Proposed Terms of Reference

Walker South Landfill Phase 2 Environmental Assessment

Walker Environmental Group

March 07, 2024

Prepared By: GHD Limited
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Toronto, Ontario M5J 1S9

Executive summary

To be provided in Final ToR.

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1. Introduction

These Terms of Reference (ToR) set out the proposed framework that will be followed during the preparation of the South Landfill Phase 2 Environmental Assessment (EA) to fulfill the applicable requirements of the *Ontario Environmental Assessment Act* (*EA Act).* For proposed "undertakings" in the Province of Ontario that are subject to Part II of the *EA Act*, a ToR is the first step of a two-step approval process. A ToR is a document prepared by a Proponent that establishes the framework or work plan for the planning, consultation, and decision-making process to be followed during preparation of the EA. A ToR is submitted to the Ontario Minister of the Environment, Conservation and Parks (Minister) for approval.

If the ToR is approved by the Minister, then the preparation of the EA follows as the second step of the *EA Act* approvals process. The South Landfill Phase 2 EA must be prepared in accordance with the approved ToR.

Walker Environmental Group Inc. (Walker) operates the South Landfill (Phase 1) at its Resource Management Campus located at 2800 Thorold Townline Road in the City of Niagara Falls. The South Landfill, which operates under Environmental Compliance Approval (ECA) No. 0972-52HQJS, as amended, has a total approved site capacity of 17.7 million cubic metres (m^3). The approved service area for the South Landfill is the Province of Ontario.

The South Landfill is a central component of Walker's Resource Management Campus (Campus) which includes the following operations:

- Municipal source-separated organics (green-bin) compositing facility*
- Municipal biosolids stabilization and soil amendment facility*
- Residential waste and recycling drop-off*
- Resource recovery/waste diversion operations including low carbon alternative fuels production, shingles recycling, etc.
- Landfill gas utilization and renewable natural gas (RNG) facility

This fully integrated resource management campus provides essential resource recovery, renewable energy and residual waste management infrastructure for the Niagara Region, surrounding communities and Ontario as a whole.

Ontario requires additional waste disposal capacity to manage materials that cannot be reused, recycled or recovered; Niagara is no different. The current phase of Walker's South Landfill is expected to reach its approved capacity between 2029 and 2031.

Walker is proposing to continue to provide residual waste disposal services at its Campus by expanding the South Landfill to provide an additional approximately 18 million m^3 of disposal capacity ("South Landfill Phase 2", "Project"). The South Landfill Phase 2 will form an important economic investment in essential waste management infrastructure and help Niagara and the Province meet the needs of a growing population. By developing Phase 2 of the South Landfill, Walker will continue to provide safe, reliable and affordable residual waste disposal capacity to its existing customer base within the City of Niagara Falls, the Regional Municipality of Niagara ("Niagara Region") and the Province of Ontario.

The proposed South Landfill Phase 2 would maintain the existing landfill service area, as well as the type and annual volume of residual materials presently accepted.

The Waste Management Projects Regulations (Ontario Regulation (O. Reg.) 101/07) outlines the *EA Act* requirements for waste management projects in the Province of Ontario. Per the August 2023 revisions to O. Reg. 101/07 and February 2024 enactment of the Comprehensive EA Projects regulation (Part II.3 Projects – Designations and Exemptions) under the *EA Act*, if a Proponent intends to increase the total waste disposal volume of an existing waste management facility by over 375,000 m^3, then the proposal or "undertaking" is subject to Part II.3 of the *EA Act*. For

* In partnership with Region of Niagara.

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projects subject to Part II.3 of the *EA Act* a Comprehensive EA (formerly referred to as an Individual EA) is to be completed in accordance with a ToR that have been approved by the Minister of the Environment, Conservation and Parks. As the proposed South Landfill Phase 2 includes an increase of approximately 18 million m^3 of total waste disposal volume for the Walker Campus, this undertaking is subject to Part II.3 of the *EA Act*.

A map depicting Walker's Resource Management Campus, including its existing operations and the proposed South Landfill Phase 2 location is provided as **Figure 1.1**.

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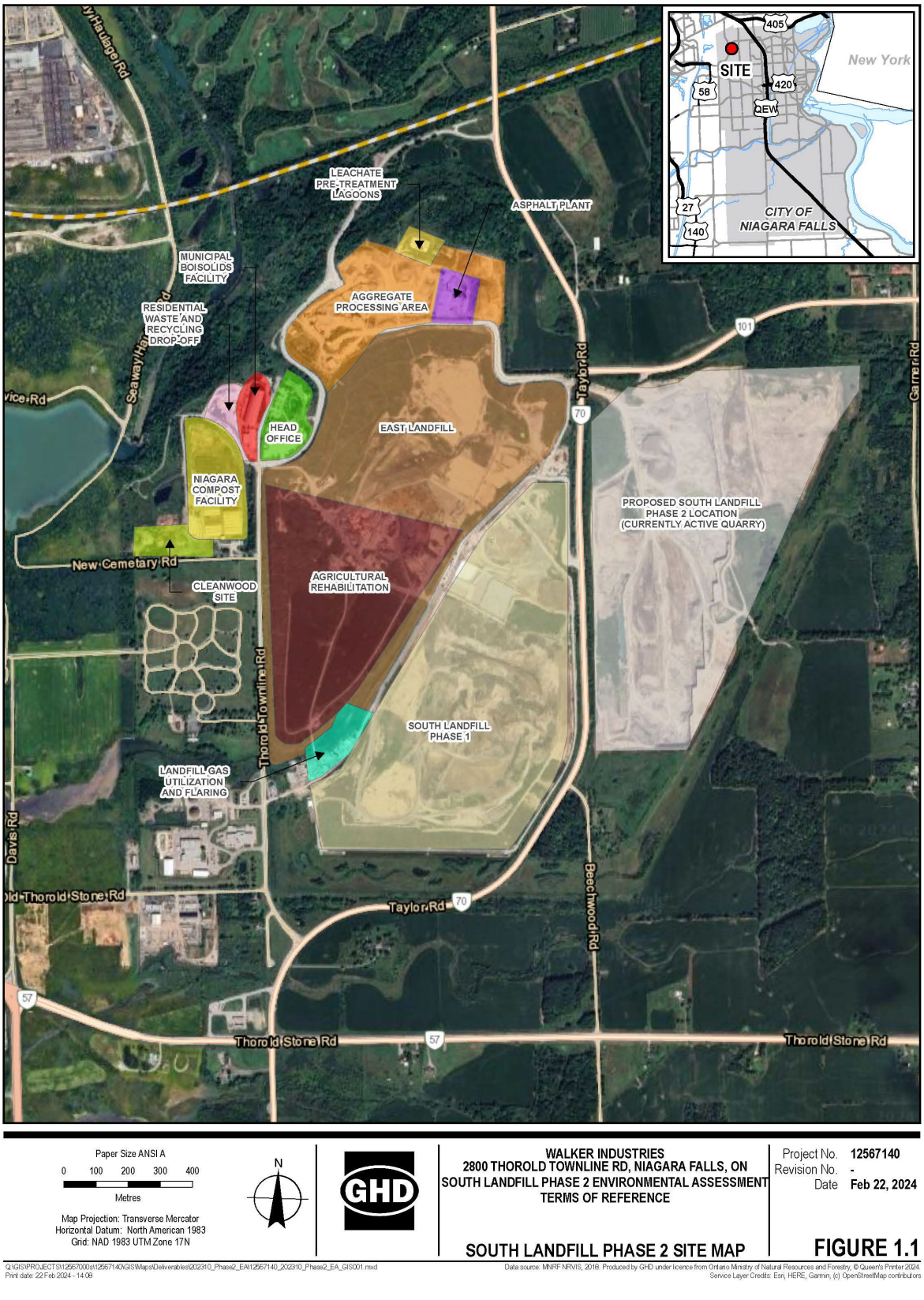

Figure 1.1 South Landfill Phase 2 Site Map

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2. Identification of the Proponent

The Proponent for the South Landfill Phase 2 EA is Walker Environmental Group Inc. (Walker), the current owner and operator of the South Landfill. As the Proponent, Walker will be responsible for preparing the EA in accordance with the approved ToR.

Walker is a leading Canadian provider of critical services and infrastructure for communities to manage waste, recover resources and contribute to a circular economy through Walker Waste Services, Walker Grease Trap Services and product brands N-Rich®, All Treat Farms® and Gro-Bark®.

Walker will be supported by a third-party consulting team that will undertake the EA on their behalf. The Proponent's contact information is as follows:

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Email: DFry@walkerind.com
Walker Environmental Group
www.southlandfillphase2.com
www.walkerind.com

2.1 History of Walker's Resource Management Campus

Walker has played an integral role in the Niagara community for over 136 years. As a fifth-generation, family-owned company based in Niagara, Walker has helped Niagara grow and thrive by providing local aggregate and construction materials, essential waste management services, resource recovery and renewable energy infrastructure. Additionally, Walker is a significant employer in the Region and contributes to its economic wellbeing through its continued investments in new businesses and infrastructure to provide safe, local, reliable and affordable services and materials to help meet the needs of the community.

Originally, dating back to the 1880's, the Campus started out as a single-cut stone quarry. Today, the Campus has grown to become a fully integrated resource management campus providing essential materials and services to the Niagara Region, surrounding communities and Province of Ontario. Some of the key operations include a compost facility, municipal biosolids facility, resource recovery operations, landfill, quarry, waste & recycling drop-off facilities and landfill gas utilization/RNG facilities. Through innovation and in response to the needs of the community, the Campus has grown and is centred around core residual waste disposal infrastructure (East and South Landfills).

As an example of the continued innovation and evolution of the Campus, Walker pioneered the successful utilization of landfill gas from the landfill to provide reliable, low cost and renewable sources of energy within the local community. For over 10 years, gas from the landfill helped power a nearby papermill. Landfill gas powered engine-generator sets were built onsite to provide renewable electricity to power the Campus and local electricity grid. In 2020, Walker and GM developed a cogeneration project using landfill gas to power and heat GM's St. Catharines Propulsion Plant helping reduce its greenhouse gas emissions by 70 percent and protecting it from rising electricity and carbon costs. Most recently, in 2023, Walker and Enbridge built Ontario's largest RNG project where landfill gas is cleaned and transformed into RNG which is used interchangeably with natural gas. In total, the landfill gas from the Walker Campus can power the equivalent of 25,000 homes.

Further, Walker's Niagara Compost Facility is licensed to process up to 90,000 tonnes of source separated organic waste and is a key component of the Region of Niagara's municipal waste diversion program. The facility's proximity to the South Landfill provides fast and effective disposal of residuals which can be odorous, shared leachate management infrastructure and shared grinding/screening equipment. Additionally, residuals or overs are used at the South Landfill as a biocover material to help control odours and oxidize methane further reducing GHG emissions.

In summary, Walker has safely and reliably managed waste from across Niagara and surrounding communities for over 40 years. The South Landfill (Phase 1), currently in operation, was opened in 2009 after it was approved by the

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then Minister of the Environment following the successful completion of an EA. The South Landfill operates in accordance with the requirements of its ECA and other applicable provincial legislation. The South Landfill's total approved disposal capacity under the *Environmental Protection Act* (EPA) approvals is 17.7 million m^3. The annual maximum approved fill rate for the site is 1.1 million tonnes, which includes a maximum of 850,000 tonnes of residual waste material per year, plus an additional 250,000 tonnes per year of soil used for daily and interim cover. Walker's South Landfill will reach its approved capacity between 2029 and 2031. Consequently, Walker aims to develop Phase 2 of the South Landfill directly to the east on property owned by Walker reusing existing industrial/quarry lands (South Landfill Phase 2).

2.2 South Landfill Existing Operations

The South Landfill is regulated by the Ministry of Environment, Conservation and Parks (MECP) under ECA No. 0972-52HQJS. It operates Monday to Saturday from 8:00 a.m. to 5:00 p.m. and is closed on Sundays and statutory holidays, including civic holidays.

The South Landfill site is a modern and highly engineered site consisting of a double composite liner system designed in accordance with O. Reg. 232/98: Landfilling Sites (**Figure 2.1**). Additionally, the hydrogeologic setting at the site provides an inward groundwater gradient (i.e., hydraulic trap design) that offers a robust groundwater protection contingency measure.

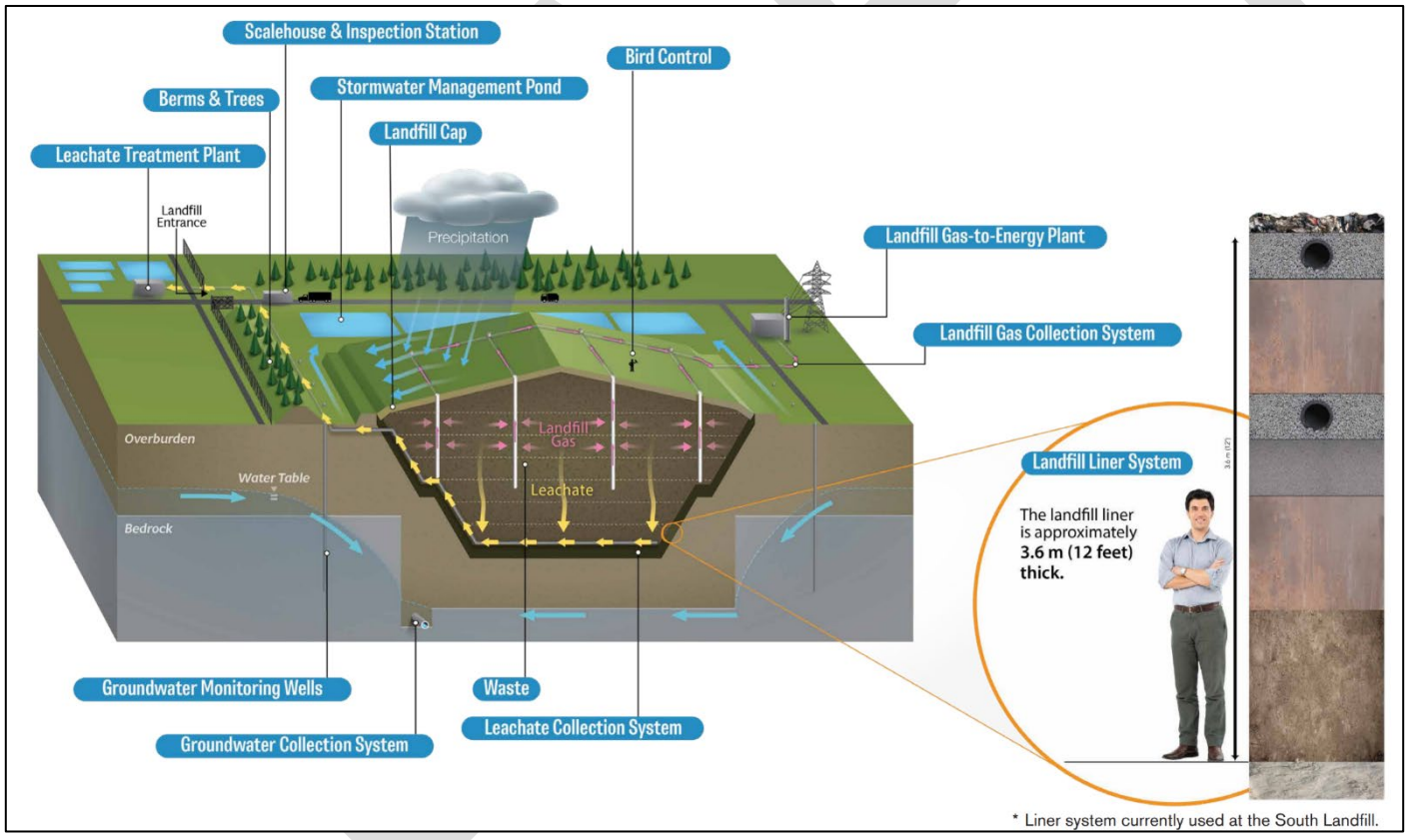

Figure 2.1 Illustrative depiction of South Landfill and Double Composite Liner System Used at the South Landfill

The South Landfill receives solid, non-hazardous waste in accordance with its ECA. Material accepted at the South Landfill comes from a variety of customers and businesses that divert at their own operations and have, or may choose to implement their own diversion and recovery system. Walker has Standard Operating Procedures (SOP) that address the screening and verification of material that is received on-site to ensure the materials received on-site match the Generator's Waste Profile. Diversion at the source of the generated residual material from generators and

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customers considers both the economic viability of diversion as well as ensuring that there is a viable end market for the diverted material.

With respect to the SOP, prior to receiving waste, Walker requires a Generator's Waste Profile to be completed. The waste generator must complete the Waste Profile, which is checked by environmental technicians, and the waste requiring disposal is then analysed by accredited, independent labs to make certain it does not contain unacceptable waste and is compared against approved limits. If the analytical results do not meet the criteria or the waste contains unacceptable materials, the Generator's Waste Profile would not be approved for disposal at the South Landfill. Upon receipt at the South Landfill, incoming waste from Generators with approved Waste Profiles is subject to inspections and random sampling to ensure it is consistent with the pre-screening analysis. If inconsistencies with the Generator's Waste Profile are found during these inspections and random samplings, a Waste Rejection Report is issued.

Upon arrival at the South Landfill, all trucks drive onto the scale for gross weight, unless the truck has previously been weighed, and recorded on the weigh bill. Drivers then proceed to the scale house for a document check. If the attendant determines that the Generator's Waste Profile has not been approved, the load is rejected. If the attendant determines that the paperwork is inappropriate, the load is rejected, and the environmental technician issues a Waste Rejection Report. If the attendant determines that the Generator's Waste Profile is approved and that the paperwork is appropriate, the load is accepted, and the attendant records the arrival information. If the load will be subject to the random compliance testing program, the load is segregated within the fill area and subjected to sampling and compliance testing.

Trucks are then directed to the active disposal area and instructed to park their truck underneath a camera to have the load inspected before proceeding to the tipping area. The landfill operator directs the waste vehicle to an appropriate tipping area within the tipping face and instructs the truck driver to begin emptying the load onto the ground. While the truck is unloading, the operator examines the waste for any non-compliant materials. Once unloaded, the material is spread in even lifts. If any non-compliant material is uncovered, the operator contacts the environmental technicians and appropriate actions are taken to remove the non-compliant materials.

3. Identification of how the EA will be Prepared

The MECP *Code of Practice: Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario* (January, 2014), outlines how a Proponent can proceed under subsection 6(2)(c) and 6.1(3) of the *EA Act*[1] if the Proponent is further along in the defined planning process and additional detail is known regarding its proposal. Accordingly, the South Landfill Phase 2 EA will be prepared under subsections 17.4(2)c and 17.6(2) (formerly subsections 6(2)(c) and 6.1.(3)) of the *EA Act*, which allow for a ToR to set out in detail the requirements for the EA such that it consists of information other than the standard requirements outlined in subsection 17.6(2).

The requirements for preparing the South Landfill Phase 2 EA are detailed in the following elements specified in this ToR:

- Purpose of the undertaking (**Section 3.1**)
- Description of and rationale for the undertaking (**Section 4**)
- Description of and rationale for the alternative methods of carrying out the undertaking (**Section 5**)
- Description of the environment and potential effects (**Section 6**)
- Description of the assessment and evaluation methodology (**Section 7**)
- Commitments and monitoring (**Section 8**)

[1] Under the amended *EA Act* through Bill 197, the proposed project falls under Part II.3 – Comprehensive Environmental Assessments and the appropriate Section is 17.4(2)c: *The proposed terms of reference must (c) specify in detail the requirements for the preparation of the environmental assessment, which may include requirements to provide information that is greater than or less than what is required under subsection 17.6 (2). 2020, c. 18, Sched. 6, s. 29*.

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- Consultation plan for the EA (**Section 9**)
- Flexibility for accommodating new circumstances (**Section 10**)
- Other approvals required (**Section 11**)

As permitted by subsection 17.4(2)c of the *EA Act*, this ToR excludes the generic requirement of the alternatives to the undertaking in the preparation of the South Landfill Phase 2 EA. **Supporting Document #1** provides the rationale for excluding the requirements as part of following subsection 17.4(2)c.

This ToR identifies a predetermined "Alternative To" and identifies the "Alternatives Methods" that will be examined during the preparation of an 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 outlines how a Proponent can proceed if the Proponent is further along in the defined planning process and additional detail is known regarding its proposal. As an example, the Code of Practice states:

> *…what is reasonable for one Proponent to implement may not be reasonable for another when trying to solve a similar problem because the circumstances between Proponents may vary widely. A private sector Proponent's inability to expropriate land or implement public programs will influence the range of alternatives it may examine...*[2]

As it relates to the Proponent and its business, the Code of Practice also refers to private sector Proponents in the waste industry as follows:

> *The ministry recognizes that there may be restrictions on some proponents that will limit the range of alternatives examined. The proponent must provide justification in the terms of reference for limiting the examination of alternatives. For example, a municipality and a private sector proponent would both like to increase waste disposal capacity in a semi-rural community. The municipality might consider one or more of the following as a reasonable range of alternatives to:*
>
> - *Waste diversion program;*
> - *Export;*
> - *Landfill; or,*
> - *Thermal technology.*
>
> *The private sector proponent may only consider landfill or on-site diversion because:*
>
> - *It cannot implement a municipal waste diversion program such as curbside recycling;*
> - *Export would affect their business; and,*
> - *Thermal technology is not economically viable because waste volumes are too small.*
> - *Alternative methods for the municipality could include a site selection process for the alternative chosen, as they have the ability to expropriate land. For a private sector proponent, there may be different designs on one site as they only own one site and cannot expropriate…*[3]

Rationale for excluding Alternatives to the Undertaking

Walker is a privately owned and operated company, conducting business in the Province of Ontario. As such, the question as to whether there is a need for the services that Walker provides, as well as how it provides these services, is largely based on business decisions. Considering Walker is proposing to develop Phase 2 of the South Landfill and continue the current operations at its Campus, the requirement for Alternative(s) to the proposed undertaking will be negated.

[2] *Codes of Practice, Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario, January 2014, Pg. 33*
[3] *Codes of Practice, Preparing and Reviewing Terms of Reference for Environmental Assessments in Ontario, January 2014, Pg. 33-34*

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Additionally, there is an economic opportunity associated with the ability of the existing South Landfill to continue to provide resource recovery and residual waste disposal services to its customers, which include businesses, municipalities, Indigenous communities, and institutions. This economic opportunity was determined through an internal business case. The economic opportunity continues to exist for the provision of additional disposal capacity at the South Landfill via a Phase 2 and is based in part on a review of historic waste generation in Ontario, the volume of material currently received at the South Landfill, and projections of waste generation and recycling (Government of Ontario's *Waste Free Ontario Act*[4] and Strategy[5]) to meet the needs of Ontario's growing population. Further, Walker reviewed projected waste volumes based on discussions with and analysis of existing clients and customers. This review clearly predicts a continued demand for residual waste disposal capacity and the demand will far exceed current capacities. With the disposal capacity at the South Landfill set to be exhausted, adding additional capacity at the South Landfill via Phase 2 is the preferred option for Walker to continue to provide essential residual waste disposal capacity to support current and future needs of Ontarians while realizing an economic opportunity.

