSE
- EXISTING LANDFILL FILL AREA
- SITE STUDY AREA
- TOWNSHIP OWNED PROPERTY
- APPROXIMATE PROPERTY BOUNDARY OF LANDFILL SITE
- 120 m STUDY AREA

NOTE(S)

1. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING TERMS OF REFERENCE FOR THE ENVIRONMENTAL ASSESSMENT OF THE PROPOSED EXPANSION OF THE BOYNE ROAD LANDFILL

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

0 40 80 160
1:4,000 METRES

CLIENT
TOWNSHIP OF NORTH DUNDAS

PROJECT
NATURAL ENVIRONMENT ASSESSMENT FOR THE ENVIRONMENTAL ASSESSMENT OF THE PROPOSED EXPANSION OF THE BOYNE ROAD LANDFILL

TITLE
STUDY AREAS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-10-29
DESIGNED	PLE
PREPARED	JEM
REVIEWED	GAW
APPROVED	HM

PROJECT NO.	PHASE/TASK	REV.	FIGURE
1648253	2.0/2.1.6	0	1

Path: N:\Active\Spatial_IM\Township of North Dundas\BoyneRoadLandfill\99_PROJ\1648253\140_PROD\Phase_2.0_Task_2.1.6\1648253-2216-HN-0001.mxd

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25mm
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October 29, 2019 Project No. 1648253

Ministry of the Environment, Conservation and Parks
Species at Risk Branch

SCOPE OF WORK FOR SPECIES AT RISK INVESTIGATIONS AT THE POSSIBLE BOYNE LANDFILL EXPANSION SITE, WINCHESTER, ONTARIO

To Whom it May Concern,

Golder Associates Ltd. (Golder) has been retained by the Corporation of the Township of North Dundas (Township) to prepare an Environmental Assessment (EA) for the Township of North Dundas Waste Management Plan. As part of the EA, waste management alternatives will be evaluated including the potential expansion of the Boyne Landfill. Although the expansion of the Boyne Landfill has not yet been determined to be the preferred method for waste management by the Township, Golder has proposed a number of natural environment investigations in order to inform any landfill expansion design, recommend appropriate mitigation measures, and identify natural environment permitting requirements, if any. The area targeted for these investigations includes the existing landfill, and lands immediately south of the existing landfill (the Site; Figure 1). The scope of work outlined below was designed based on this Site; if a different alternative is chosen, a revised scope of work may need to be prepared. We request that the Ministry of the Environment, Conservation and Parks (MECP) review this scope of work as it relates to Species at Risk (SAR) and provide comments, as necessary. A letter similar to this, focusing on significant natural features, is being sent to the Ministry of Natural Resources and Forestry (MNRF).

1.0 AGENCY CONSULTATION

Golder contacted the MNRF via a formal information request form in July 2017, with a response received in August 2017. The information provided related to natural heritage features on the Site or within 120m of the Site (study area), such as wetlands, fish communities and SAR. Golder also provided the MNRF the draft Terms of Reference (ToR) for the EA to review noting that at the time of the draft ToR the EA was of the Expansion of the Boyne Landfill although the final EA is of the Township of North Dundas Waste Management Plan. Golder also provided the MNRF the final ToR. Comments on the draft and final ToR were provided by Mary Dillon (District Planner, MNRF). Comments relating to SAR included:

1) Surveys should be completed to confirm the presence or absence of the species at risk identified as potentially occurring at the Site, or in proximity to it, unless the proposed development will not have any impact on a species or its habitat.

2) Given the confirmed presence of vernal pool habitats and the amphibian species within the deciduous swamp on Site (both confirmed and potential), Significant Wildlife Habitat (i.e., Amphibian Breeding Habitat) may be present and should be considered as part of the EA. The same may also be true for a number of species of Special Concern noted.

The scope of work described in this scope of work is intended to address these items, with the exception of SWH, which will be discussed directly with the MECP.

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, K2H 5B7, Canada T: +1 613 592 9600 F: +1 613 592 9601

2.0 DESKTOP ASSESSMENT

Golder conducted a desktop review of published natural heritage data and information available for the Site and the study area. This information served to identify Species at Risk (SAR) known to be present, or having the potential to be present. Information sources consulted included:

- MNRF Natural Heritage Information Centre (NHIC) Make-a-Map geographic explorer (MNRF, 2019)
- Atlas of Breeding Birds of Ontario (Cadman, et al. 2007)
- eBird online database (eBird, 2019)
- Atlas of the Mammals of Ontario (Dobbyn, 1994)
- Bat Conservation International (BCI, 2019)
- Ontario Odonate Atlas (MacNaughton et. al, 2019)
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2019)
- Fisheries and Oceans Canada (DFO) Aquatic Species at Risk Maps (DFO, 2019)
- Information contained in natural heritage related map layers from Ontario Base Map series, Natural Resource Values Information System (NRVIS) mapping and Land Information Ontario (LIO)
- Existing high-resolution aerial imagery and mapping

2.1 Species at Risk Screening

A SAR screening will be completed for the Site and study area and will focus on the review of records and range maps pertaining to species that are designated as threatened or endangered under the Ontario *Endangered Species Act*, 2007, species that are listed as endangered or threatened under Schedule 1 of the *Species at Risk Act*, 2002 that may occur in the vicinity of the study area.

The published SAR data will help to determine the potential for habitats of endangered or threatened species. Data from the site investigations described below will be used in combination with the desktop data to determine a final probability of SAR and/or SAR habitats within the study area and determine the need for any additional surveys.

3.0 SITE INVESTIGATIONS

Site investigations relating to SAR were, and will be undertaken at the Site as outlined in Table 1.

Table 1: Survey Dates and Type

Year	Date(s)	Survey Type(s)
2018	May 30	Eastern Whip-poor-will/Crepuscular Survey; Nocturnal Anuran Survey; Plant Community and Wetland Survey; Visual Encounter Survey (VES)
	June 3	Eastern Whip-poor-will/ Crepuscular Survey; Nocturnal Anuran Survey; VES
	June 8	Breeding Bird Survey; VES
	June 21	Breeding Bird Survey; Bat Detector Set-up and Bat Habitat Survey; Plant Community and Wetland Survey; VES
	June 26	Eastern Whip-poor-will/Crepuscular Survey; Nocturnal Anuran Survey; VES
	October 4	VES; Bat Detector Take-down
2020	TBD	Plant Community and Wetland Survey; April Nocturnal Anuran Survey

3.1 Terrestrial Surveys

3.1.1 Botanical Surveys, Ecological Land Classification and Wetland Boundaries

Two plant community surveys were conducted between May and June 2018, with a third proposed for 2020. During these surveys, the Site was assessed using Ecological Land Classification (ELC) standard protocols (Lee et al. 1998) to map the plant communities. Locations of any plant SAR encountered were mapped using a hand-held GPS. The plant community surveys were timed to capture the active period for the majority of native plant species, and a list of all plant species encountered at the Site was compiled. General notes on near-surface soil characteristics were collected, as per the methodologies of ELC.

Efforts to locate butternut trees (*Juglans cinerea*) were focused on areas where development is possibly contemplated, and within 50 m of those areas, where property access is available. Butternut health assessments (BHA) will be undertaken on any butternut trees identified on the Site by qualified Butternut Health Assessors (i.e., certified by the MNRF). The assessments will be performed according to standardized MNRF protocols (MNRF, June 2013) and using the methods as outlined in Butternut Health Assessment Guidelines (MNRF, December 2014a) and Butternut Health Assessment in Ontario (FGCA, August 2010), with all relevant information entered into the standard Butternut Data Collection Forms (1 and 2). The calculations and analysis will be performed using the Butternut Retainable Tree Analysis electronic table, updated by the MNRF in 2013.

In addition to the ELC and plant surveys, habitat structure and features specific to the habitat requirements of the SAR identified in the desktop assessment on the Site were also noted, if present.

These results will be confirmed through surveys in 2020.

3.1.2 Breeding Bird Surveys

Two early morning breeding bird surveys (BBS) were conducted on the Site in June 2018, following standard protocols (Sauer et al 2008; Cadman et al 2007). Surveys were conducted at point-count stations distributed throughout all habitats on the Site (including potential SAR habitat) and occurred between 30 minutes before sunrise and 10:00 am to encompass the period of maximum bird song. A list of all species was compiled, and the locations of any SAR were marked using a hand-held GPS.

Eastern whip-poor-will (*Caprimulgus vociferus*) is known to occur in the vicinity of the Site. Current draft MNRF methodology (MNRF, 2014) requires three visits in order to assess presence of this species. Based on a review of aerial imagery, Golder notes that a portion of the Site may provide suitable habitat for this species, in combination with larger off-site habitats. In order to assess the habitat potential, Golder completed three crepuscular/nocturnal breeding bird surveys. The crepuscular/nocturnal BBS is a point-count conducted during twilight or after dark and focused on species such as eastern whip-poor-will.

3.1.3 Herpetile Surveys

Two anuran (frog and toad) call-count surveys were conducted during early summer 2018 to capture mid- and late-season calling anurans. An April call-count survey will be conducted in 2020 to capture early-calling species. The surveys followed the point count methodology outlined in the Marsh Monitoring Program (Bird Studies Canada, 2003). Stations were distributed across the Site, based on the locations of potential breeding habitat, and following spacing requirements in the methodology.

3.1.4 Bat Surveys

Bat surveys were conducted on the Site and included the use of acoustic bat detectors (Wildlife Acoustics SM3BAT+®). Two bat detectors were deployed and programmed to record bat calls for at least 10 consecutive nights, as per MNRF recommended protocols (MNRF, 2011). Each station was located to provide coverage of the Site and target areas where bats would most likely be roosting, commuting or feeding. The microphones were programmed to record from 30 minutes before sunset to 30 minutes after sunrise. The data will be analyzed and auto-classified using SonoBat 4.2.1 nnE. The Sonobat program is specifically intended for discrimination of bats to the species level wherever possible, and validation of the species-level classification will be conducted by Golder's bat acoustic specialist.

3.2 Wildlife Habitat and Visual Encounter Surveys

During all site investigations, area searches for wildlife (VES) were conducted, including for those species groups not specifically targeted through the surveys described above. These VES have been, and will be, conducted following recommended procedures (McDiarmid 2012; Bookhout 1994; Pyle 1984), where possible. All species observed (including direct observations, calls, tracks and other signs) were recorded. Specific attention was paid to searching for suitable habitat for SAR, as well as micro-habitats that may provide significant wildlife habitat (e.g. vernal pools, rock outcrops, seeps and springs, etc.).

4.0 ANALYSIS OF RESULTS

Golder will summarize the results in the EA and supporting data will be appended to the Environmental Assessment for the landfill expansion, assuming that landfill expansion is selected as the preferred alternative. The results captured during the field investigations outlined in this scope of work will be reviewed to determine the presence / absence and extent of SAR and SAR habitat and other features including:

- Species at Risk and their associated habitats
- Significant Natural Features listed in the *Provincial Policy Statement* (MMAH, 2014)

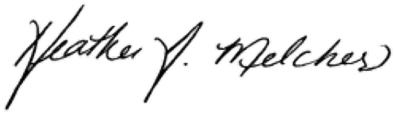
The impacts of the proposed landfill expansion, if determined to be the preferred alternative, on SAR and SAR habitat will be assessed, and mitigation measures will be recommended.

We trust that the proposed scope of work meets with your approval. If you would like to discuss the program, please feel free to contact the undersigned.

Sincerely,

Golder Associates Ltd.

