





# **Land Use and Socio-Economic Assessment Report**

**Brooks Road Landfill Capacity Expansion  
Environmental Screening**

**2270386 Ontario Limited**

**April 1, 2024**

**→ The Power of Commitment**

<b>Project name</b>		Brooks Road Landfill Expansion					
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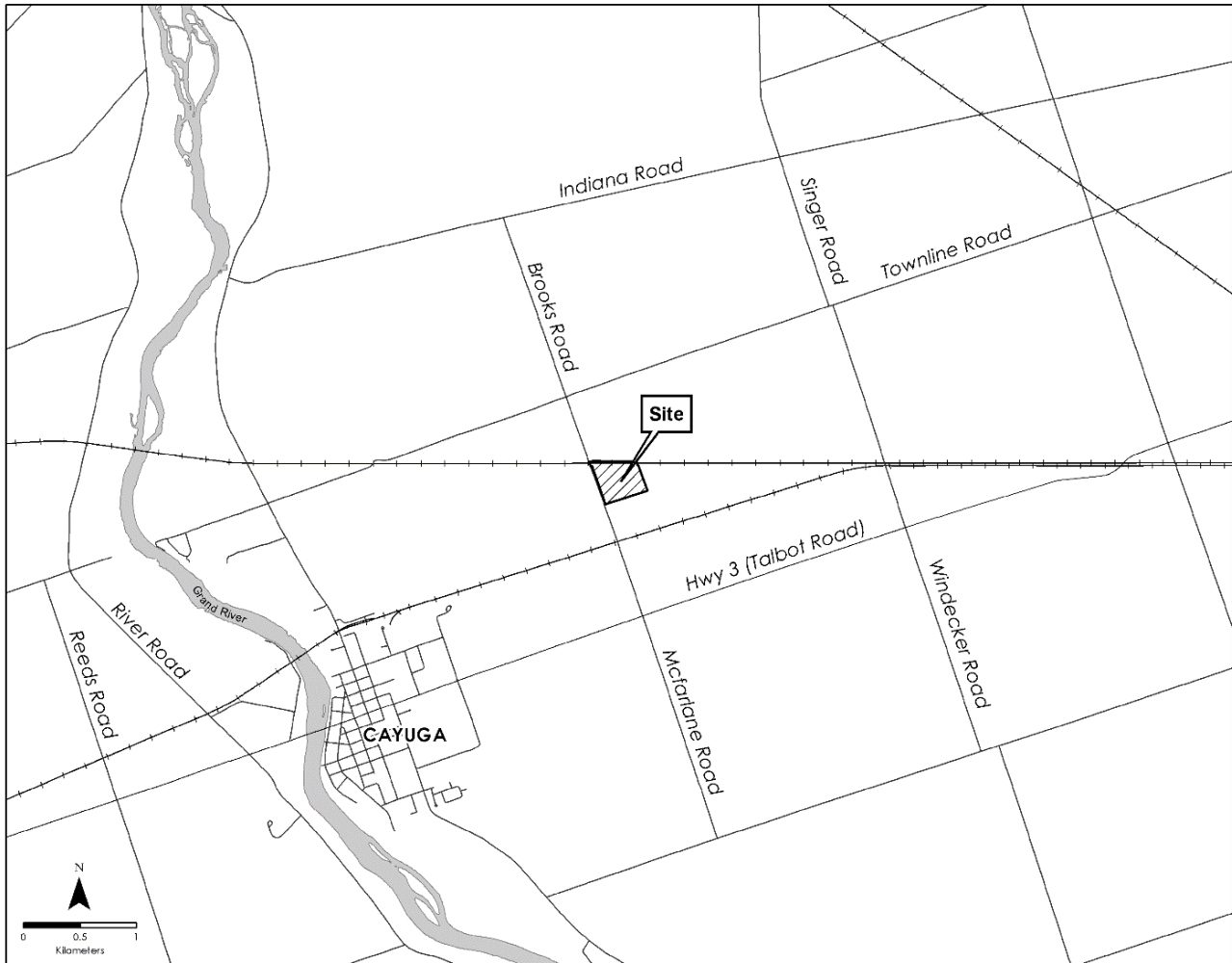
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# 1. Introduction

The Brooks Road Landfill Site (Site) is located at 160 Brooks Road, near Cayuga, Haldimand County, Ontario and is owned and operated by 2270386 Ontario Limited, herein referred to as Brooks Road Environmental (BRE, Owner, Proponent). The location of the Site is shown in Figure 1.1.



**Figure 1.1** Location of the Proposed Undertaking

The Site, which operates under Environmental Compliance Approval (ECA) No. A110302 (Landfill ECA), has an approved annual fill rate of 250,000 tonnes per year and a total capacity of 1,045,065 cubic metres (m<sup>3</sup>) (including waste and cover). The Site also operates under an air and noise ECA No. 7323-C6EJUM (Air ECA) and industrial sewage works ECA No. 1122-BKUPSM (Industrial Sewage ECA). The Site has accepted waste (in one form or another) since 1959 and received a Certificate of Approval (CofA, now referred to as an ECA) in 1980, with amendments approved by the Ministry of the Environment (currently the Ministry of Environment, Conservation and Parks (MECP) in 1980, 2002, 2004, 2005, 2007, 2011, 2012, 2013, 2014, 2017, 2018, 2020, and 2021. Under the current ECA, the Site is licenced to receive post-diversion solid non-hazardous Industrial, Commercial & Institutional (IC&I) waste from across Ontario. The 14.3-hectare (ha) Site contains an approved fill area of 6 ha.

In 2018, BRE completed an Individual Environmental Assessment (EA) to increase the total approved capacity at the Site to allow for 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 (known as the Brooks Road

Landfill Vertical Capacity Expansion EA). The Brooks Road Landfill Vertical Capacity Expansion EA was approved by the Minister of Environment, Conservation and Parks on January 15, 2019. The Site ECA was amended in 2021 to increase the annual rate of fill from 151,000 tonnes per year to a maximum of 250,000 tonnes per year, which is proportional to the daily maximum of 1,000 tonnes per day. The 2021 ECA amendment was subject to the Environmental Screening Process.

In order to meet the growing demand from waste generators and customers for a safe and reliable waste management facility for their post diversion solid non-hazardous Industrial, Commercial & Institutional waste (including impacted soils), Brooks Road Environmental is proposing to expand the capacity of the Brooks Road Landfill by approximately 219,400 m<sup>3</sup>, adding capacity equal to approximately two additional years. This expansion would be achieved through a combination of re-engineering the Site's final contours to expand the Site vertically in the expansion area (not to exceed current approved peak contours), as well as increasing the existing landfill footprint to expand the Site horizontally, as shown in Figure 1.2.

