Terms of Reference

Eastern Ontario Waste Handling Facility
Future Development Environmental Assessment

GFL Environmental Inc.

Moose Creek, Ontario

September 11, 2020

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Executive Summary

GFL Environmental Inc. (GFL) is proposing to undertake an Environmental Assessment (EA) for additional landfill disposal capacity as part of the future development of its Eastern Ontario Waste Handling Facility (EOWHF). The existing EOWHF is located on the western half of Lot 16 and Lots 17 and 18, Concession 10, Township of North Stormont, United Counties of Stormont, Dundas and Glengarry, near the intersection of Highway 417 and Highway 138. The municipal street address for the facility is 17125 Lafleche Road, Moose Creek, Ontario. The lands to the east of the existing EOWHF being considered for the future development include the eastern half of Lot 16, Lots 14 and 15, and the majority of Lot 13 of Concession 10.

The existing EOWHF landfill was previously approved under the *Environmental Assessment Act* (*EAA*) in 1999 and is operated by GFL under the Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval (ECA) A420018. The landfill is one of several integrated services offered by the company at the EOWHF. The landfill is approved to accept solid non-hazardous municipal, industrial, commercial, and institutional wastes generated within the Province of Ontario for disposal. The landfill has a permitted annual fill rate of 755,000 tonnes per year and an average daily fill rate of 2,500 tonnes per day. The permitted maximum daily fill rate is 4,000 tonnes per day. Additional waste quantities are accepted at the EOWHF composting operation.

GFL has prepared these Terms of Reference (ToR) in accordance with subsection 6(2)(c) of the *EAA* which allows GFL to set out in detail the requirements for preparation of the Environmental Assessment (EA). GFL plans to proceed under subsection 6(2)(c) and 6.1(3) of the *EAA*, which allows proponents to focus the EA and consideration of alternatives to address their specific needs and circumstances. The ToR was prepared following consultation with Indigenous communities and stakeholders as required by Section 6(3) of the *EAA*. The proposed undertaking is designated under Regulation 101/07 of the *EAA*.

The purpose of the proposed undertaking is to provide approximately 15.1 million cubic metres (m^3) of additional landfill disposal capacity at the existing EOWHF over a 20-year planning period. The undertaking will enable GFL to continue to provide disposal services for residual non-hazardous solid waste to their customers once the landfill reaches its currently approved disposal capacity, and continue to provide economic support to the local community over the long term. No changes to the approved fill rates or site access routes are proposed. The proposed undertaking will occur on land currently owned by GFL including an area in the northeast corner of the existing EOWHF. The project will continue to support the minimization of environmental impacts associated with greenhouse gas (GHG) emissions through reducing the number of waste related trucks hauling material long distances,

diversion of organic material and composting, and the capture of methane gas and generation of green energy at the EOWHF.

The rationale for the undertaking is twofold: first, there is a need for the future development of the EOWHF as it is a significant component of the provincial waste management network and infrastructure in a region lacking in sufficient and secure long-term disposal capacity; and second, GFL is providing waste management services and facilities that are well positioned to continue to support Ontario's transition to becoming waste-free and achieving a circular economy, while supporting a reduction in GHG production and the amount of waste going to landfill, consistent with provincial legislation.

The proposed future development of additional landfill disposal capacity at the EOWHF may be achieved through alternative landfill configurations. Two alternative methods for developing additional landfill disposal capacity at the EOWHF have been identified. The two conceptual design alternatives will be further refined, as appropriate, during the EA. Alternative methods for treating landfill leachate and managing landfill gas will be identified and assessed, as appropriate, during the EA.

The alternatives will be assessed using criteria related to the natural, built, cultural, social, and economic environments within the on-site study area and the off-site study area (within approximately 1 km of the on-site study area). The off-site study area may be refined during the EA to suit the requirements of a specific environmental component or based on the spatial extent of predicted effects.

GFL is committed to carrying out meaningful consultation and engagement on the future development with a broad range of stakeholders. The ToR outlines a consultation and engagement program to be implemented during the preparation of the EA to engage the public, Indigenous communities, government agencies, and other interested parties in the EA process. Consultation materials will be prepared in both English and French languages.

The EA will contain a list of commitments made by GFL during the ToR process and indicate how such commitments have been addressed in the EA. A list of commitments made by GFL during the preparation of the EA will also be included in the EA along with a framework for monitoring when and how all commitments will be fulfilled. In addition, a strategy and schedule for compliance and effects monitoring will be developed and included in the EA.

In addition to the approval under the *EAA*, certain other approvals may be required under provincial legislation. A complete list of the specific approvals required for the proposed undertaking will be provided in the EA. The proposed undertaking is not identified as a designated project under the *Impact Assessment Act*, and this has been confirmed with the Impact Assessment Agency of Canada.

Résumé exécutif

GFL Environmental Inc. (GFL) compte entreprendre une étude d'impact pour accroître la capacité d'enfouissement dans le cadre du projet d'agrandissement de son centre de traitement des déchets de l'Est de *l'Ontario (EOWHF). L'EOWHF* actuel est situé sur la portion ouest du lot 16 et des lots 17 et 18, de la concession 10, du canton de North Stormont, dans les comtés de Stormont, Dundas et Glengarry, à l'intersection des autoroutes 417 et 138. Cette installation est située au 17125, chemin Laflèche, à Moose Creek, Ontario. Les terres à l'Est de *l'EOWHF* actuel envisagées pour le projet d'agrandissement comprennent la portion Est du lot 16, les lots 14 et 15 et la majeure partie du lot 13 de la concession 10.

Le site actuel de l'*EOWHF* a déjà été autorisé en 1999 en vertu de la Loi sur les évaluations environnementales (*EAA*) et est exploité par GFL en vertu du certificat d'autorisation environnementale (*ECA*) A420018 du ministère de l'Environnement, de la Conservation et des Parcs (*MECP*). Le site d'enfouissement est l'un des nombreux services intégrés offerts par l'entreprise à *l'EOWHF*. Le site d'enfouissement est autorisé à recevoir et à disposer les déchets solides non dangereux municipaux, industriels, commerciaux et institutionnels générés dans la province de l'Ontario. Le site a une capacité annuelle autorisée de 755 000 tonnes et une capacité moyenne de 2 500 tonnes par jour. La capacité quotidienne maximale autorisée est de 4 000 tonnes par jour. L'opération de compostage du *l'EOWHF* peuvent également recevoir d'autres quantités de matières.

GFL a élaboré un cadre de références (*ToR*) conformément au paragraphe 6 (2) (c) de la Loi sur les évaluations environnementales (*EAA*), permettant à GFL d'établir de façon détaillée les critères relatifs à la préparation de l'étude d'impacts. GFL prévoit réaliser l'étude en vertu des paragraphes 6 (2) (c) et 6.1 (3) de l'*EAA* qui encadre l'étude d'impacts et permet aux promoteurs d'envisager d'autres scénarios pouvant répondre à leurs besoins et préoccupations. Le cadre de références (*ToR*) a été élaboré à la suite de consultations avec les communautés autochtones et diverses parties prenantes, comme l'exige le paragraphe 6 (3) de l'*EAA*. Le présent projet est assujetti au règlement 101/07 de l'*EAA*.

L'objectif du présent projet est d'offrir d'environ 15,1 millions de mètres cubes (m^3) supplémentaires de capacité de disposition à *l'EOWHF* actuel durant une période de 20 ans. Ce projet permettra à GFL de continuer d'offrir des services de disposition de déchets solides non dangereux à ses clients une fois que le site actuel atteindra sa capacité de disposition autorisée et de soutenir pendant plusieurs années le développement économique de la communauté environnante. Aucune modification de la capacité de disposition autorisée ou des voies d'accès au site n'est proposée. Le projet proposé est prévu sur des terrains appartenant déjà à GFL incluant une zone dans le secteur nord-est de *l'EOWHF* actuel. Le projet sera élaboré avec le souci de minimiser les impacts environnementaux associés aux émissions de gaz à effet de serre (GES) par la réduction du nombre de camions liés au transport des déchets sur de longues distances, en détournant les matières organiques vers le

compostage, et en captant le méthane généré par les matières enfouies pour la production d'énergie verte sur le site de *l'EOWHF*.

Ce projet est nécessaire pour deux grandes raisons. Premièrement, il est essentiel pour assurer le maintien de *l'EOWHF* qui constitue une des installations les plus importantes du réseau de gestion des déchets de la province et qui est située dans une région dépourvue à l'égard de sa capacité de disposer, de façon sécuritaire et à long terme, de ses matières résiduelles. Deuxièmement, GFL offre des services et des installations de gestion des matières résiduelles pouvant appuyer la transition de l'Ontario vers le *Zéro déchets* et pour une économie circulaire, tout en contribuant, en lien avec la règlementation provinciale, à réduire les GES et l'enfouissement des déchets.

Le projet d'accroître la capacité d'enfouissement de *l'EOWHF* peut être réalisé par divers scénarios de disposition. Deux scénarios sont envisagés pour augmenter la capacité de disposition. Les deux scénarios seront développés, le cas échéant, durant l'étude d'impacts. Diverses méthodes de traitement du lixiviat et de gestion du biogaz seront présentées et évaluées, le cas échéant, pendant l'étude d'impacts.

Les scénarios envisagés seront évalués à l'aide de critères liés aux milieux naturel, bâti, culturel, social et économique à l'intérieur de la zone d'étude du projet, de même qu'en périphérie de la zone d'étude (dans un rayon d'environ 1 km autour du projet). La zone d'étude en périphérie du projet pourrait être redéfinie durant l'étude d'impacts afin de respecter les spécificités de certaine composante environnementale ou pour tenir compte de l'étendue des impacts possibles.

GFL s'engage à mener des consultations et à échanger sur son projet d'agrandissement auprès d'un large éventail de parties prenantes. Le cadre de références (*ToR*) comprend la mise en œuvre d'une démarche de consultation visant à favoriser la participation des citoyens, des communautés autochtones, des organismes gouvernementaux et de toutes autres parties intéressées au processus d'étude d'impacts. Tous les documents de consultation seront préparés en anglais et en français.

L'étude d'impacts va inclure les engagements pris par GFL durant la préparation du cadre de références (*ToR*) de même que la manière qu'ils seront traités dans l'étude d'impacts. Une liste des engagements pris par GFL sera également intégrée à l'étude d'impacts de même qu'une démarche de suivi de la mise en œuvre de chacun des engagements. De plus, une stratégie et un calendrier de conformité et de surveillance des impacts seront élaborés et inclus dans l'étude d'impacts.

En plus de l'autorisation en vertu de la Loi sur les évaluations environnementales (*EEA*) d'autres autorisations pourraient être requises par la règlementation provinciale. Une liste complète des autorisations nécessaires pour la réalisation du projet sera fournie dans l'étude d'impacts. Le présent projet n'est pas identifié comme un projet désigné en vertu de la *Loi sur l'évaluation d'impact* et cela a été confirmé par l'Agence d'évaluation des impacts du Canada.

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1. Introduction and Background

GFL Environmental Inc. (GFL), is proposing to undertake an Environmental Assessment (EA) for additional landfill disposal capacity as part of the future development of its Eastern Ontario Waste Handling Facility (EOWHF).

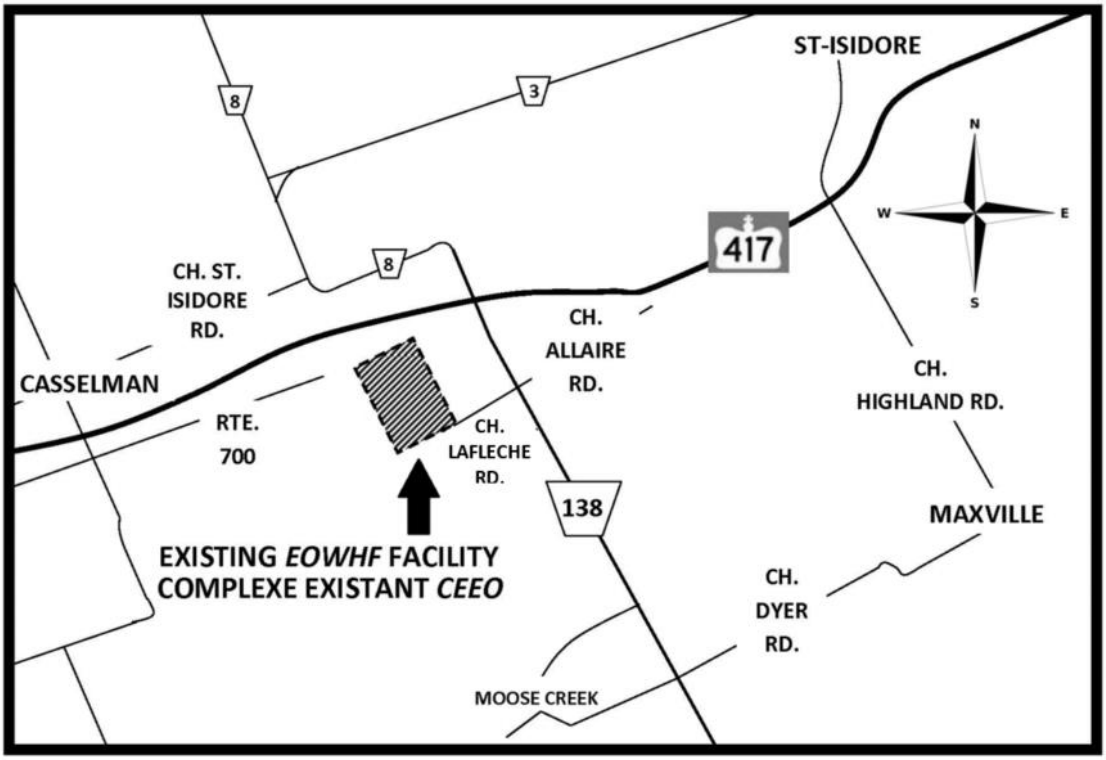
The existing EOWHF is located on the western half of Lot 16 and Lots 17 and 18, Concession 10, Township of North Stormont, United Counties of Stormont, Dundas and Glengarry, near the intersection of Highway 417 and Highway 138. The municipal street address for the facility is 17125 Lafleche Road, Moose Creek, Ontario. The lands to the east of the existing EOWHF being considered for future development include the eastern half of Lot 16, Lots 14 and 15, and the majority of Lot 13 of Concession 10.

The approved existing EOWHF encompasses a site area of 189 hectares which includes the following waste management related activities and services:

- 112 hectare landfill site;
- composting facility;
- waste transfer and processing station;
- waste water treatment facility;
- small vehicle waste drop off;
- landfill gas (LFG) utilization facility;
- enclosed flare and natural gas fired comfort heating equipment;
- Resource Productivity & Recovery Authority (RPRA) – Tires;
- Ontario Tire Stewardship (OTS) drop off; and
- supporting facilities (office, vehicle maintenance building).

The location of the EOWHF is shown on **Figure 1**.

Figure 1. Location of the EOWHF



The existing EOWHF landfill was initially approved under the Ontario *Environmental Assessment Act* (*EAA*) in 1999 and is operated by GFL under the Ministry of Environment, Conservation and Parks (MECP) Environmental Compliance Approval (ECA) A420018. The landfill is one of several integrated services offered by the company at the EOWHF, and is approved to accept solid non-hazardous municipal, industrial, commercial, and institutional wastes generated within the Province of Ontario for disposal. The landfill has a permitted annual fill rate of 755,000 tonnes per year and an average daily fill rate of 2,500 tonnes per day. The permitted maximum daily fill rate is 4,000 tonnes per day. Additional waste quantities are accepted at the EOWHF composting facility.

The development of the EOWHF landfill was proposed to occur in two phases through four stages. The total capacity of the landfill was designed to be 11.6 million m³ when fully developed. The two landfill development phases and associated stages are:

- **Phase 1** – approved in 1999, including Stages 1 to 3A, with a total capacity of 7.4 million m³.
- **Phase 2** – approved in 2019, including Stages 3B and 4, providing 4.2 million m³ of landfill disposal capacity.

Based upon the historical and forecasted filling rate at the existing landfill, GFL estimates that the landfill will reach its approved capacity by approximately late 2025.

Since the EOWHF approval in 1999, GFL and its predecessor[1] have developed a positive relationship with the surrounding community. GFL actively communicates with its neighbours to address potential issues and received complaints, and also participates in Community Liaison Committee meetings. To date, there have been few complaints or issues expressed by the community related to the operation of the EOWHF with the exception of comments related to potential odour emissions.

The operations at the EOWHF are also integrated with the company's network of waste transfer facilities in Eastern Ontario. GFL owns and operates three regional transfer stations located in the Eastern Ontario communities of Russell, Beckwith and Belleville. These facilities provide convenient waste management services to the residential and non-residential sectors and facilitate GFL's collection activities for surrounding municipalities.