As a private sector Proponent with a current facility (i.e., the South Landfill), there are a limited number of ways of approaching or dealing with the opportunity to increase residual waste disposal capacity. These would typically include the establishment of a new facility or expanding the capacity of an existing facility, such as the South Landfill. The expansion of the current facility is the most reasonable solution to address the economic opportunity for the following reasons:

- It would not be economically viable to buy additional property and establish a new facility that could accept residual solid, non-hazardous industrial residual material;
- Bill 197 (*COVID-19 Economic Recovery Act*, 2020, S.O. 2020, c. 18) creates significant risk and barriers to developing a new facility at a separate location;
- The South Landfill/Campus has existing waste management infrastructure and environmental controls in place that can be utilized and expanded (e.g., existing entrance, scales, leachate treatment, landfill gas utilization, contingency measures); and
- Walker's existing Resource Management Campus provides integrated resource recovery services/infrastructure (i.e., ECA's that permit the diversion and processing of wood waste into low carbon alternative fuels) services that a stand-alone, isolated waste disposal facility cannot; and
- Walker does not own any other sites in close proximity to its existing Campus operations that would have the required capacity to accept residual solid, non-hazardous residential and IC&I residual materials.

Accordingly, it is generally accepted that the most reasonable way of approaching this opportunity of providing increased disposal capacity by a private sector proponent with an existing, permitted, and operational facility, would be to look at the various ways in which capacity can be increased at an existing site.

Considering the opportunity that has motivated the activation of the EA process, and the fact that Walker is a private sector Proponent, there are a limited number of reasonable solutions in which the economic opportunity can be addressed; and the most reasonable way of addressing the opportunity is to assess the various ways in which capacity may be added at the existing South Landfill operation. Therefore, this ToR identifies a predetermined "Alternative To", for which approval is being sought to prepare an EA in accordance with the *EA Act*.

Discussion on the business plan and economic opportunity (Purpose of the Undertaking), as well as what choices (Alternatives To) Walker is able to consider, was prepared within the context of Walker operating the South Landfill as a private facility within the Province of Ontario and is highlighted in **Supporting Document #1** to this ToR.

3.1 Purpose/Opportunity Statement

The purpose of the undertaking is to develop the next phase (Phase 2) of the existing South Landfill and provide approximately 18 million m³ of disposal capacity, so that Walker can continue to provide residual solid, non-hazardous

[4] Ministry of the Environment and Climate Change, Government of Ontario. *Waste-Free Ontario Act*. June 2016

[5] Ministry of the Environment and Climate Change, Government of Ontario. *Strategy for a Waste-Free Ontario: Building the Circular Economy*. February 2017

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residential and IC&I residual material disposal services for materials generated primarily within the Niagara Region, Southern, and Southwestern Ontario regions.

Currently, the South Landfill is approved to receive up to 17.7 million m³ of residual materials (type stated previously). The approved service area for the existing South Landfill is the Province of Ontario, which will not change because of this EA. Based on the historic annual disposal fill rates for residual material, the South Landfill is expected to reach maximum capacity between 2029 and 2031.

As per the business case established by Walker and the demonstrated, continued, and strong demand for residual waste disposal capacity for the foreseeable future, Walker wishes to secure the economic opportunity for capturing residual solid, non-hazardous residential and IC&I residual materials by increasing its approved capacity for this material by an additional approximately 18 million m³. The proposed undertaking will continue to ensure the South Landfill:

- Ensures the facility maintains its important regional and provincial standing as a facility that provides critical waste disposal services for local, regional, and provincial customers;
- Provides a local, renewable energy source that will support the existing RNG facility, which is already Ontario's largest;
- Provides significant jobs, tax revenue and other economic benefits to the local community;
- Offers an affordable residual waste disposal option for local residents and businesses; and
- Continues to support the existing resource recovery operations at Walker's Resource Management Campus into the future.

The purpose statement will be reviewed and finalized as part of preparing the South Landfill Phase 2 EA.

4. Description of and Rationale for the Undertaking

The preliminary description of the proposed undertaking is a continuation/expansion of the existing South Landfill by developing (Phase 2) to extend its approved capacity by approximately 18 million m³ to provide disposal services for future residual solid, non-hazardous residential and IC&I residual materials generated predominantly within the Region of Niagara, Southern, and Southwestern Ontario regions. A detailed description of the rationale for the proposed undertaking will be given as part of preparing the South Landfill Phase 2 EA once a specific undertaking is selected from the Alternative Methods that are to be considered.

5. Description of and Rationale for the Alternative Methods

5.1 Description of the Alternative Methods of Carrying Out the Undertaking

As noted above, Walker has determined through their business case that continuing to provide disposal capacity at its South Landfill by extending the approved capacity by approximately 18 million m³ to receive residual solid, non-hazardous residential and IC&I residual materials generated predominantly within the Niagara, Southern, and

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Southwestern Ontario regions is the most reasonable solution for addressing the economic opportunity available to Wallker.

As noted previously, Walker is proposing to locate the additional disposal capacity (Phase 2) to the east of the existing South Landfill within the area currently occupied by Walker's Southeast Quarry, as this is the only location within Walker's existing Resource Management Campus that could feasibly accommodate the proposed expansion capacity of 18 million m^3. **Figure 5.1** highlights the proposed expansion area of the South Landfill Phase 2.

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Figure 5.1 South Landfill Phase 2 Proposed Expansion Area

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Based on the proposed undertaking described above, the Alternative Methods of Carrying Out the Undertaking that will be considered by Walker as part of the South Landfill Phase 2 EA include alternative site configuration options (e.g., footprint dimensions, heights, contours, side slopes, etc.) within the "envelope" currently occupied by the Southeast Quarry. The intent of the site configuration Alternative Methods is to allow for the continued disposal of approximately 18 million m^3 of residual solid, non-hazardous residential and IC&I residual materials at the Campus over approximately 20 years, utilizing the existing waste management infrastructure and environmental controls (e.g., existing entrance, scales, leachate treatment, landfill gas utilization, contingency measures, haul route, etc.) to the extent possible and, where required, expanding them.

In addition to the site configuration Alternative Methods, a "Do Nothing" alternative will be included as part of this EA to represent what is expected to happen if none of the Alternative Methods being considered is carried out. Although the "Do Nothing" alternative does not address the Purpose of the Undertaking and is therefore not a viable option, it is included in EAs as a matter of best practice to represent the benchmark against which the advantages and disadvantages of the Alternative Methods being considered can be measured and compared.

A detailed description of each of the Alternative Methods of Carrying Out the Undertaking will be provided as part of preparing this EA prior to their assessment and comparative evaluation. The detailed description of each Alternative Method will be based on a conceptual level of design, reflecting regulatory requirements (i.e., O. Reg. 232/98) and operational aspects of Walker's Resource Management Campus (e.g., required on-site infrastructure). Each of the conceptual designs will incorporate the following elements:

- Buffer zones between the proposed South Landfill Phase 2 footprint and the property boundary
- Setbacks to surrounding developments
- Contours and slopes of the final cover
- Peak elevation and height relative to surrounding landscape
- Footprint size
- Leachate generation rates
- Infrastructure requirements

An assessment of the existing leachate treatment system relative to the Alternative Methods will be carried out as part of this EA to determine if any modifications or additions are required to support the continuation of disposal capacity at Walker's Resource Management Campus. Any modifications or additions to the existing leachate treatment system that are required for the preferred Alternative Method will be identified as part of this EA.

With respect to the existing landfill gas collection system, this will be reviewed in a similar fashion to the leachate treatment system: an assessment of the existing landfill gas collection and utilization system relative to the Alternative Methods will be carried out as part of this EA to determine if any modifications or additions are required to support the continuation of disposal capacity at Walker's Resource Management Campus. Any modifications or additions to the existing landfill gas collection and utilization system that are required for the preferred Alternative Method will be identified as part of this EA.

5.2 Rationale for the Alternative Methods of Carrying Out the Undertaking

The site configuration options within the "envelope" currently occupied by the Walker-owned Southeast Quarry to be developed and considered as the Alternative Methods of Carrying Out the Undertaking for the South Landfill Phase 2 EA will represent different ways of performing the same activity (i.e., continuing to provide approximately 18 million m^3 residual disposal capacity). All Alternative Methods will reflect the regulatory design requirements under O. Reg. 232/98: Landfilling Sites (e.g., setbacks, slopes, etc.) and will be within Walker's ability to implement.

The area currently occupied by the Southeast Quarry is the only location within Walker's Campus that could feasibly accommodate the proposed expansion capacity of 18 million m^3. Other Walker-owned property adjacent to its

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Resource Management Campus is not being considered for the Alternative Methods of Carrying Out the Undertaking due to limitations related to parcel dimensions and reduced footprint design flexibility; inability to maximize use of the existing waste management infrastructure (e.g., leachate treatment and landfill gas collection systems), environmental controls, regulatory restrictions and Campus synergies; and environmental constraints. Further, utilizing the adjacent existing disturbed, quarried area for the expansion of the South Landfill makes most sense from economic, resource, land (re-)use and environmental perspectives.

6. Description of the Environment and Potential Effects

6.1 Preliminary Study Area

The preliminary study area includes the Site Study Area (SSA), Local Study Area (LSA), and Regional Study Area (RSA), providing spatial boundaries for the assessment of both local and more wide-reaching environmental effects. The preliminary study area will be finalized during preparation of the EA when the Alternative Methods have been developed and confirmed and the potential environmental effects are better known.

Site Study Area

The SSA is common for all technical disciplines and will include all lands (76.12 ha) owned and operated by Walker that are within the existing approved boundaries of the Southeast Quarry. **Figure 6.1** illustrates the extent of the SSA.

Local Study Area

The LSA will be specific to each technical discipline but will extend approximately 1-2 kilometres (km) beyond the SSA boundary and can generally be described as including Walker's Resource Management Campus and the immediate surrounding area. **Figure 6.1** illustrates the approximate LSA, which will vary by technical discipline and be confirmed during preparation of the EA.

Regional Study Area

The RSA will be discipline-specific and may not be required by all disciplines. The RSA will generally be based on administrative and/or natural boundaries applicable to each discipline and the parameters of their associated criteria.

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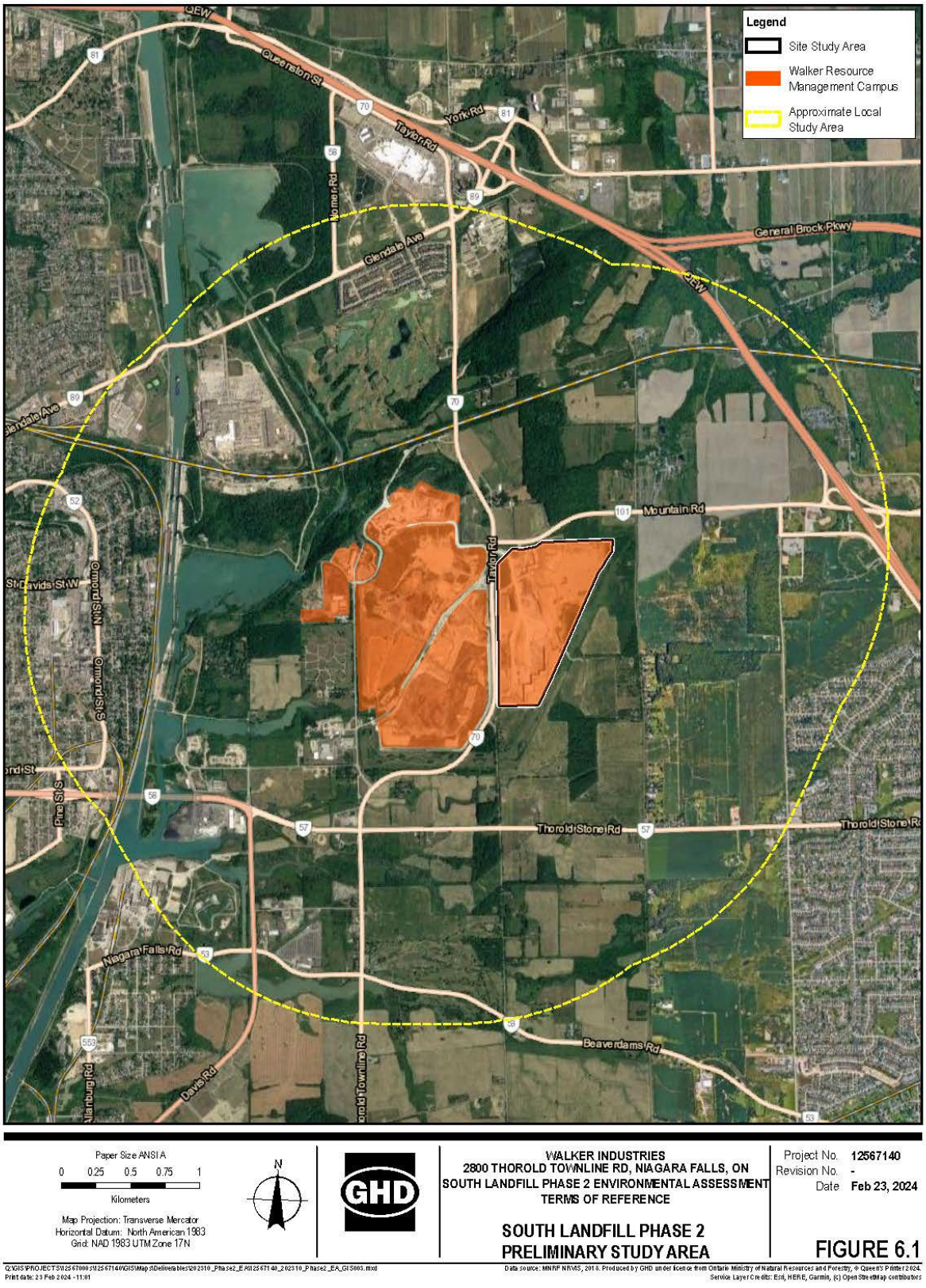

Figure 6.1 South Landfill Phase 2 Preliminary Study Area

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6.2 Preliminary Description of the Environment

6.2.1 Natural Environment

6.2.1.1 Geology / Hydrogeology

The SSA is situated just south of the Niagara Escarpment in an area characterized by low topographic relief and poorly drained soils. A relatively thin layer of lacustrine clayey silt covers the area and is underlain by a glacial silt till. The overburden thickness generally increases to the south, away from the Escarpment. Beneath the overburden are various bedrock units.

The Lockport dolostone is the uppermost bedrock unit in the area and has been quarried historically at the Campus. Regionally, the unit thickness ranges from about 3 to 15 m and is relatively porous due to the presence of natural fractures, vugs (small solution voids), larger cavities, and occasional fossiliferous zones. The underlying Decew dolostone is an argillaceous (shaley) dolostone that is regionally up to 4 m thick and tends to become increasingly shaley with depth. The Rochester Formation underlies the Decew dolostone and consists of thin to medium bedded shale and thin beds of dolomitic shale with occasional isolated thin beds of dolostone. Regionally, the thickness of the Rochester shale averages about 18 m. These bedrock units extend regionally to the south but are limited to the north of the SSA by the Niagara Escarpment.

The bedrock units below the Rochester Formation include the Irondequoit Formation limestone, Reynales Formation dolostone, and Neagha Formation shale and dolostone. These bedrock units are not exposed through the historic or current quarry operations at the Campus.

Regionally, the overburden is considered to be a semi-confining aquitard and is generally not a significant source of potable water owing to its low permeability and poor yields. Significant quantities of groundwater can only be obtained from the bedrock units, and particularly the upper portion of the Lockport Formation. The natural groundwater quality in the Lockport dolostone ranges from potable to non-potable, with increasing mineralization and decreasing potability, with depth.

Groundwater yields in the Decew and Rochester bedrock units are typically low owing to low intrinsic permeabilities in the shale bedrock. Groundwater movement in the Rochester unit is primarily horizontal due to the bedded nature of the shale, with only minor downward vertical leakage across the relatively low permeability shale beds. Due to its shale content, groundwater quality in the Decew and Rochester units are generally considered to be non-potable. The Rochester shale was formed in a saline marine depositional environment, which resulted in naturally saline and highly mineralized groundwater within this formation. The groundwater is considered a brine and is more mineralized than modern seawater. The salinity generally increases with both depth within the formation and distance from the Niagara Escarpment.

The East and South Landfills, Closed West Landfill, as well as the proposed location of the Phase 2 of the South Landfill, are developed in completed Lockport dolostone quarries. The floor of the quarries are situated on the Decew and Rochester Formations. A trench was constructed along the north-south axis of the former East Quarry to provide gravity drainage of water away from the operations. Upon completion of the Quarry, the trench was re-engineered with a perforated collection pipe installed in granular backfill to facilitate continued groundwater collection, referred to as the Groundwater Collection Trench (GWCS). A solid drainage pipe was also installed in the trench to facilitate drainage of surface water from the South and Southeast Quarries.

Under baseline (pre-developed) conditions, bedrock groundwater flows in the vicinity of the SSA were generally north towards the Niagara Escarpment. Development at the Campus has altered the potentiometric surfaces for the dolostone and shale bedrock units such that a drawdown cone exists around the former and current quarries, which influences groundwater flows up to a radius of about 500 m from the extraction area and creates a continuous inward gradient surrounding the East and South Landfills and the Southeast Quarry (the proposed Phase 2 of the South Landfill).

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Around the perimeter of the East and South Landfills, which are sealed by clay sidewalls and liners, groundwater movement is in a downward direction, along the buried vertical quarry faces, and into the weathered shale floor. The groundwater then mixes with water from the shallow Rochester shale before being collected by the perforated pipe in the GWCS. The groundwater then flows northward through the GWCS pipe to a collection chamber where it may be used for the quarry operations, discharged to the leachate collection system, or discharged to the Old Welland Canal under appropriate conditions.

Within the landfills, leachate is primarily produced by the percolation of precipitation through the refuse, while moisture present in the refuse upon arrival at the landfills also contributes to the production of leachate. An engineered clay liner system was constructed within the East and South Landfills to contain and isolate the leachate from the natural environment. A leachate collection system (LCS) constructed on the clay liner collects the leachate and discharges it to on-site lagoons where it is aerated and eventually discharged to the sanitary sewer for treatment. The Closed West Landfill operates on a different design, where pumping from a network of leachate wells is undertaken on an on-going basis to minimize leachate mounding within the waste fill. The leachate from the Closed West Landfill is also directed to the on-site lagoons.

6.2.1.2 Surface Water

The SSA is located above and adjacent to the Niagara Escarpment, southeast of St. Catharines and east of the Welland Canal (canal) in part of the Ten Mile Creek and Welland Canal catchment areas. Prior to construction of the Welland Canal and Decew Falls generating station, the Local Study Area (LSA) likely drained westward and contributed to the Twelve Mile Creek Watershed. Under existing conditions, drainage from the LSA contributes to the canal, either directly or via tributaries of the canal and Ten Mile Creek, and flows north to Lake Ontario.

Ten Mile Creek drains a catchment area east of the Southeast Quarry (i.e., the proposed expansion area of the South Landfill Phase 2) to the Welland Canal. Historically, Ten Mile Creek was diverted south and west around the Southeast Quarry and the former South Quarry, and back to its original confluence with the Welland Canal. The catchment area is predominantly rural and agricultural with an area of approximately 5.3 km^2. Other land uses in the Ten Mile Creek catchment include urban development.

The Old Welland Canal flows northwards adjacent to the escarpment face along the northwest side of the closed West Landfill and East Quarry Operations Area. The Old Welland Canal connects two surge basins on the canal, located west and northwest of the existing Walker landfill operations. Flow in the Old Welland Canal is regulated by the St. Lawrence Seaway Authority via a drop structure adjacent to the closed West Landfill.

A number of water seepage areas and spring fed ponds are present north of the SSA, on the upper bench of the Niagara Escarpment. These areas feed intermittent tributaries of the Six Mile Creek and the Old Welland Canal catchment areas.

Drainage at the Campus operations is managed such that surface water that has potential to contact waste materials is isolated and directed to the LCS, prior to treatment and discharge to the Municipal Sanitary Sewer under an existing agreement with the Town of Niagara-on-the-Lake. Non-contact runoff within the Campus is collected in the Southeast Quarry sump, East Quarry storm water management structure, and in a series of storm water management ponds around the South and East Landfills. These ponds are operated with the discharge valve normally closed and are batch discharged if they meet their applicable discharge criteria. If the accumulated runoff in the storm water management ponds do not meet discharge criteria, the water can be pumped to the LCS as a contingency.

During the extraction phase in the former East Quarry (now East Landfill), a trench was constructed along the north-south axis of the former East Quarry floor to provide gravity drainage of water away from the operations. Prior to constructing the landfill, a solid drainage pipe (1200mm solid pipe) was installed in the trench along with a perforated groundwater collection pipe, to facilitate drainage of surface water from the South and Southeast Quarries, underneath the East Landfill, to the Old Welland Canal. Collectively, these drainage pipes are known as the WEG Drainage System (WDS).

To facilitate quarry dewatering and following a period of retention to settle suspended solids, water from the Southeast Quarry sump is pumped up out of the quarry, west under Taylor Road and into the 1200mm solid pipe, from where it

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flows west around the south end of the South Landfill, then north under the East Landfill and discharges to the Old Welland Canal.

Accumulated stormwater runoff from the East Quarry Operations Area collects in the storm water management structure with the discharge valve operated in the normally closed position. The accumulated runoff settles and typically infiltrates through voids in the underlying fractured bedrock. If required, the accumulated runoff is batch discharged to a roadside ditch along Thorold Townline Road, which ultimately flows to the Old Welland Canal.

Non-contact runoff from the South Landfill flows to the South Landfill storm water management pond (SWMP). The SWMP is batch discharged into the aforementioned 1200mm solid pipe, from where it flows north under the East Landfill and to the Old Welland Canal.

Non-contact runoff from the capped southern and northern parts of the East Landfill flow to Pond S5 and the North Pond (S2N), respectively. Pond S5 is batch discharged to Ten Mile Creek at Thorold Townline Road, from where it flows west to the Welland Canal. The North Pond is batch discharged to the WBQ Service Pond, which is used as a water source for quarry operations and dust suppression.

6.2.1.3 Atmospheric—Air Quality, Odour and Noise

Air Quality

The atmospheric assessment is divided into several components, including air quality consisting of dust, landfill gases (volatile organic compounds [VOCs] and reduced sulphurs), combustion by-products, and blowing litter. The preliminary description of the existing environment in terms of air quality, based on existing available information, is provided below. A more detailed description of the existing environment will be prepared as part of the EA.

The Walker Campus consists of many activities with the potential for air emissions including closed and active landfills, landfill gas utilization activities, composting, biosolids processing, quarrying, and an asphalt plant. These operations generate various point and fugitive source emissions which have the potential to contribute to key indicator contaminants such as odour, VOCs, reduced sulphurs, combustion by-products and dust. Odour emissions are commonly associated with landfilling and composting activities with little to no contribution from quarry and asphalt operations. Landfilling activities, composting, and select asphalt manufacturing processes can be sources of VOCs and reduced sulphurs. Dust emissions are largely influenced by material handling, vehicle movements on paved and unpaved haul routes, and heavy equipment operations. Activities including waste handling and transport, handling compost materials, loading and processing of quarried material, and general vehicle movements along interior haul routes and asphalt shipping routes are some examples of potential sources of dust emissions.