Gwendolyn Weeks, H.B.Sc.Env.
Ecologist



Heather Melcher, M.Sc.
Senior Ecologist / Principal

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CC: Trish Edmond, Golder

Attachments: Figure 1 – Study Areas

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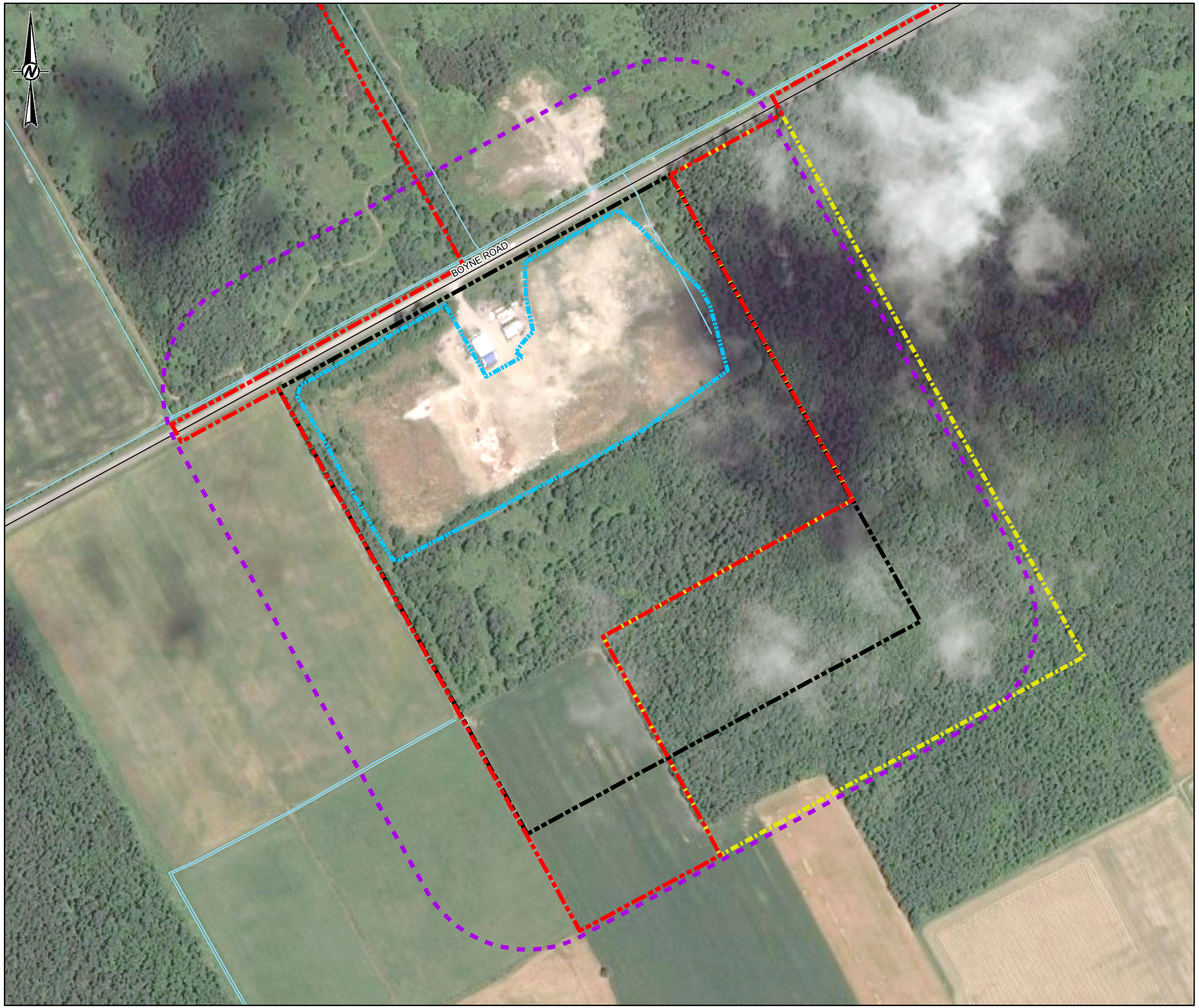

LEGEND

- ROADWAY
- WATERCOURSE
- EXISTING LANDFILL FILL AREA
- SITE STUDY AREA
- TOWNSHIP OWNED PROPERTY
- APPROXIMATE PROPERTY BOUNDARY OF LANDFILL SITE
- 120 m STUDY AREA

NOTE(S)

1. THIS FIGURE IS TO BE READ IN CONJUNCTION WITH THE ACCOMPANYING TERMS OF REFERENCE FOR THE ENVIRONMENTAL ASSESSMENT OF THE PROPOSED EXPANSION OF THE BOYNE ROAD LANDFILL

REFERENCE(S)

1. LAND INFORMATION ONTARIO (LIO) DATA PRODUCED BY GOLDER ASSOCIATES LTD. UNDER LICENCE FROM ONTARIO MINISTRY OF NATURAL RESOURCES, © QUEENS PRINTER 2014
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
COORDINATE SYSTEM: MTM ZONE 9 VERTICAL DATUM: CGVD28

0 40 80 160
1:4,000 METRES

CLIENT
TOWNSHIP OF NORTH DUNDAS

PROJECT
NATURAL ENVIRONMENT ASSESSMENT FOR THE ENVIRONMENTAL ASSESSMENT OF THE PROPOSED EXPANSION OF THE BOYNE ROAD LANDFILL

TITLE
STUDY AREAS

CONSULTANT
GOLDER

YYYY-MM-DD	2019-10-29
DESIGNED	PLE
PREPARED	JEM
REVIEWED	GAW
APPROVED	HM

PROJECT NO.	PHASE/TASK	REV.	FIGURE
1648253	2.0/2.1.6	0	1

Path: N:\Active\Spatial_IM\Township of North Dundas\BoyneRoadLandfill\99_PROJ\1648253\140_PROD\Phase_2.0_Task_2.1.6\1648253-2216-HN-0001.mxd

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM:
25mm
0

May 27, 2021 Project No. 1648253

Thomas Guo, Hydrogeologist, Eastern Region, MECP
Via Email: Thomas.guo@ontario.ca
James Holland, South Nation Conservation
Via Email: jholland@nation.on.ca
Phil Barnes, Raisin River Conservation Authority
Via Email: Phil.Barnes@rrca.on.ca
Conservation and Source Protection, Eastern Region, MECP
Via Email: sourceprotectionscreening@ontario.ca.

GROUNDWATER COMPONENT WORK PLAN, ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN

This document presents the proposed detailed work plan for the geology and hydrogeology component of the Environmental Assessment (EA) of the Township of North Dundas waste management plan (the Project). The work plan is being submitted for review and comment by the Ministry of the Environment, Conservation and Parks (MECP), South Nation Conservation (SNC) and Raisin River Conservation Authority (RRCA).

The EA of the Township of North Dundas waste management plan has advanced such that the 'Alternative To' of landfill expansion has been identified as the preferred alternative. Presently the 'Alternative Methods' of landfill expansion are being developed and this work plan presents actions required at this stage of the EA related to the geology and hydrogeology component of the environment. This work plan has been developed with consideration of the commitments made within the development of the Terms of Reference (ToR). The relevant commitment is provided below in Table 1.

Table 1: Project Commitment from ToR Relevant to Work Plan Development

ID	ToR Commitment
9	During the EA, detailed technical work plans for each of the environmental components will be developed in consultation with the agencies, Indigenous communities and the public. Where relevant, the Township will provide the detailed work plans to the appropriate regulatory agency for review and concurrence prior to undertaking the work.

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, K2H 5B7, Canada T: +1 613 592 9600 F: +1 613 592 9601

Township Geology and Hydrogeology Existing Conditions

The uppermost bedrock unit underlying the majority of the Township is limestone of the Gull River Formation, which is indicated to be overlain by Rockcliffe Formation shale in the south-central part of the Township.

Overburden soils generally consist of a mixture of marine silty clay and glacial till plain, with some specific areas underlain by organic soils. In the eastern part of the Township, an elongated northeast to south west trending ridge consisting of glacial outwash sand and gravel is present; this is locally known as the Morewood Esker, and more regionally as the Vars-Winchester esker. There is also a northeast-southwest trending area of granular soils in the western part of the Township (Hallville area) known as Hyndmans Ridge. There are several licenced aggregate operations that extract sand and gravel from these ridge features.

The thickness of overburden soil overlying the bedrock is shown to generally range from about 5 to 10 metres, with some areas of both thicker and thinner soil cover. It is known from previous subsurface studies within the Township for specific purposes, i.e., water supply studies, Boyne Road Landfill site, wastewater lagoons, that the thickness of overburden can be quite variable over relatively short horizontal distances and that there can be significant departures from the general drift thickness shown on published mapping.

The Township relies on groundwater from drilled wells for potable water supply. The Villages of Winchester and Chesterville each have communal water supplies from high-capacity drilled overburden wells located within portions of the Morewood and Maple Ridge esker deposit. The remainder of the Township relies on individual wells that generally obtain their water from zones within the bedrock.

Study Areas for Assessment of 'Alternative Methods' of Landfill Expansion

Data for the EA will be collected and analyzed for generic study areas that will be confirmed and refined during the EA. Preliminary generic study areas considered for the work plan stage of the EA include:

Site Study Area – The existing Boyne Road Landfill Site, located at 12620 Boyne Road, Lot 8, Concession VI. The extent of the Site Study Area includes the lands owned by the Township of North Dundas that consist of the existing Boyne Road Landfill waste footprint and an area 300 metres to the south of the existing waste footprint (the identified potential area for landfill expansion).

Site-vicinity Study Area – The lands in the area immediately adjacent to the Site Study Area that have the potential to be directly affected by the landfill expansion and activities with the Site Study Area. The extent of the Site-vicinity Study Area will be determined for each of the environmental components. For most environmental components, a Site-vicinity Study Area of 500 metres from the Site Study Area is appropriate.

Wider Study Area – An area that takes on the broader community generally beyond the immediate site vicinity and for specific environmental components may include the entirety of the Township of North Dundas as appropriate.

The proposed preliminary study areas for the geology and hydrogeology component are presented in Table 2.

Table 2: Proposed Preliminary Study Areas for the Geology and Hydrogeology Component

Environmental Component (Criteria)	Preliminary Area(s) to be Studied	Rationale
Geology and Hydrogeology	Site Study Area and Site-vicinity Study Area	Potential effects on groundwater quality have to comply with the MECP Reasonable Use Guideline at the landfill site and Contaminant Attenuation Zone boundaries.

Geology and Hydrogeology Work Plan

The geology and hydrogeology component will be assessed for the potential effects of the undertaking based on the criteria, indicator and methodology as follows in Table 3 below.

It is expected that the work plan, and associated criteria, indicators and data evaluation methods could be further refined during the EA as a result of consultation activities and/or additional information.

Table 3: Geology and Hydrogeology Component Work Plan

Sub-Component (Criteria)	Rationale	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Groundwater Quality	Contaminants associated with the landfill expansion and associated operations could enter the groundwater and impact off-site groundwater or surface water quality.	• Expected effect on groundwater quality at the landfill site property and compliance boundaries.	• Extensive field investigations and hydrogeological assessments have been completed for the existing landfill site since 2001. • Extensive hydraulic conductivity testing has been completed. • Review results of existing groundwater monitoring program. • No additional field work expected based on available information.	• Identify the differences between the alternatives that will affect the potential impact on off-site groundwater quality such as waste footprint configuration of expansion, direction of groundwater flow, height of expansion. • Estimate qualitatively how the differences will potentially affect the off-site groundwater quality. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Prepare a predictive model of landfill performance (contaminant transport model) as per *O. Reg. 232/98.* • Predict worst case concentrations in the overburden groundwater at the compliance boundaries for the key leachate indicator parameter chloride, with consideration of reasonable mitigation measures. [1,2] • Revise and update mitigation measures, if necessary. • Compare predictive results against approved trigger mechanism and update trigger mechanism and contingency plan if required. • Update groundwater monitoring program if required. • Predict the contaminating lifespan. • Assess potential effects in relation to Source Water Protection.	• Published regional sources and data on regional geological and hydrogeological conditions including source water protection reports. • Review MNRF petroleum well records. • Provincial Quaternary and Bedrock Mapping. • Ontario Water Well Records (water supply wells are considered to be sensitive receptors in terms of potential impacts). • Landfill Annual Monitoring Reports. • Previous site characterization/investigation reports. • Borehole Logs. • Adjacent property assessment reports, if available.

Notes:

1 Given the relatively small nature of the existing landfill and the proposed landfill expansion, selection and identification of relevant leachate indicator parameters is likely to be different than those identified in *O. Reg 232/98*. It is known that chloride is a relevant leachate indicator parameter that can be modelled at the site and, if others can be identified, then they will be included.

2 The existing and future leachate plume in the overburden is assumed to be more extensive than the plume in the bedrock. It is acknowledged that some portion of the plume may extend into bedrock. The vertical spreading of the plume to the bedrock would result in lower concentrations in the bedrock relative to what is represented in the overburden. The leachate plume is also assumed to travel at a lower velocity in the bedrock relative to the overburden due to the lower hydraulic gradients. As such, it is assumed that if regulatory compliance is met in the overburden, compliance would also be met in the bedrock at the same distance from the disposal area.

Closure

Golder is seeking concurrence and/or comments on the above-described work plan for the evaluation of 'Alternative Methods' for the geology and hydrogeology component of the Township of North Dundas Waste Management Plan EA from the MECP and SNC. Golder will be in touch to coordinate a conference call to discuss this work plan.

Golder Associates Ltd.