2. Proponent

GFL is the proponent for the proposed undertaking. GFL is the fourth-largest North American provider of diversified environmental solutions, and is the only major diversified environmental services company in North America offering services in solid waste management, liquid waste management, and infrastructure implementation. The company's services include:

- Collection, hauling, sorting, transfer and disposal of non-hazardous solid waste (including recyclable materials and organics);
- Identification, collection, transport, processing, recycling and disposal of a broad range of hazardous and non-hazardous liquid wastes (plus sale of recycled liquid wastes and other liquid products); and
- Soil remediation services, as well as site excavation, demolition, soil retention, foundations installation and specialty infrastructure project services.

Through GFL's strategically located network of more than 310 facilities across Canada and in 23 states in the United States of America (USA), the company has capabilities that can be mobilized to service their customers wherever they are located. GFL has a dedicated, professional team of more than 11,500 employees that provides local service to more than 4 million households under municipal contracts and to more than 135,000 industrial, commercial and institutional customers.

In early 2016, GFL purchased Lafleche Environmental Inc., the former owner and operator of the EOWHF. Since the original approval in 1999, the EOWHF has transformed from a small, local family-owned facility to an important multi-service

[1] In early 2016, GFL purchased Lafleche Environmental Inc., the former owner and operator of the EOWHF.

regional facility serving a broad customer base across Eastern Ontario. The EOWHF now functions as a regional facility in Eastern Ontario and is integrated with a wide range of collection, transfer, and transport services and facilities serving residential and commercial customers across the region. Operations at the EOWHF include public drop off of materials, diversion of recyclable materials including tires and electronics, a composting facility for source separated organics, energy generation and waste disposal. The EOWHF employs approximately 40 people.

The GFL contact for this project is:

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3. Preparation of the Environmental Assessment

The following sections describe how the Terms of Reference (ToR) was prepared, the flexibility of the ToR and the preparation of the EA.

3.1 Preparation of the Terms of Reference

GFL has complied with the MECP's Code of Practice for *Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (January 2014) when preparing this ToR. The consultation program has been undertaken in accordance with the MECP's Code of Practice, *Consultation in Ontario's Environmental Assessment Process* (January 2014). In addition, the requirements of the MECP's *Guide to Environmental Assessment Requirements for Waste Management Projects in Ontario* (March 2007) has also been addressed.

The Notice of Commencement for the ToR was published on January 15, 2020.

GFL has prepared this ToR in accordance with subsection 6(2)(c) of the *EAA*, which allows GFL to set out in detail the requirements for preparation of the EA. GFL plans to proceed under subsection 6(2)(c) and 6.1(3) of the *EAA*, which allows proponents to focus the EA and consideration of alternatives to address their specific needs and circumstances. The ToR was prepared following consultation with Indigenous communities and stakeholders as required by Section 6(3) of the *EAA*. The proposed undertaking is designated under Regulation 101/07 of the *EAA*.

GFL has completed an assessment of the rationale and need for the future development of the EOWHF. The EOWHF is a significant component of the provincial waste management network and infrastructure in a region lacking in

sufficient and secure long-term disposal capacity. GFL is providing waste management services and facilities that are well positioned to continue to support Ontario's transition to becoming waste-free and achieving a circular economy, while supporting a reduction in greenhouse gas (GHG) production and the amount of waste going to landfill, consistent with provincial legislation.

The EOWHF includes the largest composting facility in the province for source separated green bin organic materials and provides disposal capacity for residual wastes from an extensive number of municipalities, businesses and Indigenous communities across Eastern Ontario. Additional long-term disposal capacity will allow the continuous and on-going operation of the EOWHF, thereby enabling GFL to provide essential and secure long-term, financially-stable waste diversion, composting, and disposal services to existing and new customers. The company has invested extensively in supporting infrastructure at the EOWHF including a landfill gas-to-energy plant and an on-site leachate treatment facility, both of which have a long service life. GFL owns additional lands adjacent to the existing EOWHF to support this future development, and will continue to utilize the existing local road network without modification.

The EOWHF is a major employer and financial contributor to the local community and broader region. The development of additional disposal capacity will allow GFL to continue to provide this type of economic support to the local community and region over the long term.

GFL has determined that there is a sustainable business opportunity and need for the EOWHF to continue to provide disposal capacity over the long term. Additional details are provided in **Section 5**. Information on the rationale and need for the future development was included in consultation and engagement with the public, interested stakeholders, Indigenous Communities, and government agencies during the development of the ToR. The final description of the proposed undertaking and rationale for the project will be confirmed during the EA.

As noted, GFL intends to proceed under subsections 6(2)(c) and 6.1(3) of the *EAA*, which allow the proponent to focus the EA. Specifically, GFL intends to exclude the 'alternatives to' assessment during the EA studies because an evaluation of waste management alternatives was carried out separately in previous studies. The assessment of the 'alternatives to', including consideration of the do nothing scenario, have been further reassessed during the preparation of this ToR as presented in **Section 6.1**.

This ToR identifies a preferred 'Alternative To' and identifies the 'alternative methods' that will be examined during the preparation of the EA. This approach is consistent with the MECP *Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (January 2014), which describes how a Proponent can proceed under subsection 6(2)(c) and 6.1(3) if the Proponent is

further along in the defined planning process and additional detail is known regarding its proposal.

Two previous EAs have been completed for the EOWHF. The original EA, approved in 1998, was for the development of Stages 1 to 3A of a landfill concept plan, which also included Stages 3B and 4. The second EA, approved in 2019, considered and assessed alternatives focused on the development of the remaining landfill stages within the original concept plan, which would provide additional disposal capacity for approximately 5 to 10 years. With the acquisition of the site by GFL, the need to meet the long-term (20 years) waste disposal requirements of customers in the Eastern Ontario region, securing the business commitments and opportunity available to GFL, was identified. During the development of the ToR, GFL considered functionally different ways to provide additional residual waste disposal capacity. It was concluded that developing new landfill disposal capacity on other GFL-owned lands adjacent to the EOWHF was the preferred alternative. GFL owns approximately 240 hectares of land located immediately east of the EOWHF. This alternative will continue to support the integrated facilities at the EOWHF including management of residuals from the compost facility operation, enhancing the on-going operation of the landfill gas-to-energy facility, utilizing the existing leachate treatment facility, and receiving post-diversion residual wastes providing cost effective disposal services to generators across Ontario integrated with their local collection. GFL has virtually no ability to securely provide long-term disposal capacity by redirecting waste to other disposal facilities. The company does not own or operate any thermal treatment facilities and has no related business experience with this type of alternative.

The consideration of ‘alternatives to’ the undertaking was included as part of consultation and engagement with the public and agencies and is documented in **Section 6.1** and in the Record of Consultation and Engagement (**Supporting Document 1**). No additional assessment of ‘alternatives to’ the undertaking will be included in the EA. The ‘Do Nothing’ alternative will be carried into the EA and considered against the preferred undertaking for assessing potential effects.

The ToR further identifies the ‘alternative methods’ that will be considered in the EA. These ‘alternative methods’ will be reviewed during the EA and modified if appropriate. Additional alternatives may be identified if warranted. Based on studies completed for the existing EOWHF design and on-going development, a limited range of laterally-oriented alternative methods or design options are available. The underlying silty clay soil provides significant attenuation capabilities and natural protection to groundwater. By increasing the peak height of the current landfill design (approximately 16 metres) the investigations have indicated that the underlying soils may become unstable. This may affect the overall landfill performance and, as a result, vertical expansion alternatives are not identified. This will be considered further in the development of the alternative methods during the EA. The alternative methods are outlined in **Section 6.2**.

3.2 Flexibility of the Terms of Reference

If approved by the Minister of Environment, Conservation and Parks, this ToR will provide the framework for preparing the EA Study Report. The ToR is not intended to present every detail of all the activities that will occur when preparing the EA. It is possible that, in carrying out the work described in this ToR, minor variations to methodologies may be necessary. These variations may include, but are not limited to:

- modifications to the local study area to suit the requirements of each environmental component;
- modifications to the alternatives, or identification of additional alternatives, considered;
- modifications to studies or additional/expanded studies due to variations in the degree of environmental impact assumed at the time of preparation of this ToR or due to content and quality of information available;
- modifications to the consultation and engagement plan; and
- any other modifications required or available through changes to Acts or Regulations.

These examples are not intended to be exhaustive; rather, they are meant to set out the types of changes that may be considered minor and that could be accommodated within the framework of the ToR. The MECP will be consulted in the event of uncertainty as to whether a proposed change should be considered minor and accommodated within the approved ToR.

The flexibility to accommodate new circumstances is also described in **Section 11**.

3.3 Preparation of the Environmental Assessment

Following approval of the ToR by the Minister of Environment, Conservation and Parks (the Minister), GFL will prepare the EA in accordance with the requirements of the approved ToR and *EAA* and submit to the Minister for review and approval. The EA will include:

- a description of the purpose of the undertaking, as described in **Section 4** of this ToR;
- a description of the undertaking based on the consideration of alternative methods, as described in **Section 6** of this ToR;
- the rationale for the undertaking, as described in **Section 5** of this ToR;
- a description of the environment potentially affected by the undertaking (the description in **Section 7** of the ToR will be expanded);

- an assessment of the alternative methods of carrying out the undertaking based on the method outlined in **Section 8** of this ToR. GFL intends to consider the alternatives described in **Section 6** including:
  - a description of the effects that will be caused or that might reasonably be expected to be caused on the environment by the undertaking or the alternative methods;
  - a description of the mitigation measures that are necessary to prevent or reduce significant adverse effects on the environment; and
  - an evaluation of the advantages and disadvantages to the environment as a result of the undertaking; and
- a description of the consultation and engagement process undertaken by GFL for the EA following the plan described in **Section 9** of this ToR.

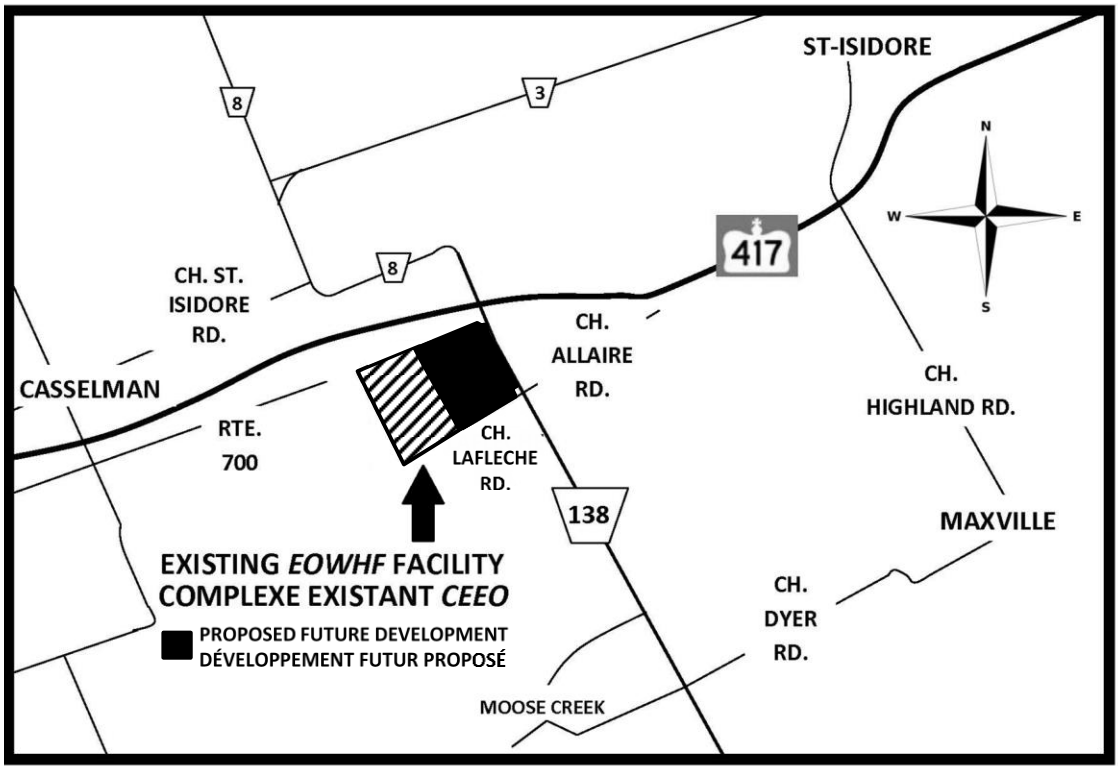
4. Purpose of the Undertaking

The purpose of the undertaking is to provide approximately 15.1 million cubic metres (m^3) of additional landfill disposal capacity at the existing EOWHF over a 20-year planning period. The undertaking will enable GFL to continue to provide disposal services for residual non-hazardous solid waste to their customers once the landfill reaches its currently approved disposal capacity, and continue to provide economic support to the local community over the long term. No changes to the approved fill rates or site access routes are proposed.

The existing EOWHF landfill site was originally approved in 1999. The development of the EOWHF landfill was proposed to occur in two phases through four stages. The total capacity of the landfill was designed to be 11.6 million m^3 when fully developed. Phase 1 was approved in 1999, including Stages 1 to 3A, with a total capacity of 7.4 million m^3. Phase 2 was approved in 2019, including Stages 3B and 4, providing 4.2 million m^3 of landfill disposal capacity. Landfilling commenced within Stage 3B in the latter part of 2019. Based upon the historical and forecasted filling rate at the existing landfill, GFL estimates that the landfill will reach its approved capacity by late 2025. The purpose of this EA is to provide additional landfill disposal capacity once the existing approved capacity is reached.

The proposed undertaking will occur on land currently owned by GFL (**Figure 2**), including an area in the northeast corner of the existing EOWHF. The purpose of the undertaking may be refined during the EA process and will be included in the EA Study Report.

Figure 2. Location of the Proposed Undertaking



5. Rationale for and Description of the Undertaking

The rationale for and description of the undertaking are presented below. The rationale for and description of the undertaking may evolve during the preparation of the EA and will be included in the EA Study Report.

5.1 Rationale for the Undertaking

The rationale for the undertaking is twofold: first, there is a need for the future development of the EOWHF as it is a significant component of the provincial waste management network and infrastructure in a region lacking in sufficient and secure long-term disposal capacity; and second, GFL is providing waste management services and facilities that are well positioned to continue to support Ontario's transition to becoming waste-free and achieving a circular economy, while supporting a reduction in GHG production and the amount of waste going to landfill, consistent with provincial legislation.

5.1.1 Need for the Undertaking

Since the original approval in 1999, the EOWHF has transformed from a small, local family-owned facility to an important multi-service regional facility serving a broad

customer base across Eastern Ontario. The EOWHF is a well-established business in the local community providing approximately 40 stable, long-term jobs for residents of the area.

In 2016, GFL acquired the former Lafleche Environmental Inc. operating company to complement other waste services provided across Ontario and Canada. GFL has continued to expand its operations into a broad series of waste management services integrated with the EOWHF landfill including:

- providing collection services to residential/municipal and industrial, commercial and institutional (IC&I) waste generators, including collection of recyclables, source separated organics, leaf and yard material, and waste, both at the curb and directly at the EOWHF;
- processing and transfer of recyclables;
- composting of source separated organic material; and
- collection and diversion of used tires, waste electrical and electronic equipment, and construction and demolition (C&D) waste.

Many of these services are provided at the EOWHF and supported by a number of smaller GFL collection facilities located in Eastern Ontario. The distribution of these facilities and service capabilities continues to expand as GFL enters into new business contracts with municipalities and businesses across Ontario.

The on-going operation of the EOWHF allows GFL to provide significant financial contributions to the local economy, through donations to support the local community, by means of a host community agreement and municipal taxes. The EOWHF contributes approximately 9% of North Stormont's tax base[2]. GFL endeavours to maximize the use of local businesses and services across the region in support of the on-going development and operation of the EOWHF. This includes food services, accommodations, repair and maintenance, construction, equipment rental and purchase, amongst other opportunities. GFL also sponsors many local events to increase the quality of life for the community.

GFL has an on-going need to continue operation of the EOWHF landfill for the following reasons:

- the company can continue to provide its customer base with an integrated set of services including collection, transfer, processing (recycling and composting) and disposal in a reliable and cost effective manner;
- long-term contractual obligations to municipalities across Ontario can be honoured and fulfilled;

[2] Including host community payment.

- the Province's waste diversion programs and objectives are and will continue to be supported; and
- environmental impacts of GHG emissions will be minimized through:
  - reducing the number of waste related trucks hauling material long distances;
  - diversion of organic material and composting;
  - the on-going closure of small municipal landfill sites without gas collection systems, as they reach approved capacity; and
  - the capture of landfill (methane) gas and generation of green energy at the EOWHF.