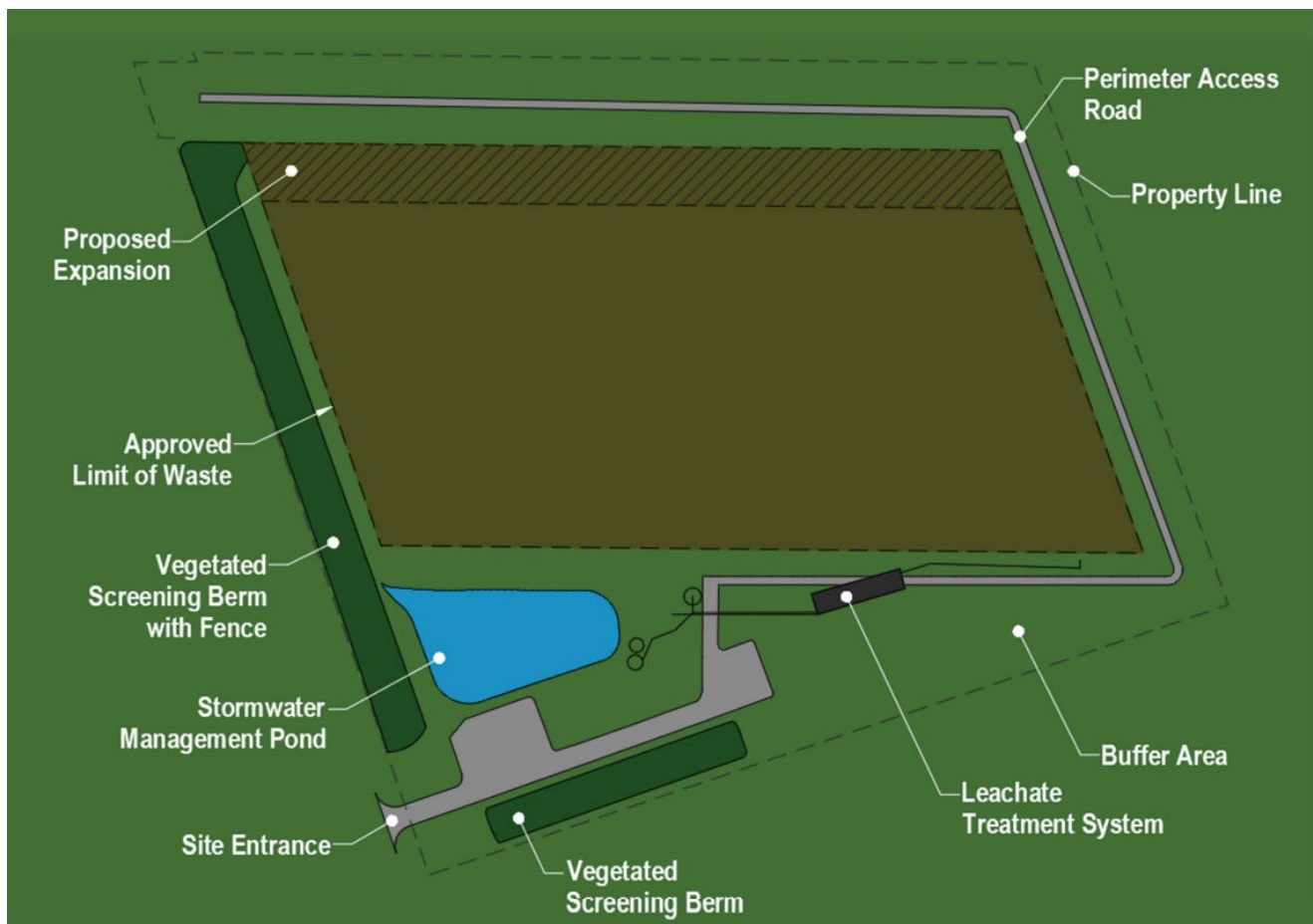


Figure 1.2 Proposed Capacity Expansion Concept

The proposed expansion would amend the approved ECA to allow for landfill volume expansion by approximately 219,400 m<sup>3</sup>, allowing for receipt of an approved maximum daily quantity (1,000 tonnes per day) throughout the year, maintaining the approved rate of 250,000 tonnes per year. The proposed change to the total landfill capacity requires additional landfill infrastructure and changes to the currently approved landfill volume, footprint, and final contours.

The proposed Brooks Road Landfill Site capacity expansion is subject to the Environmental Screening Process in accordance with Section 13 of Ontario Regulation 101/07 – Waste Management Projects Regulation of the Ontario EA Act, as follows:

*A change to a landfilling site or dump is defined as a major commercial or business enterprise or activity and is designated as an undertaking to which the Act applies, if the changes meet the following criteria:*

- 1. The total waste disposal volume of the landfilling site or dump after the change would exceed the total waste disposal volume that the landfilling site or dump was authorized to have under the Environmental Protection Act before the change by more than 100,000 cubic metres but by less than or equal to 375,000 cubic metres.*
- 2. The increase in the total waste disposal volume of the landfilling site or dump would not exceed 25 per cent of the total waste disposal volume that the landfilling site or dump was authorized to have under the Environmental Protection Act before the change.*
- 3. If a notice of completion under the Environmental Screening Process for Waste Management Projects has been submitted to the Ministry in respect of a previous change to the landfilling site or dump that meets the criteria in paragraphs 1 and 2, the day on which the notice of commencement is issued under the Environmental Screening Process for Waste Management Projects in respect of the change is at least 10 years after the day the notice of completion in respect of the previous change was submitted.*

Section 13 of Ontario Regulation 101/07 – Waste Management Projects Regulation exempts this Project from Part II of the *EA Act*, subject to fulfilling the Environmental Screening Process. The Screening will be conducted in accordance with the planning and design process outlined in MECP “*Guide to Environmental Assessment Requirements for Waste Management Projects*.” The Environmental Screening Process includes identifying and applying screening criteria to determine and describe potential environmental effects, public/external agency consultation, and the development of measures to mitigate identified environmental effects. The results of the Study will be documented in an Environmental Screening Report, which will be released for review to Stakeholders including Indigenous communities, the public, and government agencies. Upon completion of the Environmental Screening Process an application will be made to amend the existing ECA No. A110302.

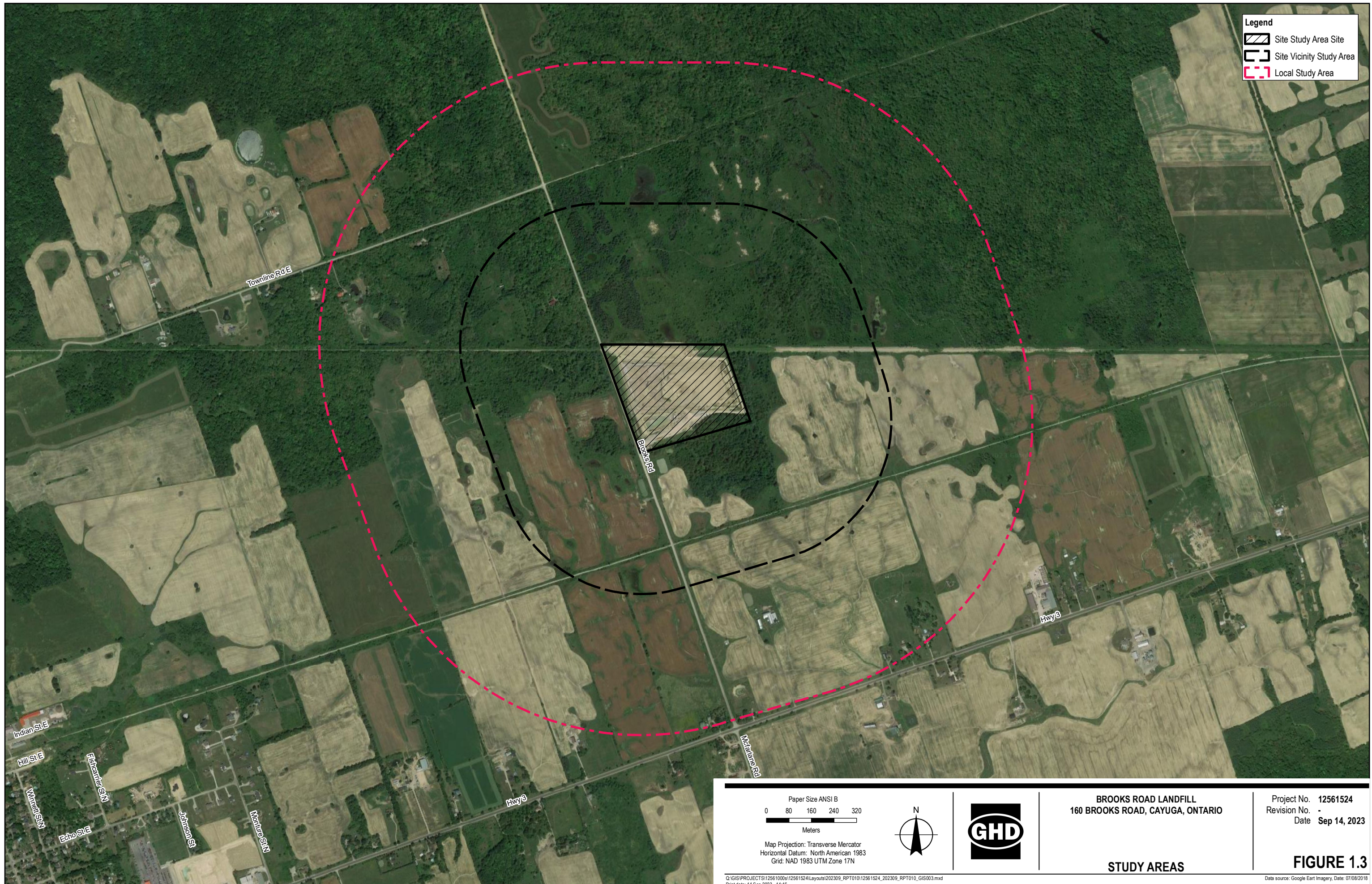
GHD has prepared a Land Use & Socio-Economic Assessment on behalf of BRE to support the proposed undertaking. This report documents the following as it relates to the land use & socio-economic environment:

- Baseline/existing conditions (i.e., what exists in the absence of the proposed project).
- Potential effects on the environment, mitigation measures, and net effects.
- Future monitoring requirements to be implemented.

The Study Areas reviewed for the Land Use assessment were as follows (see Figure 1.3):

- **Site Study Area (SSA)** – the 14.3 ha area within the existing, approved boundaries of the Site, as defined by ECA No. A110302, as amended.
- **Site-Vicinity Study Area** – the area within the vicinity of the Site extending approximately 500 meter (m) in all directions.
- **Local Study Area (LSA)** - the area within the vicinity of the Site extending approximately 1 kilometer (km) in all directions.