The Campus is surrounded primarily by agricultural lands, and several single dwelling residences are located in the vicinity. A number of sensitive receptor locations representing residences within approximately 500 m of the Campus property line have been the subject of previous studies. Impacts at these sensitive receptors will be the focus of assessment during the EA.

The various facilities on the Walker Campus have ECAs in place. As part of the application process for these ECAs, each facility was required to use dispersion modelling to demonstrate their ability to comply with the MECP air quality benchmarks at locations at and beyond the property line. All facilities are currently able to demonstrate compliance with the air quality criteria from an ECA perspective.

During this EA, a detailed evaluation will consider the influencing sources of air quality emissions from across the Campus along with new, relocated, or expanded sources associated with the South Landfill Phase 2 operations and their contributions to the sensitive receptors and other off-site locations.

Noise

Environmental noise associated with the proposed South Landfill Phase 2 is considered at surrounding sensitive off-site locations. The criteria for the evaluation are provided in MECP guideline NPC-300 and its references. The preliminary description of the noise environment is described below.

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The effect of noise in the surrounding environment is evaluated at noise-sensitive points of reception (PORs). The locations considered noise-sensitive are described in MECP guidance document NPC-300 as:

- On the façade of a dwelling
- On the property of, and within 30 m of a dwelling
- On the façade of a noise-sensitive commercial-purpose building (e.g., hotel, motel)
- On the façade of a noise-sensitive institutional-purpose building (e.g., hospital, day nursery, educational facility, place of worship not on commercially or industrially zoned land)
- On a vacant lot zoned for noise-sensitive use that is accessible by public road or navigable waterway
- For the South Landfill Phase 2, the surrounding PORs are rural residences. These residences are located within 500 m of the SSA and not more than 500 m from the haul routes.

Both the qualitative and quantitative characteristics of the existing acoustic environment at the PORs are used to determine the applicable sound level limits. The existing background sound forms the limit when the quietest periods are above the default or exclusion limits provided in NPC-300. Background sound is the combination of the sounds of nature and human-generated noise not related to the Project. Human-generated noise in this area is most consistently caused by road traffic, with less frequent sound from agricultural activities, small overhead aircraft, distant train traffic, and homeowner activities (e.g., lawnmowers, leaf blowers, snowblowers, etc.). The sounds of nature in this area would be from insects, birds and wind in the grass or trees. The exclusion limits are determined by the qualitative characteristics of the acoustic environment. NPC-300 divides acoustic environments into three Classes. Acoustic environments that are dominated by human-generated sound during daytime and the sounds of nature during nighttime are described as “Class 2”. Acoustic environments that are characterized by the sounds of nature during daytime and nighttime are “Class 3”, while major urban centres are “Class 1”. The PORs surrounding the proposed South Landfill Phase 2 would be described as having a Class 2 acoustic environment. Expected background sound levels as quiet as 50 dBA are expected during the daytime, while 45 dBA is expected during nighttime periods.

Detailed evaluation will consider the influencing sources and their contributions in greater detail for the points of reception.

6.2.1.4 Terrestrial and Aquatic Environment

Existing natural heritage features and conditions within the SSA (e.g., terrestrial and aquatic flora and fauna and ecosystems) will be identified and described in the EA to assess potential impacts and environmental effects of the expansion on those biological features and conditions.

The LSA for the Terrestrial and Aquatic investigations will include all lands (approximately 760 ha) and waters within a 1-km radius of the SSA boundaries and includes the Walker Campus and surrounding area.

The northwest corner of the SSA is adjacent to the Niagara Escarpment Plan Area, and Niagara Escarpment Development Control Area. The northern portion of the LSA is designated under the Niagara Escarpment Plan. A large woodlot has been identified north of the SSA in the LSA. This large woodlot has also been identified as white-tailed deer wintering area (Stratum 2). Portions of the aforementioned woodlot contain a non-provincially significant Ten Mile Creek Wetland Complex. The Ten Mile Creek Wetland Complex is located immediately north and abuts the limits of the SSA. The remaining northern portions of the LSA consists of agricultural land and a commercial plant nursery.

The eastern portion of the LSA consists of primarily agricultural land, with pockets of woodlands. Two non-provincially significant (Ten Mile Creek Wetland Complex and Shriners Creek Wetland Complex) have been identified on the east portion of the SSA. Ten Mile Creek runs from east of the SSA and had been historically redirected to run south along the east side of the SSA boundary, eventually leading to the Welland Canal. White-tailed deer wintering area (Stratum 2) are located within these wooded communities. A small residential community is located approximately 500 m east of the SSA.

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The southern portion of the LSA is similar to the east portion, as it is primarily agricultural land and contains portions of Shriners Creek Wetland Complex and white-tailed deer wintering area (Stratum 2). There are several permanent and ephemeral steams that flow from this southern portion into the Welland Canal.

The western portion of the LSA is heavily developed, being comprised of many Walker-owned facilities such as the former East Landfill, active South Landfill, compost site, aggregate processing facility, and Walker head office. Natural features in this portion of the LSA include a wooded area directly north of the aggregate processing area and west of Taylor Road.

The significance of any of these identified natural heritage features, as defined in the Niagara Official Plan and City of Niagara Falls Official Plan, will be evaluated through the EA process. Further, a determination of candidate and confirmed Significant Wildlife Habitat will also be evaluated.

Species at Risk

A desktop background review of the area revealed records of 33 Species at Risk (SAR) within the SSA, LSA and vicinity. These include avian, herpatologic, aquatic, insect, flora and mammalian species. Habitat suitability for each species will be cross-referenced with available habitats within the SSA and LSA to evaluate the likelihood and presence of SAR within the study areas. SAR listings within Ontario are subject to change, therefore considerations for wildlife habitat will be made as the Project progresses during the EA process.

6.2.2 Built Environment

6.2.2.1 Land Use

The proposed expansion area for South Landfill Phase 2 is currently licenced for a quarry operation. Within the licenced area, the operation includes an extraction area, internal haul roads, and landscape berms and vegetation around the perimeter of the quarry for screening purposes, with internal (non-public) entrances to the north and northwest off Mountain Road and Taylor Road, respectively. Under the existing licence, any change to the site plan, or surrender of the licence, will require approval through the Ministry of Natural Resources and Forestry (MNRF).

The proposed expansion area for South Landfill Phase 2 is in the western portion of the Walker Campus, which comprises a number of waste management and aggregate related facilities including landfills, aggregate processing areas (includes an asphalt plant), a biosolids facility, a compost facility, a residential drop-off area, and ancillary office buildings.

The SSA is bounded by Mountain Road to the north, beyond which are mainly agricultural lands and woodland areas. A single residential building, owned by Walker, is located to the northeast of the SSA beside the intersection of Garner Road and Mountain Road, with single detached dwellings also situated further north along Garner Road. A large garden centre is located on the northeast corner of Garner Road and Mountain Road, beyond which are further agricultural lands and woodland areas.

Wooded and agricultural parcels of land lie east of the SSA. A number of single residential dwellings are located along both sides of Garner Road southeast of the SSA. Agricultural and woodland areas extend east of Garner Road.

Lands located to the south of the SSA mainly consist of agricultural lands. Woodlands are situated to the southeast and also opposite Beechwood Road to the southwest. Further south, along Thorold Stone Road, are a small number of single residential dwellings, which lie within a wider agricultural area. A residential dwelling, owned by Walker, is also located to the southwest in proximity to the junction of Taylor Road and Thorold Townline Road.

Any land use decisions made under the *Planning Act* relating to the Project will be required to be consistent with the Provincial Policy Statement (PPS) and to conform and not conflict with any applicable provincial plans including the Growth Plan, Greenbelt Plan, and Niagara Escarpment Plan. The PPS provides policy direction on matters of provincial interest related to land use planning and development, as set out in Section 2 of the *Planning Act*. The PPS provides for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of the natural and built environment.

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The SSA is situated within the Greater Golden Horseshoe (GGH) Growth Plan Area. Any decisions made on the proposed amendments to regional and local planning instruments (official plans, zoning by-laws, etc.) are required to conform to and not conflict with the Growth Plan.

The SSA is situated outside of the Natural Heritage System for the Growth Plan, the Greenbelt Plan Area and the Niagara Escarpment Plan (NEP).

The SSA is within the jurisdiction of the Niagara Region Official Plan (NROP) and City of Niagara Falls Official Plan (NFOP). The SSA is shown to be situated outside of identified urban and growth areas. Narrow sections along the eastern boundary of the SSA are shown to be part of the Natural Environment System (Schedule C1 and C2). Schedule H of the NROP identifies the site as a Licenced Aggregate Operation consistent with the existing use of the site.

The SSA is primarily designated as Extractive Industrial in the NFOP, with relatively minor areas designated as Environmental Conservation Area and Environmental Protection Area. The SSA is zoned as Extractive Industrial Zone.

The visual character of the SSA reflects the efforts made to visually screen/buffer the current quarry operations. Berms, and rehabilitation plantings surround much of the SSA, giving it an early successional vegetative character. The eastern and southern boundaries of the SSA are adjacent to the Ten Mile Creek, which was realigned in the early 2000's, at which time rehabilitation plantings were introduced to the creek bed, valley and table lands.

The area immediately surrounding the SSA is dominated by industrial and agricultural land uses/landscapes and a scattering of rural residential and institutional land uses. The landscape is moderately flat to gently rolling. Land surrounding the SSA that is not occupied by other industrial uses tends to be agriculturally occupied. As a result, the landscape is characterized by open grassland fields, defined by hedgerows and fence lines, and punctuated by small and large mature deciduous woodlots.

6.2.2.2 Agriculture / Soils & Mining

The majority of lands within the Walker Campus have been disturbed by the South Landfill, East Landfill, Southeast Quarry, and other operating facilities. The lands surrounding the Campus are largely composed of agricultural lands used for common field crop production. There are also several relatively large, forested areas and scrublands within the surrounding area. The LSA beyond the boundaries of the Campus include a mix of agricultural and non-agricultural land uses land uses. Non-agricultural land uses are more prevalent on lands in close proximity to the City of Niagara Falls and City of Thorold settlement area boundaries. Although the lands north of the Campus are within the specialty crop area designation, there is little specialty crop production present.

North: North of the Campus, small areas of land are cultivated with common field crops (corn and winter wheat) and smaller areas are cultivated with specialty crops (vineyard and orchard). There is one equestrian operation located north of the Campus. Two agriculture-related uses were identified during the land use survey, which included a nursery and a winery. The remaining lands consist of scrubland, forested area, and non-agricultural land uses. The non-agricultural land uses include one recreational use, one industrial use, two institutional uses, one commercial use, and approximately eighteen non-farm residences.

East: East of the Campus, the majority of lands are cultivated for common field crop production. Crops grown at the time of the preliminary land use survey include winter wheat, soy, and corn. There is also a smaller portion of land used for specialty crop production in the form of a vineyard. The remaining lands consist of forested area and non-agricultural land uses. The non-agricultural land uses observed include two recreational uses, one commercial use, one institutional use, approximately five non-farm residences, and two separate rural residential clusters. Additionally, one remnant farm was observed during the land use survey.

South: South of the Campus, the majority of lands are cultivated for common field crop production, including soy, winter wheat and corn. The remaining lands are forested and contain small amounts of scrubland and a golf course. There were five agricultural uses identified south of the Campus. These include three retired livestock operations and two hobby farms. Two agriculture related uses were identified, which include an apiary and a nursery. Non-agricultural

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uses include three commercial uses, one recreational use, five industrial uses, approximately seventeen non-farm residences, and two rural residential clusters.

West: West of the Campus, the majority of lands have been developed and show few signs of agricultural influence. The Welland Canal separates the residential area of Thorold (west of the canal) from industrial, institutional, and commercial uses. There are no agricultural, agriculture-related, or on farm diversified land uses located west of the Campus. The land use survey identified two industrial uses and one institutional use.

6.2.3 Socio Environment

6.2.3.1 Transportation/Traffic

Internal Transportation Network

The internal transportation network for the Walker Campus consists of paved and unpaved private roads which connect to the public road network at several intersections. Five Campus accesses currently exist:

- Landfill East Access (Main Access), located on the west side of Taylor Road (Niagara Regional Road 70) approximately 600 m south of its intersection with Niagara Regional Road 101 (Mountain Road); signalized.
- North Access, located on the west side of Niagara Regional Road 70 (Taylor Road) approximately 800 m north of its intersection with Niagara Regional Road 101 (Mountain Road); unsignalized.
- Landfill West Access, located on the east side of Thorold Townline Road opposite the Niagara Region Thorold Yard at 3557 Thorold Townline Road; unsignalized.
- Landfill Northwest Access, located on the east side of Thorold Townline Road just south of the Walker head office at 2800 Thorold Townline Road; unsignalized.
- Quarry Access (maintenance only, non-public access), located on the south side of Mountain Road; unsignalized.

The main landfill access (east access) connects to a paved two-lane internal road from which trucks and other vehicles can access various parts of the South Landfill site via unpaved pathways. The Southeast Quarry on the east side of Taylor Road is connected to the remainder of the Campus facilities via a one-lane underpass of Taylor Road, located approximately 50 m south of its intersection with Mountain Road.

External Transportation Network

The external transportation network surrounding the Campus consists of several local and regional roads. Road classifications noted herein were based on Schedule “C” of the City of Niagara Falls Official Plan (2008).

- **Thorold Townline Road** is a north-south arterial road under the jurisdiction of the City of Thorold north of Thorold Stone Road and is under the jurisdiction of the Regional Municipality of Niagara (Niagara Region, the Region) south of Thorold Stone Road where it is designated as Regional Road 70.
- **Taylor Road (Regional Road 70)** is a north-south arterial road under the jurisdiction of Niagara Region, extending from York Road (Regional Road 81) to Thorold Stone Road.
- **Thorold Stone Road (Regional Road 57)** is an east-west arterial road under the jurisdiction of Niagara Region, extending from Davis Road (Highway 58) in the west to Stanley Avenue (Regional Road 102) in the east.
- **Mountain Road (Regional Road 101)** is an east-west arterial road under the jurisdiction of Niagara Region, extending from Taylor Road (Regional Road 70) in the west to Stanley Avenue (Regional Road 102) in the east.
- **Beechwood Road** is a north-south arterial road under the jurisdiction of the City of Niagara Falls, extending from Taylor Road (Regional Road 70) in the north to Brown Road in the south.
- **Garner Road** is a north-south arterial road under the jurisdiction of the City of Niagara Falls, extending from Warner Road in the north to Brown Road in the south.

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The following intersections near the Campus are signalized:

- Thorold Stone Road (Regional Road 57) at Taylor Road (Regional Road 70)/Thorold Townline Road (Regional Road 70)
- Taylor Road (Regional Road 70) at Walker Landfill East (Main) Access
- Taylor Road (Regional Road 70) at Mountain Road (Regional Road 101)

The Campus is located outside of the urban area designated by the City of Niagara Falls' Official Plan. Consequently, there are no dedicated pedestrian or cyclist facilities along adjacent roads.

Public transit in Niagara Region is currently operated by Niagara Transit Commission under the name of Niagara Region Transit (NRT). There are no fixed route transit stops in the vicinity of the site; and NRT On-Demand service does not currently operate nearby.

North of the site, a Canadian National Rail (CN) line runs generally east-west, with a grade-separated crossing at Taylor Road approximately 125 m north of the North Access. It is noted that rail facilities are not expected to be impacted by the undertaking of the proposed landfill expansion and will therefore not be analyzed further as part of the transportation impact assessment.

6.2.3.2 Neighbourhood and Community Character

The Walker Campus is located within the City of Niagara Falls and City of Thorold. The proposed South Landfill Phase 2 site is located within the City of Niagara Falls, and near the municipalities of the City of Thorold (to the west), City of St. Catharines (to the northwest) and the Town of Niagara-on-the-Lake (to the north).

In the 2021 Census of Population,[6] Niagara Falls had a population of 94,415 persons living in 37,793 total private dwellings, representing a growth of 7.2 percent from its 2016 population of 88,071. In 2021, the population of St. Catharines was 136,803 and Niagara-on-the-Lake was 19,088, representing growth of 2.8 percent and 9.0 percent respectively since 2016. Thorold's population was 23,816 in 2021, representing growth of approximately 27 percent since 2016.

These municipalities are built on an economic foundation anchored by tourism, agriculture, manufacturing, commercial retail, and knowledge-based sectors. These communities offer numerous tourist attractions, festivals, and recreational opportunities such as hotels/resorts, casinos, golf courses, wineries and Niagara's defining feature being Niagara Falls itself. More than 14 million people visit Niagara Falls and the region each year, making it one of the most famous tourism destinations in the world[7]. The current state of community well-being of these municipalities can be characterized as having a reasonably healthy balance of community assets such as skills and labour supply, municipal infrastructure, community and recreational facilities and services, health and safety services, financial wealth, community character, cohesion, and a healthy environment.

The Campus is located on lands outside of the City of Niagara Falls urban area settlement boundary and is surrounded by agricultural lands and natural heritage features, rural residences and limited development options. The Bruce Trail and the Woodend Conservation Area / Environmental Centre are located along the Niagara Escarpment, north of the Campus.

North: North of the SSA and below the Niagara Escarpment, key community features include:

- The Niagara-on-the-Green residential subdivision, located at Glendale Avenue and Taylor Road
- The White Oaks Conference Resort and Spa, located at Taylor Road north of Glendale Avenue and southwest of the Queen Elizabeth Way. This facility consists of a hotel component, a fitness and racket club, and a conference centre

[6] Statistics Canada, 2023. Census of Population "Census Profile" Available at Census of Population (recensement.gc.ca). Accessed November 10, 2023.

[7] Niagara Falls Tourism Association, undated. Niagara Falls – General Information, History and Facts. Available at general-_facts_and_history-1.pdf (niagarafallstourism.com). Accessed November 10, 2023.

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- Niagara College's Niagara-on-the-Lake campus, located between Glendale Avenue and the Queen Elizabeth Way. This campus is the centre for Niagara College's business, hospitality, environmental, culinary and wine programs
- The Royal Niagara Golf and Country Club, a public course
- The General Motors of Canada auto/engine plant, located northwest of the site along Glendale Avenue

There are two residences within 500 m and two residences within 500 and 1000 m north of the SSA boundary.

East: East of the SSA, key community features are:

- Agricultural farmlands and rural residential dwellings along Garner Road between Thorold Stone Road and Mountain Road
- A residential subdivision west of Kalar Road, including Shriners Woodlot Park
- St. Vincent de Paul Catholic Elementary School
- Niagara Sport & Social Club, the Regency Athletic Resort/Regency 76, and Club Italia located west of Kalar Road

There is one residence within 500 m and 13 residences within 500 and 1000 m east of the SSA boundary.

South: South of the SSA, and along Thorold Stone Road, the key features are:

- Retail businesses, a convenience stores and gas bar;
- The Beechwood Golf and Country Club, an 18-hole courses offering a range of golf and golf related services and banquet facilities; and,
- A variety of industrial businesses, dominated by energy production, auto parts and recycling, trucking, and construction related activity, are located to the west of Thorold Townline Road, and in particular, in the vicinity of Highway #58/Thorold Stone Road.

There are no residences within 500 m and 16 residences within 500 and 1000 m south of the SSA boundary.

West: West of the SSA, key community features are:

- Walker's South Landfill (Phase 1) and the closed East Landfill, a compost facility, residential waste drop-off area, a landfill gas utilization system, a biosolids management facility, and Walker's corporate offices.
- Several municipal and community facilities, located on Thorold Townline Road, including the Thorold Patrol Yard, Region of Niagara Public Works Service Centre and Niagara Region Fleet garage and supply yard, and the Lakeview Cemetery; and
- The Welland Canal.

There are no residences within 500 m and no residences within 500 and 1000 m west of the SSA boundary.

Because the Campus is located outside of the urban area designated by the City of Niagara Falls' Official Plan, there are no dedicated pedestrian or cyclist facilities along the roads near the SSA, however roads are known to be used by regional cycling clubs and by local residents and visitors to the area.

It is noteworthy that the Walker Campus has been an important part of the Niagara community for over 136 years, having started operations in 1887. Walker is a fifth-generation family-owned company, with over 1200 employees across North America. They offer a variety of products and services across various industries, including renewable energy, waste disposal, aggregates, road construction and more. Walker is committed to contributing to the social, economic, and environmental well-being of the communities within which they operate. Walker embraces their role of being a good neighbour, supporting environmental, health, cultural and educational initiatives that are important to their host communities and the employees who live there. Through charitable donations, sponsorships of local initiatives and employee volunteer days, they are an active community member.

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6.2.4 Economic Environment

6.2.4.1 Local Employment, Labour Supply and Economic Base

Niagara Region, located in Southern Ontario, Canada, spans 1,854.25 km^2 situated between Lake Ontario and Lake Erie, bordering the United States along the Niagara River. The Region is comprised of 12 municipalities. In 2021, the population stood at 477,941, and the number of private dwellings was 207,926[8].

Economy

Niagara Census Metropolitan Area (CMA) gross domestic product (GDP) as of Q2 2022 was $17.0 billion. The leading sectors by GDP were finance, insurance, and real estate ($4.3 billion); manufacturing ($1.9 billion); wholesale and retail trade ($1.7 billion); construction ($1.5 billion); and health care and social assistance ($1.4 billion)[9].

Businesses

In 2022, the number of businesses with employees was 13,850 and the number of businesses without employees was 29,513. Small businesses are dominant amongst employee-based businesses whereby 72.8 percent have less than 10 employees[10].

Labour Market

In Q2 2022 Niagara CMA labour force was 242,700 with employment at 230,700, and an unemployment rate of 4.9 percent. The participation rate was 64.6 percent. The largest employers by industry sector are health and social assistance (29,400); wholesale and retail trade (26,800); construction (22,000); manufacturing (20,600); and accommodation and food services (18,500)[11].

Real Estate Market

In 2022 the Niagara Region real estate market saw 12,911 new residential listings and 5,987 sales. The areas with the highest number sales were St. Catharines (1,765); Niagara Falls (1,132); Welland (795); Fort Erie (563); and Lincoln (382)[12].The median price of a single detached home in Q4 2022 was $630,000[13].

Public Finance

In 2021, Niagara Region reported total revenues of $1.190 billion, with primary sources being property taxation ($413.5 million), government transfers ($390.5 million), and user fees and service charges ($219.4 million). The value of the phase-in taxable assessment for residential was $51.762 billion, and non-residential was $10.999 billion. Total expenses after adjustments were $1.026 billion, with the largest expenditure categories being social and family services ($299.8 million), protection services ($207.7 million), environmental services ($176.5 million), and health services ($135.1 million)[14].