GFL continually looks at opportunities to grow its service offering and maximizing waste diversion activities, and has established themselves as a leader in waste diversion activities and services to support the needs of their growing customer base, specifically with recycling and composting. In 2019, GFL acquired Canada Fibers Limited, a leader in the Canadian recycling industry which operates numerous material recovery facilities in Ontario and across Canada. Canada Fibers has been responsible for managing and processing more than 450,000 tonnes of Blue Box recyclables annually in Ontario. In addition to operating MRFs, Canada Fibers has also served their clients by undertaking the expansion and upgrade of MRFs, and has several such projects underway presently. With the integration of the Canada Fibers facilities and capabilities with GFL's other services, assets and infrastructure, GFL is now positioned to create new opportunities to provide integrated collection, sorting, processing and marketing of recyclable materials.

Beyond Blue Box materials, GFL is responsible for diverting a number of other materials from disposal for its customers. The EOWHF accepts tires, waste electronics, and C&D waste. In 2019, six tonnes of tires and 170 tonnes of waste electronics were collected at the EOWHF for recycling. Additional quantities of materials are received at the EOWHF for proper management and include Specified Risk Material (SRM), contaminated soils, asbestos, solidified industrial materials and international waste. The landfill at the EOWHF is the only one in Ontario permitted to dispose of SRM (e.g., cattle).

The EOWHF composting facility is the largest in Ontario and is among the few in Ontario able to manage an expanded stream of organic materials, including diapers, sanitary and pet waste. As processing capacity for the expanded stream of organic materials is limited in Ontario, the EOWHF composting facility plays an important role in providing processing capacity to Ontario municipalities, particularly those larger municipalities who accept this type of waste in their curbside Green Bin programs. About 77,226 tonnes of residential source separated organics and 50,271 tonnes of leaf and yard material were received from Ontario households and composted at the EOWHF in 2019.

The continued operation of the landfill is integrated with, and critical to, the on-site composting facility by providing efficient access to dispose of non-compostable (mainly residual plastics) materials from the composting process. It also provides convenient access to drop-off programs to divert additional materials from disposal.

The EOWHF provides landfill disposal capacity to over 500 villages/towns/cities across Eastern Ontario. This includes municipalities within the United Counties of Stormont, Dundas and Glengarry, United Counties of Prescott and Russell, United Counties of Leeds and Grenville, Lanark County, Renfrew County, Lennox and Addington County, Hastings County and Prince Edward County. In addition, the EOWHF also provides landfill disposal capacity to Indigenous communities within the region.

The majority of these municipalities have long term (e.g., 15 years) waste disposal contracts at the EOWHF through their responsible authority (i.e., Township, Town, City or County). Many of these municipalities have been faced with the need to close their own landfill sites due to increased regulatory requirements and associated costs, plus the risks and costs associated with long term liabilities. Faced with these economic uncertainties, GFL has partnered with these municipalities to provide this necessary service in a local and cost effective manner into the future at the EOWHF.

The existing EOWHF Landfill has been approved in two phases. The initial approval for Phase 1 included Stages 1 to 3A with a total disposal capacity of 7.4 million m^3. Stage 3A reached its approved capacity in Fall 2019. Phase 2 of the landfill development includes Stages 3B and 4 with a total capacity of 4.2 million m^3. Landfilling of Stage 3B, the first stage of Phase 2, commenced in Fall 2019, and it is anticipated that landfilling of Stage 4, the second (and last) stage, will commence in late 2020. Phase 2 of the landfill is expected to be complete in late 2025.

The EOWHF landfill has an approved annual fill rate of 755,000 tonnes. Historically, the landfill has been under-utilized receiving an annual average of less than 450,000 tonnes between 2009 and 2016. Annual waste quantities received continued to increase year over year during this same time period. GFL acquired the facility in 2016 and has optimized the operations in the subsequent years. The historical waste volumes received at the EOWHF compost facility and landfill are shown in **Table 1**.

Table 1. Historical Waste Quantities (tonnes) Managed at the EOWHF

Year	Compost Facility*	Landfill
2009	9,279	269,063
2010	31,936	257,144
2011	54,350	281,461
2012	55,623	398,384
2013	82,363	398,026
2014	98,155	526,653

Table 1. Historical Waste Quantities (tonnes) Managed at the EOWHF

Year	Compost Facility*	Landfill
2015	111,445	619,626
2016	117,293	734,874
2017	151,290	712,016
2018	136,888	754,889
2019	129,134	679,464

Note: *This quantity includes residential source separated organics, leaf and yard waste, and clean wood, pulp paper, and other compostable materials.

A detailed breakdown of the source and/or material type managed at the landfill annually is provided in **Table 2**.

Table 2. Historical Material Quantities (tonnes) Managed at the EOWHF

Year	Municipal	IC&I	C&D	Cover Material	Cover Material (Contam-inated)	Other Waste Material	Total
2009	77,168	136,714	19,051	17,041	3,286	14,826	268,085
2010	58,375	140,102	6,732	38,901	1,844	11,191	257,144
2011	100,441	135,938	14,464	22,243	12	8,364	281,461
2012	96,372	198,306	19,144	75,242	140	9,180	398,384
2013	89,245	214,770	14,806	66,591	3,106	9,508	398,026
2014	172,054	242,822	15,874	87,458	0	8,445	526,653
2015	153,740	297,987	16,753	107,946	17,075	24,127	619,626
2016	148,561	317,108	25,208	101,056	132,130	14,966	734,874
2017	187,922	322,853	35,964	27,344	132,672	6,135	712,016
2018	181,478	358,346	38,607	53,713	81,927	40,818	754,889
2019	190,838	369,109	46,137	29,386	35,467	8,527	679,464

Volumes managed at the site have increased over the past several years. The increasing volumes in the years prior to 2016 reflect not only the growth of the company, but also the transition of the EOWHF to an important regional facility. The facility began to serve an increasing number of smaller municipalities across Eastern Ontario without their own disposal capacity. In addition, there has been a lack of approved, constructed and unrestricted disposal capacity within the region to service IC&I waste generators. Following the acquisition of the EOWHF by GFL and the integration of the facility within a broader regional operation serving a larger number of customers, in recent years the EOWHF has been more effectively utilized. The facility is now operating consistent with its annual fill rate approval. This same situation is evident for the compost facility which has managed increasing organic waste volumes during this time period.

Currently, the EOWHF is the only large privately-owned landfill operating in the Eastern Ontario region approved to receive putrescible waste, which is typically waste generated from residential or municipal sources. As shown in **Table 2**, the EOWHF manages a significant volume of residual waste annually from municipalities throughout Eastern Ontario. There are two large municipally owned landfills operating within the area including the City of Ottawa Trail Road Landfill and the City of Cornwall Landfill. Both of these landfill sites have service areas restricted to their specific municipal boundaries. They primarily provide disposal capacity for residential waste and lesser quantities of IC&I waste generated within their municipalities. Consequently, these landfills are typically not an option for managing the wastes received at the EOWHF.

Construction and demolition (C&D) wastes, contaminated soils and other waste material volumes disposed at the landfill have fluctuated from one year to the next. These annual fluctuations are in part driven by event based activity such as large single construction projects.

The EOWHF landfill also manages a relatively consistent volume of IC&I and C&D waste annually. Currently, there is only one other large privately owned landfill operating in Eastern Ontario with the ability to serve the waste management requirements of IC&I customers. The Waste Connections Navan Landfill in Ottawa is permitted to receive 234,750 tonnes of solid non-hazardous waste (excluding putrescible waste) per year. The Approved Amended Terms of Reference (May 2018) for the Waste Connections Ridge Landfill Expansion indicate that the Navan Landfill has less than 10 years of capacity remaining and that there is an agreement with the MECP and the community that there will be no further expansion of the site.

There are two proposed and approved private landfills within Ottawa which have not been constructed. The Waste Management West Carleton Environmental Centre (WCEC) received EA approval in September 2013. This approval included the expansion of an existing (now closed) landfill site. The approval is for a volume of 6.5 million m^3 based on receiving 400,000 tonnes annually over an approximate 10-year planning period. The Capital Region Resource Recovery Centre received EA approval in May 2017 which includes a new landfill with capacity of approximately 10.7 million m^3. This capacity was based on a 30-year planning period at a maximum of 450,000 tonnes annually.

In December 2018, the Ontario Waste Management Association released their State of Waste in Ontario: Landfill Report (2^{nd} Annual Landfill Report) which provides an assessment of landfill disposal capacity in Ontario. The Ontario Waste Management Association (OWMA) concludes that in aggregate there are approximately 14 years of landfill disposal capacity remaining in Ontario with continued export at current levels to the USA.

The OWMA report also notes that the majority of the remaining capacity is held by large municipalities (64% of capacity) which is effectively restricted by service area. Municipalities typically manage their landfills to preserve capacity for residential waste by minimizing IC&I waste disposal through market pricing strategies. Further,

the remaining disposal capacity in Ontario is becoming concentrated in a fewer number of large regional sites. OWMA reports that the trend may be for smaller open landfills to continue to close, directing increased waste volumes to a fewer number of large regional sites in the future.

While data is not available to quantify the volume of waste generated in Eastern Ontario being disposed in the USA annually, it is at least understood that some volume of waste from the area is being transported to upstate New York landfills for disposal. Similar to the situation in Ontario, landfill capacity in New York and other states is continuing to diminish and consolidating into fewer regional sites. This has had the effect of increased competition to actually secure long term disposal capacity.

The need for accessible and secure local disposal capacity for residential waste, which is managed entirely within Ontario, is of particular importance during situations like the current COVID-19 pandemic. On May 12, 2020, the OWMA issued a media release outlining the changes in residential and commercial waste generation experienced during the pandemic based on a study conducted with the support of 13 Ontario municipalities representing close to 8.5 million residents[3]. The study concluded that, between March 9 and April 27, 2020, there was an overall 5.31% increase in residential waste generation over the same time period in 2019 as a result of the pandemic. This increase included a 4.32% increase in garbage, a 12.25% increase in green bin, and a 1.07% increase in blue box. The EOWHF is an essential service for managing residential wastes (including garbage and organics) from numerous municipalities across Eastern Ontario.

It is evident that the EOWHF is a significant component of the provincial waste management network and infrastructure, both now and in the future, serving a broad area and customer base across Eastern Ontario. The EOWHF provides both composting and disposal capacity to customers from the Quebec border west to the Greater Toronto Area and north to Renfrew County. With a lack of sufficient and secure long term disposal capacity available in the region, there is an on-going requirement for this facility to continue to provide this service, supporting stable operation and growth for municipalities and businesses across Eastern Ontario.

5.1.2 Consistency with Provincial Legislation

In June 2016, the Ontario government passed the *Waste Free Ontario Act*, which enacted two Acts: the *Resource Recovery and Circular Economy Act*, 2016, and the *Waste Diversion Transition Act*, 2016. Under the new legislation, the province is moving toward a circular economy framework by establishing a producer responsibility regime. Subsequently in 2017, the MECP released the Strategy for a Waste-Free Ontario: Building the Circular Economy (the Strategy). The Strategy

[3] P. van der Werf, R. Cook, & P. Hargreave. COVID-19 Waste Generation Report – May 12, 2020. Available at: https://www.policyintegrity.ca/blog/2020/5/11/covid-19-waste-generation-report-may-12-2020.

outlines a vision for Ontario where waste is considered a resource that can be recovered, reused and reintegrated to achieve a circular economy. The ultimate goal of the Strategy is to achieve zero waste and zero greenhouse gas (GHG) emissions from the waste sector. The Strategy further identifies four overall objectives which include a total of 15 actions to be taken and implemented by 2050. A number of the actions relate to the need for landfill including increased resource recovery, disposal bans, reduction of food and organic wastes, and ensuring landfills are well planned and managed to minimize their need and reduce GHG emissions.

The Province of Ontario released their *Climate Change Action Plan 2016 – 2020*, which describes the actions Ontario will take over the next five years to fight climate change, reduce GHG pollution and transition to a low-carbon economy. The waste sector is reported to contribute 5% of the overall GHG emissions. The Climate Change Action Plan aligns with the *Waste Free Ontario Act*, outlining increased recycling efforts and a reduction in the amount of organic material being directed to landfill in order to reduce GHGs. Another action is the capture of methane generated from landfill for use as a renewable natural gas.

In November 2018, the MECP released *Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan* which outlined various commitments to reduce litter and waste in Ontario communities. Subsequently in March 2019, the Ministry released the *Reducing Litter and Waste in Our Communities: Discussion Paper* identifying three waste management goals for Ontario:

1. Decrease the amount of waste going to landfill;
2. Increase the province's overall diversion rate; and
3. Reduce greenhouse gases from the waste sector.

Even with the introduction and implementation of these provincial initiatives, residual materials will remain which require proper management and disposal for the foreseeable future.

GFL's integrated waste management services and facilities are well positioned to continue to support Ontario's transition to becoming waste-free and achieving a circular economy, while supporting a reduction in GHG production and the amount of waste going to landfill. GFL currently provides a range of services to maximize the diversion of materials away from disposal, which include the largest composting facility in Ontario capable of managing food and organic wastes and producing a high quality marketable end product. GFL is very active in providing organics management as a key business service to a diverse range of clients across Ontario and Canada. With the acquisition of Canada Fibers, GFL is also well positioned to respond to future market demands for increased recyclables processing.

Continued operation of the EOWHF aligns with the Province of Ontario's *Strategy for a Waste Free Ontario, Climate Change Action Plan* goal of reducing GHG emissions,

and the *Made in Ontario Environment Plan* to reduce litter and waste in communities. GFL has invested in many initiatives to reduce GHG emissions and divert more materials. The future development of the EOWHF is required to continue sustainable business operations and to continue providing the essential financial support for a wide range of additional services and programs, as follows:

- GFL has installed an LFG collection system at the existing EOWHF to collect methane gas (a major source of GHGs), which is used for energy production. The LFG collection system is being expanded as additional cells and stages of the landfill are completed. This now includes all of Stages 1, 2, and 3A of the existing landfill. In 2019, approximately 45 million m^3 of LFG was captured and destroyed at the EOWHF.
- In 2011, GFL received approval from the Ontario Power Authority as part of the Feed-in-Tariff (FIT) program to produce 4.5 MW of renewable energy from the collected methane. The plant is operating at its peak electrical production and has the capacity to manage additional gas volumes collected from future landfill development.
- GFL's EOWHF composting facility keeps organic material out of landfills which also reduces GHG emissions through the avoidance of methane generation from the decomposition of organic materials. This facility is one of very few composting facilities in Ontario able to manage organic materials such as diapers and sanitary products. The facility is capable of consistently producing an 'AA' compost product.
- GFL supports further reductions in GHG emissions by providing disposal services to smaller municipalities allowing them to close their landfills which do not have gas control systems. As an example, GFL worked with Russell Township Council to assist the municipality in the environmentally sound closure of their landfill and provided a state of the art transfer station for waste, recyclables and organics transfer. In addition, the transfer station site also includes a residential drop-off area that allows the efficient sorting of all waste streams, recyclables, electronic waste, metal, etc.
- GFL provides a network of regional transfer stations to collect material from a larger number of generators and consolidate the material for transport, which significantly reduces the number of vehicles travelling long distances to appropriate processing and disposal facilities. This also supports a substantial decrease in GHG emissions associated with transportation of waste.
- GFL is in the planning process for the development of greenhouses and/or comparable facilities at the EOWHF to utilize the heat generated from the existing LFG utilization facility or the LFG as a fuel source.