**Legend**

- Site Study Area Site
- Site Vicinity Study Area
- Local Study Area

<p>Paper Size ANSI B</p> <p>0 80 160 240 320</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: North American 1983 Grid: NAD 1983 UTM Zone 17N</p>			<p><b>BROOKS ROAD LANDFILL</b> 160 BROOKS ROAD, CAYUGA, ONTARIO</p>	<p>Project No. 12561524 Revision No. - Date Sep 14, 2023</p>
<p><b>STUDY AREAS</b></p>			<p><b>FIGURE 1.3</b></p>	

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## 2. Screening Criteria Checklist

At the beginning of the Environmental Screening, the Screening Criteria Checklist (provided as Schedule I, pp 67 – 69, to the “Guide to Environmental Assessment Requirements for Waste Management Projects”) is to be completed based on the information provided in the Project Description. The Screening Criteria reflect the broad definition of “environment” contained in the *Ontario Environmental Assessment Act*

As noted in the Guide:

*The Screening Criteria are presented in the form of a checklist with the option of a “Yes” or “No” response. Mitigation measures **are not** to be considered in concluding whether there is “No” potential environmental effect. That is, the proponent is required to answer “Yes” even if the proponent believes that a potential environmental effect could likely be mitigated. The reason for requiring a “Yes” is to ensure that mitigation measures are open to discussion and review. Another reason for this approach is that further discussion and review of a potential effect may reveal that there is no actual effect, in which case no mitigation is required.*

Where a “Yes” has been identified, the proponent is to provide additional information in the Environmental Screening Report, explaining the potential effect(s), methods to mitigate or address the effect(s), any net effects that are anticipated and if so, their significance. Even where the proponent indicates that no environmental effects are anticipated, it is recommended that additional information is provided in the Environmental Screening Report in order to support the “no effects” conclusion”.

Each criterion is based on a question which is prefaced with the phrase, “Might the Project...” The Table 2.1 below was completed as the first step of the Environmental Screening Process and is a summary of the criteria for the Land Use and Socio-Economic disciplines. Further descriptions of the criteria for which a “Yes” response was indicated in the Screening table are discussed in **Section 4.0** of this report.

Table 2.1 Screening Criteria Checklist

	Criterion	YES	NO	Additional Information
	<b>Might the project...</b>			
Land				
2.1	Cause negative effects on residential, commercial, institutional, or other sensitive land uses within 500 metres from the site boundary?		X	The proposed undertaking is a continuation of the existing operation through an expansion within the existing site. No change to land use is being proposed. As such, no negative effects are anticipated on the lands or land uses within 500m the Site as a result of the Project.
2.2	Not be consistent with the Provincial Policy Statement, provincial land use or resource management plans?		X	The proposed landfill expansion would continue to be consistent with the Provincial Policy Statement, provincial land use and/or resource management plans.
2.3	Be inconsistent with municipal land use policies, plans and zoning bylaws (including municipal setbacks)?		X	The proposed landfill expansion would continue to be consistent with municipal land use policies, plans and zoning bylaws (including municipal setbacks). No new lands are required and no changes to existing zoning are required.
2.4	Use lands not zoned as industrial, heavy industrial or waste disposal?		X	The proposed landfill expansion would not require new lands or changes to existing zoning.
2.5	Use hazard lands or unstable lands subject to erosion?	X		The proposed landfill expansion may require the use of hazard lands or GRCA regulated lands.

	Criterion	YES	NO	Additional Information
2.6	Cause negative effects related to the remediation of contaminated land?		X	The proposed landfill expansion would not cause negative effects related to the remediation of contaminated land.
<b>Socio-Economic</b>				
6.1	Cause negative effects on neighborhood or community character?		X	The proposed undertaking is an expansion to an already approved and existing landfill within the existing site. As such, no negative effects on the neighbourhood or community character are anticipated on as a result of the Project.
6.2	Result in aesthetics impacts (e.g., visual and litter impacts)?	X		The proposed landfill expansion would result in changes to the existing landfill footprint, cover design (daily, intermediate, final), final contours, and on-site operations and may cause aesthetic impacts due to the increase in landfill height in the expansion area.
6.3	Cause negative effects on local businesses, institutions, or public facilities?		X	The proposed undertaking is a continuation of the existing operation through an expansion within the existing site. No change to land use is being proposed. As such, no negative effects are anticipated to local businesses, institutions, or public facilities.
6.4	Cause negative effects on recreation, cottaging or tourism?		X	The proposed landfill expansion would not result in negative effects on recreation, cottaging or tourism as none of the above-mentioned uses have been identified within the Study Areas.
6.5	Cause negative effects related to increases in the demands on community services and infrastructure?		X	The proposed landfill expansion would not cause negative effects related to increases in the demands on community services and infrastructure.
6.6	Cause negative effects on the economic base of a municipality or community?		X	The proposed landfill expansion would not cause negative effects on the economic base of a municipality or community.
6.7	Cause negative effects on local employment and labour supply?		X	The proposed landfill expansion would not cause negative effects on local employment and labour supply. The continued use of the landfill will provide economic benefits to the local community in the form of new employment opportunities in both the construction and day to day operation. There is also the potential for increased employment opportunities in local firms.
6.8	Cause negative effects related to traffic?	X		The proposed landfill expansion would result in changes to the existing landfill footprint, cover design (daily, intermediate, final), final contours, and on-site operations and may cause negative effects related to traffic through prolonging the life of the Site.
6.9	Be located within 8 km of an aerodrome/airport reference point?	X		Three aerodromes have been identified within 8km of the Site: <ul style="list-style-type: none"> <li>– Cayuga (Bruce Field), approximately 1.3 km south of the Site</li> <li>– Cayuga East, approximately 3 km southeast of the Site</li> <li>– Grand River Executive, approximately 7.5 km north of the Site</li> </ul>

	Criterion	YES	NO	Additional Information
6.10	Interfere with flight paths due to the construction of facilities with height (i.e., stacks)?		X	The proposed landfill expansion would not interfere with flight paths.
6.11	Cause negative effects on public health and safety?		X	The proposed landfill expansion would not cause any negative effects on public health and safety.

## 3. Existing Conditions

The following subsections describe the existing conditions that are found within the SSA, LSA and Site Vicinity Study Areas of the proposed project.

### 3.1 Land Use Existing Conditions

#### 3.1.1 Methodology

##### 3.1.1.1 Available Secondary Source Information Collection and Review

Available secondary sources of information were collected and reviewed by the Land Use Study Team to determine existing Land Use conditions within the study area(s). The following sources of secondary information were collected and reviewed:

- Review of current zoning plans, definitions, and land use designations
- Ontario Planning Act
- Provincial Policy Statement (2020)
- Provincial Guidelines D-1: Land Use Compatibility (1995)
- Haldimand County Official Plan (2019)
- Haldimand County Zoning By-Law HC 1-2020
- Grand River Conservation Authority
- Statistic Canada (Population Census 2021)
- Land Use Assessment Report for the Brooks Road Landfill Site Vertical Capacity Expansion Environmental Assessment report prepared by GHD in December 2016<sup>1</sup>

#### 3.1.2 Description of Existing Conditions

The existing land uses around the Site are primarily agricultural and wetlands. The Site is bordered by Brooks Road to the west, and agricultural and wetland areas to the other three sides. There is an abandoned railways to the north of the Site.

##### 3.1.2.1 Sensitive Uses Within 500 Metres

Sensitive land uses are defined in the Provincial Policy Statement (PPS), 2020 as “*buildings, amenity areas, or outdoor spaces where routine or normal activities occurring at reasonably expected times would experience one or more adverse effects from contaminant discharges generated by a nearby major facility. Sensitive land uses may be a*

<sup>1</sup> Land Use Assessment Report for the Brooks Road Landfill Site Vertical Capacity Expansion Environmental Assessment report prepared by GHD in December 2016. Available at: [https://www.brenvironmental.com/files/uqd/8a04be\\_52c65748fecb46d481aadbe2e5a33bb7.pdf](https://www.brenvironmental.com/files/uqd/8a04be_52c65748fecb46d481aadbe2e5a33bb7.pdf)

*part of the natural or built environment. Examples may include, but are not limited to residences, day care centers, and educational and health facilities.”*

The existing Site is located at 160 Brooks Road, in Cayuga, Haldimand County, Ontario. The proposed expansion will take place within the site boundaries and will not require the use of any new lands. There are two identified residential properties located within the Site Vicinity Study Area, the closest is approximately 223 m northwest of the site. There are no identified institutional or recreational land uses in a 500 meters radius of the Site boundary.

### **3.1.2.2 Provincial Policy Statement**

The Provincial Policy Statement (PPS), 2020<sup>2</sup> provides clear policy direction on land use planning to promote strong communities, a strong economy, and a clean and healthy environment<sup>3</sup>. In terms of land use compatibility, the PPS 2020 (Section 1.2.6.1) states that *“Major facilities and sensitive land uses shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential adverse effects from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of major facilities in accordance with provincial guidelines, standards and procedures”*.

The PPS 2020 defines ‘major facilities’ as facilities which may require separation from sensitive land uses (as defined in Section 3.1.2.1, above), including but not limited to airports, manufacturing uses, transportation infrastructure and corridors, rail facilities, marine facilities, sewage treatment facilities, waste management systems, oil and gas pipelines, industries, energy generation facilities and transmission systems, and resource extraction activities.