Trish Edmond, M.E.Sc., P.Eng.
GeoEnvironmental Engineer, Principal

RM/PAS/PLE/sg
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CC: Doug Froats, Township of North Dundas
Solange Desautels, Supervisor Central and East Unit, EA Services, MECP
Ruth Orwin, APEP Supervisor, Technical Support Section, Eastern Region, MECP
Candice McKay, Senior Environmental Officer, Cornwall Area Office, MECP

May 27, 2021 Project No. 1648253

Beth Gilbert, Surface Water Specialist, Eastern Region, MECP
Via Email: beth.gilbert@ontario.ca
Aziz Ahmed, Manager, Municipal Water & Wastewater Permissions, MECP
Via Email: aziz.ahmed@ontario.ca
James Holland, South Nation Conservation
Via Email: jholland@nation.on.ca
Phil Barnes, Raisin River Conservation Authority
Via Email: Phil.Barnes@rrca.on.ca

SURFACE WATER COMPONENT WORK PLAN, ENVIRONMENTAL ASSESSMENT OF THE TOWNSHIP OF NORTH DUNDAS WASTE MANAGEMENT PLAN

This document presents the proposed detailed work plan for the surface water component of the Environmental Assessment (EA) of the Township of North Dundas waste management plan (the Project). The work plan is being submitted for review and comment by the Ministry of the Environment, Conservation and Parks (MECP), South Nation Conservation (SNC) and Raisin River Conservation Authority (RRCA).

The EA of the Township of North Dundas waste management plan has advanced such that the 'Alternative To' of landfill expansion has been identified as the preferred alternative. Presently the 'Alternative Methods' of landfill expansion are being developed and this work plan presents actions required at this stage of the EA related to the surface water component of the environment. This work plan has been developed with consideration of the commitments made within the development of the Terms of Reference (ToR). The relevant commitment is provided below in Table 1.

Table 1: Project Commitment from ToR Relevant to Work Plan Development

ID	ToR Commitment
9	During the EA, detailed technical work plans for each of the environmental components will be developed in consultation with the agencies, Indigenous communities and the public. Where relevant, the Township will provide the detailed work plans to the appropriate regulatory agency for review and concurrence prior to undertaking the work.

General Surface Water Existing Conditions

The Boyne Road Landfill Site is located in an area of flat to undraining farmland. A drainage ditch (perimeter drain) was constructed along the west, south and east boundaries of the approved disposal area of the Site (fill area) in 1991. Surface water runoff from the fill area drains into this perimeter drain, which discharges intermittently into the drainage ditch along the north side of Boyne Road, through a culvert located near the northeast corner of the landfill. This drainage ditch flows east and discharges into Black Creek, approximately 1.5 kilometres east of the landfill. Black Creek is a tributary of the East Castor River. Surface water quality along this drainage ditch is regularly **sampled** as part of the regular surface water monitoring program for the Boyne Road Landfill Site.

The Township is located within the South Nation River watershed and overlaps the Upper South Nation, Middle South Nation, and Castor River subwatersheds, all within the regulatory jurisdiction of SNC.

Study Areas for Assessment of 'Alternative Methods' of Landfill Expansion

Data for the EA will be collected and analyzed for generic study areas that will be confirmed and refined during the EA. Preliminary generic study areas considered for the work plan stage of the EA include:

Site Study Area – The existing Boyne Road Landfill Site, located at 12620 Boyne Road, Lot 8, Concession VI. The extent of the Site Study Area includes the lands owned by the Township of North Dundas that consist of the existing Boyne Road Landfill waste footprint and an area 300 metres to the south of the existing waste footprint (the identified potential area for landfill expansion).

Site-vicinity Study Area – The lands in the area immediately adjacent to the Site Study Area that have the potential to be directly affected by the landfill expansion and activities within the Site Study Area. The extent of the Site-vicinity Study Area will be determined for each of the environmental components. For most environmental components, a Site-vicinity Study Area of 500 metres from the Site Study Area is appropriate.

Wider Study Area – An area that takes on the broader community generally beyond the immediate site-vicinity and for specific environmental components may include the entirety of the Township of North Dundas as appropriate.

The proposed preliminary study areas for the surface water component are presented in Table 2.

Table 2: Proposed Preliminary Study Areas for the Surface Water Component

Environmental Component (Criteria)	Preliminary Area(s) to be Studied	Rationale
Surface Water	Site Study Area and Site-vicinity Study Area	Necessary to include the drainage boundaries of the subwatersheds within which the site is located.

Surface Water Work Plan

The surface water component will be assessed for the potential effects of the undertaking based on the criteria, indicators and methodology as presented in Table 3 below.

It is expected that the work plan, and associated criteria, indicators and data evaluation methods could be further refined during the EA as a result of consultation activities and/or additional information.

Table 3 Surface Water Component Work Plan

Sub-Component (Criteria)	Rationale	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Surface Water Quality	Contaminants associated with the landfill expansion and associated operations could seep or runoff into surface water and adversely affect water quality and aquatic life.	• Expected effect on surface water quality in the drainage ditch along Boyne Road and within the site-vicinity.	• Extensive field investigations and hydrogeological assessments have been completed for the existing landfill site since 2001. • Review results of existing surface water monitoring program. • No additional field work expected based on available information.	• Identify the differences that may impact changes in surface water quality, such as expansion area layout and location . • Estimate qualitatively how the differences will affect the surface water quality. • Rank each 'Alternative Method' based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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.	• Boyne Road Landfill Design and Operations Report. • Boyne Road Landfill Annual Monitoring Reports. • Historical flow observations during sampling program. • Surface water drainage mapping. • Topographic maps. • Air photos. • Published water quality information from the MECP, Environment Canada and SNC.

Sub-Component (Criteria)	Rationale	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Surface Water Quantity	Operations associated with the landfill expansion could alter runoff and peak flows	• Expected change in runoff to, and peak flows in, drainage features. • Expected degree of off-site effects on surface water quantity within the site-vicinity	• Review existing surface water management features and practices. • No additional field work expected based on available information.	• Identify the differences that may impact changes in surface water quantity such as expansion area, expansion location, proposed side slopes of the landfill, and potential effects on the existing drainage ditch adjacent to the landfill footprint. • Estimate qualitatively how the differences may affect the surface water quantity. • Rank each 'Alternative Method' based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 and prepare EA level design for stormwater management system. • Modeling of proposed stormwater management system and comparison with MECP specific design criteria.	• Boyne Road Landfill Design and Operations Report. • Boyne Road Landfill Annual Monitoring Reports. • Historical flow observations during sampling program. • Surface water drainage mapping. • Local climate data. • Topographic maps. • Air photos. • Published water quantity and flow information from the MECP, Environment Canada and SNC. • Agricultural farm drain mapping.

Closure

Golder is seeking concurrence and/or comments on the above described work plan for the evaluation of 'Alternative Methods' for the geology and hydrogeology component of the Township of North Dundas Waste Management Plan EA from the MECP and SNC. Golder will be in touch to coordinate a conference call to discuss the work plan.

Golder Associates Ltd.

Doug Kerr, P.Eng.
Associate

RM/PAS/PLE/DK/sg
\\golder.gds\gal\ottawa\active\2016\3 proj\1648253 township of north dundas boyne landfill exp ea\9 - ea technical studies\3 surface water\work plan\1648253-sw work plan may 27, 2021.docx

CC: Doug Froats, Township of North Dundas
Adam Sanzo, Project Officer, EA Services, MECP
Solange Desautels, Supervisor Central and East Unit, EA Services, MECP
Ruth Orwin, APEP Supervisor, Technical Support Section, Eastern Region, MECP
Candice McKay, Senior Environmental Officer, Cornwall Area Office, MECP

Appendix G2 Meeting Summaries, Comments

GOLDER
MEMBER OF WSP

TOWNSHIP OF
North Dundas

From:	Kircher, Ross (MECP)
To:	Merza, Header (MECP); McDonald, Robert; Smith, Kevin A. (MECP); Orwin, Ruth (MECP)
Cc:	dfroats@northdundas.com; Sanzo, Adam (MECP); Desautels, Solange (MECP); McKay, Candice (MECP); Orwin, Ruth (MECP); McEvoy, Jamie; Tomaselli, Joe; Marcerou, Yannick; 1648253, Township of North Dundas Environmental Assessment
Subject:	RE: Draft Meeting Summary (June 10, 2021) Atmosphere Component Work Plan - Environmental Assessment of the Township of North Dundas Waste Management Plan
Date:	June 23, 2021 10:37:04 AM
Attachments:	image001.png image003.png

EXTERNAL EMAIL

Good morning,

I have no comments or revisions to the attached summary.

Best Regards,

Ross

Ross Kircher, P.Eng
Air Quality Analyst I Eastern Region I Ministry of the Environment, Conservation & Parks
B 613-549-4000 ext. 2677
C 613-561-9510
ross.kircher@ontario.ca

From: Merza, Header (MECP) <Header.Merza@ontario.ca>
Sent: June 22, 2021 10:03 PM
To: McDonald, Robert <Robert_McDonald@golder.com>; Kircher, Ross (MECP) <Ross.Kircher@ontario.ca>; Smith, Kevin A. (MECP) <Kevin.A.Smith@ontario.ca>
Cc: dfroats@northdundas.com; Sanzo, Adam (MECP) <Adam.Sanzo@ontario.ca>; Desautels, Solange (MECP) <Solange.Desautels@ontario.ca>; McKay, Candice (MECP) <Candice.McKay@ontario.ca>; Orwin, Ruth (MECP) <Ruth.Orwin@ontario.ca>; McEvoy, Jamie <Jamie_McEvoy@golder.com>; Tomaselli, Joe <Joe_Tomaselli@golder.com>; Marcerou, Yannick <Yannick_Marcerou@golder.com>; 1648253, Township of North Dundas Environmental Assessment <117046@golder.com>
Subject: RE: Draft Meeting Summary (June 10, 2021) Atmosphere Component Work Plan - Environmental Assessment of the Township of North Dundas Waste Management Plan

Hi,

Please se attachment with my two comments noted in the text.

Regards,

Header Merza, P.Eng.
Senior Noise Engineer

Provincial Officer #1653

Approval Services Section – Noise
Environmental Permissions Branch
Ministry of the Environment, Conservation & Parks
Environmental Assessment & Permissions Division
135 St. Clair Avenue West, 1st Floor
Toronto ON M4V 1P5
Tel: (416)327-6575 Fax: (416)314-8452
E-mail: header.merza@ontario.ca

If you have any accommodation needs or require communication supports or alternate formats, please let me know.

Si vous avez des besoins en matière d'adaptation, ou si vous nécessitez des aides à la communication ou des médias substituts, veuillez me le faire savoir.

From: McDonald, Robert <Robert_McDonald@golder.com>
Sent: Thursday, June 17, 2021 11:56 AM
To: Kircher, Ross (MECP) <Ross.Kircher@ontario.ca>; Merza, Header (MECP) <Header.Merza@ontario.ca>; Smith, Kevin A. (MECP) <Kevin.A.Smith@ontario.ca>
Cc: dfroats@northdundas.com; Sanzo, Adam (MECP) <Adam.Sanzo@ontario.ca>; Desautels, Solange (MECP) <Solange.Desautels@ontario.ca>; McKay, Candice (MECP) <Candice.McKay@ontario.ca>; Orwin, Ruth (MECP) <Ruth.Orwin@ontario.ca>; McEvoy, Jamie <Jamie_McEvoy@golder.com>; Tomaselli, Joe <Joe_Tomaselli@golder.com>; Marcerou, Yannick <Yannick_Marcerou@golder.com>; 1648253, Township of North Dundas Environmental Assessment <117046@golder.com>
Subject: Draft Meeting Summary (June 10, 2021) Atmosphere Component Work Plan - Environmental Assessment of the Township of North Dundas Waste Management Plan

Hello all,

Attached is the Draft Meeting Summary from the Atmosphere Component Work Plan Review, which took place on June 10, 2021.

Attendees, please provide any comments or revisions to the attached meeting summary and **return to me by no later than June 24, 2021.** After this date, the summary will be updated and all comments from the review of the work plan included in the meeting summary will be considered as final.