[8] Statistics Canada. (2023, April 6). *Table 33-10-0576-01 Canadian Business Counts, with employees, census metropolitan areas and census subdivisions, June 2022.* Retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310057601

[9] Niagara Region. (2022, October). Niagara Economic Update. Retrieved from https://niagaracanada.com/data/reports/

[10] Statistics Canada. (2023, April 6). *Table 33-10-0576-01 Canadian Business Counts, with employees, census metropolitan areas and census subdivisions, June 2022.* Retrieved from https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=3310057601

[11] Niagara Region. (2022, October). Niagara Economic Update. Retrieved from https://niagaracanada.com/data/reports/

[12] Niagara Association of Realtors. (2023). *Market Report: Annual Residential Overview - Year vs Year.* Retrieved from https://www.niagararealtor.ca/public/Stats/Annual%202021%20and%202022%20Stats.pdf

[13] The Canadian Real Estate Association. (2023). *Niagara Median Price.* Retrieved from https://creastats.crea.ca/mls/stca-median-price

[14] Ontario Ministry of Municipal Affairs and Housing. (2022, November 25). Multi-Year Financial Information Return Review, Niagara R. Retrieved from https://efis.fma.csc.gov.on.ca/fir/index.php/en/multi-year-reports/year-2009-and-on/

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Cost of Service

Tip fees charged per tonne for disposal of garbage by facilities within Niagara Region are as follows[15],[16]:

- Walker Waste & Recycling Drop-Off, Thorold – $125.00/tonne
- Bridge Street Waste and Recycling Drop-Off Depot, Fort Erie – $122.50/tonne
- Humberston Landfill, Welland – $122.50/tonne
- Niagara Road 12 Landfill, West Lincoln – $122.50/tonne

6.2.5 Cultural Environment

6.2.5.1 Cultural Heritage

The Campus is situated within the traditional territory of multiple Indigenous Nations, including Six Nations of the Grand River First Nation (Haudenosaunee Confederacy), Mississaugas of the Credit First Nation and Attiwonderonk (Neutral) First Nation. These lands and immediate surrounding area are acknowledged as being associated with the Niagara Purchase (Treaty 381, 1781).

The SSA is located within the geographic Township of Stamford, which was originally known by European settlers as Township Number 2 (since it was the second township surveyed after the Township of Niagara). The Township was later known as Mount Dorchester, named for Governor General Sir Guy Carleton. In 1791, John Graves Simcoe gave the name of Stamford to Township Number 2, after the Town of Stamford in Lincolnshire, England. The Township of Stamford remained a self-governing municipality until 1963 when it became part of the City of Niagara Falls.

The City of Niagara Falls is located within Niagara Region. Niagara Region includes the municipalities of: Fort Erie, Grimsby, Lincoln, Niagara Falls, Niagara-on-the-Lake, Pelham, Port Colborne, St. Catharines, Thorold, Wainfleet, Welland and West Lincoln. The current population of Niagara Region is approximately 484,000 (2021).

The SSA is located along the edge of the eastern boundary of the City of Thorold, and south of the southern boundary of the City of St. Catharines. The existing Welland Canal is located approximately 2.3 km west of the SSA, with portions of the historic Welland Canal being located approximately 1.5 km away. The nearest designated heritage property is located approximately 2.5 km to the east, within the historic downtown area of Thorold.

The SSA is currently utilized predominantly as an active quarry operation. The lands are located within the Walker Campus, which began operations in 1887 with early quarrying operations being located to the west of the SSA. The broader area is characterized as a mixed agricultural and rural residential area, with a range of land uses. A municipal cemetery is also located approximately 1 km west of the SSA.

6.2.5.2 Archaeology

Preliminary analysis of the SSA indicates that this area has the potential for archaeological resources. Local indicators of archaeological potential include proximity to known archaeological sites, historic transportation routes and historic settlements. Specifically, the LSA is within 1 km of 30 registered archaeological sites and encompasses nine registered archaeological sites. The SSA is traversed by the Ten Mile Creek Wetland Complex, within 60 m of the Ten Mile Creek and within 103 m of Shriners Creek Wetland Complex. Historic mapping shows that the SSA is adjacent to two historically surveyed roadways and encompasses three historic farmsteads. Prior to the establishment of the present-day quarry, an archaeological investigation was conducted by Archaeological Services Inc. in 1988. This assessment identified eight sites which were within the current SSA considered for this proposal. Of the eight sites, only one required further investigation, which was fully mitigated in 1989 through mechanical topsoil removal. The location of the remaining seven sites would have been in the footprint of the current quarry and likely no longer exist. Since the previous assessments does not meet the current Ministry of Citizenship and Multiculturalism (MCM)

[15] Walker Industries. (2023). *Niagara Region: Waste Drop-Off Information*. Retrieved from https://walkerind.com/niagara/

[16] Niagara Region. (n.d.). Landfills in Niagara. Retrieved from https://www.niagararegion.ca/waste/landfills/default.aspx

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standards, the area would need to be reassessed to confirm the archaeological sites and archaeological potential has since been removed.

Based on the current physical conditions, pending the results of further background research, it is likely that a significant portion of the SSA has no potential for archaeological resources to be present. This is due specifically to the current use of a portion of the SSA as a quarry. The remaining portions that are not within the current quarry limits will likely require assessment. The division between these components is as follows:

– Within quarry limits 59.03 ha (145.52 ac): No Archaeological Potential – Disturbed
– Within quarry limits 5.98 ha (14.78 ac): Low Archaeological Potential – Potential Disturbance
– Immediately south of the quarry limits 6.15 ha (15.20 ac): High Archaeological Potential – No Significant Disturbance

6.3 Detailed Inventory of the Environment

A more detailed description of the environment will be provided during preparation of the South Landfill Phase 2 EA reflecting the final study area using available existing information sources and investigative studies.

6.3.1 Available Existing Information Sources

– Walker's extensive knowledge of the SSA and LSA based on current operations (annual monitoring reports, previous Environmental Assessments (i.e., South Landfill Phase 1), customer database, waste audits, other commissioned studies, etc.)
– Ontario Provincial Climate Change Impact Assessment Technical Report, 2023
  - Section 6.7.4 provides regional and sector-based information on the potential climate-related impacts to waste management infrastructure.
– Ontario Climate Data Portal
  - Provides historical observation and future projections data for climate change and impact research.
– Environment and Climate Change Canada's Climate Atlas of Canada
  - Documents local climate data, climate model maps, and Indigenous knowledge.
– Sources of existing information identified in relation to the investigative studies outlined in Section 6.3.2 are listed in both Appendix B and Appendix C.

6.3.2 Investigative Studies

The investigative studies that will be undertaken as part of the EA include, but are not limited to, the following:

– Geology & Hydrogeology
– Surface Water Resources
– Atmospheric Environment (including Air Quality, Odour and Noise)
– Terrestrial & Aquatic Environment
– Land Use
– Agricultural
– Transportation
– Social
– Economic
– Archaeology and Build Heritage

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The details associated with each of these investigative studies are provided in separate proposed Work Plans (see **Appendix C**). These proposed Work Plans outline what will be done during the South Landfill Phase 2 EA to generate a more detailed description of the environment and how that information will be utilized in the assessment and evaluation of alternatives, as well as the assessment of impacts associated with the preferred alternative. The proposed work plans will be reconfirmed as part of the South Landfill Phase 2 EA.

6.3.3 Potential Effects

The types of potential environmental effects that will be assessed during preparation of the South Landfill Phase 2 EA include, but are not limited to, those that are summarized in **Table 6.1**. The rationale for these initial potential environmental effects is based on the Alternative Methods presented in **Section 5.1** and preliminary description of the environment provided in **Section 6.2**. The types of potential environmental effects have been grouped into the five environmental components: natural, built, social, economic, and cultural.

The specific potential environmental effects will be determined during the preparation of the South Landfill Phase 2 EA.

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Table 6.1 Potential environmental effects to be assessed in the South Landfill Phase 2 EA

Natural	Built	Social	Economic	Cultural
– Temporary and/or long-term change in groundwater quality and/or quantity including potential indirect effect of climate change (e.g., relating to precipitation) – Temporary and/or long-term change in surface water quality and/or quantity including potential indirect effect of climate change (e.g., relating to precipitation) – Temporary and/or permanent change in air quality including temporary and/or permanent change to greenhouse gas (GHG) emissions, and consideration of potential indirect effect of climate change (e.g., on odours) – Temporary or permanent loss of aquatic features or categorical loss of functions – Temporary or permanent disturbance to aquatic and/or terrestrial species and habitat – Temporary or permanent loss of recharge and discharge areas – Temporary and/or permanent loss of natural heritage features – Temporary and or permanent change to carbon sink (e.g., changes to vegetation cover)	– Changes to approved/ planned land uses – Temporary or permanent alteration to existing views – Temporary or permanent disruption to existing Agricultural Land Base and Agri-Food Network	– Temporary disruption to traffic – Temporary or permanent disruption to residences, businesses, and/or community, institutional, and recreational facilities – Temporary or permanent disturbance to sensitive receptors due to dust, odours and noise including potential indirect effect of climate change (e.g., relating to temperature and precipitation) – Potential effects to human health (e.g., compliance with regulatory limits)	– Temporary or permanent change to the local economy, real estate, and public finances – Change in capital/operating costs	– Disturbance to lands with significant archaeological potential (i.e., lands with potential for the presence of archaeological resources) – Displacement or disruption of built heritage resources – Displacement or disruption of cultural heritage landscapes

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7. Description of the Assessment and Evaluation Methodology

7.1 Alternative Methods of Carrying Out the Undertaking

The Alternative Methods will be assessed and evaluated to identify the proposed undertaking for which *EA Act* approval will be sought.

The South Landfill Phase 2 EA will consider potential effects on the environment associated with the following timeframes:

- Construction
- Operation
- Closure/Post-closure

7.1.1 Assessment and Comparative Evaluation of the Alternative Methods of Carrying Out the Undertaking

The assessment and comparative evaluation of the Alternative Methods will utilize the following three steps:

1. Assessment of the Alternative Methods
2. Comparative evaluation of the Alternative Methods and selection of the Recommended Method
3. Identification of the Preferred Method

7.1.1.1 Assessment of Alternative Methods

The Alternative Methods will be assessed through a "net effects analysis" consisting of the following activities:

- Develop appropriate evaluation criteria and indicators based on the purpose of the undertaking, environmental conditions within the final study area, developed Alternative Methods (i.e., conceptual designs), and type of potential environmental effects from the Alternative Methods. Preliminary evaluation criteria and indicators have been developed, which will include, but may not be limited to, those set out in **Appendix B.** The preliminary evaluation criteria and indicators will be finalized during preparation of the South Landfill Phase 2 EA. Further details on the finalization of preliminary criteria and indicators are provided in **Section 9.2.4** and **Section 10** of the Proposed ToR.
- Identify potential effects on the environment (both positive and negative) by applying the finalized evaluation criteria and indicators to each Alternative Method taking environmental conditions into consideration.
- Develop impact management measures based on current procedures, historical performance, and environmental conditions to avoid/minimize potential adverse environmental effects. In addition, impact management measures other than those currently utilized at the existing South Landfill will be developed and assessed as part of the EA.
- Apply the impact management measures to the identified potential adverse environmental effects to identify residual or remaining net effects on the environment (both positive and negative).

The MECP guide for *Considering Climate Change in the Environmental Assessment Process* (2017) sets out the ministry's expectations for considering climate change in the preparation, execution and documentation of environmental assessment studies and processes. Consistent with the guide, Walker will review the Alternative Methods from a climate change adaptation and mitigation perspective. This will include identifying historical climate/meteorological trends, as well as the potential for extreme weather events that may have an effect on the Alternative Methods through power outages, physical damage, stormwater management and reduced access to the

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landfill. In addition, Walker will consider the impact of the Alternative Methods on climate change through evaluation criteria including, but not limited to, greenhouse gas emissions and impacts to carbon sinks.

7.1.1.2 Comparative Evaluation of the Alternative Methods and Selection of the Recommended Method

Once the assessment of the Alternative Methods has been completed, they will be compared using a “Reasoned Argument” or “trade-off” method to select a Recommended Method. Application of this method will identify the advantages or disadvantages of each Alternative Method based on their respective net effects. The advantages and disadvantages will be used to identify preferences among the Alternative Methods in order to establish the Recommended Method. The rationale for selecting the Recommended Method will be provided as part of the South Landfill Phase 2 EA.

7.1.2 Identification of the Preferred Method

The Recommended Method will be provided to review agencies, Indigenous communities and agencies, and the public for comment during preparation of the South Landfill Phase 2 EA, following which a Preferred Method will be identified.

7.2 Impact Assessment of the Preferred Method

The intent of the impact assessment is to allow for additional details to be developed on the Preferred Method from a design and operations perspective and to then review the impact management measures and resultant net effects described in the Alternative Methods stage within the context of the more detailed design for the Preferred Method. Specifically, the following can be accomplished:

- Potential environmental effects can be identified with more certainty.
- More site-specific impact assessment measures can be developed for application.
- Additional mitigation and impact management measures can be identified as required.
- Net environmental effects can be identified with more certainty.
- Appropriate monitoring requirements can be clearly defined.
- Specific approval/permitting requirements for the proposed undertaking can be identified.

Confirmatory environmental investigations may be carried out at this stage, if required. At the completion of the impact assessment of the Preferred Method, the advantages and disadvantages to the environment of the Preferred Method will be identified.

During the impact assessment, Walker will utilize the climate change adaptation and mitigation analysis undertaken during the Alternative Methods stage and augment as needed for the Preferred Method. Climate change mitigation and adaptation measures will be reviewed as part of the detailed site design established for the Preferred Method during the impact assessment stage of the South Landfill Phase 2 EA. In addition, during the impact assessment stage of the South Landfill Phase 2 EA, Walker will complete an assessment of the cumulative effects of the proposed undertaking and other non-Walker projects/activities that are existing, planned/approved or reasonably foreseeable within the Study Area (which will be finalized during the EA, as per **Section 6.1** of this ToR).

The impact assessment of the Preferred Method will be documented as part of the South Landfill Phase 2 EA.

7.3 Closure and Post Closure

Closure and post closure (or decommissioning) of the South Landfill Phase 2 will take place in accordance with O. Reg. 232/98, which includes the future requirement to develop a closure plan. Walker is required to prepare a

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closure plan when the South Landfill Phase 2 has reached 90 percent of its approved capacity or two years of remaining capacity (whichever comes first).

In concert with developing conceptual designs for the Alternative Methods, broad closure and post-closure frameworks will be generated for assessment and comparative evaluation purposes. The broad frameworks may include, but are not limited to, reviewing whether existing site infrastructure will remain in place at the landfill beyond the closure date, post-closure monitoring requirements, as well as the potential post-closure use. The post-closure use will need to reflect current municipal land use planning controls.

8. Commitments and Monitoring

8.1 Terms of Reference and Environmental Assessment Commitments

As part of preparing this ToR, a number of commitments are being made by Walker that will need to be fulfilled during preparation of the South Landfill Phase 2 EA. **Appendix D** lists these commitments. If approval of the proposed ToR is granted by the Minister, the list of commitments will be finalized and included in the South Landfill Phase 2 EA, documenting where and how they were dealt with during preparation of the South Landfill Phase 2 EA.

Similarly, commitments may be made by Walker during preparation of the South Landfill Phase 2 EA that will need to be fulfilled if approval of the proposed ToR is granted by the Minister. Where such commitments are made, a list of EA commitments will be documented in the South Landfill Phase 2 EA Report, including where and how they will be dealt with if the proposed ToR is approved.

8.2 Environmental Effects and EA Compliance Monitoring

Walker is committed to developing a monitoring framework during preparation of the South Landfill Phase 2 EA that will address environmental effects and, as applicable, EA compliance. The purpose of the environmental effects monitoring is to measure and ensure the effectiveness of any impact management measures proposed to address the potential negative effects of the preferred undertaking. Environmental effects monitoring will monitor the net effects associated with the construction, operation, and closure of the proposed undertaking, as necessary, and implement further impact management measures, monitoring, and contingency plans, where possible, so that:

– Predicted net negative effects are not more than expected
– Unanticipated negative effects are addressed
– Predicted benefits are realized

The purpose of the EA compliance commitment monitoring will be to track the commitments made by Walker during preparation of the South Landfill Phase 2 EA, as well as any conditions of *EA Act* approval, so that they are followed through as applicable in the construction, operation, and closure of the proposed undertaking.

The South Landfill Phase 2 EA Report will include a strategy on how and when the commitments will be fulfilled and how Walker will report on this to MECP and other regulatory agencies, as appropriate.

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9. Terms of Reference Consultation and Consultation Plan for the Environmental Assessment

The purpose of **Section 9** is to provide a brief description of how Walker consulted those potentially affected and other interested persons during the Terms of Reference (ToR) (**Section 9.1**) and outline the proposed Consultation Plan to be implemented during the Environmental Assessment (EA) (**Section 9.2**).

9.1 Terms of Reference Consultation

Walker recognizes the importance of a meaningful consultation program that effectively engages government reviewers, agencies, Indigenous communities and interested persons. During development of the ToR, Walker implemented a consultation program centred around the principles of early, often, flexible and adaptive. Walker used a variety of methods to identify those potentially affected by the Project and other interested persons to achieve broad consultation with government and non-governmental agencies (review agencies), Indigenous Peoples, near-neighbours and businesses to Walker's existing Campus, community partners and members of the public. Consultation was carried out in accordance with the *Code of Practice – Preparing and Reviewing Environmental Assessments in Ontario (Ministry of the Environment, 2014)*; and, as required by Section 5.1 of the *EA Act*.

A detailed description and results of the consultation activities carried out during preparation of the ToR are documented in the Record of Consultation (RoC), prepared under a separate cover. The following is a summary of the RoC.

9.1.1 Review Agencies, Indigenous Communities and the Public Consulted

Review Agencies

Walker contacted 35 review agencies during the development of the ToR. **Table 9.1** lists the review agencies consulted.

Table 9.1 Review Agencies Consulted

Review Agency	
Municipal – Upper tier	**Municipal – Lower tier**
Regional Municipality of Niagara	City of Niagara Falls
Niagara Regional Police Service	Niagara Falls Fire Department
Niagara Region Public Health and Emergency Services	City of Thorold
	Thorold Fire and Emergency Services
	City of St. Catharines
	Town of Niagara-on-the-Lake
Regional	
School Boards: District School Board of Niagara (DSBN) Niagara Catholic District School Board (NCDSB) Conseil scolaire Viamonde	Niagara Peninsula Conservation Authority (NPCA)

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Review Agency	
Conseil scolaire du district catholique centre-sud	
Provincial	
Ministry of the Environment, Conservation, and Parks (MECP)	Ministry of Mines
Ministry of Indigenous Affairs	Ministry of Municipal Affairs and Housing (MMAH)
Ministry of Agriculture, Food & Rural Affairs (OMAFRA)	Ministry of Natural Resources and Forestry (MNRF)
Ministry of Citizenship and Multiculturalism (MCM)	Ministry of the Solicitor General
Ministry of Economic Development, Job Creation and Trade	Ministry of Transportation (MTO)
Ministry of Energy	Niagara Escarpment Commission (NEC)
Federal	
Environment and Climate Change Canada (ECCC)	Canadian National Railway (CN)
Great Lakes St. Lawrence Seaway	Transport Canada
Non-government & Other	
Brock University	Niagara Chamber of Commerce
Niagara College	Niagara Home Builders Association
TC Energy	

Indigenous Peoples

Walker acknowledges the unique rights, interests, knowledge and history of Indigenous Peoples. Walker maintains mutually respectful relationships with Indigenous communities across present day Canada, where it continuously incorporates Indigenous views, perspectives, knowledge and procurement into its day-to-day operations.

For this EA, Walker was delegated the Duty to Consult with three Indigenous communities and agencies. Walker engaged and continues in the process of consulting with these Indigenous communities and agencies, which are listed below (**Table 9.2**).

Additionally, given Walker's long-term and standing relationships with the Métis Nation of Ontario Region 9 and the Niagara Region Native Centre, Walker communicated the announcement of the project and sought their input.

Table 9.2 Indigenous Communities Engaged, Consultation On-going

Indigenous Communities and Organizations
Mississaugas of the Credit First Nation
Six Nations of the Grand River First Nation
Haudenosaunee Confederacy Chiefs Council via the Haudenosaunee Development Institute

Public

As a long-established business in the Niagara Region, Walker has existing relationships with near-neighbours, and local communities and businesses. There are approximately 575 members of the public included in the Project contact database. These include individuals who live within approximately 3 km of the Campus and whom Walker communicates regularly via a bi-annual Campus operations newsletter, adjacent property owners, and those who requested to be added to the Project contact list.

Several methods were used to inform the public of the Project including postal mail drops, Notices published in local newspapers, email notification, phone calls, personal visits and the Project website. Each of these methods included an invitation and opportunity to be added to the Project contact list.

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9.1.2 Summary of Consultation during the Terms of Reference

To ensure that interested persons could learn about and provide input on the ToR in ways that were convenient to them, Walker provided the following online and in-person communication and consultation opportunities:

- Project website, email address, and toll-free number
- Project notifications
- Public engagement event
- Meetings
- Walker Niagara Campus tours
- Media
- Draft ToR Review Period

Project-specific Website, Email Address, and Toll-free Number

The project-specific website, email address, and toll-free number were made available beginning on November 30, 2023, the same day the Notice of Commencement was issued.

- **Project specific website**: southlandfillphase2.com
- **Email address**: info@southlandfillphase2.com
- **Toll-free number**: 1-866-699-9425

The Project website will act as the go-to source for all the most up-to-date information regarding the project, including accessing all documentation related to the project, project notifications, invitations to upcoming consultation activities, and a subscribe function to be added to the project contact list.

In addition, interested persons were, and continue to be, welcome to contact the project team directly by emailing the project email address, or by leaving a voicemail on the toll-free phone number. The project team monitors the email and telephone and responds to inquiries within 48 hours. Email and calls to other existing Walker addresses and phone numbers are directed to the project team and similarly responded to and documented.

Notifications (completed)

A Notice of Commencement and Public Open House was issued on November 30, 2023. The following is a summary of the distribution of the Notice of Commencement and Public Open House. A copy of the notice and the detailed distribution list are included in the RoC.

Table 9.3 Summary of Notifications (completed)

Notification	Details
Notice of Commencement and Public Open House Invitation	Issued November 30, 2023: – Published in the Niagara Falls Review, St. Catharines Standard, Welland Tribune and the Lake Report – Posted to Project website – Approximately 560 letters mailed to members of the public via direct postal mail (to those already on the Project contact list) and unaddressed admail (to residences and businesses within approximately 500 m – 2.5 km of the Campus) – Approximately 90 emails (with Notice and introductory letter) to governments, review agencies, Indigenous communities and community partners – Over 70 phone calls to community leaders, near-neighbours, Indigenous communities leaders

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Notifications (planned)

The following is a summary of the additional notifications planned during preparation of the ToR. Copies of the notices and the detailed distribution lists will be documented in the updated ToR and accompanying RoC.

Table 9.4 Summary of Notifications (planned)

Notification	Details
Notification of the Draft ToR available for agency and public review and comment	Planned
Notification of ToR Submission Date	Planned
Notification of Amended ToR	If required

Meetings (completed)

The following are meetings that were held prior to submission of the Draft ToR for review. Meeting summaries are included in the RoC.