Section 1.6.10.1 of the PPS 2020 notes that *“waste management systems need to be provided that are of an appropriate size and type to accommodate present and future requirements, and facilitate, encourage and promote reduction, reuse and recycling objectives... [and that] waste management systems shall be located and designed in accordance with provincial legislation and standards.”*

The SSA, Site-Vicinity, and LSA are currently in compliance with the policies contained in the PPS 2020.

### **3.1.2.3 Grand River Conservation Authority (GRCA) Regulation**

In accordance with Ontario Regulation 150/06, GRCA regulates areas where development could be subject to flooding, erosion or dynamic beaches, and where interference with wetlands and alterations to shorelines and watercourses might adversely affect those environmental features. Any of these activities within the Regulated Area may require a permit from the GRCA<sup>4</sup>.

A portion of the Site area falls within the GRCA regulated area (Figure 3.1) and may require a permit.

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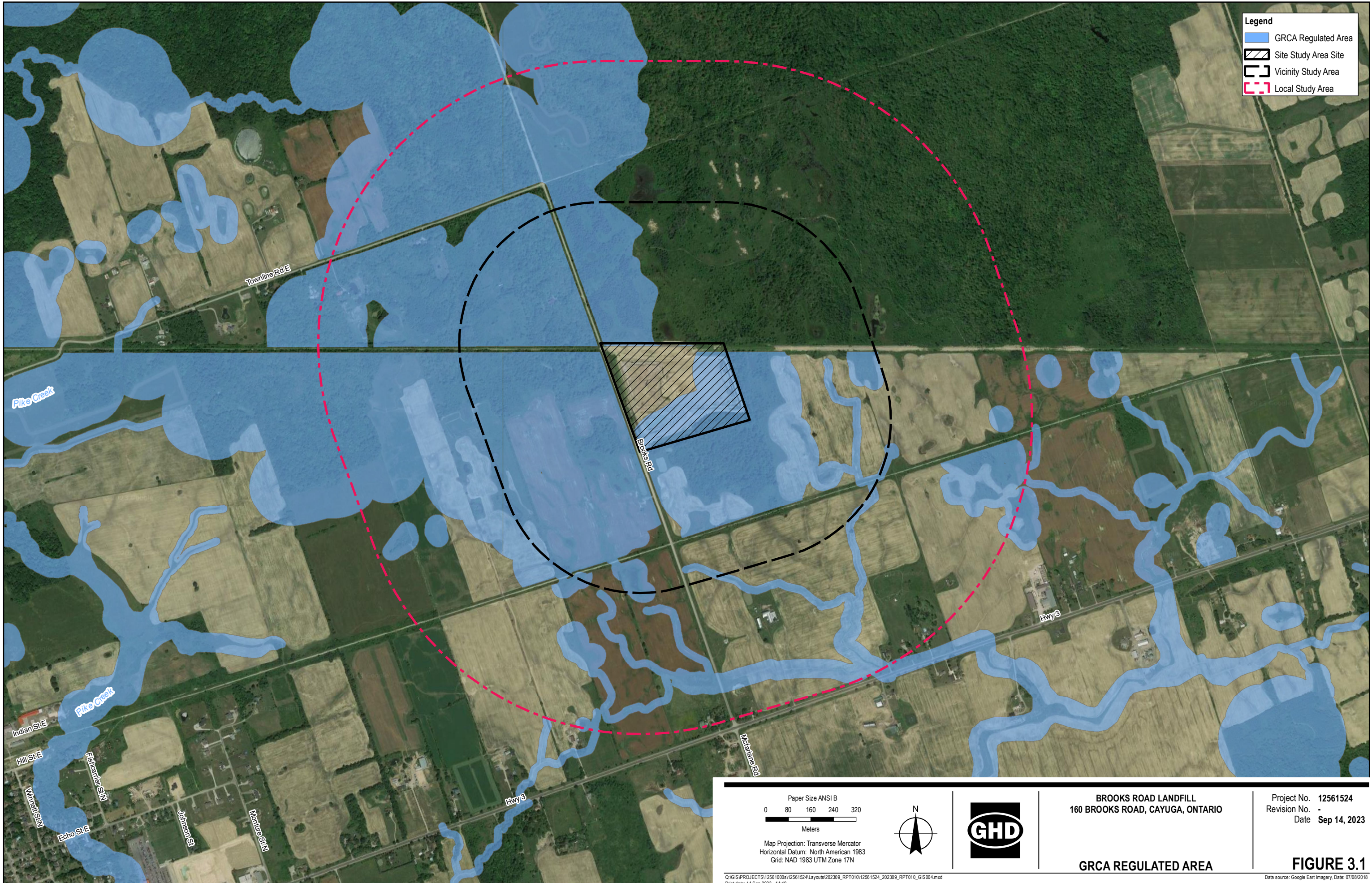
<sup>2</sup> **[Provincial Policy Statement, 2020 - Under the Planning Act \(ontario.ca\)](#)**

<sup>3</sup> It should be noted that the PPS was recently updated, and the proposed changes (PPS, 2023) were out for public consultation until August 4, 2023. The proposed changes do not impact the PPS analysis.

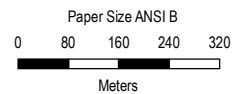
<sup>4</sup> Grand Rover Conservation Authority Website. Available at:

**<https://www.grandriver.ca/en/Planning-Development/Map-Your-Property.aspx#gsc.tab=0>**

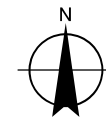




- Legend**
- GRCA Regulated Area
  - Site Study Area Site
  - Vicinity Study Area
  - Local Study Area



Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 UTM Zone 17N



**BROOKS ROAD LANDFILL**  
 160 BROOKS ROAD, CAYUGA, ONTARIO

**GRCA REGULATED AREA**

Project No. 12561524  
 Revision No. -  
 Date Sep 14, 2023

**FIGURE 3.1**



### 3.1.2.4 Planned Developments

There are currently no planned or proposed developments surrounding the Site<sup>5</sup>.

### 3.1.2.5 Municipal Land Use Policies, Plans, Zoning Bylaws

The Study Areas are situated within the unincorporated community of Cayuga in Haldimand County. The County's Official Plan and Zoning By-Laws were reviewed to determine how the land in the Study Area is to be used in the future based on municipal planning policy.

The predominance of agriculture as the primary designated land use in the Study Areas is expected to remain for the foreseeable future with very little change based on the current municipal planning policy adopted by the County of Haldimand.

#### Haldimand County Official Plan (HCOP)

The Study Area is designated as Active Waste Landfill Site and surrounding is Provincially Significant Wetlands and Agriculture.

**Provincially Significant Wetlands** – There are delineated Provincially Significant Wetlands within the SSA. As per Section 2. A. 1) of the HCOP, certain compatible uses may be permitted through an appropriately scoped Environmental Impact Study resulting in no negative impact on the natural features or ecological functions of wetland or wetland complex.

**Agriculture** – Majority of the Site Vicinity Study Area is designated agricultural. As per Section 3. A. 1) of the HCOP, the predominant use of lands within the agriculture designation shall be agriculture. Other uses compatible with agriculture such as animal kennels, forestry uses, and conservation related uses may be permitted.

**HCOP 34 (Specific policies in Haldimand County)** – The abandoned railway, located north of the existing landfill is under the HCOP 34 policy area. A waste disposal site is permitted in addition to the uses permitted in the agricultural designation. The permitted uses under waste disposal site are limited to stockpiling of clean clay, location of ground waste monitoring wells, and a general naturalized buffer area. Waste disposal or landfilling is not permitted in this designation.

**Hal 36 (Policies in the former Town of Haldimand)** – As per Hal 36, policies in the Official Plan relating to Provincially Significant Wetlands (Section 2. A. 1)), and Natural Environment Areas (Section 2. A. 3)) will not apply to the Brooks Road Landfill (formerly known as Edwards Landfill Site).

#### Haldimand County Zoning By-Law HC 1-2020

The Haldimand County zones the subject site as Disposal Industrial (MD) and Wetland (W). The land in the LSA is zoned as Agricultural (A) and Wetland (W). (see Figure 3.2).

##### **Disposal Industrial**

The SSA is zoned as Disposal Industrial. The permitted uses include waste disposal site, waste transfer site, and waste processing facility along with other compatible uses.

##### **Wetland**

A portion of the SSA and majority of the Site Vicinity and LSA is zoned as Wetland (W). The permitted uses include parks, woodlot management, conservation area, and tent and trailer park. Under Section 12.2, Hal 36.325 (Zone Exceptions) of the zoning by-law, the minimum setbacks from the wetland zone shall not apply to the commercial buildings existing on the date of passing of the by-law.