Thank you,

Robert McDonald (M.A.Sc., E.I.T.)
Geo-environmental Consultant

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
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LinkedIn | Instagram | Facebook | Twitter

Work Safe, Home Safe

Environmental Assessment of the Township of North Dundas Waste Management Plan (EA file: E0007-21)

Atmosphere Component Work Plan Review

Meeting Summary

June 10, 2021
15:00 – 16:05
Microsoft Teams Meeting

Meeting Chair: Trish Edmond (Golder)

Record Keeper: Rob McDonald (Golder)

Attendees: Trish Edmond (Golder), Rob McDonald (Golder), Jamie McEvoy (Golder), Joe Tomaselli (Golder), Kevin Smith (MECP), Ross Kircher (MECP), Header Merza (MECP)

Summary of Discussion	
1.	Golder provided a summary of the background, history and current status of the EA project. The nature of the existing landfill, the ToR process, and details of existing landfill property and neighbouring properties were summarized. Noted that the service area for the landfill is not expanding and the only increase in volume of waste received on site will be due to population increase over time.
2.	Header Merza (HM) provides insight on MECP Noise requirements and assessment procedure: • Can ignore points of reception for assessment located inside site property. Any property outside of site, that is zoned for sensitive land use is to be assessed. • Regarding vacant lots, new noise control measures, if required, can be deferred until lot is developed. • Assessment range of 1000 m is typical. Need not assess all receptors within 1000 m but can pick representative receptors in this range. • Assessment should be in accordance with 1998 Landfill Noise MECP Guideline and NPC 300.
3.	Existing and expanded landfill site would not meet requirements for landfill gas capture and hence doesn't have nor is planned to have a flare. Site does not have an existing Air ECA. It is presently unknown if the landfill expansion will require an air ECA. The team will check the requirements of O. Reg. 524 to confirm.
4.	Noise mitigation for landfill expansion along the haul route is likely not feasible considering the low number of trucks expected and required on site. HM prefers assessment to follow 1998 Landfill Noise MECP Guideline with reference to traffic and other equipment with limits.
5.	HM advises: • Do not give ranges of impact for stationary noise sources; refer to regulatory limit only. • Do not perform relative comparison. This assessment would not be in accordance with 1998 MECP guideline or NPC300 and comments would be provided by MECP if this approach is selected.

	JT (Golder) notes relative comparison is helpful for socio-economic assessment where an understanding of potential change on residential properties is required even though regulatory limits are met.
6.	JT (Golder) notes that haul route analysis for noise will be limited to Boyne Road. HM agrees, notes that hourly number of trucks will control the potential impact. If this is a small site and hourly number of trucks is low, the noise impact will likely be low. HM suggested that existing traffic (with landfill) should be compared to the 'no landfill' conditions.
7.	RK (MECP) notes: • Considering EA process (and ECA approval process), it is suggested that EA be front loaded with receptor grid for air quality assessment so that Section 9 Approval may follow EA. • Odour assessment does not need grid assessment and should be done only for nearest sensitive receptor(s). • It is suggested that additional components be added to list of indicator compounds (i.e. compounds anticipated from landfill without a flare). Compounds currently listed are likely sufficient, but not complete without key contaminants (e.g. tailpipes)
8.	TE (Golder) The team will need to review if a Section 9 Approval is required after the EA. RK (MECP) notes: For Section 9 Approval, other key emissions from landfill (such as benzene) would be ideal. Compounds may be screened out if sufficient rationale is provided and Golder can make the decision on what to submit.
9.	RK (MECP): Comparison of the preferred alternative method should be made to "baseline" (i.e. no build scenario) or background concentrations of identified compounds. • JM/JT (Golder) notes that the typical (and planned) approach is to do a 'semi-quantitative' assessment utilizing local air quality monitoring data to provide a qualitative discussion with quantitative data. • RK confirms this approach is acceptable.
10.	RK (MECP): Is landfill gas collection anticipated in expanded envelope? TE (Golder): Although landfill gas collection could be considered, it is not expected to be required and hence unlikely.

All attendees have reviewed this meeting summary and have confirmed these comments on the Atmosphere work plan review.

TOWNSHIP OF
North Dundas

Ministry of Environment, Conservation and Parks
Environmental Assessment and Permissions Division
Environmental Permissions Branch
Noise Approvals
135 St Clair Avenue West,
Toronto, ON
M4V 1P5
Attention: Header Merza, Senior Noise Engineer

Dear Mr. Header Merza,

The Township of North Dundas (the Township) is currently undertaking an Individual Environmental Assessment (EA) for the waste management plan (EA Study) that requires approval under the provincial Environmental Assessment Act (EAA). This EA has been completed and will be submitted to the Ministry of Environment, Conservation and Parks (MECP) following the approved Terms of Reference (ToR) as required by subsection 6.1(1) of the EAA, and in accordance with the requirements of subsection 6.1(2) of the EAA.

The rationale for the EA Study is that as part of a previous application procedure intended to update a number of items related to site operations and amend the Township's Boyne Road Landfill's Environmental Compliance Approval (ECA) located at 12620 Boyne Rd, Winchester, ON K0C 2K0 (the Landfill), the MECP determined that the Landfill had exceeded its approved capacity and is in an overfill situation. It is this overfill situation that triggered the need for the EA process. The Township evaluated long term waste management alternatives, with the EA Study . The result of the comparative evaluation was that expansion of the existing Landfill, together with current and future waste diversion activities, was identified as the Township's preferred long-term waste management alternative.

One of the several technical studies being prepared for the EA Study is the noise impact assessment. On Monday December 13, 2021, there was a conference call between yourself, the assigned MECP reviewer for the EA Study, the Environmental Assessment Services MECP Project Officer and Golder Associates regarding the identification of Points of Reception (PORs) for the purposes of the noise impact assessment, and specifically the Townships current land use planning policy. The following is a summary of key items discussed during the conference call:

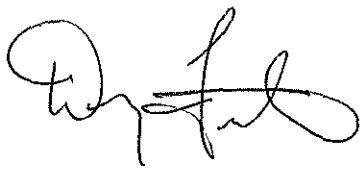
- The Township currently follows the United Counties of Stormont, Dundas, and Glengarry Official Plan (the Official Plan). According to the Official Plan, most lands in the vicinity of the Landfill are zoned as "Rural District". This land use designation allows for noise sensitive land uses.

- Noise sensitive PORs were identified through a desktop review in accordance with "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning Publication NPC-300" (NPC-300). As per NPC-300, a noise impact assessment is carried out at both existing and vacant lot noise sensitive PORs.
- The Official Plan states *"Development within 500 metres of an existing waste management system shall generally be discouraged unless supported by an appropriate study or studies which confirm that there will be no negative impacts on the proposed development related to current uses/activities associated with the normal operation of the waste management system."*. The Township will be revisiting their zoning bylaws in 2022, requiring the minimum separation distance of 500 m between the Landfill and noise sensitive land uses as defined in NPC-300, be applied to any proposed development in the vicinity of the Landfill. In the interim, the Township has adopted this requirement.
- The land directly adjacent to the east of the Landfill is owned by the Township and vacant. The Township will not permit noise sensitive land uses on these lands even though zoned as "Rural District" since they are within 500 m of the Landfill.
- The lands located to the northwest, west and southwest are identified as 'Contamination Attenuation Zone' (CAZ) and vacant. These lands are not owned by the Township, but the Township has control over the groundwater rights through easement agreements; as such, a water supply well cannot be drilled on these lands, thereby eliminating potential development on these vacant lands by a noise sensitive use. Therefore, the Township will not permit noise sensitive land uses on these CAZ lands since potable water supply is not permitted and also the CAZ lands are within 500 m of the Landfill.

As requested by you during the conference call, please accept this letter as confirmation the Township will not permit a noise sensitive land use within 500 m of the Landfill or within the existing or any future CAZ. Therefore as agreed upon during the conference call, the EA Study noise impact assessment will not require an assessment be carried out at noise sensitive PORs within 500 m of the Landfill or within the existing or any future CAZ.

We believe this letter summaries our recent discussion but please let us know otherwise and if you require any further clarification or additional information.

Thank You,



Doug Froats
Director of Waste Management

cc. Trish Edmond, Golder Associates Ltd.
Jordan Hughes, MECP Project Officer

From: Snell, Shamus (MECP) <Shamus.Snell@ontario.ca>
Sent: December 18, 2020 10:32 AM
To: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Subject: RE: MECP SARB Review: Boyne Landfill Scope of Work

Hi Gwendolyn,

If you believe that there is no habitat for Bobolink or Eastern Meadowlark on site and you support that decision with the results of the ELC survey then that is an agreeable approach. My suggestion of a survey is only a recommendation as I do not know the details of the habitat on site or potential impacts of the project. In addition, such survey information can useful if you have to submit an Preliminary Screening or Information Gathering Form.

In regards to stem/snag surveys I am referencing maternity and day roosts surveys which are generally performed if a proposed project is unable to avoid negative impacts (contravention of s. 9 and/or s. 10 of the ESA) to treed habitats potentially supporting species at risk maternity and day roosts. Again, this is only a recommendation as I do not know the details of the habitat on site and how the proposed activity may impact them or what the results of your acoustic surveys suggest for species occurrences. The requirement for and intensity of species at risk bat surveys depends upon the anticipated impact of a proposed activity on bats and bat habitat.

If the proposed project is expected to negatively impact (e.g. remove, stub, etc.) 'a small number' of potential maternity or day roost trees in treed habitats, but the timing of tree removal will avoid the bat active season (April 1 – September 30 in Southern Ontario / May 1 to August 31 in Northern Ontario), then there is no need to conduct species at risk bat surveys of treed habitats. 'A small number' may vary geographically as the availability of other nearby maternity and day roost trees differs across the province of Ontario.

For reference I have attached the protocol for "Treed Habitats – Maternity Roost Surveys"

- Important additions and exceptions to this protocol:
  - In Step 1, the Ecological Land Classification (ELC) codes provided are meant to provide guidance, however any area with suitable trees should be considered potential maternity or day roost habitat. In areas where ELC is unavailable, the project area will need to be mapped by a qualified professional experienced in ecosite classification.
  - Trees with a diameter at breast height (DBH) **>10 cm** (not >25 cm) are considered potential maternity or day roost habitat. , however smaller diameter trees (>10 cm DBH) may provide habitat for tri-colored bat. Please contact MECP for further advice if tri-colored bats are identified or assumed present. Detailed descriptions of tree species, size and age composition and attributes are very helpful for evaluating the value of specific treed habitats to species at risk bats.
  - Step 2: Snag Density Calculations – Field visits to determine best locations for deploying Acoustic Monitoring Systems are encouraged. However, snag density may also be calculated by following methods in Step 5: Detailed Mapping of Snag/Cavity Trees and does not necessarily need to precede acoustic monitoring (Steps 3 and 4).
  - Note that Step 5: Detailed Mapping of Snag Cavity Trees is important to quantify the magnitude of impacts to bat species at risk under an ESA permitting scenario. This information may also be used to inform activity alternatives that reduce and/or completely avoid impacts to bat species at risk.
  - For large projects impacting greater than 10 ha of treed habitat, we recognize following this protocol is likely not feasible. In these situations, we fully expect clients to apply some method of sampling/sub-sampling landscapes, where ELC plots, snag density calculations, and acoustic monitoring occur in randomly selected or representative locations. Information obtained from the sample may then be extrapolated to the entire project footprint to inform the final impact assessment. In cases where acoustic monitoring surveys are not performed, species at risk bat maternity roosts will be assumed present in all habitats containing trees >10 cm DBH.

Regards,

Shamus Snell
A/ Management Biologist
Species at Risk Branch
Ministry of the Environment, Conservation and Parks
Email: shamus.snell@ontario.ca

From: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Sent: December 17, 2020 12:24 PM
To: Snell, Shamus (MECP) <Shamus.Snell@ontario.ca>
Subject: RE: MECP SARB Review: Boyne Landfill Scope of Work

Hi Shamus,

Thanks for the information you provided relating to our Terms of Reference.
There is no suitable habitat for BOBO or EAME on the expansion site itself, as the open fields were row crops. We do not anticipate any impacts to habitats for these species on adjacent lands resulting from the proposed expansion, and the crops in the area were again row crops. This is why we did not perform targeted surveys for these species. Please confirm that you agree with this approach.

As it relates to the SAR bats, please elaborate on what the MECP will be looking for with respect to the stem surveys mentioned in your email. We assume these surveys should be performed in winter when the trees and limbs are more visible.

Many thanks,

-Gwendolyn

From: Snell, Shamus (MECP) <Shamus.Snell@ontario.ca>
Sent: December 16, 2020 10:56 AM
To: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Subject: MECP SARB Review: Boyne Landfill Scope of Work

EXTERNAL EMAIL

Hi Gwendolyn,

The Ministry of the Environment, Conservation and Parks (MECP) Species at Risk Branch (SARB) has conducted review of the proposed scope of work for Species at Risk (SAR) investigations at the possible Boyne landfill expansion site and has the follow comments and recommendations.