There are also a number of programs and services offered by GFL at the EOWHF which contribute to community awareness of climate change and waste reduction

including participation in various organizations to further develop opportunities to reduce waste. These include the following:

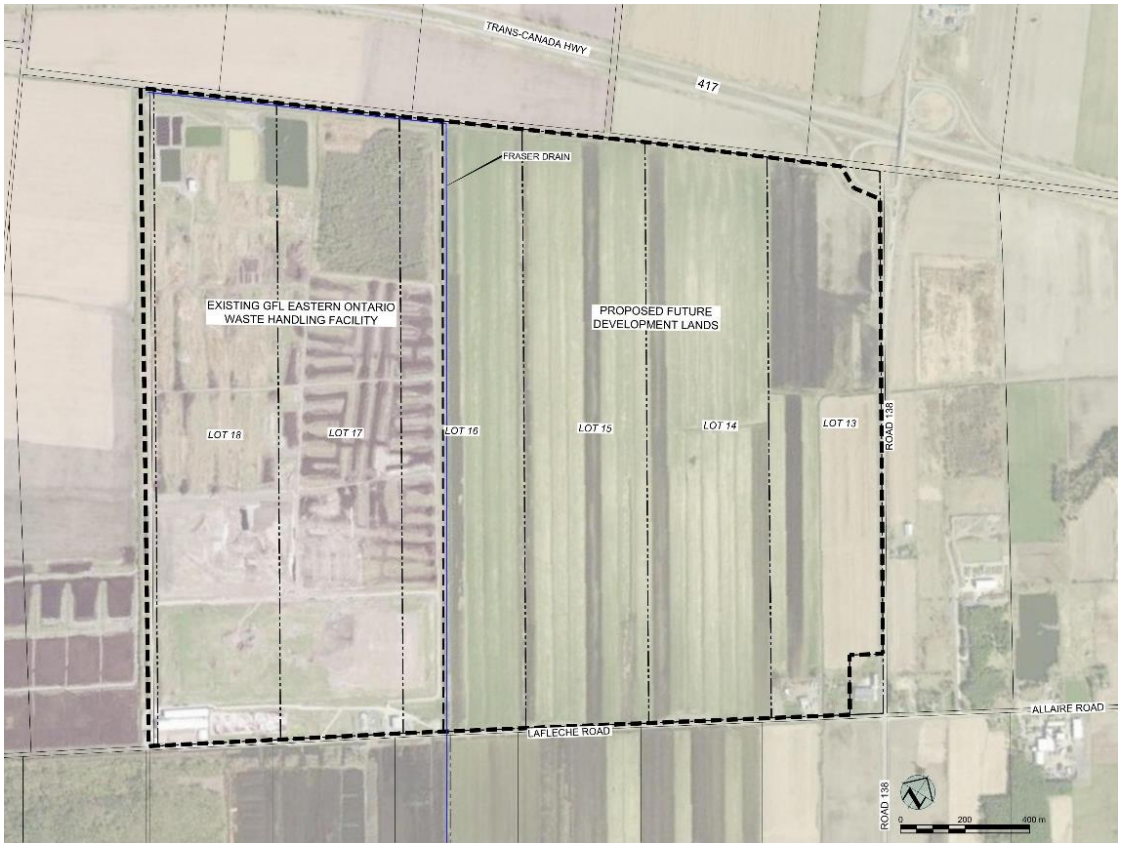
- GFL has partnered with Habitat for Humanity to allow individuals to drop off items for redistribution, instead of being disposed, at GFL transfer station locations and at the EOWHF public drop off area.
- GFL has developed a large pollinator garden on the EOWHF site. Working with the local horticultural society on the pollinator garden design, the garden was constructed in 2017 and includes over 4,300 specific plants. The pollinator garden has received praise and commendations from local, municipal and provincial agencies.
- GFL is an active educator and during a year provides presentations, tours and information to thousands of individuals. Numerous local and Ottawa schools come as part of their curriculum to the EOWHF to learn about diversion, composting, recycling and their role in making Ontario waste free.
- GFL in partnership with the Ontario Centres of Excellence, St. Lawrence Institute of Environmental Science and St. Lawrence College have funded and conducted extensive research on the beneficial use of the leachate generated from the EOWHF organics processing/composting facility. This research has included an assessment of the effect on plant growth rates. The study was finalized in 2018 and the results have shown excellent benefits to nutrient growth. Based on these successful results, GFL is exploring the potential to take the leachate from the composting facility and provide it as a viable, highly enriched liquid organic fertilizer and soil additive that can be marketed to the public. This will eliminate the need to treat the leachate as waste water and offer an excellent example of the circular economy in practice.
- GFL staff is actively involved at the director level with the Compost Council of Canada, and has been instrumental in working with them and the MECP as a member of the Organics Working Committee to develop the Organics Strategy as part of Waste-Free Ontario.
- GFL is an active member of the Ontario Waste Management Association participating in various committees on organics, recycling and soil remediation established to help advance the waste management industry within Ontario.

5.2 Description of the Undertaking

The proposed future development of the EOWHF would consist of the development of landfill capacity in an area in the northeast corner of the existing EOWHF and to the east of the existing EOHWF on lands owned by GFL (**Figure 3**). The landfill expansion is targeted to provide additional airspace capacity for approximately 20 years of operation, which represents approximately 15.1 million m^3 at GFL's current maximum annual fill rate of 755,000 tonnes per year.

The lands within the existing EOWHF being considered for future development include approximately 20 hectares in the northeast corner of the facility. The lands to the east of the existing EOWHF being considered for future development include approximately 240 hectares consisting of the eastern half of Lot 16, Lots 14 and 15, and the majority of Lot 13 of Concession 10. GFL currently owns the eastern half of Lot 16, and Lots 14 and 15, and the majority of Lot 13.

Figure 3. Proposed Future Development Lands



6. Rationale and Description of Alternatives

The *EAA* identifies two types of alternatives: 'alternatives to' an undertaking and 'alternative methods' of carrying out an undertaking. 'Alternatives to' an undertaking are the different ways of addressing a problem or opportunity, while 'alternative methods' are different ways of carrying out the same activity. The 'alternatives to' and 'alternative methods' for the EOWHF future development are discussed below.

6.1 Alternatives to the Undertaking

'Alternatives to' the undertaking are functionally different ways of addressing the business opportunity identified by GFL, which is the provision of long-term waste disposal capacity. GFL has identified and considered specific 'alternatives to' the

proposed undertaking that address the opportunity and are within the company's business mandate and ability to implement.

Consistent with the MECP Code of Practice for *Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (January 2014), GFL identified a range of 'alternatives to' for providing long-term disposal capacity that are appropriate and reasonable for them (a private sector company) to implement. The following four alternatives were identified:

1. Do nothing;
2. Redirect waste to a disposal facility elsewhere;
3. Develop a thermal treatment facility at the EOWHF; and
4. Develop additional landfill disposal capacity at the EOWHF.

Each of the 'alternatives to' were considered in the context of their ability to meet the needs of the Eastern Ontario region and the business opportunity identified by GFL. A description of each alternative to and an assessment of how each addresses the opportunity are presented below.

Alternative 1 – Do nothing

The "do nothing" alternative implies that GFL would not undertake the development of new long-term disposal capacity. GFL would only be able to continue with their current business operations at the EOWHF for approximately 5 to 6 years based on current landfilling rates (i.e., until approximately 2025). Landfill operations would have to cease once the existing landfill is at capacity. GFL would be unable to continue to provide disposal services to its customers and fulfill long term contractual commitments. These customers, including a number of municipalities across Eastern Ontario, would need to find alternate ways to manage their waste. Currently, the EOWHF is the largest operating disposal facility in Eastern Ontario, and the only landfill in the region capable of managing the waste volumes being generated by municipalities who do not have their own facility.

This alternative does not support GFL's integrated waste management programs, nor does it support the existing waste diversion infrastructure at the EOWHF. The on-site composting facility and electronics recycling service is in part financially viable due to its ability to utilize and share infrastructure with the landfill. With the closure of the landfill, it will be uneconomical for GFL to maintain the operation of the composting facility and the public drop-off facilities for waste diversion and disposal. These diversion facilities service municipalities and businesses across Eastern Ontario.

The closure of the EOWHF in approximately 5 to 6 years would result in a relatively large number of job losses within the local community, a significant loss of revenue for the Township of North Stormont, and broader negative economic impacts across the region.

This alternative is not a viable option for GFL's on-going business, its customers and the Province of Ontario. This option does nothing to contribute to the Ontario government's priorities for waste diversion and climate change. It has been included to provide a benchmark against which to measure the other alternatives and to assess the advantages and disadvantages of the preferred alternative.

Alternative 2 – Redirect waste to a disposal facility elsewhere

The EOWHF landfill is the only disposal facility owned by GFL within Ontario. This alternative consists of redirecting waste currently managed at the EOWHF (i.e., 755,000 tonnes per year) to an operating disposal facility not owned by GFL in Ontario and/or the USA. GFL owns and operates landfill sites in Quebec but they are prohibited from receiving wastes generated in Ontario.

Within Eastern Ontario, there are no large landfill facilities currently operating with the capacity to manage the wastes being disposed at the EOWHF on an annual basis. The cities of Cornwall and Ottawa are the largest municipal sites within the region and both have service areas which are restricted to their municipality. Typically, municipal landfill sites in Ontario receive only limited volumes of waste from the IC&I sectors as they look to preserve long term disposal capacity for residential generated waste. The Waste Connections Navan Landfill in Ottawa is permitted to receive 234,750 tonnes of non-putrescible waste per year and is reported to have less than 10 years of remaining capacity. These facilities are not a long term option to manage the wastes currently managed by the EOWHF.

Exporting waste to the USA is both costly and risky due to fluctuations in the value of the Canadian dollar, fuel prices, and the potential for border closures to Canadian waste due to security or health concerns. While data is not available to quantify the volume of waste generated in Eastern Ontario currently being disposed in the USA annually, it is at least understood that some volume of waste from the area is being transported to upstate New York landfills for disposal. Similar to the situation in Ontario, landfill capacity in New York is under pressure, continuing to diminish and consolidating into fewer regional sites. In addition, due to changing regulations affecting the transportation and logistics industry, there is an on-going shortage of long haul vehicles and qualified drivers available to support and sustain this approach. Also, as described in **Section 5.1.1**, the need for accessible and secure local disposal capacity for residential waste, which is managed entirely within Ontario, is of particular importance during situations like the current COVID-19 pandemic.

Based on the available options, GFL has virtually no ability to securely provide long term disposal capacity by redirecting waste to other landfill sites. Available long term landfill disposal capacity is already very limited in Eastern Ontario. Hauling waste to another disposal facility (i.e., the closest being either in New York or southwestern Ontario) significantly increases the costs GFL would need to charge its customers, for both transportation and disposal fees, results in increased GHG emissions from

increased truck volumes, causes increased concerns related to road safety, congestion and impacts on infrastructure, and makes the business less competitive putting it at a financial disadvantage. For these reasons, this is not a feasible alternative to address the regional need and business opportunity that GFL has identified.

Alternative 3 – Develop a thermal treatment facility at the EOWHF

The MECP released *Reducing Litter and Waste in Our Communities: Discussion Paper* in March 2019, which outlines the potential to use thermal treatment of waste to minimize the volume of residuals requiring management by landfill. Thermal treatment of residual waste can be undertaken through a range of technologies, some of which are well established and others which are still considered to be emerging in their application to mixed waste. Depending on the technology applied, synthetic fuels or electricity and steam are the typical outputs. Combustion residuals generated from the thermal processes will typically need to be managed by landfill.

Generally, thermal treatment for managing residual residential and IC&I wastes are categorized as incineration or emerging/alternative technology. Incineration includes the commercially proven mass burn combustion process which is the basis of the Durham York Energy Centre in Clarington, Ontario. The application of this type of technology is common across the United States and Europe. This technology approach is particularly well suited to manage a mixed residual waste stream. This facility manages approximately 140,000 tonnes per year of residential waste with a capital cost of $284 million, of which a portion was funded by the Federal Gas Tax. Annual operating costs were estimated to be in the order of $15 million offset by revenues of approximately $8.5 million from the sale of 14 MW of electricity and $550,000 from the sale of metals. The balance of the operating costs are covered by municipal taxes. The volume of waste is reduced by 85% to 90%, with the residual requiring landfill disposal.

New, emerging or alternative thermal technologies for residual waste management include gasification, pyrolysis and plasma arc amongst others. While these technologies have generally existed for a number of years, they have typically been applied to homogenous feedstocks or waste streams. To date, the application of these technologies to a mixed residential and IC&I residual waste feedstock has had very limited operating success in Canada or North America. The Plasco facility in Ottawa is a recent example where the technology application was not successful. Enerkem has developed and recently initiated the operation of a gasification facility in Edmonton producing biofuels. The success of this facility is being monitored closely for its broader application to managing a mixed residual waste stream.

GFL does not own or operate any thermal treatment facilities and has no related business experience with this type of alternative. The company is focused on maximizing waste diversion, and minimizing the volume of residual material to be landfilled, through its integrated system of collection, material recovery facilities and composting. In addition, approximately 20% to 25% of the residual material managed

at the EOWHF in recent years is unsuitable for thermal treatment (e.g., soil-like material, asbestos, special wastes, etc.).

The EOWHF has an existing landfill gas-to-energy facility. GFL, via its business partner, has a contract with the Ontario Power Authority as part of the FIT program to produce 4.5 MW of renewable energy from methane collected from the landfill and the facility is operating at its peak electrical production. The facility is designed to allow expansion and doubling of electrical production; however, the Ontario government has cancelled the FIT program and no new contracts are being issued. This would also affect the production of energy from a thermal treatment facility. Without revenues from the sale of electricity this type of facility is not financially viable.

Thermal treatment facilities are capital intensive and typically have high operating and maintenance costs; consequently, they require a relatively high per-tonne tipping fee. This type of alternative would not be cost competitive for GFL to offer to its customers. With the exception of municipalities, most customer contracts are of a short duration which creates additional financial risk in providing this type of alternative with no certainty of a long term revenue stream to cover these costs.

Given the financial and in some cases technological risks related to an approach not related to GFL's business experience, development of a thermal treatment facility is not a feasible option for the company to address the identified business opportunity.

Alternative 4 – Develop additional landfill disposal capacity at the EOWHF

This alternative consists of developing additional disposal capacity at the EOWHF through a lateral expansion of the landfill to adjacent lands owned by GFL, and on currently unused land within the northeast corner of the existing EOWHF property boundaries[4].

The development of additional disposal capacity by a vertical expansion of the existing landfill is not possible due to soil conditions within the site area. The area is underlain by a silty clay deposit which provides significant attenuation capabilities and natural protection to groundwater. Based on extensive geotechnical work completed at the EOWHF as part of the on-going design and development of the approved landfill stages, the silty clay soil is unable to safely accept the loading from an increased landfill height. The testing has shown that if the landfill height is increased, the underlying soils will become unstable, creating the risk for landfill base, berm and slope failure, and endangering human health and the environment.

The development of additional landfill disposal capacity at the EOWHF will support the integrated facilities including the management of residuals from the compost facility operation, enhancing the on-going operation of the landfill gas-to-energy

[4] There is potential to develop only very limited additional landfill capacity within the existing EOWHF property boundaries.

facility, utilizing the existing leachate treatment facility, and receiving post-diversion residual wastes providing cost effective disposal services to generators across Ontario integrated with their local collection. The on-going integration of these operations further enhances the reduction of GHG emissions.

GFL owns approximately 240 hectares of land located immediately east of the EOWHF, which is currently mainly leased to a local business and utilized for sod production. Generally this includes the land west of Highway 138, east of the eastern boundary of the existing EOWHF, north of Lafleche Road and south of Highway 417. Access to the landfill would continue to be from Lafleche Road.

GFL has successfully operated the EOWHF since 1999 and it has become an important addition to the local community by creating employment opportunities, hosting educational events and facility tours, contributing financially to the Township of North Stormont, and supporting local initiatives within the community. This alternative is the most financially and economically viable option to both GFL and its customers, utilizing land already owned by GFL and the existing supporting site infrastructure. The future development of the EOWHF on adjacent land owned by GFL is the only practical, environmentally sound and cost-effective option to address the identified business opportunity to allow GFL to operate in the long term.

Preferred Alternative to the Undertaking

GFL has determined that the future development and on-going operation of the EOWHF landfill is the only reasonable option for the company, its customers, and the Province of Ontario. The other alternatives do not address GFL's business opportunity to meet long-term customer commitments or avoid business risks, and they are not supportive of the Ontario government priorities of addressing waste diversion and climate change.

These alternatives, and the identification of the preferred 'alternative to', were presented to the public as part of consultation and engagement during the development of the ToR. The comments received on 'alternatives to' the undertaking identified that the future development of the landfill east of the EOWHF is an acceptable alternative; however, potential effects on noise, odour and visual impacts need to be considered along Highway 138 and Highway 417. The potential effects of the preferred alternative will be identified and assessed as part of the EA.

Comments were also received regarding the use of incineration and newer technologies, taken to mean various thermal treatment technologies currently being investigated. GFL has considered development of a thermal treatment facility as an alternative (Alternative 3, above) and it is not a feasible option for the company to address the identified business opportunity. GFL does not own or operate any thermal treatment facilities and has no related business experience with this type of alternative. This alternative would pose significant risks to GFL's business.

6.2 Identification of Alternative Methods

'Alternative methods' of carrying out the undertaking are different ways of implementing the proposed undertaking. The future development of additional landfill disposal capacity for the EOWHF can be achieved through alternative landfill configurations based on the area to be developed.

The lands being considered for future development include an area in the northeast corner of the existing EOWHF and lands owned by GFL to the east of the EOWHF, specifically the eastern half of Lot 16, Lots 14 and 15, and the majority of Lot 13 of Concession 10 east of the EOWHF (**Figure 3**).