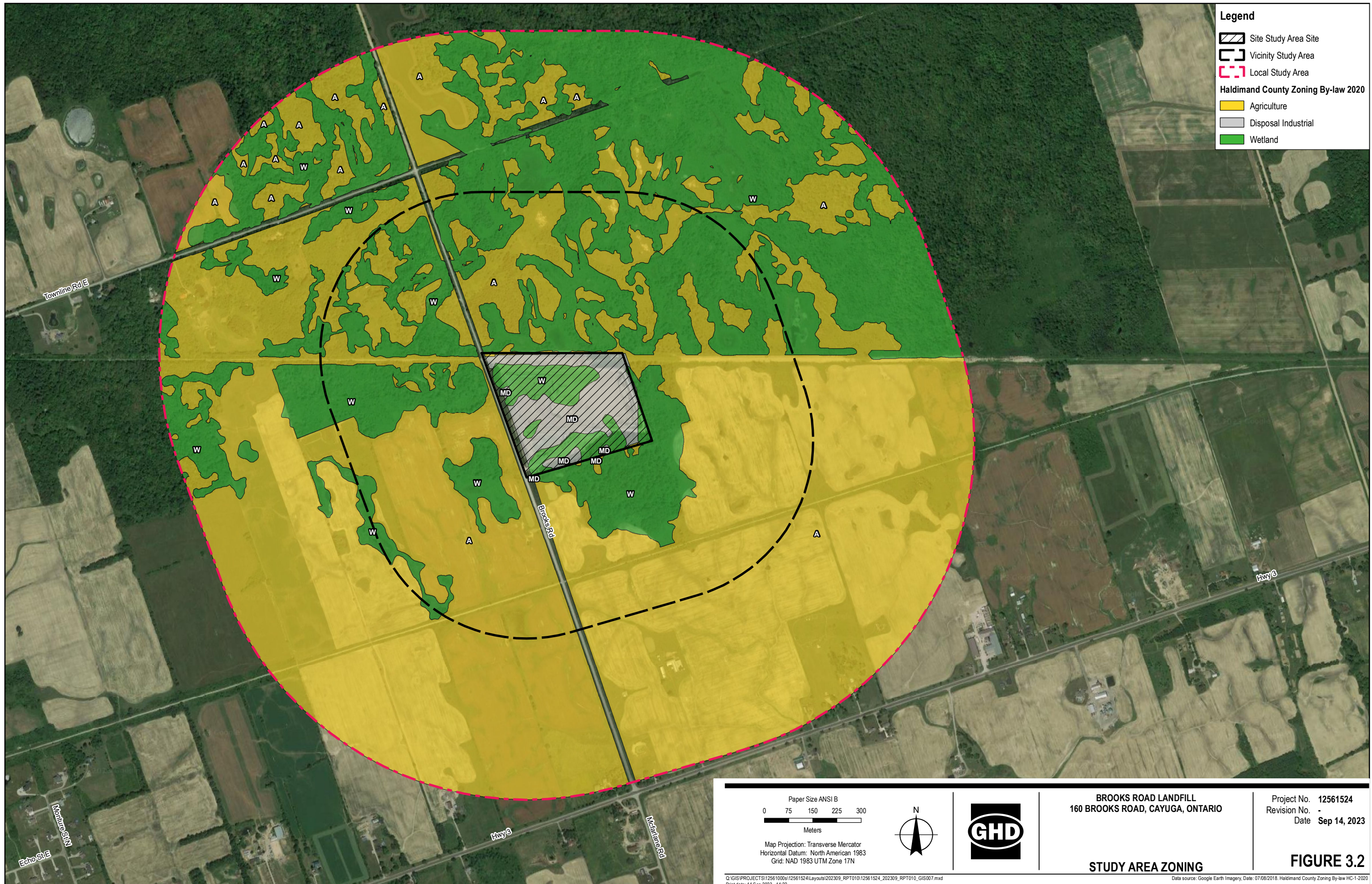
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<sup>5</sup> Haldimand County Planning Applications. Available at:  
<https://haldimand.maps.arcgis.com/apps/dashboards/945e90b55d484fd0a01253953129dc0f>

### ***Agricultural***

A larger portion of the Site-Vicinity and the LSA is zoned Agricultural. Permitted uses in the Agricultural Zone include residential (bed and breakfast establishments, single detached dwellings, and several accessory uses), agricultural, and commercial (animal hospital, animal kennel, commercial greenhouse) uses.



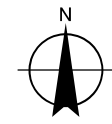
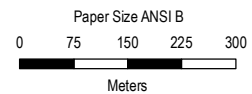


**Legend**

- Site Study Area Site
- Vicinity Study Area
- Local Study Area

**Haldimand County Zoning By-law 2020**

- Agriculture
- Disposal Industrial
- Wetland



**BROOKS ROAD LANDFILL**  
 160 BROOKS ROAD, CAYUGA, ONTARIO

Project No. 12561524  
 Revision No. -  
 Date Sep 14, 2023

Map Projection: Transverse Mercator  
 Horizontal Datum: North American 1983  
 Grid: NAD 1983 UTM Zone 17N

**STUDY AREA ZONING**

**FIGURE 3.2**



## 3.2 Socio-Economic Existing Conditions

### 3.2.1 Methodology

#### 3.2.1.1 Available Secondary Source Information Collection and Review

Available secondary sources of information were collected and reviewed by the Socio-Economic Study Team to determine existing Socio-Economic conditions within the study area(s). The following sources of secondary information were collected and reviewed:

- Review of current zoning plans, definitions, and land use designations
- Statistics Canada
- Haldimand County Community Profile
- Review of results from other discipline investigations (e.g., noise, air quality, surface water and traffic)
- Socio-Economic Assessment Report for the Brooks Road Landfill Site Vertical Capacity Expansion Environmental Assessment report prepared by GHD in December 2016<sup>6</sup>

### 3.2.2 Description of Existing Conditions

#### 3.2.2.1 Neighbourhood & Community Character

The proposed facility expansion site is located within the community of Cayuga in Haldimand County. The proposed site is designated as Active Waste Disposal Site within the Haldimand County Official Plan and zoned Disposal Industrial (MD) and Wetlands (W) in the Haldimand County Zoning By-law.

Haldimand County is located in the Golden Horseshoe region of Ontario. The community has a rural landscape of 1,251 km<sup>2</sup>, including 83 km of shoreline along Lake Erie.

According to the 2021 Census<sup>7</sup>, the County recorded a population of 49,216 in 2021, which is projected to increase to between 67,000 and 68,000 by 2041<sup>8</sup>. The age groups with the largest representation are the 55-59 and 60-64 cohorts. There is an equal distribution of males and females throughout the age groups and a greater part of the households falls within the income brackets of \$150k and above. About 4% of total population is Indigenous, largely First Nations and Métis, and 3% are visible minorities, with South Asian and Black visible minority groups more represented than other groups.

Almost half of the total population has completed high school and college education. Common fields of study include engineering, business management, and health related fields. A major part of the labour force is employed in manufacturing, health care, and construction industries. The employment rate was about 56% in 2021 with 8.3% of unemployment rate in the same year.

Eighty-five percent of the residents own their home and 15% are renters. The new housing construction project has increased from 2020<sup>9</sup>. Forty-nine projects under construction and 101 completed projects were reported in the fourth quarter of 2022.

The closest residential dwelling is located approximately 223 m northwest of the Site (see Figure 3.3).

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<sup>6</sup> Socio-Economic Assessment Report for the Brooks Road Landfill Site Vertical Capacity Expansion Environmental Assessment report prepared by GHD in December 2016. Available at: [https://www.brenvironmental.com/files/ugd/8a04be\\_282fd2938aca49d9ae4778c671605ca2.pdf](https://www.brenvironmental.com/files/ugd/8a04be_282fd2938aca49d9ae4778c671605ca2.pdf)

<sup>7</sup> Haldimand County, 2024. Haldimand County Website – Community Profiles. Available at: <https://www.haldimandcounty.ca/community-profile/>