As part of this review the SARB exmained the proposed and completed studies to check if they were sufficient to detected all potential occurrences of SAR on or adjacent to the site. It is noted that observations of Bobolink (*Dolichonyx oryzivorus*) and Eastern Meadowlark (*Sturnella magna*) occur but no species specific surveys have been conducted or are proposed. It is recommended that species specific surveys be conducted for Bobolink and Eastern Meadowlark.

Numinous observations Barn Swallow (*Hirundo rustica*) have been detected overlapping the site. If the there are any structures or buildings onsite which have the potential to be impacted by the proposed landfill expansion they should be surveyed for the presence of Barn Swallow nests.

If SAR bats are detected during the acoustic surveys, stem surveys should be performed to help determine the amount of potential nursery habitat on site.

It is recommended that any observations of SAR which are encountered during surveys be reported Natural Heritage Information Center so that they can import it into the provincial database. The link and instructions on how to do this can be found here www.ontario.ca/page/report-rare-species-animals-and-plants, or an email with the observation details (i.e. date, time, location) can be sent directly to NHICrequests@ontario.ca.

Regards,

Shamus Snell
A/ Management Biologist
Species at Risk Branch
Ministry of the Environment, Conservation and Parks
Email: shamus.snell@ontario.ca

From: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Sent: December 14, 2020 4:14 PM
To: Snell, Shamus (MECP) <Shamus.Snell@ontario.ca>
Subject: RE: Boyne Landfill Environmental Assessment - SAR Information Request

Hi Shamus,
Yes, we are still hopeful of obtaining input.
Please find attached the original email.
Many thanks,
-Gwendolyn

From: Snell, Shamus (MECP) <Shamus.Snell@ontario.ca>
Sent: December 14, 2020 10:37 AM
To: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Subject: RE: Boyne Landfill Environmental Assessment - SAR Information Request

Hi Gwendolyn,

Due to a high volume of requests received during the transition of the Endangered Species Act from the Ministry of Natural Resources and Forest (MNRF) to the Ministry of Environment, Conservation and Parks (MECP) some requests which came into our office during that time may not have been followed up on. I am working though some of these requests to ensure that someone has reached out to you and if not to check to see if your request for review is still active. If it is still active could you please resend your attached memo report as I was unable to open it from the original email.

My apologies if no one from our office has reached out to you sooner.

Regards,

Shamus Snell
A/ Management Biologist
Species at Risk Branch
Ministry of the Environment, Conservation and Parks
Email: shamus.snell@ontario.ca

From: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Sent: October 30, 2019 11:11 AM
To: Species at Risk (MECP) <SAROntario@ontario.ca>
Cc: Edmond, Trish <Trish_Edmond@golder.com>; Hanschell, Jessica <Jessica_Hanschell@golder.com>
Subject: Boyne Landfill Environmental Assessment - SAR Information Request

Hi There,
Please find attached a work plan for species at risk studies associated with the Environmental Assessment for the Township of North Dundas Waste Management Plan being conducted for the Township of North Dundas. Please review the attached information and contact me to discuss at your convenience. We look forward to working with the MECP to ensure all studies necessary are undertaken.
Many thanks,
-Gwendolyn

Gwendolyn Weeks (H.B.Sc.Env.)
Ecologist

Golder Associates Ltd.
1931 Robertson Road, Ottawa, Ontario, Canada, K2H 5B7
T: +1 613 592 9600 | **D:** +1 (613) 592-9600 x4234 | **C:** +1 (613) 913-1179 | **golder.com**
LinkedIn | Facebook | Twitter

Work Safe, Home Safe

From: Weeks, Gwendolyn
Sent: February 5, 2021 12:17 PM
To: Lee, Scott (MNRF)
Cc: Marcerou, Yannick
Subject: FW: North Dundas Waste Management Plan - Natural Environment Work Plan
Attachments: North Dundas Waste Management Plan - Natural Environment Work Plan

Importance: High

Hi There,
I am just following up on the email below. We have received comments from MECP regarding SAR, but I am just looking for confirmation that the MNRF had no comments on the work plan (attached)?
Many thanks,
-Gwendolyn

From: Weeks, Gwendolyn
Sent: December 17, 2020 4:30 PM
To: Dillon, Mary (MNRF) <Mary.Dillon@ontario.ca>
Cc: Marcerou, Yannick <Yannick_Marcerou@golder.com>; Lee, Scott (MNRF) <scott.lee@ontario.ca>
Subject: RE: North Dundas Waste Management Plan - Natural Environment Work Plan

Hi Mary,
Attached is the previous email that contains the workplan.
We look forward to receiving any comments on the work plan from the MNRF. As noted, we have submitted a workplan specific to SAR to the MECP.
All the best and Happy Holidays!
-Gwendolyn

From: Dillon, Mary (MNRF) <Mary.Dillon@ontario.ca>
Sent: December 17, 2020 2:04 PM
To: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Cc: Marcerou, Yannick <Yannick_Marcerou@golder.com>; Lee, Scott (MNRF) <scott.lee@ontario.ca>
Subject: RE: North Dundas Waste Management Plan - Natural Environment Work Plan

EXTERNAL EMAIL

Hi Gwendolyn,

I am sorry but I cannot find your October 30th message in my email though from the string below it seems the address was correct.

I moved into a new position in May and am no longer a Planner in Kemptville. I forwarded Yannick's September email about the Notice of Commencement to the District, but I do not think I forwarded your October email as I have no record. I have copied Scott Lee here and he can advise on any District input.

I am sorry to everyone for the delay.

Mary

Mary Dillon (she/her)
Planning Ecologist
Integrated Aggregate Operations Section, Regional Operations Division
Ministry of Natural Resources and Forestry
613-355-2996, mary.dillon@ontario.ca

From: Weeks, Gwendolyn <Gwendolyn_Weeks@golder.com>
Sent: December-17-20 12:46 PM
To: Dillon, Mary (MNRF) <Mary.Dillon@ontario.ca>
Cc: Marcerou, Yannick <Yannick_Marcerou@golder.com>
Subject: RE: North Dundas Waste Management Plan - Natural Environment Work Plan

Hi Mary,
Just checking in to see if the MNRF had any comments on our Terms of Reference? As noted, we sent one specific to SAR to the MECP and have received comments.
Many thanks,
-Gwendolyn

From: Weeks, Gwendolyn
Sent: October 30, 2019 11:16 AM
To: Dillon, Mary (MNRF) <Mary.Dillon@ontario.ca>
Cc: Edmond, Trish <Trish_Edmond@golder.com>; Hanschell, Jessica <Jessica_Hanschell@golder.com>
Subject: North Dundas Waste Management Plan - Natural Environment Work Plan

Hi Mary,
Please find attached a work plan for significant natural feature studies associated with the Environmental Assessment for the Township of North Dundas Waste Management Plan being conducted for the Township of North Dundas. If you recall, you reviewed the Terms of Reference for this project previously, and we have prepared the attached work plan for your review and comment. We have contacted the MECP directly regarding our proposed SAR work plan. Please review at your convenience and provide comment as needed. I am available by phone or email if you would like to discuss any aspects of the attached material.
Many thanks,
-Gwendolyn

Gwendolyn Weeks (H.B.Sc.Env.)
Ecologist

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Work Safe, Home Safe

Ministry of the Environment, Conservation and Parks
Eastern Region
1259 Gardiners Road, Unit 3
Kingston ON K7P 3J6
Phone: 613.549.4000
or 1.800.267.0974

Ministère de l'Environnement, de la Protection de la nature et des Parcs
Région de l'Est
1259, rue Gardiners, unité 3
Kingston (Ontario) K7P 3J6
Tél: 613 549-4000
ou 1 800 267-0974

Ontario

M E M O R A N D U M July 9, 2021

TO: R. Orwin, Air, Pesticides, Environmental Planning Supervisor
Technical Support Section, Eastern Region

FROM: B. Gilbert, Surface Water Specialist
Technical Support Section, Eastern Region

RE: Boyne Road Waste Disposal Site
Lot 8, Concession 4, Former Township of Winchester
Township of North Dundas, United Counties of Stormont, Dundas and Glengarry
Certificate of Approval No. A482101

As requested by you, I have reviewed the following document:

- Draft Surface Water Component Workplan, Environmental Assessment, The Township of North Dundas Waste Management Plan, dated July 2, 2021. Project No.: 1648253. Prepared by Doug Kerr, P.Eng. of Golder Associates Ltd.

I offer the following comments for your consideration with respect to surface water impact issues only. Comments on groundwater issues are addressed under separate cover by a Regional Hydrogeologist. It is understood that an equivalent letter has been prepared by GAL and circulated to the Regional Hydrogeologist.

Background Information

The Boyne Road waste disposal site (WDS) operates under Provisional CofA A482101. The site has been operating since 1965. The site is 8.1 hectares, with additional lands for use as buffer and contaminant attenuation zones. In 2014, the site was recognized as exceeding its approved capacity. Various notices have been issued to allow the site to continue to operate. Most recently, Notice No. 11 dated January 14, 2020 allows for the continued use of the site for landfilling until the final waste elevation is attained as described in the 2013 Design and Operations Plan.

The Boyne Road WDS is the only operational WDS in the township of North Dundas. A Proposed Terms of Reference (TOR) document has been reviewed by Reginal Technical Support staff. The TOR document provided a framework for completion of an Environmental Assessment (EA) to evaluate waste management alternatives and a preferred solution.

GAL reports that the EA has proceeded to the point of identifying that landfill expansion has been identified as the preferred alternative. To fulfil commitments made in the TOR, the proponent is providing detailed technical workplans for each of the environmental components for concurrence and/or comments from appropriate regulatory agencies.

The above noted document proposes the detailed work plan for the surface water component of the Environmental Assessment of the Township of North Dundas Waste Management Plan. The document is submitted for review by the MECP, the South Nation Conservation Authority and the Raisin Region Conservation Authority.

At present, the site is approved for the disposal of solid non-hazardous municipal wastes. The site is operated as a natural attenuation facility, with no engineered liner and/or leachate collection system.

I offer the following comments for your consideration with respect to surface water impact issues only:

Comments

1. The proposed preliminary areas to be studied appear reasonable. This includes the snow dump facility to the north of the landfill and the watercourse to the southwest of the potential expansion area.

2. In addition to reviewing the results of the existing surface water monitoring program for the Boyne Road landfill, the workplan intends to provide an impact assessment from the snow dump facility including evaluation of surface water flow in and around the snow dump. This is reasonable. The aim should include identifying any drainage pathways from the snow storage facility in relation to the landfill surface water monitoring stations at a time of year when snowmelt runoff is anticipated. Another consideration would be any potential ground-surface water interaction contributions from the snow dump to the drainage ditch along the north side of Boyne Road.

3. The workplan intends to obtain a sample for analysis if enough surface water is available for sampling in the watercourse (Quart Municipal Drain) located to the south west of the existing footprint. This is reasonable. In the long-term, it would be beneficial for a baseline dataset to be developed prior to waste being deposited, should the proposed expansion area to the south of the existing footprint be approved.

4. The 2020 Annual Monitoring Report for the Boyne Road landfill acknowledged that the use of chloride as a leachate indicator in surface water is complicated by the snow storage facility and road salting along Boyne Road, as is the case for hardness. For surface water impact purposes a number of the leachate indicators (chloride, conductivity, hardness, BOD, iron, and phenols) are not likely to be exclusively related to the landfill impact given other potential sources in the area (natural soil conditions, agricultural runoff, road salt, snow disposal facility, and natural break down of vegetative matter in the road side ditch). As such, additional leachate indicators should be explored. Per- and poly-fluoroalkyl substances (PFAS) are a group of parameters that are associated with landfill leachate and should be considered in surface water to identify the extent of leachate impact in surface water and distinguish it from other sources.

5. The workplan intends to update the trigger mechanism and surface water monitoring program, if required. Any changes to the trigger mechanism or surface water monitoring program would require consultation and concurrence with a Regional Surface Water Specialist.

6. With regard to the Evaluation of 'Alternative Methods' for the surface water quantity component, the workplan would benefit from evaluating the potential change in erosion and sedimentation effects on the perimeter drainage ditch which may result from the changes in surface water quantity conveyed/generated under the different 'alternative method' scenarios.

The proposed Surface Water Workplan is generally acceptable from a surface water impact perspective so long as the above comments are considered and addressed.

Thank you for the opportunity to comment. Please do not hesitate to contact me if you have any questions about these comments.

"*Original Signed by*"

Beth Gilbert, M.Sc.