Two preliminary conceptual design alternatives have been developed, which will be refined, as appropriate, during the EA. These conceptual design alternatives are outlined below. These two alternatives are consistent with the design approach that has been approved and developed over the past 20 years for the existing EOWHF. There is limited potential to adjust the design by increasing the height of the landfill. Studies completed for the EOWHF have indicated that the underlying soils may become unstable due to increased landfill height and weight. As a result, the design alternatives are limited to varying lateral configurations with a consistent height. Both alternatives provide a landfill volume of approximately 15.1 million m³ based on the approved fill rate of 755,000 tonnes per year over a 20-year planning period. Additional alternative methods may be identified and assessed as part of the EA if necessary.

Alternative methods for treating landfill leachate and managing landfill gas will also be identified and assessed, as appropriate, during the EA.

GFL will qualitatively predict the effects for each alternative method on the environment. The assessment will be completed for each component based on the locations and conceptual designs for each alternative, including mitigation and the existing environmental conditions.

6.2.1 Alternative Method 1

Alternative Method 1, shown on **Figure 4**, contains three stages oriented east-west, similar to the existing EOWHF landfill. These stages are located on the property adjacent to the EOWHF; however, a relatively small volume of capacity may be available in the northeast corner of the existing EOWHF site.

The landfill stages will be developed with similar dimensions to the existing landfill, i.e., similar width, height/depth, spacing, and side slopes as the existing landfill. The landfill design will include leachate and landfill gas collection systems. The future development will utilize typical buffer widths of approximately 100 metres from the property boundaries, with some exceptions. The existing site access road and infrastructure, including the gas-to-energy plant and the leachate treatment plant will continue to be used for the future development.

Visual screening (not shown on **Figure 4**) will be installed around the perimeter of the development through a combination of berms and vegetation plantings.

Figure 4. Alternative Method 1

6.2.2 Alternative Method 2

Alternative Method 2, shown on **Figure 5**, contains three stages oriented north-south. These stages are located on the property adjacent to the EOWHF; however, like Alternative Method 1, a relatively small volume of capacity may be available in the northeast corner of the existing EOWHF site.

As with Alternative Method 1, the landfill stages will be developed with similar dimensions to the existing landfill, i.e., similar width, height/depth, spacing, and side slopes as the existing landfill. The landfill design will include leachate and landfill gas collection systems. The future development will utilize typical buffer widths of approximately 100 metres from the property boundaries, with some exceptions. The existing site access road and infrastructure, including the gas-to-energy plant and the leachate treatment plant will continue to be used for the future development.

Visual screening (not shown on **Figure 5**) will be installed around the perimeter of the development through a combination of berms and vegetation plantings.

Figure 5. Alternative Method 2

7. Description of Existing Environment and Potential Effects of the Undertaking

A brief description of the existing environmental conditions at the EOWHF and surrounding areas is presented in this section. This description is based on the work and studies completed for the previous EA[5] and on the additional work and studies underway to support the EA for the future development of the EOWHF. A more detailed description of the existing environmental conditions will be prepared as part of the EA. The existing conditions will be used to assess the potential effects of the alternatives on the environment. The actual determination of the anticipated potential environmental effects of the undertaking, potential mitigation/management measures, and net effects are not included in this ToR; however, these will be identified in the EA Study Report.

[5] HDR Corporation. 2018. *Environmental Assessment Study Report*. Eastern Ontario Waste Handling Facility Landfill Expansion Environmental Assessment. Moose Creek, Ontario. Prepared for GFL Environmental Inc. June 1, 2018.

During the EA, existing conditions and potential effects will be considered in the context of two study areas: on-site and off-site.

The following sections describe the study areas and the existing environmental conditions within these study areas.

7.1 Study Areas

The proposed on-site and off-site study areas for the EA are as follows (**Figure 6**):

- **On-site study area** – the existing EOWHF, and the future development area comprising the eastern half of Lot 16, Lots 14 and15, and the majority of Lot 13 of Concession 10 east of the EOWHF; and
- **Off-site study area** – the lands in the vicinity of the future development extending approximately 1 kilometre from the on-site study area.

The off-site study area may be refined during the EA to suit the requirements of a specific environmental component or based on the spatial extent of predicted effects.

7.2 Existing Conditions by Environmental Component

The *EAA* defines the environment in a broad, general sense that comprises physical, biological and human considerations. In this EA the environment has been separated broadly into natural, socio-economic, cultural, and built components. The following sections present preliminary descriptions of the existing environmental conditions by environmental component. The EA Study Report will include more detailed descriptions of existing environmental conditions. The characterization of the existing environment for the EA will incorporate the results of past studies, field reconnaissance, additional baseline studies, and information from the data sources outlined in **Appendix B**, as applicable.

7.2.1 Natural Environment

The natural environment, as defined for the EA, includes the atmospheric environment, geology and hydrogeology, the surface water environment, and the ecological environment.

Figure 6. Study Areas

7.2.1.1 Atmospheric Environment

The atmospheric environment includes air quality, odour and noise.

Air Quality

The area surrounding the EOWHF comprises mostly agricultural lands as well as portions of the Trans-Canada Highway (Highway 417), Highway 138, and a number of businesses including Manderley Sod Farms, Champion Mushrooms, Calco Soils Inc., Moose Creek Tire Recycling Inc., A.L. Blair Construction Ltd. Martin Quarry, Agro Culture, Supreme Seeds, and Casselman Performance. There are seven residences located within the off-site study area.

Sources of air emissions include on-site operations and activities from the surrounding agricultural operations, as well as traffic along Highway 417 and Highway 138. The main on-site sources of air emissions at the EOWHF include the:

- landfill operations and fugitive gas emissions, including mobile sources and vehicular traffic operating on site;
- composting facility biofilter;
- siloxane flare;
- enclosed LFG flare[6]; and
- LFG utilization facility.

The site entrance road is paved and dust control measures are implemented for on-site roads; for example, surface water is applied to on-site haul roads to minimize dust. The off-site study area is influenced by the presence of agricultural operations in the local area, resulting in elevated levels of suspended particulate matter and dustfall.

Based on previous studies, the existing air quality in the on-site and off-site study areas meets the provincial and federal air quality standards for all contaminants of concern with the exception of occasional exceedances of Nitrogen Oxides, Particulate Matter, Fine Particulate Matter ($PM_{2.5}$ and PM_{10}) and seasonal exceedances of total dustfall[7]. The exceedances of the Nitrogen Oxides and Particulate Matter (PM_{10} and $PM_{2.5}$) standards are limited to the area immediately adjacent to the existing EOWHF's southern and western property lines, and the predicted concentrations of compounds of concern drop off sharply with increasing distance from the EOWHF.

[6] A second enclosed flare will be installed in 2020.

[7] Tetra Tech. 2018. *Supporting Document 1-1 – Air Quality Existing Conditions Report*. Eastern Ontario Waste Handling Facility Landfill Expansion Environmental Assessment. Prepared for GFL Environmental Inc., Moose Creek, Ontario. May 16, 2018.

Dustfall rates in the area have exceeded the air quality standards during the summer months; however, as the EOWHF is located within a region dominated by agricultural operations, and the most affected monitoring locations are situated in close proximity to a number of confounding additional dust emission sources (i.e., peat extraction, sod farming, sand and aggregate quarrying and associated heavy truck traffic from all), elevated dustfall levels are estimated to be typical of other rural, agricultural areas of Ontario.

The results of 2019 summer (June to August) dustfall monitoring carried out under ECA A420018 demonstrated that dustfall counts were below the current provincial guideline[8] for all samples collected except for one: the upwind sampling location exceeded the guideline during August 2019. It is likely that this exceedance resulted from the large number of trucks used to bring sand and stone to the site as part of the infrastructure works associated with landfill cell construction and waste capping projects. The east access road is often the route used for these supply vehicles, and the sampling device is fastened to a hydro-pole that is positioned immediately beside this road.

GHG emissions from the EOWHF are due primarily to the generation, combustion and fugitive releases of LFG from the facility. The EOWHF currently contributes approximately 0.2% of Canada's solid waste related GHG emissions, or approximately 0.01% of the country's total GHG emissions[7].

Odour

Previous studies have shown that concentrations of odorous compounds of concern within the on-site and off-site study areas do not exceed the applicable air standards or limits. Predicted odour concentrations have been shown to meet the guideline limit of 1 OU/m^3 for all but a minimal 0.6% of the time; consequently, the EOWHF meets the relevant odour guideline approximately 99.4% of the time[9]. The infrequent occurrence of exceedances and complaints of transient odours are likely related to operational issues that can be effectively mitigated by adjusting operational practices.

In a recent study[9], the primary odour sources at the EOWHF were identified as:

- Landfill gas – 70%;
- Tipping – 9%;
- Compost fugitives – 8%;

[8] In Ontario, the current guideline for total dustfall is 7.0 g/m^2/30 days as per Ontario Regulation 419/05: Air Pollution – Local Air Quality, January 1, 2019.

[9] Tetra Tech. 2020. Technology Benchmarking Report of Methods to Reduce Odour Impacts from the Eastern Ontario waste Handling Facility. Presented to GFL Environmental Inc., North Stormont, Ontario. March 24, 2020.

- Curing – 8%;
- Leaf and yard waste storage – 4%; and
- Biofilter – 1%.

Additional potential odour sources identified in the study as negligible include:

- South leachate aeration ponds;
- Leachate treatment facility;
- Treated effluent holding ponds;
- Auxiliary wetland ponds;
- Landfill gas utilization facility (which includes the flares)[10]; and
- Finished compost storage and screening.

Between the beginning of 2014 and the end of 2016, a total of 12 odour-related complaints were logged by either the MECP or directly by the EOWHF. This is equivalent to a frequency of occurrence of less than 1.6% of the time (conservatively assuming that the reported odour persisted for a period of 24 hours for each complaint event). In 2017 through 2018, a total of 12 odour-related complaints were received by GFL, and no odour complaints were received in 2019 or to-date in 2020. The MECP has indicated that they have received a limited number of additional odour complaints since 2017 but the details have not been made available to GFL.

The complaints received by GFL were received during both normal operations and while there were no operations on-going. The odour complaints were also highly transient, lasting for only limited periods of time, making it difficult to accurately discern the originating source based on the available data. It is worth noting that the majority of complaints were related to odour impacts detected while travelling along area roads, rather than on-site at residences or businesses.

The odour complaints in 2016 through 2018 were associated with LFG impacts, which could be effectively mitigated by improving or implementing measures related to the first four elements listed above. In 2017, GFL initiated a 3-year plan to enhance the landfill gas management system at the EOWHF and substantial improvements in landfill gas odour have been achieved from past operations.

Since 2016, GFL installed additional gas wells within Stage 2 of the landfill which was completed in March 2018 with 72 wells. The installation of landfill gas wells in Stage 3A of the landfill was completed in 2020 with 54 wells. A total of 114 additional wells are pending installation within Stage 3B (currently under development) and Stage 4 (to be developed). Additional LFG management infrastructure to be installed in 2020 includes a second blower skid, a second enclosed flare (for a total of three flares), and design modifications to maximize biogas capture. In addition, routine

[10] A second enclosed flare will be installed in 2020.

landfill surface scans are conducted to detect and address fugitive emissions. These measures can be expected to effectively mitigate the fugitive release of LFG under normal operating conditions.

There are other potential sources of odour in and around the study area including agricultural activities like fertilizer applications and the nearby mushroom farm. These sources have the potential to generate significant odour emissions under adverse circumstances.

Noise

The EOWHF and surrounding areas are within a high noise environment dominated by a major 400 series highway (Highway 417) linking the Ottawa Region to Montreal. A commercial peat harvesting operation is located on the west side of the EOWHF along with an access road which allows for the passage of heavy trucks alongside the western and northern boundaries of the EOWHF.

Noise sources associated with the landfilling activities are mainly waste trucks travelling from the site entrance to the active phase and equipment used at the tipping face for shaping the mound. Equipment also operates on-site for construction at the landfill's active phase or for preparation of the next landfilling phase. Additional noise sources are associated with the LFG utilization facility, the leachate collection and treatment facility, and the composting facility and activities.

There have been no noise complaints at the EOWHF since operations began in 1999. An annual noise monitoring program has been carried out at the EOWHF since 2010, which involves a noise monitor placed in close proximity to the nearest receptor. Noise levels at the monitoring location are dominated by the road traffic noise along the Highway 417 and the noise associated with the EOWHF is inaudible over noise from Highway 417 at the closest receptor.

7.2.1.2 Geology and Hydrogeology

Geology and hydrogeology includes geology, hydrogeology, and groundwater quality and quantity.

Geology

The near surface bedrock underlying the EOWHF consists mainly of shale and limestone deposits of the Shadow Lake Formation of the Ottawa Group. The shale overlies the limestone unit. The bedrock surface generally slopes from the north to the south across the site from an elevation of approximately 55 metres above sea level in the north to 43 metres above sea level in the south, and ranging between 10.5 and 24.7 metres below ground level, which is consistent with the regional bedrock geology map of the area.

The general overburden stratigraphy in the area of the EOWHF consists of a surficial peat layer underlain by a silty clay deposit, commonly underlain by a sandy silt

glacial till layer which overlies bedrock. The typical thickness of the geological deposits is as follows:

- peat soil 2 to 3 metres thick;
- silty clay 7 to 17 metres thick;
- compact to very dense glacial till approximately 3 metres thick; and
- bedrock.

The subsurface soil conditions in the proposed future development area generally consists of a substantially thick overburden layer that rests upon bedrock. The typical thickness of the geological deposits is as follows:

- topsoil 0.3 to 2.1 metres thick;
- silty clay or clay with some silt and trace sand 4 to 16 metres thick;
- sandy gravel glacial till with some silt 0.6 to 5.7 metres thick; and
- bedrock.

Hydrogeology

The direction of shallow and deep groundwater flow is from south to north across the onsite study area. The vertical hydraulic gradient is variable between stratigraphic layers, with some upward, some downward, and some locations mixed. The clayey upper overburden layer is anticipated to provide a relatively low hydraulic conductivity, while the gravelly sand till lower overburden layer is anticipated to provide a moderate hydraulic conductivity. The bedrock displays mixed hydraulic conductivity, depending on the degree of fracturing; the bedrock at some boreholes is effectively impervious.

The existing EOWHF site is not within a source water protection zone and the EOWHF Annual Reports confirm that the site is in compliance with the MECP's *Guideline B7 – Incorporation of the Reasonable Use Concept into Groundwater Management Activities*. No issues have arisen with respect to ground water use since the site commenced operations. Mapping by the source water protection authority indicates that the future development area is classified as being a Highly Vulnerable Aquifer with a score of 6 and is within a Significant Groundwater Recharge Area with a score of 6.

The water table surface declines northward, from approximately 67.0 metres above sea level near to Lafleche Road to approximately 64.0 metres above sea level near to the intersection of Concession Road 7 and Highway 138. The depth to water table ranges from 0.5 to 1.5 metres below ground, with an average of 0.9 metres below ground.

The closest municipal water treatment plant and system is located 5 km away in the Village of Casselman and a second plant is located 5 km away in the Village of Moose Creek.

Groundwater Quality and Quantity

The bedrock aquifer groundwater within the region is of high quality. Overburden aquifer groundwater quality in the region is also of relatively high quality. A total of 416 groundwater wells were previously identified within a 5 km radius of the EOWHF, the majority of which were drilled into bedrock with depths ranging from 0.3 to 39 metres below ground and static water level depths ranged from 0.6 to 16.8 metres.

The current groundwater quality at the existing landfill, based on historical and recent groundwater monitoring data, suggests that landfill leachate generation at the EOWHF has not impacted groundwater quality at the perimeter wells. Groundwater quality, as determined through monitoring the site perimeter wells, is indicative of naturally occurring background conditions.

7.2.1.3 Surface Water Environment

The surface water environment includes surface water quality and quantity.

Surface Water Quality

The EOWHF is located in a predominantly agricultural area with some rural areas to the south. The main surface watercourses providing drainage to and from the EOWHF site are the Fraser Drain and Moose Creek. The surrounding properties used for cash cropping, sod farming, and peat extraction, are drained by agricultural drains or peat drains which discharge to the Fraser Drain or Moose Creek at points between the EOWHF monitoring programs' upstream and downstream sampling stations.

The future development lands are located to the east of the EOWHF and are primarily used for agriculture and sod farming. A segment of the Tayside-Legault Drain flows through the eastern part of Lot 13 and then crosses Highway 138, eventually draining to the Scotch River after crossing Highway 417.

EOWHF surface water management is addressed via the conditions of the Environmental Compliance Approval. In general, surface water within the site boundaries is collected and treated via a system of stormwater collection ponds which provide total suspended solids removal and pre-development flows.

The Fraser Drain and Moose Creek are receiver watercourses for the EOWHF site's stormwater runoff and for the landfill's treated leachate effluent. Both systems discharge to the Fraser Drain, the first receiver, which joins the Moose Creek just downstream of the site. The treated leachate is a product of the EOWHF's leachate collection system and the on-site leachate treatment facility.