Table 9.5 Summary of Meetings Held

Date	Meeting Name
October 10, 2023	Pre-commencement meeting with Ministry of Environment, Conservation and Parks (MECP) #1
November 14, 2023	Pre-commencement meeting with MECP #2
November 21, 2023	Pre-commencement meeting with MECP #3
December 18, 2023	Niagara Region and City of Niagara Falls GRT meeting #1
December 19, 2023	GRT Meeting 1, Session #1
December 20, 2023	GRT Meeting 1, Session #2
January 16, 2024	Six Nations of the Grand River First Nation
January 31, 2024	Royal Niagara Golf Club
February 1, 2024	Town of Niagara-on-the-Lake
February 6, 2024	City of St. Catharines – Follow-up Meeting & Tour
February 7, 2024	Six Nations of the Grand River First Nation – Follow-up Meeting
February 8, 2024	Greater Niagara Chamber of Commerce
February 9, 2024	DSBN Woodend
February 9, 2024	Niagara Region GRT meeting #2
February 12, 2024	Meeting with MECP prior to release of Draft ToR
February 23, 2024	City of Niagara Falls

Meetings (planned)

The following are planned and potential meetings to be held after the Draft ToR is submitted for review. The purpose of these meetings will generally be to discuss comments on the Draft ToR and submission of the ToR. Additional meetings will be planned as appropriate. All meetings will be documented in the updated ToR and accompanying RoC.

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Table 9.6 Summary of Planned and Potential Meetings

Date	Meeting Name
March 15, 2024	Meeting with City of Thorold
March 18, 2024	Meeting with Mississaugas of the Credit First Nation
March 19, 2024	Meeting with Niagara College
TBD	GRT Meeting 2
TBD	Niagara Region and City of Niagara Falls GRT meeting
TBD	Lower-tier municipalities GRT meetings
TBD	Indigenous community and agency meetings
TBD	GRT Meeting 3
TBD	MECP Project Officer meeting

Terms of Reference Public Open House

A public engagement event, held in the form of a Public Open House, took place on December 14, 2023, from 4:00 p.m. to 8:00 p.m. at Club Italia (2525 Montrose Road, Niagara Falls, ~2 km from the Walker Campus). The purpose of the Open House was to provide an opportunity for interested persons to learn about the proposed Project, and EA process, meet the project team, ask questions, and provide comments for consideration during preparation of the ToR.

This Open House also provided a chance to introduce Walker and its existing operations at the Campus to those who may not have been familiar with the company and Project site.

The in-person Open House was complemented by a virtual, self-guided open house available December 15, 2023, through to January 15, 2024 on the Project website. The virtual open house included a comment submission function which was available for the duration of the virtual open house period noted above.

Walker hosts an annual Holiday Gathering for near-neighbours which consists of gathering to celebrate community before the Christmas holiday. The Gathering was held on December 12, 2023, from 6:00 pm to 8:30 pm at White Oaks Conference Centre (~3 km from the Walker Campus). Over 90 near-neighbours attended. While this was not an official EA public event, due to the timing (after the Notice of Commencement and two days before the Open House), Walker addressed questions and gathered feedback at this event. Feedback has been incorporated into the Public Open House feedback summary in the RoC.

Niagara Campus Tours

Walker maintained an open invitation for interested persons to tour the Walker's Resource Management Campus in Niagara to learn more about how Walker recovers resources and manages residual waste, including how it constructs, operates, and manages the existing South Landfill. The existing landfill operations also served to demonstrate how Walker would continue to provide residual material capacity. Walker provides over 100 Campus tour per year to school groups, neighbours, Indigenous peoples, businesses and municipal partners. Due to the time of year, Walker is gathering interest in tours from interested parties and will hold tours in Spring 2024.

The annual Summer Neighbour Appreciation BBQ and Open House also provides an opportunity for interested persons to tour the Campus and learn about the proposed Project and EA process, ask questions, and provide comments.

Media

Project team members made themselves available to media inquiries related to the Project. As part of the Notice of Commencement, Walker engaged local media, and sent notifications, invitations to consultation activities, and a link to

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the Project website for further information. A media kit was provided to local media for the Notice of Commencement. A copy can be found on the RoC.

Opportunities to Review the Terms of Reference

The Draft ToR will be made publicly available for review and comment from March 7 to April 22, 2024 (45 days). Comments received on the Draft ToR and how they were considered will be documented in the updated ToR and the accompanying RoC. Once updated, the Final ToR will be submitted for formal review, and made available to all interested persons (general public, Indigenous communities, government agencies) for inspection and comment during a 30-day review period.

9.1.3 Results of Consultation during the Terms of Reference

Walker received a wide range of input and comments from review agencies, Indigenous Peoples and agencies, and the public as a result of the preceding consultation activities outlined in **Section 9.1.2**.

The following tables provide a summary of comments received from review agencies, Indigenous communities and the public, and Walker's response to those comments. A full listing of the comments received and how they have been considered by Walker are included in the RoC and comments disposition table.

Review Agencies

The following table summarizes comments received by review agencies and Walker's response during the development of the ToR. Full details can be found in the RoC.

Table 9.7 Summary of Comments Received from Review Agencies

Review Agency	Summary of Comments Received	Walker Response
Niagara Region	**Sustainability** Consideration should be given to Niagara Region and area municipalities' sustainability goals, objectives, and targets for integration into the project, where possible.	Walker will review Niagara Region and area municipalities' sustainability goals, objectives, and targets and identify opportunities to incorporate them into the South Landfill Phase 2 project.
Niagara Region / City of Niagara Falls	**South Landfill Phase 1 and Phase 2 Sequencing** What does the transition between Phase 1 and Phase 2 look like?	Walker anticipates a seamless transition between South Landfill Phase 1 and Phase 2. Specific details on sequencing would be determined following EA approval.
Niagara Region / City of Niagara Falls	**Landfill Height** Question raised regarding the limit on landfill height for South Landfill Phase 2	The development of site configuration options within the "envelope" currently occupied by the Walker-owned Southeast Quarry as the Alternative Methods of Carrying Out the Undertaking for the South Landfill Phase 2 EA will consider landfill height in accordance with the regulatory design requirements under O. Reg. 232/98: Landfilling Sites.
Niagara Region / City of Niagara Falls	**Role and Responsibilities of Conservation Authorities During the EA** Question raised about Bill 23, *More Homes Built Faster Act*, and changes to Conservation Authorities' role and responsibilities regarding comment and review of EAs	It is Walker's understanding that under Bill 23, Conservation Authorities no longer provide municipal programs or services related to reviewing or commenting on proposals/applications made under the *EA Act*. NPCA has and will continue to be consulted as part of the Government Review Team throughout the EA process.
Niagara Region / City of Niagara Falls /	**Sequencing of Planning Approvals**	Walker to prepare an approvals sequencing tracking document outlining timing of provincial and local planning approvals for the project.

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Review Agency	Summary of Comments Received	Walker Response
Town of Niagara-on-the-Lake	Clarification sought on timing of local planning approvals	
Niagara Region / City of Niagara Falls / Town of Niagara-on-the-Lake	**Municipal Review Process** Questions regarding the role and responsibilities of municipalities throughout the EA process and discussion of a coordinated review approach	Local municipalities are members of the Government Review Team. Per the MECP *Code of Practice: Consultation in Ontario's Environmental Assessment Process* (January 2014), the Government Review Team is responsible for providing input advice, information and guidance within their mandated areas of responsibility for proponent consideration; suggesting modifications to the proposal/documentation that may address concerns; participating in the ministry's review of submissions made to the ministry for the proposed ToR and EA, including providing comments to the Branch within the specified review timelines; and identifying and confirming environmental effects related to their mandate.
Niagara Region / Town of Niagara-on-the-Lake	**Consultation Activities** Inquiries into consultation undertaken by Walker, including: – Which municipalities have/will be consulted? – Will the Niagara Escarpment Commission be consulted? – Which Indigenous communities and agencies will be consulted? – Open House #1 attendance	Walker has and will continue to consult with the following municipalities: the City of Niagara Falls, the Town of Niagara-on-the-Lake, the City of Thorold, and the City of St. Catharines. The Niagara Escarpment Commission has and will continue to be consulted throughout the EA process. Walker was delegated the duty to consult with the following Indigenous communities and agencies by the MECP: the Haudenausaunee Development Institute, Mississaugas of the Credit First Nation, and Six Nations of the Grand River. Open House #1 was primarily attended by local residents located within 500 m of the Campus. The Open House #1 Summary can be found in Appendix I of the Record of Consultation.
City of Niagara Falls / Town of Niagara-on-the-Lake	**Secondary Plans** The South Landfill Phase 2 EA should consider the Northwest Secondary Plan (Niagara Falls) and the Glendale Secondary Plan (Niagara-on-the-Lake).	The Northwest Secondary Plan and the Glendale Secondary Plan will be considered as part of the Land Use Assessment (see Appendix C-5).
City of Niagara Falls	**Host Community Compensation** Question raised regarding when tonnage royalty discussions will occur	Tonnage fee discussions will occur at a later stage in the project, when EA studies have concluded.
City of St. Catharines	**Growth Targets** Consideration should be given to Region's / area municipalities' growth targets to ensure disposal capacity needs for Niagara region are met	Walker will consider regional and municipal growth targets as part of the EA. The South Landfill Phase 2 will manage waste generated in Niagara as a first priority to ensure disposal capacity for the local community.
Town of Niagara-on-the-Lake	**Odour** Will odour impacts change with the introduction of South Landfill Phase 2?	The Atmospheric Assessment will include an assessment of odour (see Appendix C-3).
Town of Niagara-on-the-Lake	**Tour of Campus** Interest expressed in a tour of Walker's Niagara Resource Management Campus	Walker will schedule a tour of its Campus with staff from the Town of Niagara-on-the-Lake.

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Indigenous Communities

The following table summarizes comments received by Indigenous communities and agencies and Walker's response during the development of the ToR. Full details can be found in the RoC.

Table 9.8 Summary of Comments Received from Indigenous Communities

Indigenous Community/Agency	Topic / Summary of Comments Received	Walker Response
Six Nations of the Grand River	**Historic Land Use of Proposed Phase 2 Site** Interest in land use and baseline ecological conditions prior to the development of the existing Southeast Quarry at the proposed Project site, as well as previous archaeological studies undertaken.	Walker is reviewing the studies prepared as part of the approval of the Southeast Quarry circa 1980s to identify land use and ecological conditions, as well as any archaeology studies that were undertaken. Walker will consider pre-development conditions as part of its end-use planning.
Six Nations of the Grand River	**Resource Recovery/Waste Diversion at Walker** Does Walker have a diversion program currently in place for South Landfill Phase 1?	Walker has several resource recovery (diversion) programs in-place at its Campus for materials that can be economically recovered from incoming waste, such as organics, shingles and wood. Additionally, Walker focuses on 'source-separation' where recyclables and organics are separated early in the waste management chain and before they are contaminated with other wastes which makes them challenging to recover and reuse. For example, our source-separated organics program, where we compost food waste from the Green Bin program.
Six Nations of the Grand River	**Engagement & Consultation** Guidance provided by Six Nations of the Grand River on engagement and consultation expectations/requirements throughout the EA process.	When consulting with Six Nations of the Grand River, Walker will ensure that this guidance is considered.
Six Nations of the Grand River	**Restoration & Rehabilitation of Phase 2 Post-Closure** Request for Walker to identify species of interest and importance to Six Nations of the Grand River during the EA and for site rehabilitation purposes. Restoration planning for the South Landfill Phase 2 should consider planting of tree/plant species of interest and importance to Six Nations of the Grand River. A 10:1 replanting ratio, and 1:1 ratio for deadfall is recommended for post-closure landfill rehabilitation.	Walker will confirm species of interest and importance with Six Nations of the Grand River during the EA, including consideration for restoration planning.
Six Nations of the Grand River	**Buffers along Watercourses** 60-m setbacks from watercourses (i.e., 10 Mile Creek) and other natural features are preferred	Setbacks from watercourses and other natural features will be considered as part of the identification and development of impact management measures during the EA.
Six Nations of the Grand River	**Best Practices for Landfill Sites** Recommendations provided on best practices for site operations, such as wildlife-friendly fencing, litter mitigation, and use of bird and bat-friendly lighting.	Best practices will be considered as part of the identification and development of impact management measures during the EA.
Six Nations of the Grand River	**Cumulative Effects** Inquiry into whether Walker is going to consider cumulative effects as part of the EA	Walker is proposing to include an assessment of cumulative effects in the EA, as noted in Section 7.2 - Impact Assessment of the Preferred Method of this ToR.

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Indigenous Community/Agency	Topic / Summary of Comments Received	Walker Response
Six Nations of the Grand River	**Accommodations** Costs associated with meetings and document review during the EA process discussed, as well as other accommodation opportunities.	Walker agrees with the accommodation rates outlined by Six Nations of the Grand River for meetings and document review. As part of this EA, Walker is open to discussing other accommodation opportunities as the project progresses.
Six Nations of the Grand River	**Training & Job Opportunities** Interest in jobs/career opportunities, training, and co-op placements at Walker	Walker will connect with Indigenous employment agencies/organizations to discuss potential jobs/careers/training/co-op opportunities.
Six Nations of the Grand River	**Niagara Resource Management Campus Tour** Interest expressed in a tour of Walker's Niagara Resource Management Campus in Spring/Summer 2024	Walker will schedule a tour for Spring/Summer 2024.

Public

The following table summarizes comments received by members of the public and Walker's response during the development of the ToR. Full details can be found in the RoC.

Table 9.9 Summary of Comments Received from the Public

Topic	Summary of Comments Received	Walker Response
Property Value Protection	Concern regarding potential loss of property value	The Economic Environment Impact Assessment will include a property value impact assessment (see Appendix C-9).
Open House #1 Event Feedback	Attendees expressed that materials presented were helpful in describing the project and that the event was accessible.	Walker will incorporate this feedback into the design of future public information sessions.
Toronto Waste	Will South Landfill Phase 2 accept waste from outside of Niagara?	The South Landfill Phase 2 will manage waste generated in Niagara as a first priority to ensure disposal capacity for the local community. Walker is proposing a service area of Niagara Region, Southern, and Southwestern Ontario to provide flexibility/contingency (e.g., a natural disaster such as tornado in an adjacent municipality).
EA Process	Clarification sought on EA process timelines and timing of future public events	Walker updated its project website to include approximate timelines for key project milestones (www.southlandfillphase2.com).
Community Benefits	Inquiries received from local residents about potential benefits of being a near neighbour to the Campus and proposed Phase 2 site location	Walker will look to enhance its existing annual Neighbour Appreciation BBQ/Campus Open House event by including free compost as well as identifying other opportunities via direct dialogue with neighbours. The EA will also identify impact mitigation and management recommendations as part of the overall effects assessment (see Section 7.2 of the ToR).
Need for Future Niagara Disposal Capacity	Businesses and residents expressed support for the provision of future waste disposal capacity in Niagara Region	The South Landfill Phase 2 will manage waste generated in Niagara as a first priority to ensure disposal capacity for the local community for the next 20 years.
Community Liaison Committee	Will Walker be establishing a Community Liaison Committee for this EA?	Walker will attempt to establish a Community Liaison Committee during the EA stage as noted in Section 9.2.2 - Proposed Consultation Activities of the ToR.

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Topic	Summary of Comments Received	Walker Response
Overall Project Feedback	Open House #1 attendees provided positive feedback on the project, stating that they are not concerned with the proposal.	Walker will consider this feedback as part of the EA.
Southeast Quarry's Current Agricultural Rehabilitation Plan (End-use)	Interest in the existing rehabilitation plan for the Southeast Quarry	Walker will assess agricultural impacts as part of the Agricultural Impact Assessment (see Appendix C-6). Walker will evaluate end use options for the South Landfill Phase 2 including an agricultural end use.
Odour	Will there be more odour present in the community?	The Atmospheric Environment Impact Assessment will include an odour assessment (see Appendix C-3).
Traffic	Will traffic patterns change in the community?	The Transportation Impact Assessment will evaluate changes in traffic patterns in the local community (see Appendix C-7).
Utilization of Landfill Gas	Supportive of renewable energy generation from landfill gas. Will Phase 2 produce renewable energy?	As part of this EA, Walker will be exploring how landfill gas produced from Phase 2 can be incorporated into the existing landfill gas utilization facility at the Walker Campus.
Incineration	Is incineration planned as part of the South Landfill Phase 2 project?	Walker is not considering incineration as part of this EA.
Project Location	Provide larger maps on the proposed location of Phase 2 (i.e., the map in the Notice of Commencement was hard to read).	Walker will incorporate this feedback into future project visual aids/maps/Notices.
Leachate	Concern about preventing leachate from impacting the 10 Mile Creek	Landfill design measures including the landfill liner, leachate collection system, and landfill cap will prevent leachate from coming into contact with 10 Mile Creek. The Surface Water Impact Assessment will include a water quality impact assessment of the 10 Mile Creek (see Appendix C-2).
Hours of Operation	Will the operating hours for South Landfill Phase 2 change from the current operating hours of Phase 1?	Walker does not anticipate changing the operating hours; however, this EA will assess the impact of operating hours on things like traffic patterns, noise, etc.
Site Rehabilitation & Naturalization	Recommendations to increase tree plantings around this site, specifically evergreens and regionally native species. Recommendations to improve wildlife corridors/connectively of natural spaces on buffer lands surrounding the Walker Campus.	Walker will consider this input as part of the mitigation, community benefits, and end-use elements of this EA.
Communication with Walker	Community members requested increased communication from Walker in the community	Walker will incorporate this input into the EA and existing Campus operations.
Existing Campus Operations	Range of feedback on existing Campus operations ranging from support of Walker's community litter clean-up efforts and improved blast techniques to feedback on occasional nuisance impacts such as dust, noise, odour, and visual.	Walker has shared this feedback with Campus operations for follow-up.
Partnership Opportunities	Inquiries about potential collaborative opportunities for environmental education and awareness (i.e., waste management, composting, etc.)	Walker expressed interest and scheduled meetings to further discuss environmental education and awareness collaboration opportunities with local educational institutions/community groups.

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Topic	Summary of Comments Received	Walker Response
10 Mile Creek Trail Reopening	Inquiry into the reopening of the 10 Mile Creek trail on Walker's Campus with enhancements/interpretive signage.	With construction of the RNG facility complete, Walker will be reopening the trail in the summer of 2024.
Economic Opportunities	Inquiries into the jobs and continued economic opportunities in the local community.	The Economic Environment Impact Assessment will identify the economic impacts to the local community (Niagara Region) and Province overall (see Appendix C-9).
Community Character	Will the community character change due to the development of Phase 2?	The Social Environment Impact Assessment will assess social impacts including changes to the local community characteristics (see Appendix C-8).
Job Opportunities	Inquiry about whether there will be job opportunities associated with Phase 2 and/or if there are current positions available at Walker.	Walker directed the inquiry to the landing page where current opportunities are posted on the company website: https://walkerind.com/current-opportunities/. Walker provides a range of careers and is always on the lookout for new candidates.

9.2 Proposed EA Consultation Plan

This section outlines the engagement and consultation activities to be carried out as part of the preparation of the Environmental Assessment (EA). The consultation efforts listed in this section will continue to build on the engagement and consultation activities carried out during the ToR.

9.2.1 Guiding Principles and Objectives

As a 5th generation family-owned company, Walker is committed to meaningful and effective engagement and consultation. A program for consulting with interested persons was developed as part of initiating the Terms of Reference process in accordance with MECP's *Code of Practice – Preparing and Reviewing Environmental Assessments in Ontario (Ministry of the Environment, 2014);* and, as required by Section 5.1 of the *EA Act*. At the outset, four consultation principles were established as part of developing the program:

– Timeliness – Engage early and often
– Flexibility – Accommodate the changing needs of participants and issues that may arise
– Inclusiveness – Engage widely by offering multiple consultation opportunities through a variety of consultation forums
– Transparency – Opportunities to participate in consultation activities will be communicated through multiple communication channels, and the results of consultation will be clearly documented

With these four overarching principles in mind, four objectives were developed for the Consultation Program that were carried throughout the consultation process:

– Generate awareness of the Project and EA process while creating opportunities for participation throughout the EA process within the surrounding community
– Facilitate constructive input from consultation participants prior to key decision-making milestones in the EA process
– Provide ongoing opportunities for feedback and input, and for issues and concerns to be raised, discussed, and resolved to the extent possible
– Document input received through the consultation process and demonstrate the impact of consultation on decision-making

The proposed EA consultation plan has been designed to create two-way dialogue between Walker and review agencies, Indigenous peoples, and the public. It will allow for multiple opportunities as well as a variety of methods for input and feedback to be considered throughout the EA.

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9.2.2 Proposed Consultation Activities

Proposed consultation activities will include, but not be limited to, those initiated during preparation of the ToR. Consultation activities that will continue during the EA include:

Project website

The Project website (southlandfillphase2.com) launched during the ToR will continue to be the go-to source of information about the Project. The website includes detailed and up-to-date information about Walker, the Project, the EA process, and consultation opportunities. It also has a dedicated documentation section where all technical reports and consultation materials can be found.

Dedicated toll-free telephone line and email address

The toll-free telephone number (1-866-699-9425) and email address (**info@southlandfillphase2.com**) will continue to be available as a means for interested parties to contact project team members directly. All inquiries received by telephone and email will be followed up with within 48 hours.

Public Events

Two drop-in style Public Open Houses are proposed during the EA and are further described in **Section 9.2.4**. Non-project-specific events traditionally hosted and/or attended by Walker will also provide opportunities for Project information to be shared with the public, and for the public to ask questions and provide comments throughout the EA process. Examples of such events include Walker's Neighbour Appreciation BBQ & Open House (typically June) and its Holiday Gathering where over 200+ neighbours attend to learn more about Walker, discuss happenings in the neighbour and celebrate community.

Meetings

Individual/group meetings will be scheduled, as appropriate, to discuss project-specific issues with a review agency or agencies, Indigenous communities and agencies, and the public.

Community Liaison Committee

Walker will attempt to establish of a Community Liaison Committee (CLC) from a range of interested community members, specifically neighbours of Walker's Campus, local municipal representatives, local economic associations and local environmental associations/groups. The CLC will serve as an advisory body that will provide a forum at key milestones for community input during the EA.

Landfill Tours

Walker will continue to provide an open invitation for interested individuals and groups to tour the Campus. The tours provide an opportunity to learn more about how Walker constructs, operates, and manages a modern landfill. Since landfills are only one component of the Campus, tours will also provide an overview of Walker's other operations at the Campus including organics processing, renewable energy, biosolids management, etc.

Media

Walker will communicate with the media to provide important updates about the Project and answer questions, as appropriate.

Project Notices and Updates (electronic and conventional mailouts)

Building on the Project distribution list created during the ToR, Walker will continue to provide important updates and notifications for upcoming consultation opportunities by email and print mail drops to residents within approximately

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500 to 2.5 km. Key Project milestones will also be communicated via ads in local newspapers and updates to the Project website.

Further description of EA-specific consultation activities tied to the key decision-making milestones in the EA process are outlined in **Section 9.2.4**. They include Project notices, public open houses, and opportunities to review and comment on the draft and final EA documents.

9.2.3 Obtaining Input from Interested Persons

Input will be obtained from interested persons during the South Landfill Phase 2 EA through a variety of means specific to each group as follows:

Public

Input from the public will be received primarily through written correspondence via the Project website and e-mails, documented telephone calls via the project specific 1-800 number, verbal discussions held at Public Open House events, and additional individual or group meetings.