BG/bg

ec: J. Mahoney, Technical Support Section Manager, Acting
V. Castro, Water Resources Unit Supervisor, Acting
M. Seguin, Cornwall Area Supervisor
C. McKay, Senior Environmental Officer
S. Desautels, Supervisor Environmental Assessment Services Section
Y. Marcerou, Environmental/Waste Engineer, Golder Associates

c: T. Guo, Regional Hydrogeologist
File SW ST ND 03 06 C4 (Boyne Road Landfill Site)
File SW 13 06 07 02 BL (Black Creek, South Nation River Basin)
BG ECHO# 1-46291652

GOLDER
MEMBER OF WSP

MEETING SUMMARY

June 23, 2021
15:00 – 16:10
Microsoft Teams Meeting

Groundwater and Surface Water Components Work Plan Review
Environmental Assessment of the Township of North Dundas Waste Management Plan (EA file: E0007-21)

Meeting Chair: Trish Edmond (Golder)

Record Keeper: Yannick Marcerou (Golder)

Attendees: Trish Edmond (Golder), Yannick Marcerou (Golder), Doug Kerr (Golder), Beth Gilbert (MECP, Surface Water Specialist), Thomas Guo (MECP, Hydrogeologist), Robert Ulfig (MECP, Municipal Water and Wastewater Permissions), Lisa Van De Ligt (Raisin Region Conservation Authority, RRCA), Michelle Cavanagh (South Nation Conservation Authority, SNCA), Michael Melaney (SNCA).

Summary of Discussion	
1.	Trish Edmond (TE, Golder) provided a summary of the background, history and current status of the EA project. The nature of the existing landfill, the ToR process, and details of existing landfill property, the site study area, the site vicinity study area (500m radius, typically the area of most impact) and neighbouring properties were summarized. Noted that the service area for the landfill is not expanding and the only increase in volume of waste received on site will be due to population increase over time. Every discipline will consider their impact study area based on applicable regulations but most will end up close to this 500m area. In 2014, following the submission of a Design and Operations Plan report for the site, an overfill situation was discovered. In 2015, Golder prepared the Waste Management Alternatives Evaluation (WMAE) report which looked primarily at expanding the landfill and closing the site and exporting waste to an approved facility. Waste-to-Energy technology was not deemed to be economically possible for the low volumes considered and opening a new landfill site at another location was deemed to be too complicated. The Township Council reviewed the report and evaluated its options. In 2016, the Township initiated an Environment Assessment (EA) for a landfill expansion. There has been little public interest so far during consultations. During the circulation of the draft Terms of Reference (ToR) on landfill expansion, the MECP changed it to an EA on Waste Management Planning. All options (referred to as 'Alternatives to' the undertaking) were to be evaluated in the EA in a more public way than it was done for the WMAE report. The ToR was approved in the summer of 2020. As part of the ToR commitments, the Township completed a waste diversion study in fall of 2020 which presented some options and their expected impacts on residual volumes for the Township to enhance waste diversion. Technical Bulletin #1 summarized the findings of this study and it was circulated to stakeholders in January 2021. Then in February 2021, the Township circulated Technical Bulletin #2 which presented the result of the 'Alternatives to' evaluation for the EA. The 'Alternatives to' considered are a landfill expansion, closure of the site and export, consideration of areas in the Township suitable to open a new landfill, other technologies, and diversion (TE noted that our society and technologies currently available are

Summary of Discussion	
	not yet ready to divert all waste produced by the Township). The preferred 'Alternative to' was evaluated to be an expansion of the operating landfill, Boyne Road Landfill. TE described the property, its buffer zone to the south, the portion of Boyne Road along the site and across the road to the northeast, as well as the approved Contamination Attenuation Zone (CAZ) to the west and northwest. The landfill expansion is likely to be for approximately 450,000m^3 of additional capacity. With regards to the site hydrogeological conditions, TE mentioned that Chesterville water supply well head protection area extends to parts of the northeast buffer lot. Source Conservation Authorities and MECP source water protection were consulted early on and will continue to be involved in discussions. It was noted that the classification WHPA-D is not subject to Source Water Protection restrictions. The existing landfill site is currently interpreted to be operating in compliance with groundwater Reasonable Use Guideline. Its expansion as a natural attenuation site is interpreted to be also likely possible and in compliance with the Ministry Guidelines (the landfill and its contemplated expansion do not have any engineered feature). Local neighbours' drinking water comes from their own wells. As expected, the landfill expansion will have to comply with Ontario Drinking Water Quality Standards (ODWQS) at the property boundary and the associated CAZ. Groundwater modeling was completed as part of the WMAE report, showing that a landfill expansion can be done and the results of the modeling will be updated and presented in the EA Study to obtain concurrence from the MECP. The site does not currently have a Sewage Works Environmental Compliance Approval (ECA). The proposed landfill expansion will need one for the stormwater control features needed (perimeter ditch, pond, etc.)
2.	Thomas Guo (TG, MECP) indicated that he replaces Shawn Trimper (ST) who is on secondment at the Peterborough District Office (and may come back to the MECP Technical Support Section and could be re-assigned to this file at a later date). TG intends to consult with ST who has more background on the site hydrogeological performance. Beth Gilbert (BG, MECP) indicated that she has been reviewing annual monitoring reports for this landfill since 2012, except for a period of time while she was on maternity leave. Lauren Forrester was reviewing the surface water aspects of those reports during that time.
3.	BG (MECP) asked if the snow disposal facility on northeast buffer zone was within the 500m larger study area as this facility is considered a secondary source of chloride and could impact the list of leachate indicator parameters (LIP). TE (Golder) confirmed that the snow disposal facility was located within this area and will be considered. Any model will have to account for and include the snow disposal facility for prediction of future performance.

Summary of Discussion	
4.	TG (MECP) inquired about the general groundwater flow direction in the overburden and bedrock units. TE (Golder) indicated that groundwater generally flows to the north but it is locally interpreted to be radial in the immediate site vicinity in the overburden, mostly north, west and south. In bedrock, it is variable to flat radial groundwater flow. It was noted that bedrock was not monitored as much as overburden but the adequacy of the monitoring program will be evaluated as part of the EA Study, as described in the groundwater component work plan. TE (Golder) described the overburden at the site: peat, then silty clay, underlain by silty sand. Hydraulic conductivity testing shows overburden to be more permeable than the bedrock unit.
5.	Michael Melaney (MM, South Nation Conservation Authority) asked if the interpretations of flow direction and overburden being more permeable than bedrock at the site were based on leachate indicator parameters concentrations or just falling head tests at the wells (noting that results from these tests were notoriously inadequate for such interpretations). TE (Golder) confirmed that groundwater was being monitored in bedrock and historical analytical results showed lesser concentrations of leachate indicator parameters in bedrock than in overburden wells. Monitoring results therefore support Golder's interpretation and will be presented in the EA study.
6.	Doug Kerr (DK, Golder) presented current surface water conditions at the site, indicating that a municipal drain was present north of Boyne Road, discharging into Black Creek further east. Another drain is present south of the road and a perimeter ditch is present west, south and east of the waste footprint with a discharge point at the culvert located north east of the landfill discharging into the drain on the north side of the road. In 2015, Golder considered in its landfill expansion conceptual design a pond to achieve 80% Total Suspended Solids (TSS) removal, to comply with the March 2003 Stormwater Management Planning and Design Manual. Engineered features to management stormwater will be re-evaluated as part of the EA. The surface water monitoring program includes one background surface water location upstream, another one across the site and one downstream as well as a fourth one located further upstream, requested by the MECP to be added to the monitoring program. All these locations are in the municipal drain north of Boyne Road. As part of the surface water component work plan, Golder will evaluate impacts to surface water. Overburden flow to the north may, at times, discharge into the deeper ditch north of Boyne Road. Golder will also consider impact to the surface water from the snow disposal facility. It was noted that although a temporary excavation was present a few years ago near this facility, it was later filled and graded by the Township. The Township is considering installing a culvert in the drain to isolate surface water from groundwater discharge in the ditch along the section of Boyne Road across the site.

Summary of Discussion	
7.	BG (MECP) noted with regard to groundwater interaction with surface water in the ditch as well as the snow disposal facility that an appropriate suite of parameters should be developed to exclusively represent leachate and isolate impacts from the snow disposal facility. She recommended not to rely only on chloride. DK (Golder) confirms that it will be part of the study. TE (Golder) indicated that although it is not very common to have a snow disposal facility in the vicinity of landfill, road salt impacts are a common occurrence near landfills. The Study will evaluate if leachate indicator parameters that are unique to the landfill and different from the snow disposal facility are available.
8.	DK (Golder) discussed the quantitative aspects of stormwater, indicating that standard drainage areas would be evaluated and peak flow would be reduced by the installation of a stormwater pond at the site. DK confirmed that since the expansion would be in the same watershed, there is no obvious obstacle to achieve compliance with O.Reg. 232/98 and the Ontario Water Resources Act (OWRA). DK (Golder) indicated that a qualitative ranking will be used to choose the preferred option. The pond will be sized based on the preferred 'Alternative Method'.
9.	BG (MECP) noted the presence of the perimeter ditch and confirmed that it is expected to remain for the expansion, although it would have to be expanded south and continue discharging northeast of the site. She also noted the presence of an agriculture drain southwest of the waste footprint and asked about any potential groundwater discharge due to the interpreted radial flow. TG (MECP) concurred with BG (MECP) and confirmed the interpreted radial flow shown in the 2020 Annual Monitoring Report (AMR).
10.	TE (Golder) asked if both conservation authorities wanted to receive for review the site's 2020 AMR. Michelle Cavanagh (MC, South Nation Conservation Authority) confirmed that it would be helpful for them.
11.	TE (Golder) highlighted that the geology and hydrogeology component work plan had one indicator: the expected effect on groundwater quality around the site. It will be used to understand if the expansion can meet regulatory requirements and if there are preference between the different Alternative Methods. Regarding the potential issues raised by the MECP Technical Reviewers and their comments on the AMR (interpreted radial flow, impacts from the snow disposal facility), TE reiterated that the Township already had the bulk of the information needed for a proper Hydrology, Hydrogeology and Geology report, including falling head tests and monitoring data collected over the years. There is currently no plan to collect more field data. However, the EA Study will present all these data more substantively than in the AMR to support the current interpretations. TE (Golder) indicated that the characteristics of each Alternative Method could be used to assess alternatives qualitatively, although it is expected the landfill expansion alternatives will likely be very similar for hydrogeology. TE (Golder) noted that groundwater compliance at the property boundary will be assessed quantitatively only for the preferred 'Alternative Method'. TE (Golder) suggested that the work plan include snow dump impact evaluation.

Summary of Discussion	
12.	MM (SNCA) noted that chloride in groundwater was prevalent across south east Ontario and may not be a great indicator for the site . He indicated that the proposed work plan appears to be reasonable. With regard to groundwater quality in a bedrock unit, he noted that there is usually less storage and less water in these units. Regarding the Source Water Protection aspect of this evaluation, he confirmed that no policies would apply although if contamination moves and contaminates drinking water sources, it cannot be cleaned up later and it would have a long lasting impact. MM (SNCA) commented on the surface water work plan based on his extensive experience with flood plain evaluations and highlighted that 100 year events may not be adequate and a larger storm event may be more relevant. TE (Golder) replied that climate change needs to be taken into consideration in the EA and indicated that it mostly impacts the stormwater management aspect of this study. DK (Golder) confirmed that Golder could consider models other than the usual 100 year event that is required in O.Reg. 232/98. TE (Golder) responded with regard to the use of chloride as an LIP that it was a generally a good LIP because it does not attenuate (therefore it is usually the first one to reach boundaries) but Golder will be evaluating the pertinence of other LIP to calibrate its model.
13.	TG (MECP) indicated that based on his review of the 2020 AMR, April and August groundwater flow figures both showed radial flow and recommended to confirm groundwater flow directions. He insisted that it was very important for this study to have a good understanding of it, especially for the southern part of the site, where the expansion is considered. He recommended consideration of measuring water levels during other times of the year to better determine flow directions. He suggested considering an expansion of the landfill on the property located north of Boyne Road. TE (Golder) confirmed that hydrological conditions will be better presented in the study. She also indicated that Golder will consider a potential expansion to the property north of Boyne Road noting that landfill expansions touching or vertically above existing landfills are more common. TG (MECP) also highlighted that an expansion to the south may require more CAZ south of the site, beyond the current buffer zone. TG (MECP) also noted that the team should ensure that the proposed expansion will be able to receive Environmental Protection Act approval once the EA is completed and approved.
14.	TE (Golder) indicated that Golder will prepare a summary of the discussions and revise the work plans accordingly. She asked if participants intended to submit written comments. BG (MECP) confirmed that she would prefer to submit written comments to the EA Review Team. If Golder intends to revise the work plan, she will comment on revised version. TE (Golder) acknowledged that the revised work plans will be submitted for review with the meeting summary and will be documented as consultation in the EA.
15.	BG (MECP) asked to identify any surface water drainage pathway for the snow disposal facility and suggested that a field component be added for it. She also reiterated that a better LIP is needed to separate interpretation from snow disposal facility impacts and additional parameters should therefore be explored. TE (Golder) highlighted that impacts from the snow disposal facility are already considered in the AMR and no permanent drainage is in place around snow disposal facility.

