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Section 3.0 Overview of the Undertaking

This section of the EA Report describes the project, otherwise known as the Undertaking, and discusses the purpose, alternatives, and benefits of the project.

3.1 Description of the Undertaking

The proposed undertaking is the vertical expansion of the capacity of the existing Brooks Road Landfill Site to allow the continued receipt of post-diversion IC&I waste over a five to seven year planning period and an amendment to the Site's rate of fill to provide for a maximum of 151,000 tonnes per year. The rationale behind this fill rate amendment is to accommodate busier months of operation in the spring and summer, given that these times of year typically produce more construction waste than the winter months, while not increasing the total annual waste received. The undertaking proposed is for Brooks Road Environmental to continue operating the landfill from a "business as usual" perspective. The planning period is a function of the constraints of the site (i.e., small footprint, ability to develop on existing waste footprint) and the fact that the site will most likely not operate at the maximum annual fill rate at all times. Further, the planning period is a function of the business procured by the owner and the rate at which waste is received. The five to seven year planning period is expected to start in Fall 2017, following EA and ECA approvals. It should be noted that a volumetric calculation, using a (potential) vertical expansion of 4:1 slope to show total airspace and subtracting the currently approved capacity, was undertaken to arrive at 421,000 m³. Assuming a density of 1 tonne per cubic metre of air space consumed for the landfill waste, there is potential capacity for 421,000 tonnes. A five to seven year planning period has been provided for as the amount of waste received tends to fluctuate year over year. Ultimately, the landfill will not exceed 421,000 m³ (total), nor will it exceed 151,000 tonnes for any given year.

3.2 Purpose

The business opportunity identified by Brooks Road Environmental to continue to provide IC&I solid, non-hazardous waste disposal capacity primarily to businesses within Haldimand County and the surrounding areas, as well as from across Ontario, was determined based on the following factors:

- Current IC&I waste diversion rate and disposal capacity in Ontario
- Recovering a portion of the financial capital spent to remediate the existing landfill
- Minimizing environmental impacts by offering a modern, engineered landfill as a local solution for waste disposal (rather than shipping to the United States [U.S.]

IC&I Waste Diversion & Disposal Capacity

The overall waste diversion rate for the IC&I sector in Ontario has steadily decreased over the past decade or so, with the latest numbers from Statistics Canada (2010) indicating a rate of

approximately 13 percent for the non-residential sector (including IC&I and Construction and Demolition (C&D) sectors). Given that the residential sector waste diversion rate is almost three times higher at 37 percent (Statistics Canada, 2010), two conclusions can be drawn: 1) as the majority of Ontario's IC&I waste is not diverted from landfill, there remains a continued need for significant disposal capacity in Ontario, and 2) the opportunity for improvement in the waste diversion rate for the IC&I sector is considerable.

In 2010 the Auditor General of Ontario estimated that the remaining capacity for Ontario's 32 largest landfills, at the current rate of fill, was 25 years (Office of the Auditor General of Ontario, 2010). Coupled with the fact that the landfill capacity available in Ontario is already less than the disposal capacity required for IC&I and C&D waste generated by Ontario sources (RIS International Ltd., 2005), it would appear that additional capacity for IC&I in Ontario may soon be required. Further data released in January 2016 from the Michigan Department of Environmental Quality highlights that the IC&I sector in Canada still remains dependent upon exporting waste to Michigan, sending approximately 6.2 million m³ of waste in 2015¹.

In 2012, Statistics Canada estimated that Ontario produced approximately 13 million tonnes of IC&I waste and municipal solid waste (MSW) annually. Of this total, approximately 6 million tonnes are landfilled in Ontario, 3.5 million tonnes are landfilled in other jurisdictions (i.e., across the border to Michigan or New York), and 3.5 million tonnes are diverted from landfill (e.g., through recycling, composting, etc.). While IC&I waste makes up approximately 60 percent of the waste produced in Ontario, approximately 12 percent of IC&I sector waste is diverted from landfill at present.