The surface water quality off-site in the Fraser Drain and Moose Creek adjacent and downstream of the EOWHF appears to be affected by activities around the landfill site. Several potential off-site sources for the elevated parameter concentrations include peat extraction activities, truck traffic, air-borne particulate, and off-site contributions via off-site drains. There are also on-going agricultural activities upstream and adjacent to the site and neighbouring watercourses, including those that discharge to the Fraser Drain upstream of the EOWHF downstream surface water monitoring stations.

The leachate treatment facility receiver monitoring results indicate that conductivity levels and the concentrations of parameters such as boron, chloride, nitrates, sulphate, and total dissolved solids in the Fraser Drain immediately downstream of the treated effluent discharge point were affected by the treated effluent discharge, but that the initial impact of the treated effluent discharge on parameter concentrations is of limited duration under high flow conditions (i.e., greater than 50 litres/second). Under low flow and stagnant conditions in Fraser Drain, the ability to assimilate the treated effluent is limited or minimal resulting in conditions comparable to the quality of the treated effluent. This is currently being assessed through variable effluent discharge rates under flow conditions that provide adequate assimilative capacity.

Moose Creek is considered by the MECP to be a Policy 2 Receiver for iron, phosphorus and nitrates. The existing leachate treatment facility's tertiary treatment process effectively removes iron and phosphorus from the leachate stream, resulting in concentrations well below 1 mg/L so the treated effluent's impact in terms of these parameters is negligible.

The existing leachate treatment facility's current biological process was intended to convert nitrogen ammonia to nitrates through the nitrification process. The result is an elevated concentration of nitrates in treated effluent that is discharged to Fraser Drain, draining to Moose Creek. GFL has enacted a modified effluent discharge plan to reduce the potential impact of nitrates on the receiver stream.

The area around the Tayside-Legault Drain consists mainly of agricultural land. The flow volume in the drain is low and drains east towards the Scotch River. Although associated with a different water shed than Fraser Drain and Moose Creek, the water quality in the Tayside-Legault Drain appears to be very similar to that of Fraser Drain with comparable concentrations of all measured parameters.

Surface Water Quantity

The on-site and off-site study areas are located within the Moose Creek subwatershed. The surface water features around the site include the Fraser Drain along the eastern and northern sides of the property which drains into Moose Creek located to the west, and the Albert Fahey Award Drain located along the south side of the site, which also drains into Moose Creek.

The existing on-site stormwater management system is approved under an existing environmental compliance approval and includes three surface water management ponds and a perimeter channel and outlet control structure located at the northwest corner of the site, which begins at the downstream end of two of the ponds and extends to the outlet structure at the northwest corner of the site where flows are controlled to not increase peak flows downstream. The three stormwater management ponds are designed for both quality control (80% Total Suspended Solids removal or an 'Enhanced' level of protection) and quantity control (to maintain peak flows to 'natural' levels up to and including the 10-year return period and also provide extended detention to prevent downstream erosion).

The perimeter channel is designed to collect the controlled outflows from the stormwater management ponds, collect surface flows from the existing / natural portions of the site, and convey the collected flows for all return periods up to the 100-year design event to a dedicated outlet to the Fraser Drain. Peak flows are controlled at this dedicated outlet by an outlet structure containing orifices and weirs, sized to control peak flows up to the 10-year design event to their 'natural' levels.

The future development lands contain agricultural tile drains, which drain most of the area west toward the Fraser Drain. The eastern portion of the area drains east toward the Tayside-Legault Drain.

7.2.1.4 Ecological Environment

The ecological environment includes both terrestrial and aquatic ecosystems.

The on-site and off-site study areas were historically part of the locally significant Moose Creek wetland complex (non-provincially significant, now limited to off-site areas to the south) but have since been stripped of natural vegetation in the process of peat harvesting. No Provincially Significant Wetlands are located within the on-site or off-site study areas; however, a Significant Woodland is located within the Moose Creek wetland complex.

An ANSI of Regional Significance for Life Science, a significant natural heritage feature, is located within the off-site study area immediately south of the existing EOWHF site. The boundaries of the ANSI as currently mapped by the MNRF (Land Information Ontario) have not been updated to reflect existing land cover, and show that the ANSI exists in areas that now includes the EOWHF, peat fields, agricultural fields, etc. The only remaining portion of the ANSI, located within the off-site study area, is the wooded area associated with Moose Creek Wetland southwest of the on-site study area.

The majority of the EOWHF site is actively used for landfill operations or has been historically disturbed; peat and topsoil have been removed, disturbing the natural vegetation composition in all areas; as such, natural vegetation cover is isolated to areas that are not repeatedly disturbed. Natural vegetation on the site is currently limited to the small disjunct treed swamp in the northeast corner, the roadside

ditches, unused areas of the site, and the edges of the site. The majority of vegetation on site is common and disturbance tolerant, supporting common wildlife species.

The site and most of the surrounding area is largely of anthropogenic nature (i.e., agricultural, industrial) and is therefore not suitable habitat for most Species At Risk known to occur or to potentially occur in the off-site study area. Two legally protected Species At Risk were observed in the future development lands portion of the on-site study area in 2019: Barn Swallow, and Little Brown Myotis. One Species At Risk, Bank Swallow, was observed in the off-site study area. Legally protected Category 3 habitat of Bank Swallow and Barn Swallow falls within a small portion of the on-site study area at the south end, but this does not necessarily constrain development due to the opportunity to register the project with MECP and to apply for an overall benefit permit. No Significant Wildlife Habitat as defined in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E was identified in the on-site or off-site study areas.

The on-site and off-site study areas are part of a larger natural heritage feature that spans to the north as identified by MNRF at the landscape level. This natural heritage feature includes a Migratory Bird Staging and Migration Stopover Area as it pertains to Snow Geese and Canada Geese for both spring and fall. The feature also includes a Raptor Wintering Area for various species including Snowy Owls and Rough-legged Hawks. Waterfowl Stopover and Staging Areas and Raptor Wintering Areas as mapped by MNRF are considered candidate Significant Wildlife Habitats (MNRF 2015)[11]. Confirmation of a candidate Significant Wildlife Habitat requires meeting criteria defined by MNRF (2015), including confirming the presence of suitable Ecological Land Classification (ELC) habitat codes and the abundance and/or groupings of associated species. Snow Geese were observed in large numbers (500+ individuals) on sod and annual row crop fields in the study area over five days in the spring of 2019. However, the ELC criteria for significant Waterfowl Stopover and Staging Areas for Snow and Canada Geese only include aquatic habitats such as marshes, swamps, and shallow water aquatic systems such as ponds, lakes, bays, coastal inlets, and watercourses used during migration. The off-site study area contains swamps (SWD) but these are all densely treed and without open surface water, and observations of Snow Geese were not associated with these habitats. As such, the study areas do not contain significant Waterfowl Stopover and Staging Areas for Snow and Canada Geese based on MNRF's criteria. While several species of raptors have been observed at the existing EOWHF in the winter (e.g., Niblett Environmental Associates 2018)[12] and the off-site study area does contain a combination of treed and upland habitats greater than 20 hectares, these habitats do not meet the ELC habitat criteria for significant Raptor Wintering

[11] Ontario Ministry of Natural Resources and Forestry (MNRF). 2015. *Significant Wildlife Habitat EcoRegion Criteria Schedules for EcoRegion 6E*.

[12] Niblett Environmental Associates Inc. 2018. *Natural Environment Existing Conditions Report: Eastern Ontario Waste Handling Facility Landfill Expansion Environmental Assessment*.

Areas (MNRF 2015). Raptors are likely attracted to the existing EOWHF due to the presence of prey species such as gulls and small mammals that feed on the waste.

There is an overall lack of perennially wet watercourses within the on-site study area. The stretches of the Fraser Municipal and Tayside-Legault Drains located on site provide mostly cool-warm and warm waters for fish, respectively. Sections of these drains have been identified as providing habitat for fish communities in the summer. Although 10 different species were captured in the Fraser Drain and six species were captured in the Tayside-Legault Drain during 2019 surveys, no provincially and/or nationally listed (Species At Risk) fish species were captured. No critical habitat for aquatic Species At Risk or sensitive spawning habitat was identified within the study areas.

7.2.2 Socio-Economic Environment

The socio-economic environment comprises the economic and social environments.

7.2.2.1 Economic Environment

The Township of North Stormont has a population of approximately 6,873 (2016) and is experiencing minimal population growth. North Stormont has the smallest labour force, the lowest unemployment rate, and highest participation rate compared to other municipalities in the United Counties of Stormont, Dundas and Glengarry. The top three employment sectors in the United Counties of Stormont, Dundas and Glengarry are health care and social assistance, retail trade, and manufacturing.

The EOWHF is a major employer in the Township of North Stormont, providing approximately 40 stable, long-term jobs for residents in the area. Approximately 80% of the EOWHF's employees reside in the United Counties of Stormont, Dundas and Glengarry (including the City of Cornwall), and approximately 20% reside in the United Counties of Prescott and Russell. Over a quarter of the employees at the EOWHF have been employed at the facility for more than 7 years.

GFL supports a number of community initiatives and participates in a number of programs and committees in the area. The EOWHF provides significant financial contributions to the local economy, through donations to support the local community, the host community agreement and municipal taxes. GFL provides cost-effective and environmentally-secure waste management services[13] to municipalities and businesses across Eastern Ontario, and contributes approximately 9% of North Stormont's tax base[14]. GFL endeavours to utilize local businesses and services in support of its operation to the extent possible. The EOWHF supports a number of

[13] These services include waste collection, organics composting, recycling, electronic waste collection, tire collection and residential drop-offs.

[14] Including host community payment.

local vendors providing goods and services, spending approximately $10 million annually in the local community.

7.2.2.2 Social Environment

The Social Environment includes the local community and visual aesthetics.

Local Community

The EOWHF is located in a predominantly rural area with very few neighbours and some agricultural, quarry and recycling operations. The rural area is predominantly agricultural, with cash crops of corn and soybeans being the main agricultural activity. The EOWHF is adjacent to peat and sod farming operations, with agriculture to the north of Concession Road 7. The future development lands consist of sod farming and agricultural lands, which are adjacent to agricultural lands to the north of Concession Road 7 and east of Highway 138, and sod farming, agriculture, and peat extraction to the south of Lafleche Road.

There are currently no recreational resources located within the on-site and off-site study areas, and there are no sensitive land uses such as churches, parks, or schools. Seven residences are located within the off-site study area, located between 70 m and 950 m from the on-site study area. Based on an average of 2.7 people per residence, approximately 19 people could be residing within the off-site study area.

Visual Aesthetics

The EOWHF and future development lands are situated on land that is relatively flat. The land use surrounding the site consists of agriculture (corn and soybeans), peat extraction and sod farming as previously noted. Vegetation on the EOWHF site consists of hedgerows and berms, while vegetation on the future development lands consists of sod and crops. There are many small woodlots and tree plantings surrounding the EOWHF site, particularly along the north side of Highway 417 which obstructs the view of the EOWHF from the highway. There are no woodlots or plantings obstructing the view of the future development lands.

In general, the EOWHF is relatively unobtrusive and has a low profile; particularly from the south, east and west view points, it is difficult to see the landfill. From the north, the waste water treatment plant and compost screening area are more visible. The future development lands are flat and can be observed from the surrounding roadways without obstruction.

7.2.3 Cultural Environment

The cultural environment comprises archaeological and cultural heritage resources.

7.2.3.1 Archaeological Resources

The on-site and off-site areas were once part of the Moose Creek wetland. A Stage 1 Archaeological Assessment was completed for the entire 189 hectare EOWHF site as part of the original EA for the landfill in 1999. The Stage 1 Archaeological Assessment determined that there is no archaeological potential within the boundaries of the existing EOWHF site, including the northeastern corner of the site, and recommended no further study. Provincial interest in archaeology for the property was signed off in a letter dated November 2, 1999. Nothing of archaeological significance has been found on or around the EOWHF as the site has been developed.

A Stage 1 Archaeological Assessment completed in 2020 for the future development lands determined that the area has no archaeological potential due to deep and extensive land disturbance and permanently low and wet conditions. This report is being provided to the Ministry of Heritage, Sport, Tourism and Culture Industries for review and to be entered into the Ontario Public Register of Archaeology Reports.

7.2.3.2 Cultural Heritage Resources

Three cultural heritage resources were identified within the off-site study area as part of a study undertaken in 2020: one located at the western edge of the off-site study area on Concession Road 7 (also known as Route 700); one located north of Highway 417; and one located at the eastern edge of the off-site study area between Allaire Road and Highway 417.

The one resource located at the western edge of the off-site study area comprises a farmscape and a residence. The resource located north of Highway 417 is a farmstead, while the resource located at the eastern edge of the off-site study area is a residence and former farmscape. These cultural heritage resources are historically, architecturally, and contextually associated with late nineteenth to mid twentieth-century settlement patterns and agricultural industry in the area.

No cultural heritage resources were identified within the on-site area.

7.2.4 Built Environment

The built environment includes transportation, land use, aggregate extraction and agriculture.

7.2.4.1 Transportation

The EOWHF is located on Lafleche Road, a private road, which is accessed from Highway 138. Highway 138 intersects with Highway 417 approximately 2 km north of Lafleche Road. The closest airport is located approximately 50 km west of the site (Ottawa International Airport). The surrounding area is predominantly rural and undeveloped.

The current haul route to the EOWHF is via Highway 417, Highway 138 and Lafleche Road. Approximately 90% of the vehicles entering the site are large industrial trucks including dump trucks, walking floor trucks, rear loaders, front loaders, and roll-offs. Automobiles and service/pick-up trucks represent the remainder of the vehicles. The larger trucks generally travel to/from Ottawa or to/from the south via Highway 138. The smaller personal vehicles and pick-up trucks likely serve the surrounding local communities.

Under existing conditions, the intersections at Highway 417 and Highway 138, Highway 138 at Lafleche Road, and Lafleche Road at the GFL driveway entrance are operating well with residual capacity.

7.2.4.2 Land Use

The EOWHF and future development lands (i.e., the on-site study area) are located within the Township of North Stormont in the United Counties of Stormont, Dundas and Glengarry (SDG). The off-site study area is located within both the Township of North Stormont in the United Counties of SDG, and the Nation Municipality in the United Counties of Prescott and Russell. Consequently, the official plans of both Counties and the zoning by-laws of the lower tier municipalities are considered to understand the existing and future land use conditions of the study areas. In the case of the United Counties of SDG, the Official Plan is currently under appeal; therefore, the designations and policies of both the Official Plan in effect and those under appeal are considered until such time as the appeals are settled.

The on-site study area includes the existing EOWHF site and the future development area. The future development area is currently used for agriculture (sod farming) with a small commercial office for the sod farm administration and sales. The EOWHF site is designated “Rural District” in the Official Plan, while the majority of the future development area is designated “Agricultural Resource Lands” with the exception of the lands along Highway 138 (Lot 13), which are designated “Employment District”.

Waste management systems are a permitted land use in the “Rural District”, and thus the existing EOWHF and any proposed future development of landfill capacity in the available areas of the existing EOWHF are consistent with the policies of the Official Plan. Waste management systems are not permitted in the “Agricultural Resource Lands” and “Employment District” designations; consequently, an official plan amendment will be required to redesignate the lands prior to development.

Regarding zoning, the landfill cells at the EOWHF site are zoned “Waste Disposal” while the remainder of the site is zoned “Rural”. The future development lands east of the EOWHF are zoned “Agriculture”, with the exception of a small portion of lands along Highway 138 (Lot 13), which are zoned “Highway Commercial”. A waste management site is not permitted in these zones; consequently, a zoning by-law amendment will be required to rezone the future development lands prior to development.

Existing land use conditions in the off-site study area are predominantly agricultural with some extractive uses (aggregate and peat extraction), heavy industrial uses, and a small number of commercial and residential uses. The remaining lands are vacant or in a natural state. There are seven residences within the off-site study area, of which two are located within 500 metres of the on-site study area boundary. There are no other sensitive land uses such as recreation uses, churches, parks, or schools within the off-site study area.

Future land use conditions in the off-site study area are guided by the two applicable Official Plans. The south and east portions of the off-site study area are located within the United Counties of SDG. There are four land use designations within this portion of the study area, including “Employment District” along Highway 138, “Rural District”, “Extractive Resource Lands (Licensed Pit & Quarry)”, and “Agricultural Resource Lands”.

The intent of the “Employment District” is to consolidate industrial and commercial uses in proximity to transportation corridors, as well as allowing large-scale agriculture-related uses such as value-added production. The existing residential and agricultural uses on these lands therefore do not conform to the future planned uses of these lands. The other existing land uses generally conform to the official plan land use designations.