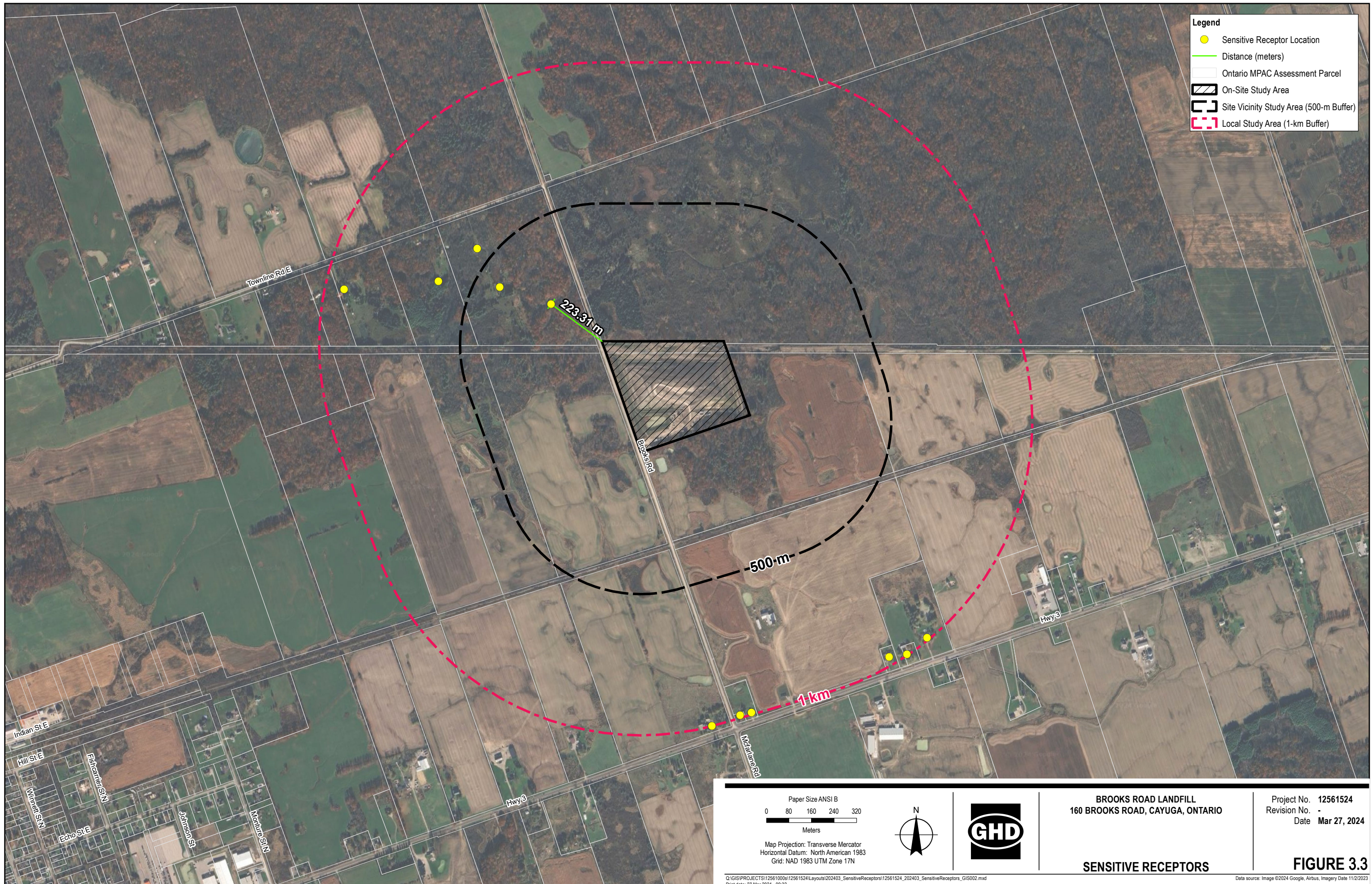
<sup>8</sup> Haldimand County Revised Growth Analysis to 2051 Memo prepared by Watson & Associates Economists Ltd. Available at:

<https://www.haldimandcounty.ca/wp-content/uploads/2021/01/Revised-Watson-forecasts-2020-VERSION-2.pdf>

<sup>9</sup> Canada Mortgage and Housing Corporation Website. Last accessed November 12, 2023. Available here:

<https://www03.cmhc-schl.gc.ca/hmip-pimh/en/TableMapChart/#Profile/6175/3/Haldimand%20County%20CY%20>





**Legend**

- Sensitive Receptor Location
- Distance (meters)
- Ontario MPAC Assessment Parcel
- On-Site Study Area
- Site Vicinity Study Area (500-m Buffer)
- Local Study Area (1-km Buffer)

<p>Paper Size ANSI B</p> <p>0 80 160 240 320</p> <p>Meters</p> <p>Map Projection: Transverse Mercator Horizontal Datum: North American 1983 Grid: NAD 1983 UTM Zone 17N</p>	<p>N</p>		<p><b>BROOKS ROAD LANDFILL</b> 160 BROOKS ROAD, CAYUGA, ONTARIO</p>	<p>Project No. 12561524 Revision No. - Date Mar 27, 2024</p>
<p><b>SENSITIVE RECEPTORS</b></p>			<p><b>FIGURE 3.3</b></p>	

Q:\GIS\PROJECTS\12561000e\12561524\Layouts\202403\_SensitiveReceptors\12561524\_202403\_SensitiveReceptors\_GIS002.mxd  
Print date: 27 Mar 2024 - 09:32

Data source: Image ©2024 Google, Airbus, Imagery Date 11/2023



### 3.2.2.2 Visual

The existing visual landscape within the SSA, Site-Vicinity Study Area, and LSA can be described as rural, agricultural, and includes regional roads. There is a wire fence around the perimeter of the site. The western part of the existing Site located on Books Road has a visual berm which includes a chain link fence with visual screen as mitigation to visual impact, providing a visual barrier to passersby.

### 3.2.2.3 Local Businesses, Institutions or Public Facilities

In addition to farming, the only other business operating within the LSA is the Brooks Road Landfill Site, which employs six full-time and one part-time staff. There are no other businesses, institutions or public facilities located within the LSA.

### 3.2.2.4 Local Employment & Labor Supply

According to the 2021 Census, there are total 24,335 residents in the labour force, of which 20,645 are employees and 3,675 are self-employed. Majority of the employed are in trade and transport occupations (26%), sales and services (22%), business and finance (14%), education, law, and government (10%), and healthcare (8%). The employment rate in 2021 was 56.6% and participation rate was 61.8%. The unemployment rate was recorded to be 8.3% in the same year.

A major part of the labour force is into manufacturing, health care, and construction industry. The employment rate was about 56% in 2021 with 8.3% of unemployment rate in the same year.

The Brooks Road Landfill Site employs six full-time and one part-time staff.

### 3.2.2.5 Traffic

Highway 3 and Brooks Road are the two major roads providing access to the existing Brooks Landfill. Traffic on Brooks Road is predominantly truck traffic specific to the landfill operation. Traffic on Highway 3 is a mix of both commuter and truck traffic. The capacity analysis under peak operations confirms no current capacity constraints in the LSA road network. Further details on traffic (existing conditions and potential effects) are included in the Traffic Assessment Report, prepared concurrently with this report by GHD.

### 3.2.2.6 Social

The LSA is located within the boundaries of Haldimand County, Ontario, approximately 2 km northeast the Village of Cayuga. There are 39 property parcels within the LSA (not including the Site) and 11 residential dwellings. Of these 39 properties, 19 were Farm Tax Rated for the 2022 tax year<sup>10</sup>. The closest residential dwelling is located approximately 223 m northwest of the Site.

No static recreational resources (e.g., picnic areas, trailer parks), churches, or cemeteries are located within the LSA; however, Brooks Road as well as the abandoned railway to south of the Site (parallel to Highway 3) are identified in the Official Plan as trail locations and in the Haldimand County Trails Master Plan 2009 as “Proposed Special Use Routes” (Brooks Road as a “Proposed Signed Route” and the abandoned railway as a Proposed Multi-Use Trail”) for implementation in the short-term (0 to 5 years from the publication date). There is presently no indication of the implementation of the proposed trails along either of these routes.

The topography across the LSA from north to south ranges from approximately 202 m AMSL to approximately 196 m AMSL. As such, the land within the LSA can be considered to be relatively flat. The majority of the lands within the LSA immediately adjacent to the Site are forested, thus obscuring the view of the Site. The exception is the parcel of land immediately west of the Site, which includes an open field, from which the Site is visible; however, the existing berm along the western perimeter of the Site obscures most views of the landfilling operations from this parcel. The

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<sup>10</sup> Government of Ontario. (2022). *AgMaps – Agricultural Information Atlas*. Source: [AgMaps \(gov.on.ca\)](https://www.agmaps.gov.on.ca)

existing visual berm includes a chain link fence with visual screen as mitigation to visual impact, providing a visual barrier to passersby from Brooks Road.

### **3.2.2.7 Airport**

There are three private airfields within the 8 km radius of the Site: the Cayuga (Bruce Field) Airport, approximately 1.5 km south; the Cayuga East Airport, approximately 3 km southeast; and the Grand River Executive Airport (also referred to as the York Airport) approximately 7.5 km north of the Site.

## **4. Description of Project Components and Activities**

A Project Description, which includes a Site Plan, was prepared so that potential environmental effects and mitigation measures could be identified. Figure 4.1 is provided as the Site Plan and the following subsections provide a general summary of the proposed undertaking.