In 2016, the Ontario Waste Management Association (OWMA) published a *State of Waste in Ontario: Landfill Report*, which provided a breakdown on the amount of waste landfilled in Ontario as well as the amount of waste exported to other jurisdictions, specifically Michigan and New York State. In 2014, Ontario landfills received a total of 7.7 million tonnes of waste². This includes MSW, industrial waste, hazardous waste, contaminated soil, and additional materials used for annual daily cover. These numbers do not include the nearly 3.5 million tonnes of waste that is exported annually to the United States (US). In its last report, Michigan indicated that 2.4 million tonnes of Canadian waste was imported, while New York has consistently imported around 1 million tonnes of waste from Ontario. The OWMA Report calculated Ontario's existing landfill capacity to be between 11.4 years (if all waste generated in Ontario were to be disposed of in Ontario) to 16.5 years (if 30 percent of Ontario's waste continues to be sent to the US for disposal)³. Recognizing that this represents all types of waste from various sectors, it nevertheless demonstrates the amount of waste generated in Ontario as well as the amount landfilled in Ontario or exported to landfills in the US. Further, it reinforces the fact that the amount of landfill capacity remaining in Ontario is decreasing – for all sectors. Developing local solutions to address in Province waste management needs is

¹ Report of Solid Waste Landfilled in Michigan for Fiscal Year 2015, Department of Environmental Quality, 2016.

² State of Waste in Ontario: Landfill Report, OWMA, 2016.

³ Ibid

environmentally responsible, financially sound, and provides for secure waste management infrastructure for the province.

Recently, the Ontario Government introduced the *Waste-Free Ontario Act* (WFOA), which provides for "Full Producer Responsibility" (FPR) into Ontario's waste management system, essentially, in very general terms, making individual producers responsible for costs associated with disposal (including collection) of their products. The rationale for introducing FPR is to encourage producers to both minimize the volume of waste and increase the possibilities for reuse and recycling for their products and/or packaging. The introduction of the WFOA will no doubt revolutionize Ontario's waste industry; however, given that Bill 151 introducing the WFOA was passed on June 1, 2016, it will be some time yet before its policies are launched formally. Until such time as the WFOA is up and running smoothly, the issue of decreasing disposal capacity in Ontario remains.

While Ontario works towards its goal of zero waste, as identified in the WFOA and in particular the Strategy for a Waste Free Ontario: Building the Circular Economy (Strategy), there will still be a need for landfill space. The Strategy also discusses how the Province would carefully consider the need and location of landfills, including the expansion of existing sites. Increasing the capacity of an existing modern, well-managed, state of the art non-hazardous solid waste landfill site, such as Brooks Road Landfill, would ensure that a new landfill would not be required while the Province is working towards implementing the policies to get Ontario on track to be waste free. As much of the material received at the Brooks Road Landfill is considered residual waste (i.e., remaining material once recovery/recycling options have been exhausted at-source), the vertical expansion of the Site further supports the Strategy action to divert more waste from disposal, thereby reducing greenhouse gas emissions. In addition, Brooks Road Environmental's proposed expansion supports the provincial government's desire to ensure that while the Province is looking to move to become "waste free", there is still a desire to maintain some disposal capacity within Ontario, to ensure the waste that is generated within the Province, is managed in the Province. The strategy also calls for focusing on expanding existing facilities that are already permitted, well-designed, and environmentally-secure. Given its relatively short lifespan, this proposed vertical capacity expansion offers an interim disposal solution while the Province brings forward Regulations and Action plans to achieve a "waste-free" Ontario.

For the reasons described above, Brooks Road Environmental is seeking approval for a vertical capacity expansion for approximately 421,000 m³ (including waste and daily/final cover) to dispose of up to 151,000 tonnes of waste per year (same rate as the existing landfill) for five to seven years (not 20 years, as is standard). This expansion would allow Brooks Road Environmental to continue to accommodate solid, non-hazardous IC&I waste disposal from Haldimand County and the surrounding area until such time as the policies and programs within the WFOA is rolled out over the next several years.

Recovering Costs

Since purchasing the Site in May 2012, Brooks Road Environmental has dedicated substantial resources to the transformation of the existing landfill into a modern engineered facility in full compliance with MOECC requirements. The vertical expansion of the existing Site and operation for a further five to seven years would allow Brooks Road Environmental to recoup some of the costs (into the \$Millions for equipment and decommissioning activities) incurred for remediation.

Environmental Solution

In addition to supplying necessary IC&I waste disposal capacity and allowing for recovery of decommissioning costs, Brooks Road Environmental believe that providing a local disposal option for residual IC&I waste generated locally is an environmentally responsible practice and wish to continue to provide this service.

3.3 Alternatives to the Undertaking

After establishing that there is a need for waste disposal capacity, Brooks Road Environmental looked at different ways of meeting this need in the ToR. In EA terms, this is the assessment of "Alternatives To" the proposed undertaking.