The west and north portions of the off-site study area are located within the United Counties of Prescott-Russell. There are two land use designations within this portion of the off-site study area, including a small amount of “Rural Policy Area” along County Road 8 and the remainder in the “Agricultural Resource Policy Area”. The existing commercial use and approved industrial use along County Road 8 are intended uses in the “Rural Policy Area”. The commercial use on these lands does not conform to the future planned uses of these lands. All other existing land uses generally conform to the official plan land use designations.

7.2.4.3 Aggregate Extraction and Agriculture

Based on a review of existing data sources[15], there are no known aggregate resources located within the on-site study area. There is one known aggregate resource within the off-site study area: the Martin Quarry, owned by A.L. Blair Construction Limited, located approximately 750 metres east of the on-site study area.

Lands adjacent to the EOWHF to the east, within the future development area, are used for sod farming, to the south for peat extraction, to the west for peat extraction

[15] Ontario Ministry of Natural Resources and Forestry (MNRF) “Find Pits and Quarries” website available at https://www.ontario.ca/environment-and-energy/find-pits-and-quarries, and Geographic Information System (GIS) information provided by the United Counties of Stormont, Dundas, Glengarry, Prescott-Russell.

and agricultural purposes (cash crops), and to the north for agricultural purposes (cash crops). The cash crops are currently either soybeans or corn.

Soil types in the on-site and off-site study areas have moderate to severe limitations on use for crops. Agricultural activities in the area contribute to dust and odour in the off-site study area. Some crops may also provide visual screening of the landfill.

8. Environmental Assessment Method

The following sections provide an overview of the method that will be used to develop the EA for the proposed undertaking.

The proposed method to be followed in the EA will be a qualitative comparison of the 'alternative methods' using criteria, indicators and data sources to identify the preferred alternative.

An effects assessment will be carried out on the preferred alternative using the same criteria, indicators and data sources, and additional studies as required.

8.1 Description of the Existing Environment

The existing environment within the on-site and off-site study areas (**Section 7.1**) will be characterized in the EA Study Report. The characterization of the existing environment will address the five aspects of the environment as defined in the *EAA*, specifically:

- natural environment;
- built environment;
- cultural environment;
- social environment; and
- economic environment.

For the purposes of the EA, the social and economic environments have been combined into the socio-economic environment.

The characterization of the existing environment will incorporate the results of past studies, field reconnaissance, additional baseline studies, and information from the preliminary data sources outlined in **Appendix B**, as applicable.

The potential environmental effects of the alternative methods will be qualitatively compared against the existing environmental conditions.

8.2 Description of the Alternative Methods

GFL has preliminarily identified two alternative methods for the future development of the landfill as described in **Section 6.2**. The alternative methods will be described in

further detail in the EA Study Report. Alternative methods for treating landfill leachate and managing landfill gas will also be identified and described, as appropriate, during the EA.

8.3 Prediction of Potential Environmental Effects for Each Alternative Method

The potential effects of each alternative method will be identified based upon application of the proposed evaluation criteria, indicators and data sources as outlined in **Appendix B**. The analysis of potential effects will be based on the maximum allowable waste receipt level for the EOWHF landfill. Potential effects can be positive or negative, direct or indirect, and short or long-term. Actions necessary, or that may reasonably be expected to be necessary, to prevent or mitigate the potential effects will be identified, as appropriate.

8.4 Identification of the Preferred Alternative

The alternative methods will be assessed in a qualitative comparative process to determine the preferred alternative, using the criteria and indicators provided in **Appendix B**. These evaluation criteria and indicators will be finalized during the EA.

The differences in net effects (the potential effect remaining following implementation of mitigation and/or management measures) will be used to identify and compare the advantages and disadvantages for each alternative. The comparison of alternatives will include a clear rationale for the selection of the preferred alternative.

8.5 Effects Assessment of the Preferred Alternative

Following the identification of the preferred alternative, an effects assessment will be carried out on the preferred alternative considering the same criteria, indicators and data sources, and additional studies as required, taking into account possible mitigation and/or management measures and cumulative effects. The potential effects of the preferred alternative will be compared to the 'do nothing' alternative.

The EA will also include a description of the preferred alternative's contribution to reducing GHG emissions and climate change, and the potential effect of climate change on the preferred alternative.

9. Consultation and Engagement

An overview of the consultation and engagement process conducted during the ToR is presented below and the detailed in **Supporting Document 1 – Record of Consultation and Engagement**. The proposed Consultation and Engagement Plan in support of developing the EA is presented in **Section 9.2** and the proposed plan for Indigenous engagement during the EA is presented in **Section 9.3**.

9.1 Summary of Consultation and Engagement Activities on the ToR

GFL consulted and engaged with a broad range of stakeholders including the public, agencies, and Indigenous communities during the preparation of this ToR. The following consultation activities took place during preparation of the ToR:

- Notice of Commencement of ToR and Public Open House;
- Public Open House #1;
- Project Update including a letter, comment/response table, and fact sheets on key issues;
- Draft ToR review between June 12 and July 31, 2020;
- Project website, e-mail, and telephone number;
- Engagement with Indigenous communities and groups;
- Municipal Council meetings:
  - Township of North Stormont council meetings on January 28 and April 28, 2020;
  - The Nation Municipality council meeting on May 4, 2020;
  - Municipality of Casselman council meeting on May 12, 2020;
- Community Liaison Committee meetings:
  - on January 14, 2020 prior to the Notice;
  - on July 22, 2020 during the Draft ToR review; and
- phone calls.

A detailed chronology and description of the various consultation and engagement events and activities during the ToR development is included in **Supporting Document 1 – Record of Consultation and Engagement**.

The Notice of Commencement for the ToR was developed, which included an overview of the Project, the EA process, and an invitation to Public Open House #1. The Notice of Commencement (the Notice, provided in **Supporting Document 1**) was published in both English and French in two local newspapers: the Cornwall Standard-Freeholder on January 15 and 16, 2020; and Le Reflet – The News on January 16, 2020.

The Notice, in both English and French, was also sent via regular mail to agencies, municipalities, organizations, Indigenous communities, and neighbouring property owners on January 13, 2020. Personalized letters providing a brief overview of the project and an invitation to Public Open House #1 were addressed to agencies, municipalities, organizations, and Indigenous communities, and were sent along with

the Notice via regular mail[16] on January 13, 2020. The letters were sent in either English and/or French depending on the requirements of the recipient. The list of recipients was developed in consultation with the MECP. Letters were addressed to the following Indigenous communities and organizations:

- Mohawk Council of Akwesasne;
- Algonquins of Ontario;
- Huron Wendat Nation Council;
- Mohawks of the Bay of Quinte – Tyendinaga Mohawk Council;
- Métis Nation of Ontario; and
- Métis Nation of Ontario Ottawa Métis Council.

A copy of the Notice, in both English and French, was uploaded to the project website (http://gflenv.com/moose-creek-eowhf) on January 15, 2020.

Public Open House #1 was held on January 30, 2020 at the Moose Creek Recreation Centre from 4 p.m. to 8 p.m. to introduce and provide an overview of the project, discuss the development and contents of the ToR, present the EA process, and provide information on the proposed alternatives being considered, the EA evaluation process and criteria, and the consultation process that will be followed during the development of the ToR and EA. A total of 49 people attended the Open House. Materials were available in both English and French, and a comment form was provided to solicit public input. The Open House display boards were also posted on the project website in both English and French. A detailed summary of Public Open House #1 was posted on the website and is provided in **Supporting Document 1**.

GFL provided presentations regarding the proposed project and ToR to the following municipalities and groups:

- Township of North Stormont Council on January 28 (in person) and April 28, 2020 (teleconference);
- The Nation Municipality Council on May 4, 2020 (teleconference); and
- Municipality of Casselman Council on May 12, 2020 (teleconference).

Due to the COVID-19 pandemic the latter three meetings were held via teleconference. Copies of the presentations are included in **Supporting Document 1**.

[16] The information was provided to the Indigenous communities by registered mail.

A project update was provided via a mail out on May 8, 2020, via email and hard copy mail depending on the recipient[17], which contained a project update letter, a table of comment/responses received to-date, and fact sheets regarding the key issues of LFG Management and Community Benefits. All update documents were also posted to the project website.

During the development of the draft ToR, GFL responded to comments received by telephone, email, and in writing. The company also offered to meet with anyone who requested, including conducting tours of the EOWHF; however, the opportunity for in-person meetings and site tours was limited by the COVID-19 pandemic. All comments received and responses provided by GFL are included in **Supporting Document 1**.

A Draft ToR and Record of Consultation and Engagement were prepared and made available to the public, Indigenous communities, government review team, and all other stakeholders on the project mailing list for their review and comments. Review comments on the Draft ToR were requested between June 12 and July 31, 2020. A Notice was provided in English and French to all recipients. A PDF copy of the Draft ToR was emailed to agencies and municipalities along with the Notice on June 12, 2020. A letter in English and French and a copy of the Draft ToR were sent along with the Notice to Indigenous communities via Express Post on June 10, 2020. The Notice (in both languages), the Draft ToR, and Record of Consultation and Engagement were also uploaded to the project website. Due to the COVID-19 pandemic, hard copies of the documents were not made available at public viewing locations. Copies of the materials are included in **Supporting Document 1**. All comments received and responses provided by GFL, including how the comments are addressed in the ToR, are included in **Supporting Document 1**.

9.2 Proposed Consultation and Engagement Program for the EA

GFL is committed to carrying out meaningful consultation and engagement on the future development with a broad range of stakeholders. The development of the proposed consultation and engagement program for the EA is based on the following principles:

- transparency, accountability and accessibility;
- identification of stakeholder and Indigenous community concerns early in the process and addressing these concerns in the EA;
- multiple points of consultation and engagement throughout the EA using a variety of techniques (in-person, digital, print); and
- documentation of issues, concerns and responses in the EA.

[17] The information was provided to the Indigenous communities by registered mail.

By consulting with interested people[18], GFL will provide opportunities for input before decisions are made and then respond by making changes as appropriate. The input received through the EA consultation and engagement process will be considered in the preparation of the EA and studies, and how this input is incorporated into the EA will be documented.

Consultation and engagement will be undertaken at key points in the process, as well as on an on-going basis, through the following activities as conditions permit:

- **Notice of Commencement for the EA**: by mail, email, local newspapers, and on the project website, in both English and French languages, including details on the project, the EA process and contact information, as a minimum.
- **Public Open House(s)**: to present the 'alternative methods', a description of the existing environmental conditions, the comparative evaluation criteria, the results of the assessment and comparative evaluation of the alternative methods, and the identification of the preferred alternative. The format of the Public Open Houses will be determined based on social gathering restrictions due to the pandemic.
- **Meetings/Tours**: if possible, depending on social gathering restrictions due to the pandemic;
- **Consultation and Engagement Report**: summarizing the results of the open house(s) as well as comments received via fax, email or post will be prepared, including a record of comments and responses.
- **Website**: established by GFL during the development of the ToR will be maintained during the EA to provide information, inform the public of consultation and engagement events, and provide a means for feedback.
- **Contact Person**: provided for a GFL staff member to receive enquiries from interested parties for information and submit comments.
- **Draft EA Study Report**: provided to the public, agencies, and Indigenous communities who have submitted comments on the ToR and/or wish to receive a copy. Written comments on the draft report will be requested within 45 days of its submission to the MECP. Notice of the draft report availability will be provided by newspaper notice, mail, email, and on the project website.
- **Final EA Study Report**: provided to the public, agencies and Indigenous communities who have submitted comments on the Draft EA and/or wish to receive a copy. Notice of the final report availability will be provided by newspaper notice, mail, email, and on the project website.

Consultation and engagement will be conducted in accordance with MECP requirements, and with consideration given to the potential limitations caused by the

[18] The Francophone population is included in the definition of interested persons.

COVID-19 pandemic. If requested, additional consultation and engagement activities may be undertaken. GFL is prepared to discuss individual concerns and comments directly with potentially affected persons. Additional events may be held to address specific issues of concern, as warranted.

Notification and open house related materials will continue to be provided and made available in both English and French languages. Bilingual staff will also be available at GFL to respond to any comments or concerns. The draft and final EA documentation will be prepared in English with an executive summary available in both French and English.

A Record of Consultation will be prepared as part of the EA which will include information about the EA consultation program, including copies of correspondence from and to the Proponent, information about and received at the public open houses and copies of comments, questions, issues, and concerns from stakeholders and members of the public, and how those questions, issues, and concerns were addressed.

In accordance with Section 6.1(2)(e) of the *EAA*, a description of the consultation and engagement program carried out by GFL during the EA, along with the results of the consultation and engagement, will be documented in the EA Study Report.

9.3 Indigenous Engagement during the EA

The list of potentially-affected Indigenous communities was developed in consultation with the MECP. The MECP provided formal written notification to GFL delegating procedural aspects of Indigenous consultation for this EA and required that the following communities be consulted:

- Mohawk Council of Akwesasne;
- Huron Wendat Nation Council; and
- Algonquins of Ontario Consultation Office.

Based on the previous EA conducted for the EOWHF landfill expansion[19], GFL included additional Indigenous communities in the contact list. During the EA, GFL will continue to engage with the following Indigenous communities and organizations in a manner consistent with any requests that might be received from each community:

- Mohawk Council of Akwesasne;
- Algonquins of Ontario;
- Huron Wendat Nation Council;

[19] HDR Corporation. Eastern Ontario Waste Handling Facility Landfill Expansion Environmental Assessment. Prepared for GFL Environmental Inc. June 1, 2018.

- Mohawks of the Bay of Quinte – Tyendinaga Mohawk Council;
- Métis Nation of Ontario; and
- Métis Nation of Ontario Ottawa Métis Council.

GFL is committed to working with these Indigenous communities and organizations to address any comments or concerns they may have. This includes providing any specific engagement activities, such as meetings, at the request of the community. Consultation and engagement will be conducted in accordance with MECP requirements, and with consideration given to the potential limitations caused by the COVID-19 pandemic. GFL will provide written notification to the Indigenous communities and organizations consistent with the consultation and engagement program for the EA.

10. Commitments and Monitoring

The EA will contain a list of commitments made by GFL during the ToR process and indicate how such commitments have been addressed in the EA. A list of commitments made by GFL during the preparation of the EA will also be included in the EA along with a framework for monitoring when and how all commitments will be fulfilled.

A strategy and schedule for compliance and effects monitoring will be developed and included in the EA. The monitoring plan will consider all relevant project phases: planning, detailed design, tendering, construction, establishment and post-establishment. Compliance monitoring is an assessment of whether an undertaking has been designed, constructed, implemented and/or operated in accordance with the commitments in the EA document and the conditions of approval. Effects monitoring consists of activities carried out by the proponent after the approval of the EA to determine the environmental effects of the undertaking. Monitoring requirements for effects related to the proposed undertaking are anticipated to be developed as a part of the *Environmental Protection Act* and *Ontario Water Resources Act* approval processes.

11. Flexibility to Accommodate New Circumstances

The proposed project detailed in this ToR is based upon a preliminary or conceptual design, and does not necessarily represent the final design, location, or scope of the project. The description of the project in this ToR should be viewed as a preliminary description, which is subject to change during the preparation of the EA based on the results of on-going studies and advancement of the project design, existing conditions studies and effects assessments, and consultation and engagement

including input from agencies and other regulatory authorities. Consequently, there may be changes to the feasible alternative methods for carrying out the project before the proposed undertaking is confirmed and presented in the EA Study Report.

Subsection 6.1(1) of the *EAA* states that the EA must be prepared in accordance with the approved ToR. GFL is aware that unforeseen circumstances may arise that could prevent the commitments in the ToR from being met; as such, flexibility has been incorporated into this ToR, where appropriate, to accommodate new circumstances that may arise during the progression of the EA and/or project design. It is therefore understood that certain aspects of the ToR may be adjusted without the need to re-start the provincial EA process.

For the purposes of preparing this ToR, flexibility is defined to include a minor variation or modification to the ToR itself, such as a change in consultation and engagement methods, existing conditions study methods, effects assessment methods, and to allow for refinement to things such as study areas, environmental criteria, indicators, and data sources. Therefore, the ToR has not established detailed existing conditions or a full suite of potential effects of the undertaking, for example; these will be determined during the EA and presented in the EA Study Report.

It is noted that proposed minor modifications to the ToR will be discussed with the MECP prior to proceeding with the changes.

12. Other Approvals

In addition to EA approval, certain other approvals may be required, including but not limited to:

- *Environmental Protection Act*;
  - Environmental Compliance Approvals (Waste Disposal and Air);
- *Ontario Water Resources Act*;
  - Environmental Compliance Approval (Sewage Works);
- *Drainage Act;*
- *Fisheries Act;*
- *Conservation Authorities Act*; and
- *Planning Act*.

Official Plan and Zoning By-Law amendment approvals will also be required.

The proposed undertaking is not identified as a designated project under the *Impact Assessment Act* (*IAA*), and based on correspondence received from the Impact Assessment Agency of Canada in May 2020, it has been confirmed that the future

development will not be subject to review under *IAA*. A list of the specific approvals required for the proposed undertaking will be provided in the EA.