Review Agencies

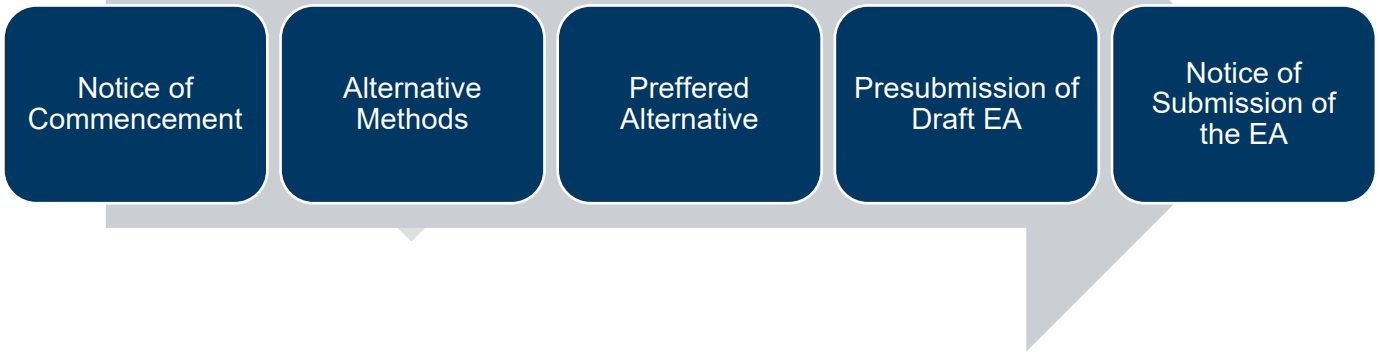
Input from interested review agencies will be received primarily through written correspondence and e-mails, individual or group meetings (e.g., Government Review Team meetings).

Indigenous Peoples

Input from interested Indigenous communities, agencies, or individuals will be obtained primarily through written correspondence and e-mails, documented telephone follow-up calls and, if interest is expressed, individual or group meetings. It is Walker's objective to develop meaningful opportunities to engage with Indigenous peoples throughout the EA process by providing access to technical information and the project team's technical expertise as well as receiving input and being responsive to any concerns that may arise.

9.2.4 Key Decision-making Milestones when Consultation will Occur

In addition to the ongoing consultation opportunities available to interested parties throughout the preparation of the EA, there are several important consultation points that align with key decision-making milestones in the EA process. These consultation points are illustrated below and further described in the following sections.



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Notice of Commencement

Following the Minister's approval of the Terms of Reference, Walker will issue a Notice of Commencement of Environmental Assessment. The Notice will provide information to interested parties about the next steps in the process, what is being proposed, and how to become involved.

Alternative Methods (Public Event 1)

- Confirm the Final Environmental Assessment Study Area
- Present Study Area existing conditions
- Review the developed Alternative Methods
- Confirm the evaluation criteria and indicators to be applied to the Alternative Methods, and the evaluation methodology to be used

Preferred Alternative (Public Event 2)

- Review the comparative evaluation process and confirm the recommended alternative
- Confirm the methodology for the detailed impact assessment of the preferred alternative

Review of the Draft EA Report

- Review the potential environmental effects, recommended impact management measures, resulting net environmental effects, proposed monitoring requirements, and proposed approvals/permits required for implementing the Preferred Method.
- Review the draft EA Report prior to its finalization and formal submission to the Minister for approval.

Notice of Submission of the EA

- Initiates the formal review of the EA Report

9.2.5 Proposed Issues Resolution Strategy

Walker recognizes that there may be issues raised or disputes during preparation of the South Landfill Phase 2 EA that may be difficult to resolve. As such, Walker has developed an issues resolution strategy as part of the ToR. This strategy will benefit all parties involved by providing an agreed to and well understood issues resolution process to ensure that disputes are effectively and appropriately dealt with.

Should an issue or dispute arise during preparation of the EA, Walker will discuss the nature of the issue or dispute with the interested persons and attempt, in good faith, to reach a resolution that is agreeable to both Walker and the interested persons. A comment disposition table will used to document comments and responses, and issue resolution meetings will be organised, as appropriate. If a mutually agreeable resolution is not achieved prior to submission of the EA, Walker will refer the matter to MECP. With this general framework in mind, a more detailed issue resolution strategy will be developed as part of the EA.

10. Flexibility of this Terms of Reference

If approval of the ToR is granted by the Minister, then the South Landfill Phase 2 EA must be prepared in accordance with the approved ToR. Notwithstanding this, circumstances may arise during preparation of the EA that could prevent the proposed framework from being carried out exactly as outlined in the approved ToR. As a result, flexibility has been provided in the ToR to allow Walker to adjust certain aspects of the proposed framework or accommodate new

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circumstances during preparation of the EA without the need to prepare and submit a new ToR to the Minister for approval. **Table 10.1** lists the aspects/circumstances where Walker is seeking flexibility.

Table 10.1 Flexibility of the Terms of Reference

Aspect / Circumstance	Process for Confirming / Finalizing
Description of and rationale for the undertaking A preliminary description of the proposed undertaking is provided in the ToR: – Increasing the approved capacity of the South Landfill by approximately 18 million m³ by locating additional disposal capacity to the east of the existing South Landfill within the area currently occupied by the Southeast Quarry. – The proposed increased disposal capacity will allow disposal of residual solid, non-hazardous residential and IC&I residual materials generated predominantly within the Niagara, Southern, and Southwestern Ontario regions to continue at the South Landfill.	A detailed description of and the rationale for the proposed undertaking will be provided as part of preparing the EA once a specific undertaking is selected from the Alternative Methods of Carrying Out the Undertaking that are to be considered.
Description of and Rationale for the Alternative Methods The ToR identifies that the Alternative Methods of Carrying Out the Undertaking that will be considered by Walker as part of the South Landfill Phase 2 EA include alternative site configuration options (e.g., footprint dimensions, heights, contours, side slopes, etc.) within the "envelope" currently occupied by the active Southeast Quarry.	The site configuration Alternative Methods within the envelope of the Southeast Quarry will be developed and described in detail as part of preparing the South Landfill Phase 2 EA in order to complete the assessment and comparative evaluation of Alternative Methods. Similarly, the rationale for each of the site configuration Alternative Methods will be developed as part of preparing the EA. The finalization of the Alternative Methods and their rationale will occur after presenting their details and consulting on them with Indigenous communities, review agencies, and the public.
Preliminary Study Area The preliminary study area identified in the ToR includes the Site Study Area (SSA), Local Study Area (LSA), and Regional Study Area (RSA): – The SSA is common for all technical disciplines and will include all lands (76.12 ha) owned and operated by Walker that are within the existing approved boundaries of the Southeast Quarry. – The LSA will be specific to each technical discipline but will extend approximately 1-2 km beyond the SSA boundary and can generally be described as including the Walker Campus and the immediate surrounding area. – The RSA will be specific to each technical discipline. The RSA will generally be based on administrative and/or natural boundaries applicable to each discipline and the parameters of their associated criteria.	The preliminary study area will be finalized during preparation of the EA when the Alternative Methods have been confirmed and the potential environmental effects are better known.
Detailed Description of the Environment A brief description of the environment within the preliminary study area addressing all components of the *EA Act* definition of the environment (i.e., natural, built, social, economic, and cultural) has been provided in the ToR.	A more detailed description of the environment will be provided during preparation of the EA reflecting the final study area using available existing information sources and investigative studies.
Investigative Studies/Work Plans A description of the investigative studies and proposed work plans has been provided in the ToR.	The proposed work plans will be reconfirmed as part of the EA.
Potential Effects A preliminary list of the types of potential environmental effects that will be assessed during preparation of the EA has been included in the ToR.	The specific potential environmental effects will be determined during the preparation of the EA.

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Aspect / Circumstance	Process for Confirming / Finalizing
Evaluation Criteria A preliminary list of evaluation criteria and indicators has been provided in the ToR.	The preliminary evaluation criteria and indicators will be finalized prior to application during preparation of the EA.
Consultation A preliminary list of consultation activities proposed to be carried out during the preparation of the EA are provided in the ToR as follows: – Project website – Dedicated toll-free telephone line and email address – Public Events (including two Public Open Houses) – Meetings – Landfill tours – Project notices and updates	As part of the EA, the consultation activities will include those listed in the ToR but may include additional activities, as appropriate.

11. Other Approvals Required

To implement the proposed undertaking, approvals are required under other legislation in addition to approval under the *EA Act*. The types of approvals that potentially apply may include, but are not limited to:

- *Ontario Environmental Protection Act* (EPA) – MECP
- *Ontario Water Resources Act* (OWRA) – MECP
- *Aggregate Resources Act (ARA)* – MNRF
- *Conservation Authorities Act* – NPCA
- *Planning Act*

Official Plan and Zoning By-law amendment approvals may also be required.

The proposed undertaking is not described in the Physical Activities Regulations (Project List) and is therefore not a designated project under the *Impact Assessment Act* (IAA) and not subject to review under IAA.

The actual approvals required for the preferred undertaking will be identified during preparation of the South Landfill Phase 2 EA.

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Appendices

Appendix A

Glossary of Terms

Acronym	Definition
ARA	Aggregate Resources Act
CLC	Community Liaison Committee
CMA	Census Metropolitan Area
CN	Canadian National Rail
D&O	Design & Operations
DFO	Fisheries and Oceans Canada
DSBN	District School Board of Niagara
EA	Environmental Assessment
EA Act	Ontario Environmental Assessment Act
ECA	Environmental Compliance Approval
ECCC	Environment and Climate Change Canada
EPA	Environmental Protection Act
GDP	Gross Domestic Product
GGH	Greater Golden Horseshoe
GHG	Greenhouse Gases
GRT	Government Review Team
GWCS	Groundwater Collection Trench
IAA	Impact Assessment Act
IC&I	Industrial Commercial and Institutional
LCS	Leachate Collection System
LSA	Local Study Area
MCM	Ministry of Citizenship and Multiculturalism
MECP	Ontario Ministry of the Environment, Conservation and Parks
MHSTCI	Ministry of Heritage, Sport, Tourism and Culture Industries
MMAH	Ontario Ministry of Municipal Affairs and Housing
MNRF	Ontario Ministry of Natural Resources and Forestry
MTO	Ontario Ministry of Transportation
NCDSB	Niagara Catholic District School Board
NEC	Niagara Escarpment Commission
NEP	Niagara Escarpment Plan
NFOP	Niagara Falls Official Plan
NPCA	Niagara Peninsula Conservation Authority
NROP	Niagara Regional Official Plan
NRT	Niagara Regional Transit
OH	Open House

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Acronym	Definition
OMAFRA	Ontario Ministry of Agriculture, Food & Rural Affairs
OWRA	Ontario Water Resources Act
POR	Point of Reception
PPS	Provincial Policy Statement
PSW	Provincially Significant Wetland
RoC	Record of Consultation
RNG	Renewable Natural Gas
RSA	Regional Study Area
SAR	Species at Risk
SOP	Standard Operating Procedures
SSA	Site Study Area
SWM	Stormwater Management System
TBC	To Be Confirmed
TBD	To Be Determined
TC	Transport Canada
ToR	Terms of Reference
VOC	Volatile Organic Compound
WEG	Walker Environmental Group Inc.

Unit	Definition
ac	Acres
dBA	A-weighted Decibel
ha	Hectare
Km	Kilometre
L	Litre
M	Metre
mm	Millimetre
m^3	Cubic metres
μg	Microgram

Term	Definition
Advantage	A relative term used to indicate that a particular condition is deemed to offer a benefit when compared to another condition.
Alternative Methods of Carrying out the Undertaking (Interchangeable with Alternative Methods)	Different ways of doing the same activity.
Approval	Permission granted by an authorized individual or organization for an undertaking to proceed. This may be in the form of program approval, certificate of approval or provisional certificate of approval.

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Term	Definition
Built Environment	The human-made surroundings that provide the setting for human activity.
Category	A broader category, group or element of the environment used for classifying a given set of criteria.
Commitments	Represents a pledge from a proponent about a certain course of action, that is, “I will do this, at this time, in this way.” Proponents document obligations and responsibilities, which they agree to follow, in environmental assessment documentation. The Minister of the Environment, Conservation and Parks, with the agreement of Cabinet, has the authority to give approval to proceed with the undertaking. The commitments within the document are often made legally binding as a condition of approval.
Compliance Monitoring	An assessment of whether an undertaking has been constructed, implemented, and/or operated in accordance with the commitments made in the environmental assessment and the conditions of the Environmental Assessment Act approval.
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.).
Cover material	Material used to cover the waste in the disposal cells during or following landfilling operations. May be daily, intermediate or final.
Criteria/ Criterion	A set of principles or standards used to compare and judge alternatives. (plural = “criteria”, singular = “criterion”).
Cultural Environment	The ways of living developed by a community and passed on from generation to generation, including customs, practices, places, objects, artistic expressions, and values.
Design and operations (D&O) plan	A document required for obtaining a Certificate of Approval, which describes in detail the function, elements or features of the landfill site/facility, and how a landfill site/facility would function including its monitoring and control/management systems.
Design capacity (Total Disposal Volume)	The maximum 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.
Disadvantage	A relative term used to indicate that a particular condition is deemed to be unfavourable or of an inferior condition when compared with another condition.
Economic Environment	The economic conditions that influence the life of humans or a community, including factors such as employment, income, and wealth.
Environmental Compliance Approval (ECA)	Technical approval of the Facility issued by MECP under Sections 9 and 27 of the Environmental Protection Act and Section 53 of the Ontario Water Resources Act).
Environment	As defined by the Environmental Assessment Act, environment means: - Air, land or water, - Plant and animal life, including human life,

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Term	Definition
	- 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	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 Evaluation criteria Evaluation criteria are considerations or factors taken into account in assessing the advantages and disadvantages of various alternatives being considered. For the purposes of this Terms of Reference, an Environmental Assessment refers to the process and related documentation, including the submission of a Terms of Reference and final Environmental Assessment Report for approval by the Minister of the Environment, in accordance with the requirements of Part II.3 of the EA Act.
Environmental Assessment Act (EA Act)	Legislation that defines a decision-making process used to promote good environmental planning by assessing the potential effects of certain activities on the environment. The purpose of the EA Act is the betterment of the people of the whole or any part of Ontario by providing for the protection, conservation, and wise management in Ontario of the environment.
Environmental Effect	The effect that a proposed undertaking or its alternatives has or could potentially have on the environment, either positive or negative, direct or indirect, short- or long-term.
Evaluation	A formal process for comparatively assessing the advantages and disadvantages of alternatives (see Evaluation Methodology).
Evaluation Methodology	A formal process for comparatively assessing the advantages and disadvantages of alternatives and establishing an order of preference among alternatives.
Hazardous waste	Any residual hazardous materials which by their nature are potentially hazardous to human health and/or the environment, as well as any materials, wastes or objects assimilated to a hazardous material. Hazardous waste is defined by Ontario Regulation 347 and may be explosive, gaseous, flammable, toxic, radioactive, corrosive, combustive or leachable.
Impact Assessment	The process of studying and identifying the future consequences of a current or proposed action.
Indicator	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. The gases produced from the wastes disposed in a landfill; the main constituents are

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Term	Definition
	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.
Mitigation	Action(s) that remove or alleviate to some degree the potential negative effects associated with an activity.
Monitoring	A systematic method for collecting information using standard observations according to a schedule and over a sustained period of time.
Natural Environment	A term that encompasses all living and non-living things occurring naturally on Earth or some region thereof.
Net Effects	Positive or negative environmental effects of a project and related activities that will remain after mitigation and impact management measures have been applied.
Net Effects Analysis	The process of determining and documenting the net effects associated with each indicator for each alternative being considered.
Non-hazardous waste	Non-hazardous wastes includes all solid waste that does not meet the definition of hazardous waste and includes designated wastes such as asbestos waste.
Potential Effect	An effect that is deemed possible to result from an activity.
Preferred Alternative	The alternative selected as the undertaking for which approval will be sought, based on an approach for identifying a preferred alternative, namely: - Identify a recommended Alternative Method, - Consult review agencies and the public on the recommended alternative, - Confirm or select the preferred alternative based on the comments received.
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.
Public	Means the general public, individual members of the public who may be affected by or have an interest in a project and special interest groups.
Rationale	Explanation of the logical reasons or principles employed in consciously arriving at a decision or estimate.
Reasoned Argument/ Trade-off Method	A comparative evaluation method based on net effects / advantages and disadvantages and explained in narrative terms (rationale). The process of examining the net effects and key trade-offs of each alternative in order to provide a clear rationale for the preferred alternative.
Recommended Alternative Method	An Alternative Method selected as first place based on the results of a comparative evaluation process.
Record of Consultation	Describes the consultation activities undertaken during the preparation of the EA Terms of Reference.
Review Agencies	Means government agencies, ministries, or public authorities or bodies whose mandates require them to

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Term	Definition
	have jurisdiction over matters affected or potentially affected by projects.
Service life	The period of time during which the components of a properly designed and maintained engineered facility will function and perform as designed.
Site life	The period of time during which the landfill can continue to accept wastes.
Social Environment	Represents the external conditions under which people engage in social activity within their community.
Terms of Reference (ToR)	The first step in an application for approval to proceed with a project or undertaking under the Environmental Assessment Act is the submission of a Terms of Reference (ToR) for the Environmental Assessment (EA). Public and agency consultation is required on the preparation and submission of the ToR to the MECP. Approval is required by the MECP. If approved, the ToR provides a framework / work plan for the EA
Trade-offs	Trade-offs A balancing of attributes, all of which are not attainable at the same time. Giving up of one thing in return for another

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Appendix B

Evaluation Criteria

Preliminary Evaluation Criteria and Indicators for Assessing the Alternative Methods of Carrying Out the Undertaking

The preliminary evaluation criteria and indicators for assessing the Alternative Methods of Carrying Out the Undertaking as part of the South Landfill Phase 2 Environmental Assessment (EA) include those set out in Tables 1-10. The preliminary evaluation criteria and indicators are grouped according to the following components based on the definition of the environment as provided in the *EA Act*: Natural, Built, Social, Economic, and Cultural. In addition, the potential data sources for the criteria and indicators are provided in Tables 1-10.

The preliminary evaluation criteria and indicators will be finalized during preparation of the South Landfill Phase 2 EA.

Table 1 ***Preliminary Criteria, Indicators, and Data Sources – Geology and Hydrogeology***

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Geology & Hydrogeology	Effect on groundwater quality	– Predicted effects to groundwater quality at property boundaries and off-site	– Hydrogeological and geotechnical studies – Water well records – Determination of water well users in the area – Annual Monitoring Reports – Proposed leachate control concept designs – Environment Canada Canadian Climate Normals – Leachate generation assessment – Provincial Water Quality Monitoring Network (PWQMN) – Geology and Hydrogeology Existing Conditions Report
	Effect on groundwater flow	– Predicted effects to groundwater flow at property boundaries and off-site	– Hydrogeological and geotechnical studies – Water well records – Determination of water well users in the area – Annual Monitoring Reports – Geology and Hydrogeology Existing Conditions Report

Table 2 Preliminary Criteria, Indicators, and Data Sources – Surface Water Resources

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Surface Water Resources	Effect on surface water quality	– Predicted effects on surface water quality on-site and off-site	– Topographic maps – Surface Water Existing Conditions Report – Air photos – Facility layout, drainage maps and figures – Proposed on-site stormwater management concept designs for vertical expansion alternatives – Existing leachate management system – Annual Monitoring Report – Interviews and discussions with Ministry of Environment, Conservation and Parks (MECP) staff, Conservation Authorities, and Environment Canada – Published water quality and flow information from MECP, Environment Canada and conservation authorities – Site reconnaissance – Provincial Water Quality Monitoring Network (PWQMN) – Surface Water Existing Conditions Report
	Effect on surface water quantity	– Predicted change in drainage areas and land use – Predicted occurrence and degree of off site effects	

Table 3 Preliminary Criteria, Indicators, and Data Sources – Atmospheric Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Atmospheric Environment	Effect of air quality on off-site receptors	– Predicted off-site point of impingement concentrations ($\mu g/m^3$) of indicator compounds – Number of off-site receptors potentially affected (residential properties, public facilities, businesses, and institutions) – Frequency of any exceedance of applicable standards, limits, or guidelines at identified receptors.	– Environment Canada or MECP hourly meteorological data and climate normals – Applicable MECP guidelines and technical standards (i.e., O. Reg. 419/05, Standard, guidelines, and screening levels, MECP Ambient Air Quality Criteria, and Canadian Ambient Air Quality Standards) – Aerial photographic mapping and field reconnaissance – Off-Site receptors confirmed on recent mapping – Emissions Summary and Dispersion Modelling (ESDM) reports – Annual Monitoring Reports – Available background ambient air data, obtained from sources such as: • Site ambient air monitoring • Local Air Monitoring Network data • National Air Pollution Surveillance (NAPS) and/or MECP Ambient Air Monitoring Stations – Waste materials, landfill gas, and leachate characterization and sampling data – Proposed facility characteristics – Landfill design and operation data and associated topography – Site dust / air quality complaint history – Atmospheric Existing Conditions Report
	Effect of odours on off-site receptors	– Predicted off-Site odour concentrations ($\mu g /m^3$ and odour units) – Number of off-Site receptors potentially affected (residential properties, public facilities, businesses and institutions) – Frequency of any exceedance of applicable standards, limits, or guidelines at identified receptors	– Published odour studies for similar source types – Site specific odour source data – Environment Canada or MECP hourly meteorological data and climate normals – Applicable MECP guidelines and technical standards – Site odour complaint history – Annual Monitoring Reports – Aerial photographic mapping and field reconnaissance – Off-site receptors confirmed on recent mapping – Odour assessment reports – Waste materials, landfill gas, and leachate characterization and sampling data – Proposed facility characteristics – Landfill design and operation data and associated topography – Atmospheric Existing Conditions Report
	Effect of noise on off-site receptors	– Predicted off-Site noise level – Number of off-Site receptors potentially affected (residential properties, public facilities, businesses, and institutions) – Predicted sound from traffic	– Site-specific equipment noise measurements – Manufacturer-provided noise specifications – Traffic reports for existing and future conditions – Applicable MECP guidelines and technical standards (Noise guidelines for landfill sites, Oct, 1998; NPC-300, August, 2013; NPC-233). – Aerial photographic mapping and field reconnaissance to confirm off-Site receptors – Land Use Zoning Plans – Acoustic Assessment Reports – Annual Monitoring Reports – Proposed facility operational characteristics and scenarios – Landfill design and operation data and associated topography – Offsite topography – Atmospheric Existing Conditions Report