"Alternatives To" a proposed undertaking are functionally different ways of approaching and dealing with a problem or opportunity. There are a number of possible options or Alternatives To for satisfying the business opportunity identified by Brooks Road Environmental to provide continued IC&I solid, non-hazardous waste disposal capacity within Haldimand County and the surrounding areas, including: establishing a new landfill; expanding the existing landfill (vertically); and exporting waste to another disposal facility. As stated in the Code of Practice and noted previously, *"a private sector proponent's inability to expropriate land or implement public programs will influence the range of alternatives it may examine,"* and, as such, the Alternatives To explored as part of the ToR did not include thermal treatment, biological processing, or expanding horizontally onto land not owned by the proponent. In order to identify the most appropriate way to satisfy the identified need or "Preferred Alternative To," Brooks Road Environmental applied a set of screening criteria to each of the proposed Alternatives To the undertaking, including the option to do nothing. The screening criteria selected range from approvability to feasibility to economic viability. The results of the screening of Alternatives To the undertaking are found in **Table 3.1** below.

Table 3.1 Screening of Alternatives To

<i>Is the Alternative To...</i>	Alternative 1 Do nothing	Alternative 2 Establish a new landfill elsewhere	Alternative 3 Expand the existing landfill (vertically)	Alternative 4 Export waste to other disposal facilities
reasonably capable of being approved (e.g., must meet environmental requirements)?	Yes	Yes	Yes	Yes
technically feasible?	Yes	Yes	Yes	Yes
consistent with principles of responsible waste management?	No	Yes	Yes	No
consistent with the identified business opportunity?	No	Yes	Yes	Yes
resilient to market fluctuations and/or international waste transfer policies?	Yes	Yes	Yes	No
capable of enabling Brooks Road Environmental to continue to provide cost effective services to its customers?	No	No	Yes	No
economically viable for the company and are the economic benefits and risks acceptable?	No	No	Yes	No

Based on the results of the screening, the following conclusions were drawn with respect to each of the Alternatives To the undertaking:

Alternative 1 – Do nothing

While approvable, technically feasible, and resilient to market fluctuations and international waste transfer policy, Brooks Road Environmental does not consider this alternative to be a reasonable option for its ongoing business, as it does not satisfy the identified need for additional IC&I solid, non-hazardous waste disposal capacity.

Alternative 2 – Establish a new landfill elsewhere

Unlike the "do nothing" option, this alternative, in addition to being approvable, technically feasible, and resilient, is consistent with the core principles of responsible waste management and satisfies the identified need for additional waste disposal capacity. However, Brooks Road Environmental does not own other land in proximity to its current Site that has been identified as suitable for new waste disposal capacity nor does the company have the ability to expropriate land for a new site, thus making this option unfeasible.

Alternative 3 – Expand the existing landfill (vertically)

This "Alternative To" the proposed undertaking satisfies all of the screening criteria as it is approvable, technically feasible, resilient to market fluctuations and international waste transfer policies, consistent with the core principles of responsible waste management and satisfies the identified need for additional waste disposal capacity. Further, on the economic side, this Alternative To is both viable and cost-effective, given that the existing Site is available,

fully engineered, built to the appropriate standard, well-understood and already permitted to receive waste.

Alternative 4 – Export waste to other disposal facilities

While this alternative is approvable, technically feasible, and satisfies the identified need for additional waste disposal capacity, it is both a costly and risky option as operations may be heavily impacted by market fluctuations and international waste transfer policy, given that the most economical means of disposal would be exporting the waste to the U.S. As it cannot be assumed that it will always be possible for waste to be exported to the U.S., based on restrictions that have been put in place in the past, this is not a viable option for Brooks Road Environmental. Further, providing a local solution for the disposal of waste is consistent with responsible waste management principles as it minimizes greenhouse gas emissions associated with long-distance hauling of waste.

Given that Brooks Road Environmental is successfully operating the existing Site and wishes to continue the business opportunity at this Site, the establishment of a new landfill site or export of waste elsewhere are not feasible options. As a result, Alternative 3 – expand the existing landfill (vertically), is the only practical, environmentally sound and financially feasible means of addressing the identified business opportunity for providing solid, non-hazardous waste disposal capacity within Haldimand County and the surrounding areas for the next five to seven years.

Other "Alternatives To," such as recycling at source and thermal treatment, are beyond the Proponent's control and, in addition, do not allow the Proponent to meet the identified business opportunity. It should be noted that a horizontal expansion of the site will not be looked at as part of the Alternative Methods due to natural and technical environmental constraints; namely: 1) the Site is constrained by a Provincially Significant Wetland (PSW) and Brooks Road; and 2) investing in new landfill infrastructure (i.e., additional liner construction) is not economically feasible for the company. As such, these "Alternatives To" the undertaking have not been considered in the screening.