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# Figure 4.1

P03. ISSUED FOR CLIENT REVIEW	R.L.	D.B.	10-27-2023	
P02. ISSUED FOR CLIENT REVIEW	R.L.	D.B.	04-26-2023	
P01. ISSUED FOR REVIEW	R.L.	D.B.	09-19-2022	
No.	Issue	Checked	Approved	Date

Author	S. HOLLAND	Designer	D. BARTON
Drafting Check	M. WOLFER	Design Check	D. GATRELL
Project Manager	R. LOVEDAY	Project Director	D. BARTON

## BROOKS ROAD LANDFILL SITE HALDIMAND COUNTY, ONTARIO

### DESIGN AND OPERATIONS REPORT LANDFILL EXPANSION

Date: **OCTOBER 20, 2023**  
Scale: **1:1000**

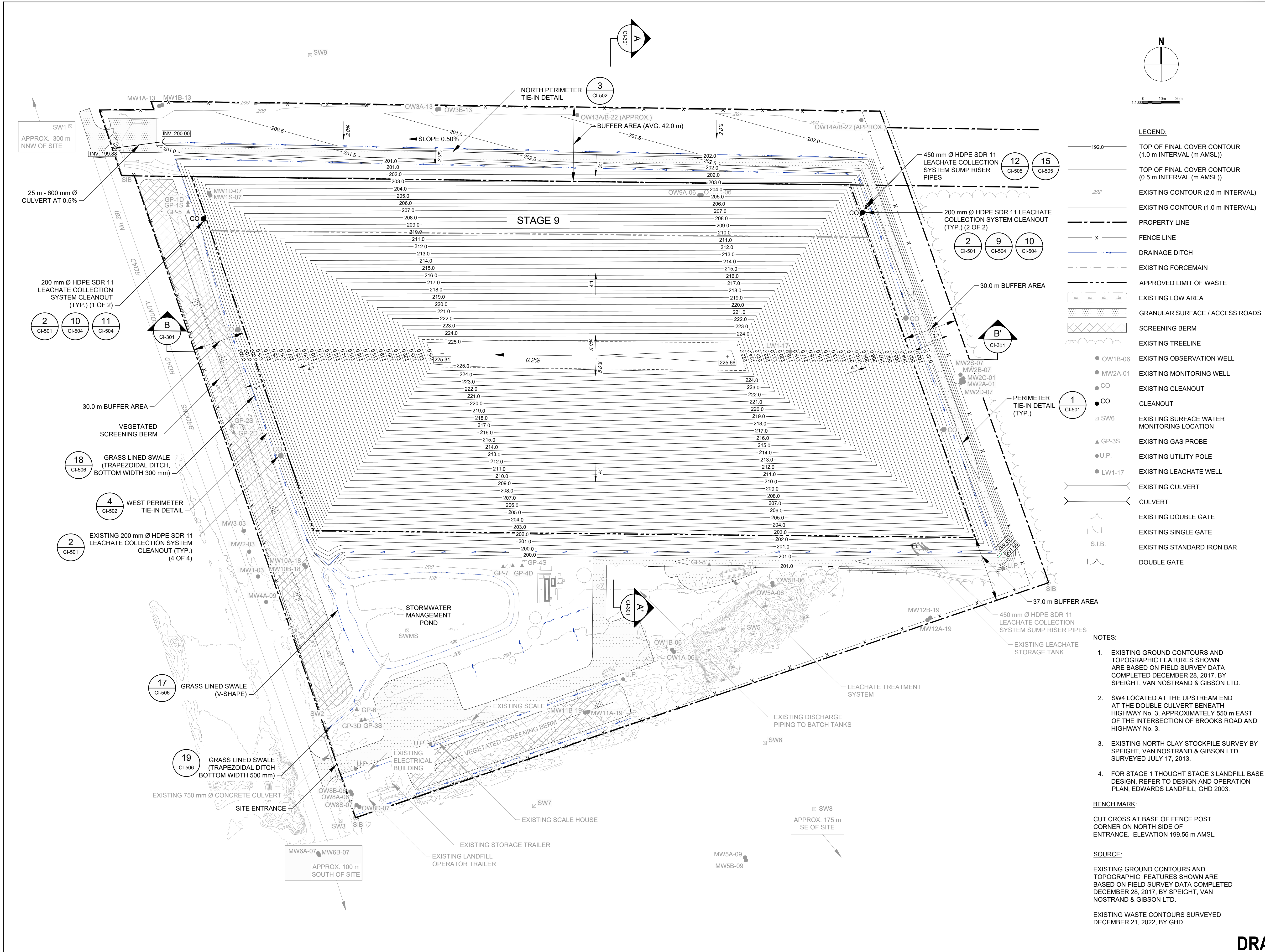
Project No.: **12561524**

Title: **FINAL CONTOUR PLAN  
(TOP OF TOPSOIL)**

Size: **ANSI D**

Sheet No.: **CI-103**

# DRAFT



- LEGEND:**
- 1.0m — TOP OF FINAL COVER CONTOUR (1.0 m INTERVAL (m AMSL))
  - 0.5m — TOP OF FINAL COVER CONTOUR (0.5 m INTERVAL (m AMSL))
  - 2.0m — EXISTING CONTOUR (2.0 m INTERVAL)
  - 1.0m — EXISTING CONTOUR (1.0 m INTERVAL)
  - - - - - PROPERTY LINE
  - x - - - - - FENCE LINE
  - - - - - DRAINAGE DITCH
  - - - - - EXISTING FORCEMAIN
  - - - - - APPROVED LIMIT OF WASTE
  - - - - - EXISTING LOW AREA
  - - - - - GRANULAR SURFACE / ACCESS ROADS
  - - - - - SCREENING BERM
  - - - - - EXISTING TREELINE
  - OW1B-06 EXISTING OBSERVATION WELL
  - MW2A-01 EXISTING MONITORING WELL
  - CO EXISTING CLEANOUT
  - CO CLEANOUT
  - SW6 EXISTING SURFACE WATER MONITORING LOCATION
  - ▲ GP-3S EXISTING GAS PROBE
  - U.P. EXISTING UTILITY POLE
  - LW1-17 EXISTING LEACHATE WELL
  - - - - - EXISTING CULVERT
  - - - - - CULVERT
  - - - - - EXISTING DOUBLE GATE
  - - - - - EXISTING SINGLE GATE
  - - - - - S.I.B. EXISTING STANDARD IRON BAR
  - - - - - DOUBLE GATE

- NOTES:**
- EXISTING GROUND CONTOURS AND TOPOGRAPHIC FEATURES SHOWN ARE BASED ON FIELD SURVEY DATA COMPLETED DECEMBER 28, 2017, BY SPEIGHT, VAN NOSTRAND & GIBSON LTD.
  - SW4 LOCATED AT THE UPSTREAM END AT THE DOUBLE CULVERT BENEATH HIGHWAY No. 3, APPROXIMATELY 550 m EAST OF THE INTERSECTION OF BROOKS ROAD AND HIGHWAY No. 3.
  - EXISTING NORTH CLAY STOCKPILE SURVEY BY SPEIGHT, VAN NOSTRAND & GIBSON LTD. SURVEYED JULY 17, 2013.
  - FOR STAGE 1 THOUGHT STAGE 3 LANDFILL BASE DESIGN, REFER TO DESIGN AND OPERATION PLAN, EDWARDS LANDFILL, GHD 2003.

**BENCH MARK:**  
CUT CROSS AT BASE OF FENCE POST CORNER ON NORTH SIDE OF ENTRANCE. ELEVATION 199.56 m AMSL.

**SOURCE:**  
EXISTING GROUND CONTOURS AND TOPOGRAPHIC FEATURES SHOWN ARE BASED ON FIELD SURVEY DATA COMPLETED DECEMBER 28, 2017, BY SPEIGHT, VAN NOSTRAND & GIBSON LTD.  
EXISTING WASTE CONTOURS SURVEYED DECEMBER 21, 2022, BY GHD.



The project for which the Environmental Screening Process is being undertaken is a proposed capacity expansion of 219,400 m<sup>3</sup> and involves a change to the final site capacity, contours, and footprint. Some level of construction is required to implement the proposal. This would be a combination of re-engineering the Site's final contours to expand the Site vertically in the expansion area (not to exceed current approved peak contours), as well as increasing the existing landfill footprint to expand the Site horizontally. Modification to the northern perimeter access road and stormwater drainage ditch would be required to accommodate the proposed changes to the final Site contours. The former railway property would continue to provide buffer land for the Site. The Brooks Road Landfill will continue to operate within currently approved operating hours and current construction activities and daily operations will continue as usual. There are no changes to the annual fill rate limits (maximum 1,000 tonnes per day and 250,000 tonnes per year) proposed as part of this project.

A summary of the key elements of the proposed capacity expansion compared to the existing approved landfill is provided in Table 4.1.

**Table 4.1** Summary of Proposed Brooks Road Landfill Capacity Expansion Design vs Existing Landfill

Design Component	Existing Landfill	Proposed Capacity Expansion
Volume (m <sup>3</sup> )	1,045,065	1,264,4651
Footprint Area (ha)	6.07	7.15
Peak Elevation (mAMSL) (top of final cover)	221.50	225.66
Peak Elevation – top of waste (mAMSL)	220.75	224.91
Crest of Slope Elevation (mAMSL)	221.0	225.30
Slopes (Top/Sides)	Top – 20:1 (5%) Sides – 4:1 (25%)	Top – 20:1 (5%) Sides – 4:1 (25%) New stage is 4:1 (25%) north side slope, extends to a new peak elevation (i.e., elevated 20:1 [5%] plateau), and the south side slope (25%) ties-in to existing approved top of waste plateau. All other sides remain the same.
Stormwater Pond	Permanent pool – 1,266 m <sup>3</sup> Total live storage – >5,502 m <sup>3</sup>	Pond capacity is sufficient for the proposed expansion based on existing Stormwater Management Plan.
Stormwater Drainage Ditch		Stormwater drainage ditch shifted by 30 m. East and west ditches will extend to maintain full perimeter ditch.
Perimeter Roads		Northern perimeter access road shifted by 29 m. East access road extended as appropriate. Access road will extend west, proposed to connect to Brooks Road as a secondary site access (locked during normal operation). A turnaround area will be provided in the northwest corner.
Maximum Daily Truck Traffic	25 to 50	25 to 50
Post-Closure Leachate Generation Rate	33 m <sup>3</sup> /day	39 m <sup>3</sup> /day
Capacity anticipated to be reached (year)	2024	2026

# 5. Potential Effects, Mitigation Measures & Net Effects

There is no significant impact to the predominantly agricultural land uses within the Study Areas as the proposed undertaking will not be acquiring any new lands.