Table 4 Preliminary Criteria, Indicators, and Data Sources – Terrestrial and Aquatic Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Terrestrial & Aquatic Environment	Effect on terrestrial ecosystems	– Predicted impact on vegetation communities – Predicted impact on wildlife habitat – Predicted impact on vegetation and wildlife including rare, threatened or endangered species	– Previous site surveys – Site investigations – Ministry of Natural Resources and Forestry (MNRF) databases – MECP databases – Fisheries and Oceans Canada (DFO) mapping – Niagara Peninsula Conservation Authority (NPCA) databases – Beaverdams and Shriners Creek Watershed Plan – Ontario Breeding Bird Atlas (OBBA) – Ontario Butterfly Atlas (OBA) – Ontario Reptile and Amphibian Atlas (ORAA) – Rare Vascular Plants of Ontario – Species at Risk of Ontario List (SARO) – Natural Environment Existing Conditions – Atlas of Canada (Toporama) – Niagara Official Plan – City of Niagara Falls Official Plan – Niagara Escarpment Plan – Facility layout and figures
	Effect on aquatic ecosystems	– Predicted impact on aquatic habitat – Predicted impact on aquatic biota	
	Effect on rare (vulnerable), threatened or endangered species of flora or fauna or their habitat	– Predicted impact on rare, threatened, or endangered flora and fauna species and their habitat	
	Effect on designated wetlands	– Predicted impact on designated wetlands	
	Effect on wildlife habitat, populations, corridors or movement	– Predicted impact on wildlife habitat, populations, corridors or movement	
	Effect on fish or their habitat, spawning, movement or environmental conditions (e.g., water temperature, turbidity, etc.)	– Predicted impact on fish, fish habitat, spawning behaviour, movement or environmental conditions	
	Effect on locally important or valued ecosystems or vegetation	– Predicted impact on locally important or valued ecosystems or vegetation	

Table 5 Preliminary Criteria, Indicators, and Data Sources – Land Use

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Land Use	Effect on existing and proposed planned future land uses	– Current and planned future land use – Proximity to off-Site sensitive land uses (i.e., dwellings, churches, parks)	– Aerial photographic mapping and field investigations – Land Use Existing Conditions Report – Site surveys and assessments – Published data sources (i.e., Official Plans, Zoning By-laws) – Provincial Policy Statement – Growth Plan – Discussions with municipality and, if required, property owners local to the Site – Review of findings of all the supporting studies (in relation to relevant policies and provincial guidelines)
	Effect on views of the facility	– Predicted changes in views of the facility from the surrounding area – Visibility of project features from selected receptor locations – Level of visual contrast of project features from selected receptor locations	– Alternative methods – Site grading plans – Aerial mapping and field investigation – Land Use Existing Conditions Report – Satellite imagery – Google Earth – Web mapping sites – Existing Site-specific studies and reports – Visualization software and simulations

Table 6 Preliminary Criteria, Indicators, and Data Sources – Agricultural Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Agriculture	Effects on existing Agricultural Land Base	– CLI Soil Capability classification – Soil Suitability classification – Climate – Level of Fragmentation – Proximity to Non-farm Land Uses	– Provincial Policy Statement, 2020 – Niagara Escarpment Plan – Greenbelt Plan – Niagara Falls Official Plan – Niagara Falls Zoning – Aerial photographic mapping and field reconnaissance – Canadian Lands Inventory (CLI) mapping – Agricultural Existing Conditions Report
	Effects on Agri-Food Network	– Type(s) and proximity of agricultural operations – Type(s) and proximity of agricultural-related facilities – Predicted impacts on surrounding agricultural operations & agricultural-related facilities	– Agricultural Systems Portal – Field inventories

Table 7 Preliminary Criteria, Indicators, and Data Sources – Transportation

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Transportation	Effect on traffic	– Potential for traffic collisions – Operational Level of Service at intersections around the Campus	– Previous transportation studies – Local data (e.g., from Niagara Region, City of Niagara Falls, etc.) – Site-specific operations data and observations – Transportation Existing Conditions Report

Table 8 Preliminary Criteria, Indicators, and Data Sources – Social Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Social	Displacement of Residents from Houses	– The number of households/residents (property owners and tenants) to be displaced (i.e., forced relocation) by the project itself regardless of whether their property has been purchased or not. – The potential for or likelihood of voluntary out-migration of residents for consideration of the indirect effects on community character and cohesion.	– South Landfill Phase 2 project description – Field mapping of residences – Household/property owner questionnaire
	Disruption to Use and Enjoyment of Residential Properties	– The number of existing residential households and/or future households that are located at specific receptor locations and potentially affected by noise, dust, odour, traffic, agricultural and visual effects; and the potential for and likelihood of changes in the presence of vermin and gulls. – The number of existing residential households fronting/backing onto a haul route and potentially affected by changes in project related traffic and traffic noise. – Potential for or likelihood of changes in peoples' use of residential property.	– South Landfill Phase 2 project description – Field mapping of residences – Household/property owner questionnaire – Results from other discipline analyses
	Disruption to Use and Enjoyment of Public Facilities and Institutions	– The number of existing public facilities and institutions that may be affected by nuisance factors such as noise, dust, odour, traffic and visual effects; and the potential for and likelihood of changes in the presence of vermin and gulls. – Potential for or likelihood of changes in operations of public facilities and institutions. – Potential for or likelihood of changes in use and enjoyment of public facilities and institutions.	– South Landfill Phase 2 project description – Secondary source data – Field mapping of public facilities and institutions – Interviews with facility operators – Results from other discipline analyses
	Loss/ Disruption of Recreational Resources	– The number/nature of existing recreational resources and/or future features potentially affected by noise, dust, odour, visual effects and changes in project-related traffic; and the potential for and likelihood of changes in the presence of vermin and gulls. – Potential for or likelihood of changes in operations of recreational features. – Potential for or likelihood of changes in use and enjoyment of recreational resources.	– South Landfill Phase 2 project description – Secondary source data – Field mapping of public facilities and institutions – Interviews with recreational facility operators / recreational resource users – Interviews with key local and regional governmental agency representatives – Interviews with key stakeholders – Results from other discipline analyses

Environmental Component	Evaluation Criteria	Indicators	Data Sources
	Changes to Community Character	– Compatibility of landfill operations with the existing and likely future character of the community. – Compatibility of the proposed end use with the existing and likely future character of the community.	– South Landfill Phase 2 project description – Secondary source data – Public attitude research – Interviews with key local and regional governmental agency representatives – Interviews with key stakeholders – Results from social assessment and other discipline analyses
	Changes to Community Cohesion	– The extent of displacement. – The potential for or likelihood of voluntary out-migration. – Loss and the extent of disruption of recreational resources, public facilities and institutions, and the use and enjoyment of residential properties.	– South Landfill Phase 2 project description – Secondary source data – Public attitude research – Household/property owner questionnaire – Interviews with key local and regional governmental agency representatives – Interviews with key stakeholders – Results from other social assessment and other discipline analyses

Table 9 Preliminary Criteria, Indicators, and Data Sources – Economic Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Economic	Effect on Local Economy	– Impact on businesses • Disruption/displacement of businesses (including tourism and farms) • Business opportunities – Labour market impacts • Impact on direct, indirect, and induced employment – GDP impacts • Impact on direct, indirect, and induced GDP – Retention of economic benefits within local economy	– Interviews & surveys (businesses, associations, economic development organizations, labour organizations, etc.) – Economic development plans – Vendor/supplier data – Statistics Canada – Lightcast
	Effect on Real Estate	– Property value impacts	– Interviews (real estate association and realtors) – Teranet Geowarehouse – Canadian Real Estate Association
	Effect on Public Finance	– Impact on municipal revenue – Impacts on municipal cost – Impact on assessment base	– Interviews (municipal finance and other municipal departments) – Municipal financial documents – Financial information return reports
	Cost of Services	– Impact on customer cost of waste services	– Waste management industry scan – Waste management industry reports

Table 10 Preliminary Criteria, Indicators, and Data Sources – Archaeology and Built Heritage

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Archaeology and Built Heritage	Effect on known or potential significant archaeological resources	– Number and type of potentially significant, known archaeological sites affected. – Area (ha) of archaeological potential (i.e., lands with potential for the presence of significant archaeological resources) affected.	– Published data sources (e.g., City of Niagara Falls, Niagara Region, past archaeological assessments) – Ministry Citizenship and Multiculturalism Screening – Ontario Archaeological Sites Database records
	Effect on built heritage resources and cultural heritage landscapes	– Number and type of built heritage resources and cultural heritage landscapes displaced or disrupted	– Published data sources (e.g., City of Niagara Falls, City of Thorold, Niagara Region) – Ministry Citizenship and Multiculturalism Screening – Ontario Heritage Trust – Museums, archives, other historical sources (as applicable)

Appendix C

Proposed Work Plan

Introduction

There are a number of work plans proposed as part of Walker's South Landfill Phase 2 Environmental Assessment (EA) Terms of Reference (ToR). The proposed Work Plans include, but are not limited to, the following:

- Geology & Hydrogeology
- Surface Water Resources
- Atmospheric Environment (including Air Quality, Odour, and Noise)
- Terrestrial & Aquatic Environment
- Land Use
- Agricultural
- Transportation
- Social
- Economic
- Archaeology and Built Heritage

The following Work Plans outline what will be done during the EA to generate a more detailed description of the environment and how that information will be utilized in the assessment and evaluation of alternatives, as well as the assessment of impacts associated with the preferred alternative.

Climate change will be considered in the detailed impact assessment. Accordingly, the impact assessment will include description of the preferred alternative's greenhouse gas (GHG) emissions and potential effect on climate change, the potential effect of climate change on the preferred alternative, proposed impact management measures, and net effects.

Appendix C-1

Geology and Hydrogeology

The Geology and Hydrogeology Work Plan addresses both groundwater quality and groundwater flow. The following tasks will be undertaken to characterize existing environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures, and compare alternative methods of carrying out the undertaking:

- Compile and interpret information from existing data sources, including data sources listed in Table 1
- Conduct investigations to confirm site information compiled from existing documentation and document the findings in the Geology and Hydrogeology Existing Conditions Report that will form an appendix to the EA Report.
- Based on the Conceptual Designs developed for the Alternative Methods:
    - Conduct numerical groundwater flow modelling and predictive modelling of contaminating lifespan as per Ontario Regulation 232/98 for each alternative method.
    - Based on the Alternative Methods and the results of predictive modelling, identify the potential effects of each alternative on the geological and hydrogeological environment.
    - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the geological and hydrogeological component, rank the Alternative Methods and identify the Recommended Alternative from a geological and hydrogeological perspective.
- Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be carried out to identify potential environmental effects with more certainty. The impact assessment will include more site-specific impact management measures, and groundwater monitoring requirements will be clearly identified. The information and analysis will be documented in a Geology and Hydrogeology Impact Assessment Report that will form an appendix to the EA.

Table 1 Preliminary Criteria, Indicators, and Data Sources – Geology and Hydrogeology

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Geology & Hydrogeology	Effect on groundwater quality	– Predicted effects to groundwater quality at property boundaries and off-site	– Hydrogeological and geotechnical studies – Water well records – Determination of water well users in the area – Annual Monitoring Reports – Proposed leachate control concept designs – Environment Canada Canadian Climate Normals – Leachate generation assessment – Provincial Water Quality Monitoring Network (PWQMN) – Geology and Hydrogeology Existing Conditions Report
	Effect on groundwater flow	– Predicted effects to groundwater flow at property boundaries and off-site	– Hydrogeological and geotechnical studies – Water well records – Determination of water well users in the area – Annual Monitoring Reports – Geology and Hydrogeology Existing Conditions Report

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Appendix C-2

Surface Water Resources

The Surface Water Resources Work Plan addresses both surface water quality and surface water quantity. The following tasks will be undertaken to characterize existing environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures, and compare alternative methods of carrying out the undertaking:

- Compile and interpret information from existing data sources, including data sources listed in Table 2
- Conduct investigations to confirm site information compiled from existing documentation and document the findings in the Surface Water Existing Conditions Report that will form an appendix to the EA Report.
- Based on the Conceptual Designs developed for the Alternative Methods:
  - Predict and assess future surface water runoff, peak flows and quality conditions associated with each of the alternative methods.
  - Compare these predictions to the existing conditions; determine changes and potential adverse effects on downstream watercourses; determine if mitigation measures are required and, if so, develop mitigation (i.e., engineered stormwater management measures/facilities).
  - Based on the Alternative Methods and the results of predictive modelling, identify the potential effects of each alternative on the surface water environment.
  - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the surface water component, rank the alternatives, and identify the Recommended Alternative from a surface water perspective.
- Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be conducted. The impact assessment will identify potential environmental effects with more certainty and will include more site-specific impact management measures and monitoring requirements. The information and analysis will be documented in a Surface Water Impact Assessment Report that will form an appendix to the EA.

Table 2 Preliminary Criteria, Indicators, and Data Sources – Surface Water Resources

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Surface Water Resources	Effect on surface water quality	– Predicted effects on surface water quality on-site and off-site	– Topographic maps – Surface Water Existing Conditions Report – Air photos – Facility layout, drainage maps and figures – Proposed on-site stormwater management concept designs for vertical expansion alternatives – Existing leachate management system – Annual Monitoring Report – Interviews and discussions with Ministry of Environment, Conservation and Parks (MECP) staff, Conservation Authorities, and Environment Canada – Published water quality and flow information from MECP, Environment Canada and conservation authorities – Site reconnaissance – Provincial Water Quality Monitoring Network (PWQMN) – Surface Water Existing Conditions Report
	Effect on surface water quantity	– Predicted change in drainage areas and land use – Predicted occurrence and degree of off site effects	

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Appendix C-3

Atmospheric Environment (including Air Quality, Odour, and Noise)

The Atmospheric Environment Work Plan addresses air quality, noise, and odour. The following tasks will be carried out to characterize existing atmospheric environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures (if required) and compare alternative methods of carrying out the undertaking:

- Compile and interpret information from existing data sources, including data sources listed in Table 3
- Conduct investigations to confirm site information compiled from existing documentation and finalize location and nature of potential off-site receptors and document the findings in the Atmospheric Existing Conditions Report that will form an appendix to the EA Report.
- Compile and document climate normals for the project site and document the existing climatic conditions.
- Consult with the MECP and other members of the Government Review Team (GRT) on the modeling protocols to be used in the assessment.
- Develop a list of key indicator compounds that will be used to evaluate potential impacts through the air quality and odour assessment. Approximately 10-15 key indicator compounds will be selected based on previous studies completed on existing facilities and published documentation.
- Update existing on-site sampling to characterize sources of air quality and odour and provide data for input to the air quality and odour assessments.
- Update existing noise measurements on-site for environmentally significant mechanical noise sources (stationary and mobile landfill equipment) and off-site measurements as necessary to input into an acoustical model to determine the existing baseline environmental noise levels at potential sensitive points of reception.
- Develop an AERMOD atmospheric dispersion model for the site, prepared in accordance with MECP's Air Dispersion Modelling Guide for Ontario (ADMGO), which will be used to predict effects of the existing and proposed operations. The sources of the data will be reviewed with the MECP prior to finalization of the modelling dataset.
- Develop an ISO 9613 prediction model for the Site, which will be used to predict effects of the proposed operations.
- Develop a road traffic noise prediction model, which will be used to describe traffic sound levels at potential off-site receptors.
- Based on the Conceptual Designs developed for the Alternative Methods:
    - Predict and assess potential impacts (including cumulative effects) of the alternative methods from an atmospheric perspective, including assessing emissions from the Alternative Methods in accordance with applicable MECP guidance documents. The assessment will focus on the predicted maximum air quality and odour effects associated with each of the Alternative Methods. Odours and odour-based compounds will be assessed at odour-sensitive receptor locations, as per MECP guidance.
    - Predict and assess potential impacts from a noise perspective in accordance with applicable MECP Noise guidelines. Noise generation from existing equipment operating at the site will be based on measurements from the existing landfill or data from a database of similar and representative noise sources. This will be followed by the execution of a noise prediction model for each alternative method. The results of this study will predict the worst-case, one hour, off-site environmental noise impacts from each of the alternative methods at the points of reception subject of the study. A point of reception means an MECP prescribed location on a noise sensitive land use (existing dwelling or vacant land zoned for noise-sensitive use) where noise from a stationary source is received.
    - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the Atmospheric component, rank the

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Alternative Methods, and identify the Recommended Alternative from an Atmospheric Environment perspective.

– Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be conducted. The impact assessment will identify potential environmental effects with more certainty and will include more site-specific impact management measures and monitoring requirements. The information and analysis will be documented in an Atmospheric Environment Impact Assessment Report (in accordance with MECP reporting guidelines/requirements) that will form an appendix to the EA.

Table 3 Preliminary Criteria, Indicators, and Data Sources – Atmospheric Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Atmospheric Environment	Effect of air quality on off-site receptors	– Predicted off-site point of impingement concentrations ($\mu g/m^3$) of indicator compounds – Number of off-site receptors potentially affected (residential properties, public facilities, businesses, and institutions) – Frequency of any exceedance of applicable standards, limits, or guidelines at identified receptors.	– Environment Canada or MECP hourly meteorological data and climate normals – Applicable MECP guidelines and technical standards (i.e., O. Reg. 419/05, Standard, guidelines, and screening levels, MECP Ambient Air Quality Criteria, and Canadian Ambient Air Quality Standards) – Aerial photographic mapping and field reconnaissance – Off-Site receptors confirmed on recent mapping – Emissions Summary and Dispersion Modelling (ESDM) reports – Annual Monitoring Reports – Available background ambient air data, obtained from sources such as: • Site ambient air monitoring • Local Air Monitoring Network data • National Air Pollution Surveillance (NAPS) and/or MECP Ambient Air Monitoring Stations – Waste materials, landfill gas, and leachate characterization and sampling data – Proposed facility characteristics – Landfill design and operation data and associated topography – Site dust / air quality complaint history – Atmospheric Existing Conditions Report
	Effect of odours on off-site receptors	– Predicted off-Site odour concentrations ($\mu g /m^3$ and odour units) – Number of off-Site receptors potentially affected (residential properties, public facilities, businesses and institutions) – Frequency of any exceedance of applicable standards, limits, or guidelines at identified receptors	– Published odour studies for similar source types – Site specific odour source data – Environment Canada or MECP hourly meteorological data and climate normals – Applicable MECP guidelines and technical standards – Site odour complaint history – Annual Monitoring Reports – Aerial photographic mapping and field reconnaissance – Off-site receptors confirmed on recent mapping – Odour assessment reports – Waste materials, landfill gas, and leachate characterization and sampling data – Proposed facility characteristics – Landfill design and operation data and associated topography – Atmospheric Existing Conditions Report

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Environmental Component	Evaluation Criteria	Indicators	Data Sources
	Effect of noise on off-site receptors	– Predicted off-Site noise level – Number of off-Site receptors potentially affected (residential properties, public facilities, businesses, and institutions) – Predicted sound from traffic	– Site-specific equipment noise measurements – Manufacturer-provided noise specifications – Traffic reports for existing and future conditions – Applicable MECP guidelines and technical standards (Noise guidelines for landfill sites, Oct, 1998; NPC-300, August, 2013; NPC-233). – Aerial photographic mapping and field reconnaissance to confirm off-Site receptors – Land Use Zoning Plans – Acoustic Assessment Reports – Annual Monitoring Reports – Proposed facility operational characteristics and scenarios – Landfill design and operation data and associated topography – Offsite topography – Atmospheric Existing Conditions Report

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Terrestrial and Aquatic Environment

The Terrestrial and Aquatic Environment Work Plan addresses both terrestrial ecosystems and aquatic ecosystems. The following tasks will be undertaken to characterize the existing terrestrial and aquatic environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures and compare alternative methods of carrying out the undertaking:

- Compile and interpret information from existing data sources, including data sources listed in Table 4
- Conduct investigations to confirm site information compiled from existing documentation and document the findings in the Terrestrial and Aquatic Environment Existing Conditions Report that will form an appendix to the EA Report.
- Based on the Conceptual Designs developed for the Alternative Methods:
  - Predict and assess potential impacts of the alternative methods on the terrestrial and aquatic ecosystem.
  - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the Terrestrial and Aquatic Environment component, rank the Alternative Methods, and identify the Recommended Alternative from a Terrestrial and Aquatic Environment perspective.
- Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be conducted. The impact assessment will identify potential environmental effects with more certainty and will include more site-specific impact management measures and monitoring requirements. The information and analysis will be documented in a Terrestrial and Aquatic Environment Impact Assessment Report that will form an appendix to the EA.

Table 4 Preliminary Criteria, Indicators, and Data Sources – Terrestrial and Aquatic Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Terrestrial & Aquatic Environment	Effect on terrestrial ecosystems	– Predicted impact on vegetation communities – Predicted impact on wildlife habitat – Predicted impact on vegetation and wildlife including rare, threatened or endangered species	– Previous site surveys – Site investigations – Ministry of Natural Resources and Forestry (MNRF) databases – MECP databases – Fisheries and Oceans Canada (DFO) mapping – Niagara Peninsula Conservation Authority (NPCA) databases – Beaverdams and Shriners Creek Watershed Plan – Ontario Breeding Bird Atlas (OBBA) – Ontario Butterfly Atlas (OBA) – Ontario Reptile and Amphibian Atlas (ORAA) – Rare Vascular Plants of Ontario – Species at Risk of Ontario List (SARO) – Natural Environment Existing Conditions – Atlas of Canada (Toporama) – Niagara Official Plan – City of Niagara Falls Official Plan
	Effect on aquatic ecosystems	– Predicted impact on aquatic habitat – Predicted impact on aquatic biota	
	Effect on rare (vulnerable), threatened or endangered species of flora or fauna or their habitat	– Predicted impact on rare, threatened, or endangered flora and fauna species and their habitat	
	Effect on designated wetlands	– Predicted impact on designated wetlands	

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Environmental Component	Evaluation Criteria	Indicators	Data Sources
	Effect on wildlife habitat, populations, corridors or movement	– Predicted impact on wildlife habitat, populations, corridors or movement	– Niagara Escarpment Plan – Facility layout and figures
	Effect on fish or their habitat, spawning, movement or environmental conditions (e.g., water temperature, turbidity, etc.)	– Predicted impact on fish, fish habitat, spawning behaviour, movement or environmental conditions	
	Effect on locally important or valued ecosystems or vegetation	– Predicted impact on locally important or valued ecosystems or vegetation	

Existing Conditions

The terrestrial and aquatic environment will be characterized through background data review, Site investigations, and agency consultation which will include communication with MNRF, MECP, and NPCA. Available secondary sources of information will be collected and reviewed to characterize the natural environment within the Final Study Area. The following sources of secondary information will be collected and reviewed:

– Existing Site natural environment reports
– Review of facility layout and figures
– Biological and Species at Risk (SAR) data requests from MNRF, MECP, and NPCA
– Natural heritage features, sensitive areas, and SAR from Natural Heritage Information Centre (NHIC) and DFO
– Beaverdams and Shriners Creek Watershed Plan
– Aerial imagery and topographic maps of Study Areas

Aquatic field investigations will include characterization of existing aquatic ecosystems within the Final Study Area, including drainage ditches and natural watercourses by means of existing fish community surveys, aquatic habitat assessment, benthic invertebrate sampling programs, water quality and flow information, and conducting additional field surveys if or as necessary. When compared with the background fish community data, this will provide a suitable characterization of the local fish community and electrofishing surveys will not be required.

Terrestrial surveys will include characterization of existing terrestrial ecosystems within the Final Study Area, including occurrence and distribution of wetlands, vegetation communities and wildlife (e.g., birds, mammals, reptiles, and amphibians by means of breeding bird surveys, rare plant and insect assessment, snake/turtle surveys, mammal surveys, specific surveys for any identified SAR), natural areas such as significant wetlands, woodlands, valley lands and wildlife habitat, and habitat for endangered and threatened species, conducting additional field surveys for these terrestrial features if or as necessary.