A

Acronyms, Units, and Glossary

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Acronyms

Acronym	Definition
ANSI	Area of Natural and Scientific Interest
C&D	Construction and Demolition
COVID-19	Coronavirus Disease
EA	Environmental Assessment
EAA	*Environmental Assessment Act*
ECA	Environmental Compliance Approval
ELC	Ecological Land Classification
EOHWF	Eastern Ontario Waste Handling Facility
ESDM	Emission Summary and Dispersion Modelling
FIT	Feed-in-Tariff
GFL	GFL Environmental Inc.
GHG	Greenhouse Gas
IAA	*Impact Assessment Act*
IC&I	Industrial Commercial and Institutional
LFG	Landfill Gas
MECP	Ministry of Environment, Conservation and Parks
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MNRF	Ontario Ministry of Natural Resources and Forestry
MW	Megawatt
OTS	Ontario Tire Stewardship
OWMA	Ontario Waste Management Association
PWQMN	Provincial Water Quality Monitoring Network
RPRA	Resource Productivity & Recovery Authority
SAR	Species At Risk
SDG	Stormont, Dundas and Glengarry
SRM	Specified Risk Material
SWH	Significant Wildlife Habitat
THR	Threatened
USA	United States of America
WCEC	West Carleton Environmental Centre

Glossary

Term	Definition
Approval	Permission granted by an authorized individual or organization for an undertaking to proceed. This may be in the form of program approval, environmental compliance approval, certificate of approval or provisional certificate of approval

Glossary

Term	Definition
Capacity (Disposal Volume)	The total volume of air space available for disposal of waste at a landfill site for a particular design (typically in m^3); includes both waste and daily cover materials, but excludes the final cover
Composting	The controlled microbial decomposition of organic matter, such as food and yard wastes, in the presence of oxygen, into finished compost (humus), a soil-like material. Humus can be used in vegetable and flower gardens, hedges, etc.
Composting facility	A facility designed to compost organic matter either in the presence of oxygen (aerobic) or absence of oxygen (anaerobic).
Construction and demolition (C&D) waste	Solid waste produced in the course of residential, commercial, industrial or institutional building construction, demolition or renovation (e.g., lumber, brick, concrete, plaster, glass, stone, drywall, etc.)
Environment	As defined by the Ontario *Environmental Assessment Act*, environment means: • air, land or water; • plant and animal life, including human life; • the social, economic and cultural conditions that influence the life of humans or a community; • any building, structure, machine or other device or thing made by humans; • any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities; or • any part or combination of the foregoing and the interrelationships between any two or more of them (ecosystem approach).
Environmental Assessment (EA)	A systematic planning process that is conducted in accordance with applicable laws or regulations aimed at assessing the effects of a proposed undertaking on the environment
Environmental Compliance Approval (ECA)	A licence or permit issued by the Ministry of the Environment for the operation of a waste management site/facility
Evaluation criteria	Evaluation criteria are considerations or factors taken into account in assessing the advantages and disadvantages of various alternatives being considered
Feed-in-Tariff (FIT) program	The Feed-In Tariff (FIT) Program was developed for the Province of Ontario to encourage and promote greater use of renewable energy sources including on-shore wind, waterpower, renewable biomass, biogas, LFG and solar photovoltaic for electricity generating projects in Ontario, typically for projects from 10 kW up to 500 kW. A new procurement process is being developed for large renewable projects (greater than 500 kW).
Greenhouse gas (GHG)	Any of the gases whose absorption of solar radiation is responsible for the greenhouse effect, including carbon dioxide, methane, ozone, and the fluorocarbons.
Indicators	Indicators are specific characteristics of the evaluation criteria that can be measured or determined in some way, as opposed to the actual criteria, which are fairly general
Industrial, commercial and institutional (IC&I) wastes	Wastes originating from the industrial, commercial and institutional sectors
Landfill gas (LFG)	The gases produced from the wastes disposed in a landfill; the main constituents are typically carbon dioxide and methane, with small amounts of other organic and odour-causing compounds
Landfill site	An approved engineered site/facility used for the final disposal of waste. Landfills are waste disposal sites where waste is spread in layers, compacted to the smallest practical volume, and typically covered by soil.
Leachate	Liquid that drains from solid waste in a landfill and which contains dissolved, suspended and/or microbial contaminants from the breakdown of this waste.

Glossary

Term	Definition
Material Recovery Facility	A processing facility which sorts recyclable materials into various streams (e.g., glass, newspaper, aluminum, steel, etc.).
Methane gas	A colourless, odourless highly combustible gas often produced by the decomposition of decomposable waste at a landfill site. Methane is explosive in concentrations between 5% and 15% volume in air.
Mitigation	Measures taken to reduce adverse impacts on the environment.
Non-hazardous waste	Non-hazardous wastes include all solid waste that does not meet the definition of hazardous waste and includes designated wastes such as asbestos waste.
Proponent	A person who: • carries out or proposes to carry out an undertaking; or • is the owner or person having charge, management or control of an undertaking.
Receptor	The person, plant or wildlife species that may be affected due to exposure to a contaminant.
Residual waste	Waste remaining after a technological process has taken place; e.g., unrecyclable/unprocessed materials remaining after being processed at a material recovery facility or non-compostable materials such as plastic from the composting facility.
Source separated organic material	Organics separated by a household or business that include food wastes and may include leaf and yard wastes.
Specified risk material (SRM)	Tissues that, in infected cattle, typically contain the agent that causes bovine spongiform encephalopathy, predominantly concentrated in tissues such as the brain and spinal cord.
Stakeholder	Any organization, governmental entity, or individual that has a stake in or may be impacted by a given approach to environmental regulation, pollution prevention, energy conservation, etc.
Terms of Reference (ToR)	A terms of reference is a document that sets out detailed requirements for the preparation of an Environmental Assessment.
Undertaking	Is defined in the Ontario *Environmental Assessment Act* as follows: • An enterprise or activity or a proposal, plan or program in respect of an enterprise or activity by or on behalf of Her Majesty in right of Ontario, by a public body or public bodies or by a municipality or municipalities; • A major commercial or business enterprise or activity or a proposal, plan or program in respect of a major commercial or business enterprise or activity of a person or persons other than a person or persons referred to in clause (1) that is designated by the regulations; or • An enterprise or activity or a proposal, plan or program in respect of an enterprise or activity of a person or persons, other than a person or persons referred to in clause (a), if an agreement is entered into under section 3.0.1 in respect of the enterprise, activity, proposal, plan or program ("enterprise").
Waste	Refuse from places of human or animal habitation; unwanted materials left over from a manufacturing process.
Waste electrical and electronic equipment	A term encompassing all electronic waste (typically anything with a cord) designated by the MECP for end-of-life management by Ontario Electronic Stewardship.

B

Proposed Evaluation Criteria, Indicators, and Data Sources

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Table B-1. Proposed Evaluation Criteria, Indicators and Data Sources for the Environmental Assessment

Evaluation Criteria	Rationale	Indicators	Data Sources
Natural Environment			
Atmospheric Environment			
Air Quality	Waste disposal site and associated operations can emit contaminants that can degrade air quality. Construction and operation activities at a waste disposal site can also lead to increased levels of particulates (dust) in the air.	• Predicted off-site point of impingement air concentrations of emitted contaminants of concern • Frequency of any exceedance of applicable standards or limits • Number of off-site receptors potentially affected (residential properties, public facilities, businesses/farms, institutions)	• Approved meteorological data • Applicable MECP guidelines, technical standards and models • Aerial photographic mapping and field reconnaissance • Previously completed Emission Summary and Dispersion Modelling Reports • Off-site receptors confirmed on recent mapping • Available background ambient air data • Proposed facility characteristics • Landfill design and operation data • Published terrain data • Published air emission factors
Odour	Waste disposal site and associated operations can emit contaminants that generate odorous emissions.	• Predicted off-site odour concentrations (µg/m³ and odour units) • Frequency of any exceedance of applicable standards or limits • Number of off-site receptors potentially affected (residential properties, public facilities, businesses/farms, institutions)	• Approved meteorological data • Applicable MECP guidelines, technical standards and models • Aerial photographic mapping and field reconnaissance • Previously completed Emission Summary and Dispersion Modelling (ESDM) Reports • Off-site receptors confirmed on recent mapping • Proposed facility characteristics • Landfill design and operation data • Published terrain data • Published air emission factors

Table B-1. Proposed Evaluation Criteria, Indicators and Data Sources for the Environmental Assessment

Evaluation Criteria	Rationale	Indicators	Data Sources
Noise	Activities related to operation of the landfill can result in an increase in noise levels associated with the waste disposal facility.	• Predicted site-related noise levels (measured in dBA or dBAI). • Number of off-site receptors potentially affected (residential properties, public facilities, businesses/farms, institutions)	• Annual site specific noise monitoring data • Manufacturer provided noise specifications • Applicable MECP guidelines, technical standards and models • Aerial mapping and field reconnaissance to confirm off-site receptors • Land use zoning plans • Proposed facility characteristics • Landfill design and operations data
Geology and Hydrogeology			
Groundwater Quality	Contaminants associated with waste disposal sites have the potential to enter the groundwater and impact off-site groundwater.	• Predicted effects to groundwater quality at property boundaries and off-site	• Hydrogeological and geotechnical studies • Determination of water well users in the area • Annual site monitoring reports • Leachate generation assessment • Provincial Water Quality Monitoring Network (PWQMN) • Proposed facility characteristics • Landfill design and operations data
Groundwater Quantity	Physical works may disrupt natural groundwater flows.	• Predicted groundwater flow characteristics	• Hydrogeological and geotechnical studies • Water well records • Determination of water well users in the area • Annual site monitoring reports • Proposed facility characteristics • Landfill design and operations data

Table B-1. Proposed Evaluation Criteria, Indicators and Data Sources for the Environmental Assessment

Evaluation Criteria	Rationale	Indicators	Data Sources
Surface Water Environment			
Surface Water Quality	Effluent from the waste disposal site has the potential to run off into surface water through stormwater discharge or from the leachate collection and treatment system.	• Predicted effects on surface water quality; on-site and off-site	• Surface water quality and quantity monitoring data including nutrients, total suspended solids (TSS) and other pollutants associated with waste disposal sites • Topographic maps and air photos • Landfill design and operations data • On-site stormwater management system design for expanded landfill • On-going surface water impact assessment of the existing landfill site on receiving waters • Integration of stormwater management with restoration of agricultural drains • Landfill leachate treatment alternatives • Landfill design and operations data
Surface Water Quantity	Construction of physical works may disrupt natural surface drainage patterns and may alter runoff and peak flows. The presence of the expanded landfill may also affect base flow to surface water.	• Change in drainage areas • Predicted occurrence and degree of off-site impacts	• On-site stormwater management system design for expanded landfill • Annual monitoring reports • Published flow information from MECP, Environment Canada and local conservation authorities • Engineer's Reports for municipal drains • Site reconnaissance • Proposed facility characteristics • Landfill design and operations data
Ecological Environment			
Terrestrial Ecosystems	Continued or expanded operation of the waste disposal facility may disturb the functioning of natural terrestrial habitats and vegetation, including rare, threatened or endangered species.	• Predicted impact on vegetation communities • Predicted impact on wildlife habitat • Predicted impact on vegetation and wildlife including rare, threatened or endangered species	• Vegetation, breeding bird, amphibian calling, and SAR habitat survey data from previous studies and field studies • Aerial imagery • MNRF Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement

Table B-1. Proposed Evaluation Criteria, Indicators and Data Sources for the Environmental Assessment

Evaluation Criteria	Rationale	Indicators	Data Sources
			• MNRF Significant Wildlife Habitat Technical Guide • Significant Wildlife Habitat (SWH) Schedule Criteria for Ecoregion 6E • Proposed facility characteristics • Landfill design and operations data • Annual monitoring report data
Aquatic Ecosystems	Continued or expanded operation of the waste disposal facility may disturb the functioning of natural aquatic habitats and species, including rare, threatened or endangered species.	• Predicted changes in water quality • Predicted impact on aquatic habitat including fish habitat • Predicted impact on aquatic biota including rare, threatened or endangered species	• Fish and fish habitat survey data from previous studies and field studies • MNRF review letters of previous existing conditions reports • Mass balance models to estimate temperature, TSS and nutrients • Annual monitoring report data • Proposed facility characteristics • Landfill design and operations data
Socio-Economic Environment			
Economic			
Economic effects on/benefits to local community	The continued operation of the landfill could have economic effects on and/or provide economic benefits to the local community, which may include an increase or decrease in employment.	• Employment at site (number and duration) • Local business employment • Displacement of business activities • Opportunities for the provision and procurement of products and/or services	• Census and municipal data for the Township of North Stormont, United Counties of Stormont, Dundas and Glengarry, the City of Cornwall, and The Nation Municipality and Village of Casselman in the United Counties of Prescott-Russell • Proposed facility characteristics • Landfill design and operations data
Social			
Effects on local community	Waste disposal facilities can potentially affect local residents and businesses in the vicinity of the site.	• Number of residents • Number and type of local businesses • Predicted changes to use of property	• Mapping and field reconnaissance • Census information and municipal data • Proposed facility characteristics • Landfill design and operations data

Table B-1. Proposed Evaluation Criteria, Indicators and Data Sources for the Environmental Assessment

Evaluation Criteria	Rationale	Indicators	Data Sources
Visual Impact of Facility	The contours of the waste disposal facility may affect the visual appeal of a landscape.	• Predicted changes in perceptions of landscapes and views.	• Site grading plans • Aerial mapping and field reconnaissance • Proposed facility characteristics • Existing landfill design and operations data • Regional topographic mapping
Cultural Environment			
Cultural Heritage Resources	Activities related to construction and operation of the landfill may result in direct or indirect impacts to identified cultural heritage resources.	• Proximity of known or potential cultural heritage resources to the landfill (known/potential cultural heritage resources will be assessed for potential direct or indirect impacts)	• Published data sources • Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) - Built Heritage and Cultural Heritage Landscapes Checklist • MHTSCI - Ontario Heritage Tool Kit • Cultural Heritage assessment • Commemorative statements • Proposed facility characteristics • Landfill design and operations data
Archaeological Resources	Archaeological resources are non-renewable cultural resources that can be destroyed by the construction and operation of a waste disposal facility.	• Archaeological resources on-site and in vicinity and predicted impacts on them	• Existing Stage 1 Archaeological Assessment for the EOWHF site • MHSTCI Correspondence • Stage 1 Archaeological Assessment for the future development lands
Built Environment			
Transportation			
Effects from Truck Transportation along Access Roads	Truck traffic associated with continued operations of the landfill may adversely affect residents, businesses, institutions and movement of farm vehicles in the site vicinity.	• Disturbance to traffic operations	• Existing information and traffic data • Proposed facility characteristics • Landfill design and operations data • Traffic Impact Study

Table B-1. Proposed Evaluation Criteria, Indicators and Data Sources for the Environmental Assessment

Evaluation Criteria	Rationale	Indicators	Data Sources
Current and Planned Future Land Use			
Effects on Current and Future Land Uses	The continued operation of the landfill may not be fully compatible with certain current and/or planned future land uses in the off-site study area. Waste disposal facilities can potentially affect the use and enjoyment of recreational resources in the vicinity of the site.	• Current land use • Planned land use • Type(s) and proximity of off-site recreational resources within 1 km of a landfill footprint potentially affected • Type(s) and proximity of off-site sensitive land uses (e.g., dwellings, churches, parks) within 1 km of a landfill footprint potentially affected	• United Counties of Stormont, Dundas and Glengarry Official Plan • Township of North Stormont Official Plan and Zoning By-law • Aerial photographic mapping and field reconnaissance • Published data on public recreational facilities/activities • Provincial Policy Statement • Proposed facility characteristics • Landfill design and operations data
Aggregate Extraction and Agricultural			
Aggregate Resources	Aggregate resources may be present in the area of the expanded landfill.	• Presence of known or identified aggregate resources and the predicted impact of impairment of their use due to the proposed footprint, construction and operation on-site	• Aggregate resources inventory mapping • Ontario geological survey • Borehole logs from previous field investigations • Proposed facility characteristics • Landfill design and operations data
Effects on Agricultural Land	Agricultural land may be affected by the development of the facility.	• Predicted loss of agricultural land use • Predicted impacts on surrounding agricultural operations • Type(s) and proximity of agricultural operations (e.g., organic, cash crop, livestock)	• Provincial Policy Statement • United Counties of Stormont, Dundas and Glengarry Official Plan • Township of North Stormont Official Plan and Zoning By-law • Aerial mapping and field reconnaissance • Canadian Lands Inventory mapping • Proposed facility characteristics • Landfill design and operations data • Agriculture Impact Assessment Study