## 5.1 Methodology and Investigations

The assessment of effects associated with the proposed undertaking was carried out through a series of steps that is based, in part, on the description of existing conditions as well as the Project Description and Site Plan. The assessment of effects was also undertaken within the context of the previously completed Screening Criteria Checklist, as summarized in **Section 2** of this report.

The land use and socio-economic existing conditions characterized for each criterion identified in the Screening Criteria Checklist were assessed, taking into consideration the Project Description and Site Plan in order to identify potential effects that may result from the proposed undertaking. Following the determination of potential effects, measures required to mitigate any potential effects were developed and the resulting net effects (with the application of mitigation measures) were determined.

## 5.2 Land Use Net Effects

This Section provides an assessment of the potential negative environmental effects for those Land Use criteria which might be affected by the project (i.e., those for which a “Yes” answer was given in the Screening Criteria Checklist) as identified in **Section 2**. The effects assessment describes how existing environmental conditions in the Study Area(s) would change as a result of the construction and operation of the proposed undertaking.

As described in **Section 2**, a “Yes” was applied to the following Land Use criteria:

Land Use				
	Criterion	YES	NO	Additional Information
2.5	Use hazard lands or unstable lands subject to erosion?	X		The proposed landfill expansion may require the use of hazard lands or GRCA regulated lands.

### 5.2.1 Potential Effects on Land Use Environment

The proposed undertaking is compatible with planning and by-law documents for the area and would continue to be consistent with the Provincial Policy Statement. Expansion of the landfill will not affect land uses within 500 m as all operations will continue to take place within the existing site boundaries. BMPs will be implemented by BRE to manage nuisance related effects during construction and operation.

The proposed expansion may require the use of hazard lands or lands subject to erosion such as GRCA-regulated lands. On-site operations may cause potential negative effects on the geology and hydrogeology as well as on the natural habitat and wildlife in this area.

As identified in the Screening Criteria Checklist and **Section 3.1.2.3** above, portions of the SSA, Site Vicinity, and LSA are GRCA regulated areas and zoned as Wetlands. The proposed expansion will require GRCA permit to expand within the regulated lands.

## 5.2.2 Mitigation Measures

Potential negative effects on the natural environment and wildlife will be mitigated through BMPs such as the final cover system, leachate collection system, and liner system. In addition to these engineered controls, the Site is also situated within a fine grained (clay rich) stratigraphic sequence with significant vertical thickness. This natural feature provides additional protection of the underlying aquifer as well as some beneficial attenuation capacity. A silt fence is also installed in areas of possible sediment migration.

Detailed mitigation measures are outlined in the Natural Environment Assessment Report and Geology and Hydrogeology Assessment Report prepared by GHD in March 2024.

## 5.2.3 Net Effects

There are no net negative environmental effects anticipated with respect to Land Use associated with the operation of the proposed landfill expansion.

Potential negative environmental effects during construction related to dust, odour, noise, and traffic will be mitigated through the use of best management practices.

## 5.3 Socio-Economic Net Effects

This Section provides an assessment of the potential negative environmental effects for those Socio-Economic criteria which might be affected by the project (i.e., those for which a “Yes” answer was given in the Screening Criteria Checklist) as identified in **Section 2**. The effects assessment describes how existing environmental conditions in the Study Area(s) would change as a result of the construction and operation of the proposed undertaking.

As described in **Section 2**, a “Yes” was applied to the following Socio-Economic Criteria:

Socio-Economic				
	Criterion	YES	NO	Additional Information
6.2	Result in aesthetics impacts (e.g., visual and litter impacts)?	X		The proposed landfill expansion would result in changes to the existing landfill footprint, cover design (daily, intermediate, final), final contours, and on-site operations and may cause aesthetic impacts due to the increase in landfill height in the expansion area.
6.8	Cause negative effects related to traffic?	X		The proposed landfill expansion would result in changes to the existing landfill footprint, cover design (daily, intermediate, final), final contours, and on-site operations and may cause negative effects related to traffic through prolonging the life of the Site.
6.9	Be located within 8 km of an aerodrome/airport reference point?	X		Three aerodromes have been identified within 8km of the Site: <ul style="list-style-type: none"> <li>– Cayuga (Bruce Field), approximately 1.3 km south of the Site</li> <li>– Cayuga East, approximately 3 km southeast of the Site</li> <li>– Grand River Executive, approximately 7.5 km north of the Site</li> </ul>

### 5.3.1 Potential Effects on Socio-Economic Environment

As identified in **Section 2**, there are no potential effects anticipated to neighborhood or community character as the Site of the proposed expansion is located within an area currently zoned as Disposal Industrial. No negative effects on local businesses, institutions, or public facilities are anticipated. There will be no negative impacts on recreation,

cottaging, and tourism as no such land uses have been identified in the SSA and LSA. There will be no increase in the demand for community services and/or infrastructure as a result of the proposed expansion and no change in the economic base of the surrounding community, local employment, or labour supply.

The proposed undertaking is a horizontal and vertical expansion of the existing landfill which will cause an increase in the landfill height and may cause negative visual and aesthetic impact in the absence of mitigation measures. However, this will not exceed currently approved peak contours and can be mitigated.

The results of the Traffic Assessment Report conducted as part of this Environmental Screening Process concluded that the truck traffic associated with the proposed capacity expansion will not contribute any additional traffic within the study area due to maintaining the maximum approved fill rates. With no additional traffic being generated by the Site, minimal impact is expected on traffic safety and traffic operations. No potential road improvements are required or recommended.

Three local airfields, Cayuga (Bruce Field) Airport, Cayuga East Airport, and Grand River Executive (York) Airport, are located within 8 km of the Site. However, the proposed expansion will not cause negative impacts to the airports and will not interfere with the flight paths as no tall structures, such as stacks, exist or are proposed at the Site.

## 5.3.2 Mitigation Measures

With no additional truck traffic generated by the proposed capacity expansion, no mitigation measures are recommended in order to avoid or minimize impacts on transportation.

There is a wire fence around the perimeter of the site. The western part of the existing Site located on Books Road has a visual berm which includes a chain link fence with visual screen as mitigation to visual impact, providing a visual barrier to passersby. The visual screen will be augmented in response to the increased landfill height as a visual and aesthetic mitigation measure.

## 5.3.3 Net Effects

The results of the Socio-Economic Assessment indicate that there will be a change to the current visual scenario as a result of the proposed expansion. However, this can be mitigated by increasing the height of the existing visual screen, vegetating the screening berm and/or introducing additional plantings on the Site. This would minimize views of the Site from surrounding areas.

# 6. Monitoring Requirements and Additional Approvals

## 6.1 Monitoring Requirements

There are no requirements for monitoring specifically related to land use or the socio-economic environment for the proposed landfill expansion.

## 6.2 Additional Approvals

The proposed expansion will require a permit from the GRCA. No other approvals are required for land use or the socio-economic environment for the proposed landfill expansion.

## 7. Conclusion

Application of the Screening Criteria Checklist identified the potential for negative effects related to traffic. The results of the Traffic Assessment Report conducted as part of this Environmental Screening Process concluded that the truck traffic associated with the proposed capacity expansion will not contribute any additional traffic within the study area due to maintaining the maximum approved fill rates. With no additional traffic being generated by the Site, there is an expected minimal impact on traffic safety, and traffic operations, and no potential road improvements are required or recommended. Therefore, there are no anticipated potential negative impacts on the socio-economic environment related to traffic.

Application of the Screening Criteria Checklist identified the potential for negative effects on the aesthetics in the absence of mitigation measures. An increase in the height of the existing fence is proposed to provide a visual barrier to the increased landfill height and it should be noted that the expansion will not exceed currently approved peak contours. Therefore, there are no anticipated potential negative impacts on the socio-economic environment related to aesthetics.

Application of the Screening Criteria Checklist identified that the Site is located within 8km of an aerodrome or airport reference point but will not interfere with flight paths as no tall structures exist or are proposed at the Site.

Application of the Screening Criteria Checklist identified that the Site may require the use of hazard lands such as GRCA regulated wetlands. Any potential impacts to these lands will be mitigated through the application of BMPs.

In conclusion, the results of the Land Use and Socio-Economic Assessment indicate that there are no net effects anticipated for land use or the socio-economic environment.