Timing windows for terrestrial and aquatic field investigations are outlined as follows:

Site Investigation	Timing Windows
Ecological Land Classification (ELC), Wetland Delineation and Botanical Inventory	Visit #1 – May Visit #2 – June/July Visit #3 – September

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Site Investigation	Timing Windows
Amphibian Call Count (ACC) Surveys	Visit #1 – April Visit #2 – May Visit #3 – June
Breeding Bird Survey	Visit #1 – Late May/early June Visit #2 – Late June/early July
Snake/Turtle Surveys	Visit #1 – April/May Visit #2 – Early June
Aquatic Habitat Assessments	Visit #1 – Early May Visit #2 – June
Benthic Invertebrate and Water Quality	Visit #1 – September/October
SAR Screening	All site visits
General Wildlife	All site visits

A terrestrial and aquatic environment existing conditions report will be prepared based on the results of the background review, agency consultation, Site investigations, and Site plan. Existing conditions will be used to assess the potential adverse impacts of the proposed undertaking to natural heritage features and to evaluate potential mitigation measures and their net effects.

Potential Effects, Mitigation Measures & Net Effects

The description of existing conditions will be used to assess the effects of the proposed undertaking on the Site's natural heritage features and surrounding watercourses within the Final Study Area. The assessment will propose mitigation measures to avoid or mitigate negative impacts on the natural features or ecological functions of sensitive natural and hydrologic features within the Study Areas. Additionally, it will be determined if mitigation and/or habitat compensation measures will be required to avoid or reduce potential adverse impacts.

Monitoring Requirements and Additional Approvals

To ensure that the mitigation measures identified through the assessment are implemented as envisioned, a strategy and schedule will be developed for monitoring environmental effects. With these monitoring requirements in mind, commitments will also be made to ensure that they are carried out as part of the construction, operation, and maintenance of the proposed undertaking. Any additional terrestrial and aquatic environment approvals required as part of Walker's South Landfill Phase 2 expansion will also be documented.

Throughout the project, we will be mindful of implications for the Project from federal and provincial legislation, including the provincial Conservation Authorities Act (CAA) and Endangered Species Act (ESA), and the federal Fisheries Act (FA), Migratory Birds Convention Act (MBCA), and Species at Risk Act (SARA). At this time, we anticipate consideration will need to be given under the following governing bodies.

Niagara Peninsula Conservation Authority

Ten Mile Creek and its tributaries are regulated under NPCA Ontario Regulation 155/06 for the Development, Interference with Wetlands and Alterations to Shorelines and Watercourses. Both the Final Study Area is within the NPCA regulated area. Under the legislative changes associated with Bill 23, NPCA's review and permitting authority will be focused on flooding and erosion hazard mitigation. A permit from NPCA may be required.

Ministry of Environment, Conservation and Parks

SAR is protected under the Endangered Species Act (2007), which is managed by MECP. The preliminary review of the Final Study Area via the NHIC website and DFO's Aquatic Species at Risk mapping identified no

SAR or critical habitat. Other SAR that have the potential to occur in the Study Areas that could be affected by the proposed works include, but are not limited to, western chorus frog, birds (Acadian flycatcher, bank swallow, barn swallow, bobolink, chimney swift, common nighthawk, eastern meadowlark, eastern wood-pewee, grasshopper sparrow, hooded warbler, least bittern, northern bobwhite, peregrine falcon, red-headed woodpecker, and wood thrush), American eel, bats, reptiles (five-lined skink, Midland painted turtle, milksnake, northern map turtle, snapping turtle, timber rattlesnake), arthropods (monarch and mottled duskywing), and vascular plants (cucumber tree, deerberry, and eastern flowering dogwood). Further consultation with MECP upon project commencement will be required.

Following the initial habitat assessment, consultation with MECP, and review of the proposed works against relevant mitigation measures, the potential to impact SAR or SAR habitat and if additional permitting steps are required with MECP will be determined.

Fisheries and Oceans Canada

Fish and fish habitat are protected under the Fisheries Act (1985), which is managed by DFO. On August 28, 2019, changes were made to the Fisheries Act. These changes include new protections for fish and fish habitat in the form of standards, codes of practice, and guidelines for projects in and near water. These provide guidance on how to avoid and mitigate impacts to fish and fish habitats and comply with the Fisheries Act to avoid causing the death of a fish or harmful alteration, disruption, or destruction (HADD) of fish habitat from your work, undertaking or activity.

Available DFO Aquatics SAR mapping has not identified aquatic SAR or their critical habitat within the Study Areas. As such a SARA permit is not anticipated for the proposed works.

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Appendix C-5

Land Use

The Land Use Work Plan addresses the land use component of the environmental assessment (EA) by undertaking a review of provincial and municipal planning documents to determine the policy and regulatory context related to the proposed use and Study Area. Existing land use information will be derived from field surveys and aerial photography interpretation and compared with others to confirm consistency. Particular attention will be given to the identification of land uses potentially sensitive to landfilling activities, as defined in the Provincial guidelines and municipal policies. The following tasks will be undertaken to characterize the existing land use environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures and compare alternative methods of carrying out the undertaking:

– Undertake a review of provincial legislation, guidelines and municipal planning documents to determine the policy and regulatory context related to the Study Area, including but not limited to:
    - Ontario Planning Act*
    - Growth Plan for the Greater Golden Horseshoe*
    - Provincial Policy Statement*
    - Ontario Ministry of Environment, Conservation and Parks Guidelines:
        – Land Use Compatibility, Guideline D-1
        – Land Use On or Near Landfills and Dumps, Guideline D-4
    - Niagara Region Official Plan
    - City of Niagara Falls Official Plan
    - City of Niagara Falls Zoning By-law
    - Canada Land Inventory (CLI) / Soil Capability for Agriculture mapping (and more detailed, supplementary information from Agricultural Impact Assessment)

    **Changes to provincial legislation and provincial plans have been announced recently. These will be monitored and, if any new legislation or plans come into effect in the interim, will be reviewed to identify potential implications for the Project.*
– Review background documentation regarding the existing Aggregate Resource Act licence and surrender requirements.
– Review background documentation regarding the existing Campus Operations.
– Compile and interpret information from existing data sources, including data sources listed in Table 5
– Conduct investigations to confirm site information, (land uses, viewpoints and viewsheds) compiled from existing documentation and document the findings in the Land Use Existing Conditions Report that will form an appendix to the EA Report.
– Conduct discussions with Municipal Planning Staff to confirm local development activity and identify potential planning issues.
– Review findings of all supporting studies (in relation to relevant policies and provincial guidelines)
– Based on the Conceptual Designs developed for the Alternative Methods:
    - Predict and assess potential impacts of the alternative methods on the existing land uses and viewpoints. Particular attention will be given to the identification of land uses potentially sensitive to landfilling activities, as defined in the Provincial guidelines and municipal policies.
    - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the land use Environment component, rank

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the Alternative Methods, and identify the Recommended Alternative from a land use Environment perspective.

– Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be conducted. The impact assessment will identify potential environmental effects with more certainty and will include more site-specific impact management measures and monitoring requirements. The information and analysis will be documented in a Land Use Environment Impact Assessment Report that will form an appendix to the EA.

Table 5 Preliminary Criteria, Indicators, and Data Sources – Land Use

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Land Use	Effect on existing and proposed planned future land uses	– Current and planned future land use – Proximity to off-Site sensitive land uses (i.e., dwellings, churches, parks)	– Aerial photographic mapping and field investigations – Land Use Existing Conditions Report – Site surveys and assessments – Published data sources (i.e., Official Plans, Zoning By-laws) – Provincial Policy Statement – Growth Plan – Discussions with municipality and, if required, property owners local to the Site – Review of findings of all the supporting studies (in relation to relevant policies and provincial guidelines)
	Effect on views of the facility	– Predicted changes in views of the facility from the surrounding area – Visibility of project features from selected receptor locations – Level of visual contrast of project features from selected receptor locations	– Alternative methods – Site grading plans – Aerial mapping and field investigation – Land Use Existing Conditions Report – Satellite imagery – Google Earth – Web mapping sites – Existing Site-specific studies and reports – Visualization software and simulations

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Appendix C-6

Agricultural Environment

The methodology developed for the Agricultural Work Plan will be consistent with OMAFRAs Draft Agricultural Impact Assessment (AIA) Guidance Document (2018). A study area will be defined within which the Agricultural System will be characterized and evaluated. The Agricultural System[1], is comprised of a group of inter-connected elements that collectively create a viable, thriving agricultural sector. It has two components:

1. An agricultural land base comprised of prime agricultural areas, including specialty crop areas, and rural lands that together create a continuous productive land base for agriculture.
2. An agri-food network which includes infrastructure, services and assets important to the viability of the agri-food sector.

The study area will include both a Primary and Secondary study area, consistent with the AIA Guidance Document. The agricultural resources that comprise the agricultural land base (e.g., soils and soil capability/suitability and climatic factors) will be characterized. The work plan will identify and characterize those components that comprise the agri-food network such as agricultural-related facilities, land improvements, and agricultural services. The information collected will be used to identify and assess the potential effects of the land use change on the Agricultural System. Mitigation measures will be recommended to avoid and/or minimize negative impacts to the extent possible and compare alternative methods of carrying out the undertaking.

The following tasks will be undertaken to characterize the Agricultural System within the Final Study Area. Compile and interpret information from existing data sources, including data sources listed in Table 6.

– Conduct investigations to confirm information and document the findings in the Agricultural Existing Conditions Report that will form an appendix to the EA Report.
– Based on the Conceptual Designs developed for the Alternative Methods:
    - Predict and assess potential impacts of the alternative methods on the existing soils and agricultural operations within the Final Study Area.
    - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the agricultural component, listed in Table 6. rank the Alternative Methods, and identify the Recommended Alternative from an agricultural perspective.
– Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be carried out. Potential environmental effects and site-specific impact management measures and monitoring requirements will be clearly identified. The information and analysis will be documented in an Agricultural Impact Assessment Report that will form an appendix to the EA.

Table 6 Preliminary Criteria, Indicators, and Data Sources – Agricultural Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Agriculture	Effects on existing Agricultural Land Base	– CLI Soil Capability classification – Soil Suitability classification – Climate – Level of Fragmentation	– Provincial Policy Statement, 2020 – Niagara Escarpment Plan – Greenbelt Plan – Niagara Falls Official Plan – Niagara Falls Zoning – Aerial photographic mapping and field reconnaissance

[1] Implementation Procedures for the Agricultural System in Ontario's Greater Golden Horseshoe, OMAFRA Publication 856. March 2020.

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Environmental Component	Evaluation Criteria	Indicators	Data Sources
		– Proximity to Non-farm Land Uses	– Canadian Lands Inventory (CLI) mapping – Agricultural Existing Conditions Report
	Effects on Agri-Food Network	– Type(s) and proximity of agricultural operations – Type(s) and proximity of agricultural-related facilities – Predicted impacts on surrounding agricultural operations & agricultural-related facilities	– Agricultural Systems Portal – Field inventories

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Appendix C-7

Transportation

The Transportation work plan addresses traffic operations. The following tasks will be undertaken to characterize the existing environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures, and compare alternative methods of carrying out the undertaking:

- Compile and interpret information from existing data sources, including but not limited to data sources listed in Table 7.
- Conduct investigations to confirm site information compiled from existing documentation and document the findings in the Transportation existing conditions report that will form an appendix to the EA Report.
- Conduct analysis of existing traffic conditions and document the findings in the Transportation existing conditions report that will form an appendix to the EA Report.
- Based on the Conceptual Designs developed for the Alternative Methods:
  - Predict and assess future traffic conditions associated with each of the alternative methods.
  - Compare these predictions to the existing conditions; determine changes and potential adverse effects on road network and intersections; determine if mitigation measures are required and, if so, develop mitigation measures.
  - Based on the Alternative Methods and the results of traffic modelling, identify the potential effects of each alternative.
  - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the transportation component, rank the alternatives, and identify the Recommended Alternative from a transportation perspective.
- Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be conducted. The impact assessment will identify potential environmental effects with more certainty and will include more site-specific impact management measures and monitoring requirements. The information and analysis will be documented in a Transportation Impact Assessment Report that will form an appendix to the EA.

Table 7 Preliminary Criteria, Indicators, and Data Sources - Transportation

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Transportation	Effect on traffic	– Potential for traffic collisions – Operational Level of Service at intersections around the Campus	– Previous transportation studies – Local data (e.g., from Niagara Region, City of Niagara Falls, etc.) – Site-specific operations data and observations – Transportation Existing Conditions Report

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Appendix C-8

Social

The Social Assessment Work Plan addresses the potential effects on and benefits to the local community, including residents, public facilities and institutions, recreational resources, community character and community cohesion.

The following tasks will be undertaken to characterize the existing environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures, and compare alternative methods of carrying out the undertaking:

– Compile and interpret information from existing data sources, including:
  - Statistics Canada and other Federal departmental data;
  - Municipal data, including planning data;
  - Municipal vision statements, economic development and sustainability plans, infrastructure and recreational plans (e.g., cycling plans) etc.;
  - Information available from public facilities and institutions, community groups and organizations;
  - Conservation Authority information;
  - Provincial Assessment information; and
  - Literature and case studies regarding social impacts.
– Conduct field investigations to confirm information and document the findings in a report that will form an appendix to the EA Report, including:
  - Field mapping of residences, public facilities and institutions, and recreational resources;
  - Interviews with key local and regional governmental agency representatives that have a role to play in the planning and development of communities and recreational resources;
  - Interviews with operators of public facilities and institutions and recreational resources within the Site Vicinity study area;
  - Interviews with key stakeholders such as sports and recreational clubs, community groups (e.g., Local Environmental Non-Government Organisations (ENGOs).
  - A questionnaire for existing households/property owners within the Site Vicinity study area and along the haul route;
  - A public attitude research survey undertaken with a representative sample of residents within the Community study area.
– Based on the Conceptual Designs developed for the Alternative Methods:
  - Predict and assess potential impacts of the alternative methods on the local community within the Final Study Area.
  - For the purposes of the Social Assessment, several receptor locations will be identified to assist with the consideration of the effects that may result from the project. Some of these receptor locations will be common with other disciplines to ensure that the assessment considers multiple and/or cumulative effects. The number and locations of these common receptors will be determined in a collaborative fashion with other disciplines, (i.e., air quality, noise/vibration, economics/financial, agriculture, traffic and visual/landscape disciplines).
  - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the social component, listed in Table 8, rank the Alternative Methods, and identify the Recommended Alternative from a social perspective.
– Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be carried out. Potential environmental effects and

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site-specific impact management measures and monitoring requirements will be clearly identified. The information and analysis will be documented in a report that will form an appendix to the EA.

- Recommendations to mitigate and/or otherwise manage potential social effects will consider measures that ensure that people and their community have the capacity to contend with change and that good relationships are fostered between the proponent, neighbouring communities, and others involved in or affected by the project's development. Walker will draw upon its experience at its own landfill and aggregate facilities in Ontario when considering the effectiveness of these measures.

Table 8 Preliminary Criteria, Indicators, and Data Sources – Social Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Social	Displacement of Residents from Houses	– The number of households/residents (property owners and tenants) to be displaced (i.e., forced relocation) by the project itself regardless of whether their property has been purchased or not. – The potential for or likelihood of voluntary out-migration of residents for consideration of the indirect effects on community character and cohesion.	– South Landfill Phase 2 project description – Field mapping of residences – Household/property owner questionnaire
	Disruption to Use and Enjoyment of Residential Properties	– The number of existing residential households and/or future households that are located at specific receptor locations and potentially affected by noise, dust, odour, traffic, agricultural and visual effects; and the potential for and likelihood of changes in the presence of vermin and gulls. – The number of existing residential households fronting/backing onto a haul route and potentially affected by changes in project related traffic and traffic noise. – Potential for or likelihood of changes in peoples' use of residential property.	– South Landfill Phase 2 project description – Field mapping of residences – Household/property owner questionnaire – Results from other discipline analyses
	Disruption to Use and Enjoyment of Public Facilities and Institutions	– The number of existing public facilities and institutions that may be affected by nuisance factors such as noise, dust, odour, traffic and visual effects; and the potential for and likelihood of changes in the presence of vermin and gulls. – Potential for or likelihood of changes in operations of public facilities and institutions. – Potential for or likelihood of changes in use and enjoyment of public facilities and institutions.	– South Landfill Phase 2 project description – Secondary source data – Field mapping of public facilities and institutions – Interviews with facility operators – Results from other discipline analyses

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Environmental Component	Evaluation Criteria	Indicators	Data Sources
	Loss/Disruption of Recreational Resources	– The number/nature of existing recreational resources and/or future features potentially affected by noise, dust, odour, visual effects and changes in project-related traffic; and the potential for and likelihood of changes in the presence of vermin and gulls. – Potential for or likelihood of changes in operations of recreational features. – Potential for or likelihood of changes in use and enjoyment of recreational resources.	– South Landfill Phase 2 project description – Secondary source data – Field mapping of public facilities and institutions – Interviews with recreational facility operators / recreational resource users – Interviews with key local and regional governmental agency representatives – Interviews with key stakeholders – Results from other discipline analyses
	Changes to Community Character	– Compatibility of landfill operations with the existing and likely future character of the community. – Compatibility of the proposed end use with the existing and likely future character of the community.	– South Landfill Phase 2 project description – Secondary source data – Public attitude research – Interviews with key local and regional governmental agency representatives – Interviews with key stakeholders – Results from social assessment and other discipline analyses
	Changes to Community Cohesion	– The extent of displacement. – The potential for or likelihood of voluntary out-migration. – Loss and the extent of disruption of recreational resources, public facilities and institutions, and the use and enjoyment of residential properties.	– South Landfill Phase 2 project description – Secondary source data – Public attitude research – Household/property owner questionnaire – Interviews with key local and regional governmental agency representatives – Interviews with key stakeholders – Results from other social assessment and other discipline analyses

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Appendix C-9

Economic

The Economic Environment Work Plan addresses various economic aspects. The following tasks will be undertaken to characterize the existing environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures, and compare alternative methods of carrying out the undertaking:

- Compile and interpret information from existing data sources, including but not limited to data sources listed in Table 9.
- Conduct Site investigations to confirm site information compiled from existing documentation and document the findings in the Economic Environment Existing Conditions Report that will form an appendix to the EA Report.
- Evaluate impacts on local economy including businesses, labour market, and gross domestic product (GDP), as well as impacts to real estate, public finance, and cost of services.
- Based on the Conceptual Designs developed for the Alternative Methods:
  - Predict and assess potential impacts of the alternative methods on economics environmental component.
  - Apply mitigation measures to determine the net effects for each Alternative Method and compare the degree of net effects using the criteria and indicators for the Economic Environment component, rank the Alternative Methods, and identify the Recommended Alternative from an Economic Environment perspective.
- Once the Preferred Method has been identified and additional details developed from a design and operations perspective, an impact assessment will be conducted. The impact assessment will identify potential environmental effects with more certainty and will include more site-specific impact management measures and monitoring requirements. The information and analysis will be documented in an Economic Environment Impact Assessment Report that will form an appendix to the EA.

Table 9 Preliminary Criteria, Indicators, and Data Sources – Economic Environment

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Economic	Effect on Local Economy	– Impact on businesses • Disruption/displacement of businesses (including tourism and farms) • Business opportunities – Labour market impacts • Impact on direct, indirect, and induced employment – GDP impacts • Impact on direct, indirect, and induced GDP – Retention of economic benefits within local economy	– Interviews & surveys (businesses, associations, economic development organizations, labour organizations, etc.) – Economic development plans – Vendor/supplier data – Statistics Canada – Lightcast
	Effect on Real Estate	– Property value impacts	– Interviews (real estate association and realtors) – Teranet Geowarehouse – Canadian Real Estate Association
	Effect on Public Finance	– Impact on municipal revenue – Impacts on municipal cost – Impact on assessment base	– Interviews (municipal finance and other municipal departments) – Municipal financial documents – Financial information return reports
	Cost of Services	– Impact on customer cost of waste services	– Waste management industry scan – Waste management industry reports

Appendix C-10

Archaeology and Built Heritage

The Archaeology and Built Heritage Work Plan addresses both archaeological resources and cultural and heritage resources (built heritage and cultural landscapes).

The following tasks will be undertaken to characterize the existing environmental conditions within the Final Study Area, predict and assess potential environmental effects, determine mitigation measures, and compare alternative methods of carrying out the undertaking:

– Complete the Cultural Heritage Screening Checklist from the Ministry of Citizenship and Multiculturalism (MCM) to determine if further study is required.
– Undertake further archaeological and cultural heritage studies as applicable in order to understand potential impacts and provide mitigation where warranted.
    - Assuming further archaeological study is required, complete Stage 1 background research and Stage 2 field investigations (detailed below) to identify any potential archaeological resources and assess potential Cultural Heritage Value and Interest (CHVI).
    - Provide recommendations for appropriate next steps for any archaeological sites identified that retain further CHVI.

Table 10 Preliminary Criteria, Indicators, and Data Sources – Archaeology and Built Heritage

Environmental Component	Evaluation Criteria	Indicators	Data Sources
Archaeology and Built Heritage	Effect on known or potential significant archaeological resources	– Number and type of potentially significant, known archaeological sites affected. – Area (ha) of archaeological potential (i.e., lands with potential for the presence of significant archaeological resources) affected.	– Published data sources (e.g., City of Niagara Falls, Niagara Region, past archaeological assessments) – Ministry Citizenship and Multiculturalism Screening – Ontario Archaeological Sites Database records
	Effect on built heritage resources and cultural heritage landscapes	– Number and type of built heritage resources and cultural heritage landscapes displaced or disrupted	– Published data sources (e.g., City of Niagara Falls, City of Thorold, Niagara Region) – Ministry Citizenship and Multiculturalism Screening – Ontario Heritage Trust – Museums, archives, other historical sources (as applicable)

Stage 1 Archaeological Assessment

The Stage 1 assessment will consist of comprehensive background research into the study area. This is accomplished through an examination of the archaeology, history, geography, and current land conditions in the vicinity of the project lands. This stage also generates an inventory of known archaeological sites within 1 km and previous archaeological fieldwork results within 50 m of the study area, which are used to assist in predicting zones of archaeological potential. Sources utilized during a background study include archival sources (e.g., historical publications and records), current academic and archaeological publications (e.g., archaeological studies, reports and management plans), modern topographic maps, recent satellite imagery, historical maps/atlases, and the MCM's Ontario Archaeological Sites Database.

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The results of the background research as well as the analysis and evaluation of the study area's archaeological potential will form appropriate recommendations (i.e., no further work in areas of no archaeological potential and Stage 2 archaeological assessment for all areas of archaeological potential).

Any Stage 2 fieldwork that is required will be done in accordance with the MCM Standards and Guidelines. The site visit component of the Stage 1 will be done concurrently with any Stage 2 fieldwork that is required.

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Appendix D

Proposed Terms of Reference

Commitments Table ***(To be provided with Final Terms of Reference)***