Summary of Discussion	
16.	TG (MECP) asked if the MECP abatement officer for the site, Candice McKay (MECP Cornwall Area Office), had been invited for the call. TE (Golder) confirmed that she was invited and will be receiving the meeting summary. TG (MECP) indicated that Golder should direct everything to her as she is the coordinator for the site. TE (Golder) replied that because this is an EA, the project team is supposed to go through the MECP EA Branch rather than the abatement officer for the site. However, the MECP project officer Adam Sanzo (MECP EA Branch) is on leave. Adam Sanzo's supervisor Solange Desautels gave the go ahead for Golder to coordinate this meeting in Adam's absence. Ruth Orwin (MECP Technical Section APEP) and Candice McKay were made aware of this consultation but declined attending. Since this is an EA and Ruth Orwin would generally coordinate Technical Section Comments it would makes sense that any comments are provided to her. TE indicated that feedback from the MECP Technical Section was welcomed but we did not necessarily require it in written form and their verbal comments from this meeting and the summary would be sufficient. BG (MECP) reiterated that comments will be provided on the meeting summary and the formalized work plan. She will brief Ruth Orwin about it and provide her comments to her.
17.	MC (SNCA) indicated that all documents should be send to James Holland (SNCA) who will forward in his team appropriately. TE (Golder) acknowledged that documents (including the 2020 AMR) will be sent to the two points of contacts for the two Conservation Authorities: James Holland and Lisa Van De Ligt.

Appendix G3 Detailed Work Plans

Draft Report
May 2022

GOLDER
MEMBER OF WSP

TOWNSHIP OF
North Dundas

From: Marcerou, Yannick
Cc: Doug Froats; Edmond, Trish; jordan.hughes@ontario.ca; Marcerou, Yannick; McDonald, Robert
Bcc: [redacted] 648253, Township of North Dundas Environmental Assessment
Subject: Township of North Dundas EA - Work Plans
Date: February 3, 2022 5:24:00 PM
Attachments: North Dundas WMP EA - Work Plans.pdf
image001.png
image003.png

Hello,

The Township of North Dundas (Township) is undergoing an environmental assessment (EA) for the Township's Waste Management Plan under the *Environmental Assessment Act*. The EA Study will evaluate long-term solid waste management options for a 25-year planning period.

As part of the EA Study, the Township will: evaluate 'Alternatives To' the Waste Management Plan (WMP), identify the preferred WMP, characterize the existing environmental conditions, identify and develop 'Alternative Methods' of waste management, compare the 'Alternative Methods', identify mitigation measures and determine net environmental effects.

The Township has prepared work plans in consultation with the Ministry of Environment, Conservation and Parks, Ministry of Natural Resources and Forestry and conservation authorities for how the individual environmental components (technical teams studying aspects of the environment like air, noise, groundwater, etc.) will complete aspects of their individual component studies following completion of the identification of the preferred WMP. These work plans were prepared in advance of Technical Bulletin #3 that you were notified of on November 29, 2021 and were meant to be circulated in advance of Technical Bulletin #3 but are being provided to you now for your comment. Please see the attached work plans or visit the EA Study website https://www.northdundas.com/municipal-services/environmental-assessments to review the details of the studies.

Please do not hesitate to contact us if you have any suggestions, additions or questions related to the work plans.

Regards,

Yannick Marcerou (M.Eng., P.Eng.)
Environmental/Waste Engineer

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Work Safe, Home Safe

Summary of Work Plans for the EA

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Atmosphere/ Air Quality (health-related compounds and dust), odour, GHG)	Landfill expansion and associated operations can produce gases containing contaminants that degrade air quality if they are emitted to the atmosphere. Construction activities associated with landfill expansion and continued landfill operation can lead to levels of particulates (dust) in the air. Landfill operation can also result in odour effects.	• Potential effects on air quality (including dust, odour, GHG)	• Expected concentrations of air quality indicator compounds (selected regulated air contaminants to represent this type of project), including dust, at the property boundary and nearby sensitive receptors. • Expected site-related odour at off-site sensitive receptors. • Expected GHG emissions.	• Compile and interpret existing Environment Canada or MECP's air quality monitoring data and meteorological data. • Review aerial photographic mapping to identify sensitive receptors. • Review zoning maps. • It is not proposed to collect site-specific data.	• Identify the differences in potential air and odour concentrations from emission sources based on their distance and direction to nearest off-site receptors, the property boundary, and site characteristics such as height of the expanded landfill that will influence dispersion. • Identify difference in the expansion alternatives that will impact GHG generation such as the landfill configuration. • Qualitatively evaluate the differences in potential air quality, odour and GHG. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Select air indicator compounds appropriate for the landfill expansion, expected to include suspended particulate matter (SPM), particles nominally smaller than 10 µm in diameter (PM_{10}), particles nominally smaller than 2.5 µm in diameter ($PM_{2.5}$), nitrogen oxides (NOx), sulphur dioxide (SO_2), carbon monoxide (CO), hydrogen sulphide (H_2S), vinyl chloride (C_2H_3Cl), odour. • Complete air and odour emission estimates based on published emission factors and available literature, as well as results from a site-specific LFG generation model for input into the dispersion model. • Execute an air quality dispersion model for the currently approved landfill and for an expanded landfill. • Predict worst-case air quality and odour effects for sensitive receptors based on an expanded landfill operation scenario. • Calculate GHG emissions based on the expanded landfill. • If required, identify mitigation or best management practices that can be implemented into the design of the preferred alternative to allow the landfill expansion to achieve compliance with applicable air quality limits.	• Environment Canada or MECP's regional air quality data, hourly meteorological data and climate normals. • Published emission factors (including odour). • Site-specific LFG generation model. • Preferred 'Alternative Method' landfill design and phasing plan. • Odour complaints history for the landfill site. • Applicable provincial regulations, standards and guidelines.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Atmosphere/ Noise	Landfill expansion and associated operations will generate noise that will be emitted into the atmosphere and could impact neighbouring sensitive receptors.	• Potential effects on noise	• Noise Levels at neighbouring noise sensitive existing receptors or vacant lots (with appropriate zoning that may accommodate the future construction of sensitive noise receptors).	• Review of aerial imagery. • Review of zoning/land use mapping. • Undertake field program and/or carry out a desktop analysis to quantify existing noise levels.	• Identify existing and vacant lot noise sensitive receptors in the vicinity of the landfill. • Identify potential differences in expected noise levels based on the distance and potential line-of-site exposure of the sensitive receptors to the landfilling. equipment/activities. • Review the direct interaction of the proposed 'Alternative Method' footprints and existing/potential. sensitive receptors. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 in accordance with MECP and internationally accepted standards. • Using the site-specific noise model described above, model the predictable worst-case noise levels from the preferred landfill expansion at identified sensitive receptors (existing or potential), and compare them to MECP noise guidelines. • If required, identify mitigation that can be implemented into the design of the preferred alternative to allow the landfill expansion to achieve compliance with applicable noise limits. • Develop monitoring, trigger and contingency plans, if relevant.	• Landfill equipment list and expected utilization. • Preferred 'Alternative Method' landfill design and phasing plan. • Baseline noise predictions. • Manufacturer's noise data. • Consultant's database of similar noise studies. • Ministry of Transportation Ontario (MTO) / local municipal traffic count data or newer data collected to support this EA. • Applicable provincial guidelines.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Geology and Hydrogeology/ Groundwater Quality	Contaminants associated with the landfill expansion and associated operations could enter the groundwater and impact off-site groundwater or surface water.	• Potential effects on groundwater resources	• Expected effect on groundwater quality at the landfill site property boundary and/or compliance boundaries.	• Extensive field investigations and hydrogeological assessments have been completed for the existing landfill site since 2001. • Extensive hydraulic conductivity testing has been completed. • Review results of existing groundwater monitoring program. • Limited additional field work in the form of additional parameter analysis expected based on available information. • Renewed analysis of existing data to confirm groundwater flow direction(s), predominant impacts expected in the overburden and not the bedrock, leachate indicator parameters unique to the landfill and not the neighbouring snow storage area.	• Identify the differences between the alternatives that will affect the potential impact on off-site groundwater quality such as expanded waste footprint configuration, direction of groundwater flow, thickness of waste in the expansion. • Estimate qualitatively how the differences will potentially affect the off-site groundwater quality. • Rank each 'Alternative Method' based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Prepare a predictive model of landfill performance (contaminant transport model) as per *O. Reg.* 232/98. • Predict worst case concentrations in the overburden groundwater at the landfill and/or CAZ compliance boundaries for the key leachate indicator parameter chloride, with consideration of reasonable mitigation measures. [1,2] • Compare the predicted concentrations in the overburden groundwater to the Reasonable Use Criteria. • Evaluate potential for overburden 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. • Update groundwater monitoring program, if required. • Predict the contaminating lifespan. • Assess the potential effects in relation to Source Water Protection.	• Published regional sources and data on regional geological and hydrogeological conditions, including source water protection reports and source water protection zones in County and Township Official Plans. • Review MNRF petroleum well records. • Provincial Quaternary and Bedrock Mapping. • Ontario Water Well Records (water supply wells are considered to be sensitive receptors in terms of potential impacts). • Boyne Road Landfill Annual Monitoring Reports. • Previous site characterization/investigation reports. • Borehole logs.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Surface Water/ Surface Water Quality	Contaminants associated with the landfill expansion and associated operations could seep or runoff into surface water and adversely affect water quality and aquatic life.	• Potential effects on surface water resources	• Expected effect on surface water quality in the drainage ditch along Boyne Road and within the Site-vicinity Study Area.	• Extensive field investigations and hydrogeological assessments have been completed for the existing landfill site since 2001. • Review results of existing surface water monitoring program. • Limited additional field work related to neighbouring municipal drains expected based on available information.	• Identify the differences that may impact changes in surface water quality such as expansion area layout and location. • Estimate qualitatively how the differences will affect the surface water quality. • Rank each 'Alternative Method' based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Evaluation of required construction of new on-site facilities (pond(s)) and the facility's ability to mitigate potential changes to surface water quality. • Modelling 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.	• Boyne Road Landfill Design and Operations Report. • Boyne Road Landfill Annual Monitoring Reports. • Historical flow observations during sampling program. • Surface water drainage mapping. • Topographic maps. • Air photos. • Published water quality information from the MECP, Environment Canada and SNC.
Surface Water/ Surface Water Quantity	Operations associated with the landfill expansion could alter runoff and peak flows.	• Potential effects on surface water resources	• Expected change in runoff to and peak flows in drainage features. • Expected degree of off-site effects on surface water quantity within the Site-vicinity Study Area.	• Review existing surface water management features and practices. • No additional field work expected based on available information.	• Identify the differences that may impact changes in surface water quantity such as expansion area, expansion location, proposed side slopes of the landfill, and potential effects on the existing drainage ditch adjacent to the landfill footprint. • Estimate qualitatively how the differences may potentially affect the surface water quantity. • Rank each 'Alternative Method' based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 and prepare EA level design for stormwater management system. • Modelling of proposed stormwater management system and comparison with MECP specific design criteria.	• Boyne Road Landfill Design and Operations Report. • Boyne Road Landfill Annual Monitoring Reports. • Historical flow observations during sampling program. • Surface water drainage mapping. • Local climate data. • Topographic maps. • Air photos. • Published water quantity and flow information from the MECP, Environment Canada and SNC. • Agricultural farm drain mapping.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources

Biology/ Aquatic Ecosystems	Landfill expansion could remove or disturb the functioning of natural aquatic habitats and species, including rare, threatened, or endangered species.	• Potential effects on natural environment features (aquatic and terrestrial ecosystems)	• Expected change in surface water quality and/or quantity within the Site Study Area and the Site-vicinity Study Area.
			• Expected impact on aquatic habitat and biota, including rare, threatened, or endangered species within the Site Study Area and the Site-vicinity Study Area.
				• Wetland boundary surveys.
				• Headwater Drainage Features assessment.
				• Fish habitat survey.
				• Fish communities survey.
					• Identify differences in potential impacts to watercourses.
					  • Waste footprint likely to cause alteration or destruction of existing habitat.
					  • Differences in discharge rate from SWM system.
					  • Change in water quality to receiving water courses.
					• Rank each alternative based on the differences.
					• Describe advantages and disadvantages of the 'Alternative Methods'.
						• Identify areas of potential disturbance including:
						  • Direct habitat loss/disturbance.
						  • Indirect habitat disturbance.
						  • Impacts to aquatic species at risk (SAR) habitat and species.
						• Identify appropriate mitigation measures, if needed.
						• Develop monitoring, and contingency plans, if relevant.
							• United Counties of Stormont, Dundas and Glengarry Official Plan.
							• Field surveys.
							• MNRF Natural Heritage Information Centre (NHIC) Make-a-Map geographic explorer (MNRF, 2021a)
							• Existing and readily available information (including watershed studies) and mapping available through the SNC.
							• DFO Aquatic Species at Risk Maps (DFO, 2021).
							• Information contained in natural heritage related map layers from Ontario Base Map series, Natural Resource Values Information System (NRVIS) mapping and Land Information Ontario (LIO).
							• Existing high-resolution aerial imagery and mapping.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources

Biology/ Terrestrial Ecosystems	Landfill expansion could remove or disturb the functioning of natural terrestrial habitats and vegetation, including rare, threatened or endangered species.	• Potential effects on natural environment features (aquatic and terrestrial ecosystems)	• Expected impact on terrestrial vegetation communities, wildlife habitat, and wildlife, including rare, threatened or endangered species within the Site and Site-vicinity Study Areas	• 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.
					• Identify differences in the alternatives that will potentially impact terrestrial features:
					  • Change in the site development area for the landfill.
					  • Change in the Waste Footprint Area of the landfill.
					  • Impact to SAR.
					  • Impact to Significant Wildlife Habitat (SWH).
					  • Removal of natural vegetation.
					• Rank each alternative based on the differences.
					• Describe advantages and disadvantages of the 'Alternative Methods'.
						• Identify potential impacts to SAR, SWH, wetland woodlands, and environmentally significant areas, including:
						  • Direct habitat loss/disturbance.
						  • Indirect habitat disturbance.
						  • Impacts to terrestrial SAR habitat and species.
						  • Vegetation removal.
						  • Potential impacts to species
						• Identify appropriate mitigation measures, if needed.
						• Develop monitoring, and contingency plans, if relevant.
							• United Counties of SD&G Official Plan.
							• Field surveys.
							• MNRF NHIC Make-a-Map geographic explorer (MNRF, 2021a).
							• Existing and readily available information (including any watershed studies) and mapping available through the local Conservation Authority.
							• Atlas of Breeding Birds of Ontario (Cadman, et al. 2007).
							• eBird online database (eBird, 2021).
							• Atlas of the Mammals of Ontario (Dobbyn, 1994).
							• Bat Conservation International (BCI, 2021).
							• Ontario Odonate Atlas (Jones et. al 2021).
							• Ontario Reptile and Amphibian Atlas (Ontario Nature, 2021).
							• Information contained in natural heritage related map layers from Ontario Base Map series, NRVIS mapping and LIO.
							• Existing high-resolution aerial imagery and mapping.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Agriculture/ -	The agricultural land base or agricultural operations may be impacted by the landfill expansion and associated operations.	• Potential effects on existing agriculture	• Expected effect on agricultural land base and agricultural operations within the Site and Site-vicinity Study Areas	• Review of aerial photographic mapping. • Compile parcel fabric mapping from Township. • Review Official Plans and Zoning By-Law. • Review Canada Land Inventory (CLI) mapping.	• The potential effect of the proposed landfill expansion alternatives on the existing and potential agricultural use of on-site and off-site lands will be assessed. • Differences between alternatives will be identified, for example, proximity to livestock, use of prime agricultural areas (soil capability), degree of infrastructure/investment, impact on agricultural system (fragmentation). • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Based on the proposed landfill operational practices and/or results of predictive assessments of potential nuisance effects as caried 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.	• Existing site-specific studies. • Applicable provincial regulations, standards and guidelines. • Provincial Policy Statement (2020). • United Counties of Stormont, Dundas and Glengarry Official Plan. • Available soils mapping. • Aerial photographic and topographic mapping. • Statistics Canada agriculture profiles. • Relevant information available from Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) and Ontario Federation of Agriculture (OFA).

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Cultural Heritage Resources/ Archaeological Resources	A horizontal landfill expansion has the potential to affect archaeological resources.	• Potential effects on archaeology	• Expected archaeological resources potentially affected on-site.	• 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.	• Identify archaeological sites that are anticipated to be impacted by expansion alternatives. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 (Stage 4 mitigation).	• Existing site-specific archaeological assessment reports. • Ontario Archaeological Sites Database. • Ministry of Tourism, Culture, and Sport (MTCS) *Standards and Guidelines for Consultant Archaeologists*. • United Counties of SD&G Official Plan.
Cultural Heritage Resources/ Cultural Heritage Landscapes	Identified cultural heritage landscapes can be altered by the landfill expansion. Depending on the nature of identified cultural heritage landscapes, there could be an impact by the ongoing operation of the landfill.	• Potential effects on cultural heritage landscapes	• Expected impact on identified cultural heritage landscapes within the Site-vicinity Study Area.	• 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. • Complete a cultural heritage resources impact assessment.	• Identify the risk of potential direct or indirect impact using guidance and types identified in the MTCS *Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process.* • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 MTCS *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, and preferred landfill expansion and conservation measures to reduce or avoid impact to cultural heritage landscapes.	• Description of proposed expansion alternatives. • Preferred landfill expansion design. • Existing site-specific studies. • Applicable provincial plans, acts, regulations, standards and guidelines, and policies. • United Counties of SD&G Official Plan. • Local Historical Society, if available.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Cultural Heritage Resources/ Built Heritage Resources	Heritage attributes of identified built heritage resources could be impacted by the landfill expansion and associated operations.	• Potential effects on built heritage resources	• Expected impact on the heritage attributes of identified built heritage resources within the Site-vicinity Study Area.	• 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. • Complete a cultural heritage resources impact assessment.	• Identify the risk of potential direct or indirect impact using guidance and types identified in the MTCS *Ontario Heritage Tool Kit: Heritage Resources in the Land Use Planning Process.* • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 MTCS *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.	• Description of proposed expansion alternatives. • Preferred landfill expansion design. • Existing site-specific studies. • Applicable provincial plans, acts, regulations, standards and guidelines, and policies. • United Counties of SD&G Official Plan. • Local Historical Society, if available.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Land Use Planning/ Current and Planned Future Land Uses	Waste disposal facilities could potentially be incompatible with municipal land use policy framework.	• Potential effects on existing land use	• Expected incompatibility with existing or known future land use.	• Review aerial photographic mapping. • Compile parcel fabric mapping from Township. • Review Official Plan and Zoning By-law • Review Provincial Guidelines (e.g., Land Use Compatibility, Guideline D-1, Land Use On or Near Landfills and Dumps, Guideline D-4). • Review Provincial Policy Statement 2020. • Interviews with municipal staff to confirm development activity planned in the site-vicinity and identify potential planning issues.	• Differences between alternatives will be identified with respect to land use compatibility. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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.	• Preferred 'Alternative Method' landfill design and phasing plan. • Existing site-specific studies. • Applicable provincial regulations, standards and guidelines. • Provincial Policy Statement (2020). • United Counties of SD&G Official Plan. • Land Use Compatibility, Guideline D-1. • Land Use On or Near Landfills and Dumps, Guideline D-4. • Aerial photographic and topographic mapping • Field reconnaissance. • Discussion with City planning department.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Socio-economic/ Local Economy	The continued operation of the landfill can influence employment and business in the wider regional area.	• Relative potential changes in employment, impacts to local commercial businesses and capital costs.	• Expected effect on local employment. • Expected effects on local businesses and commercial activity. • Expected effects on municipal finances.	• Review of current and projected employment numbers (during both construction and operation phases). • Review of municipal revenues and projected change from site expansion. • Review of land use designations and Official Plan. • Interviews with municipal staff to understand potential costs and impacts to services from expanded site (e.g., public works, emergency management systems, transportation). • Review of local business database.	• Identify total increase in employment hours/full time equivalent positions during both construction and operational phases by alternative design. • Identify loss of potential land use for commercial purposes or residential purposes as a result of landfill expansion and associated employment and rental income, respectively. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Re-evaluate property taxes or rent paid to the municipality based on larger property parcel and any potential change in land use designation. • 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. • Calculate amount of increased revenue to the Township minus any potential increased costs to determine net economic effect.	• United Counties of SD&G Official Plan. • Statistics Canada 2016 Census data. • United Counties of Stormont Dundas and Glengarry website, 2020.
Socio-economic/ Residents and Community	Waste disposal facilities can potentially affect the use and enjoyment of their properties by residents in the vicinity of the site.	• Potential site operational effects on sensitive off-site receptors (i.e., noise, litter, air quality)	• Displacement of residents. • Expected interference with use and enjoyment of residential properties (nuisance effects).	• 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.	• Establish closest residential receptors to each alternative design. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• Review of findings from other disciplines - noise, odour, air quality, operations (litter and vermin)- to ascertain any potential nuisance effects on sensitive receptors. • Evaluate level of 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.	• Site related complaints. • Discipline findings – noise, air quality, land use, operations. • Existing site or proposed expansion related best management practices. • Statistics Canada 2016 Census data. • United Counties of SD&G website, 2020

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Socio-economic/ Visual	The landfill expansion can affect the local community by changes in the visual appearance of the site.	• Potential changes in visibility of the landfill	• Expected changes in landscape views from off-site.	• Field investigations to identify key viewpoints and obtain photos. • Use software to produce representative 3D perspective images for each viewpoint.	• Identify the differences in potential visual impacts based on the distance and direction to nearest off-site receptors, the property boundary, and site characteristics such as height of the expanded landfill. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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.	• Google Earth. • Township of North Dundas aerial photos. • ACAD drawings of existing landfill and proposed expansion alternatives. • Site photos.
Transportation/ Traffic	The operations at the landfill can impact the traffic in the surrounding area through changes in truck traffic to/from the landfill.	• Potential effect on road network	• Expected effect on traffic along haul routes.	• 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.	• Assess existing traffic conditions based on haul routes and other common users. • Identify the differences in traffic operations by evaluating the alternatives for landfill expansion. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• 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 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.	• Turning Movement Count, average annual daily traffic (AADT), and signal timing data, if available. • Additional tonnage and resulting number of trucks to site due to expansion. • Collision history statistics, if available. • Existing site-specific and related studies, consultant observations, and available Township planning and engineering documents. • Traffic counts if necessary.

Component/ Sub-component	Rationale	Evaluation Criterion/Criteria	Indicator(s)	Data Collection and Field Work	Evaluation of 'Alternative Methods'	Prediction of Potential Effects for the Preferred 'Alternative Method'	Data Sources
Design and Operations/ Financial	Different methods of landfill expansion can have different costs based on the design and associated requirements to construct the expansion.	• Potential effects on capital costs	• Estimated costs associated with implementation of expansion alternatives.	• Existing cost information from the Township and local construction projects. • Estimates of required earthworks for each 'Alternative Method'.	• The expected cut and fill and any additional earthworks for each 'Alternative Method' will be estimated. • Expected differences in operations between alternatives. • Rank each alternative based on the differences. • Describe advantages and disadvantages of the 'Alternative Methods'.	• A summary of the design of the preferred 'Alternative Method' including best management plans will be prepared.	• Existing landfill site or proposed expansion related best management practices. • Description of proposed expansion alternatives. • Preferred 'Alternative Method' landfill design and phasing plan.

Notes:

1 Given the relatively small nature of the existing landfill and the proposed landfill expansion, selection and identification of relevant leachate indicator parameters is likely to be different than those identified in *O. Reg* 232/98. It is known that chloride is a relevant leachate indicator parameter that can be modelled at the landfill site and, if others can be identified, then one or more will be included.

2 The existing and future leachate plume in the overburden is assumed to be more extensive than the plume in the bedrock. It is acknowledged that some portion of the plume may extend into bedrock. The vertical spreading of the plume to the bedrock would result in lower concentrations in the bedrock relative to what is represented in the overburden. The leachate plume is also assumed to travel at a lower velocity in the bedrock relative to the overburden due to the lower hydraulic gradients. As such, it is assumed that if regulatory compliance is met in the overburden, compliance would also be met in the bedrock at the same distance from the disposal area.