

Appendix I-7

**Visual Environment Detailed Impact
Assessment Report**



Draft Visual Detailed Impact Assessment

South Landfill Phase 2

Walker Environmental

29 June 2026

→ The Power of Commitment

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1. Introduction

This report documents the visual impact assessment of the Preferred Method for the Environmental Assessment (EA) to develop the next phase of the existing South Landfill (i.e., South Landfill Phase 2) located at the Walker Resource Management Campus (Campus). The proposed South Landfill Phase 2 will add approximately 19.8 million cubic metres (m³) of landfill capacity over a 20-year period.

In the preceding Alternative Methods phase of the EA, net effects analyses as well as a comparative evaluation of three Alternative Landfill Configuration Options and two Leachate Management Options were carried out in order to identify a Preferred Landfill Footprint and a Preferred Leachate Management Option. The three Alternative Landfill Configuration Options and two Leachate Management Options presented in the Alternative Methods phase were developed to a conceptual level of design and documented in a Conceptual Design Report (CDR). The potential environmental effects, preliminary impact management measures to address the potential adverse environmental effects, and the remaining net effects following the application of the impact management measures were identified for all three Alternative Landfill Configuration Options and both Leachate Management Options. The Preferred Landfill Configuration Option was determined to be Option A (*Same Height and Slopes as Current South Landfill Phase 1¹*) and the Preferred Leachate Management Option was determined to be Option A (*Continued and Expanded Use of the Municipal Wastewater Treatment System*), hereafter collectively referred to as the Preferred Method.

At the detailed impact assessment phase, additional details are developed for the Preferred Method from a design and operations perspective, as documented in a Facilities Characteristics Report (FCR), so that potential environmental effects, preliminary impact management and compensation measures, and resultant net effects described at the Alternative Methods stage can be reviewed and more accurately defined, as required, along with enhancement opportunities and approval requirements. Specifically, the following can be accomplished:

- Potential environmental effects can be identified with more certainty.
- More site-specific impact management 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.

Climate change mitigation and adaptation measures are also reviewed as part of the detailed site design established for the Preferred Method. In addition, during the impact assessment stage of the South Landfill Phase 2 EA, Walker has committed to completing an assessment of the cumulative effects of the proposed undertaking and other non-Walker projects and activities that are existing, planned/approved or reasonably foreseeable within the Study Area.

The discipline-specific work plans developed during the Terms of Reference (ToR) outlined how impacts associated with the Preferred Method would be assessed. The results of these assessments are documented in 12 stand-alone Detailed Impact Assessment Reports:

- Geology and Hydrogeology
- Surface Water
- Air Quality and Odour
- Noise

¹ Following consultation on the comparative evaluation of the alternative methods, the Preferred Landfill Configuration Option was refined based on public, stakeholder and Government Review Team (GRT) comments and feedback received. Specifically, the proposed maximum height was decreased to reduce visual impact, the proposed Limit of Fill was adjusted in several areas to avoid sensitive natural features and to accommodate necessary infrastructure within the buffer, and slopes were adjusted to maximize compatibility with an agricultural end use, all of which resulted in a slightly reduced waste capacity.

- Terrestrial and Aquatic
- Land Use
- Visual Environment
- Agriculture
- Transportation
- Social Environment
- Economic Environment
- Greenhouse Gas Assessment

1.1 Description of the preferred landfill configuration option

Landfill Configuration Option A was originally selected as preferred due to its long-term benefits, including the largest waste capacity, longest operational lifespan, and associated economic and employment advantages. Following its selection, the design of Landfill Configuration Option A was refined in response to feedback received during consultation to reduce its visual impact and improve compatibility with a future agricultural end use. Furthermore, the Limit of Fill boundaries were adjusted to avoid natural features and to accommodate necessary infrastructure within the buffer. These refinements included a reduction in peak elevation to 211 metres above mean sea level (mAMSL) at the top of waste (TOW; 211.75 mAMSL at the top of cap), and adjustments to slope gradients, now designed to a maximum steepness of 3:1 (horizontal:vertical) for below-ground slopes and between 16:1 and 3.5:1 for above-ground slopes, improving the area compatible with an agricultural end use. These changes bring Option A closer in form to the Options B and C while preserving its advantage of a higher overall waste capacity. The refined Option A design would provide approximately 19.8 million m³ of expanded landfill capacity and include 44 hectares (ha) of land compatible with an agricultural end use. From a visual perspective, these refinements reduce potential visual impacts by lowering the overall landfill profile, moderating slope transitions, and creating a landform that is more consistent with the surrounding topography, thereby reducing visual contrast and enhancing compatibility with the existing landscape character, as defined in Section 4.1. The final contour plan for the Preferred Landfill Configuration Option is shown in **Figure 1.1**.

Path: I:\projects\CA0018521.3292_0001\Drawings\Site\Drawings\Final\CA0018521.3292_0001-Final-Contour-Plan-and-Surface-Water-Management.dwg | User: jkelly | Date: 2025-03-30 11:54:45 AM | Title: Final Contour Plan & Surface Water Management

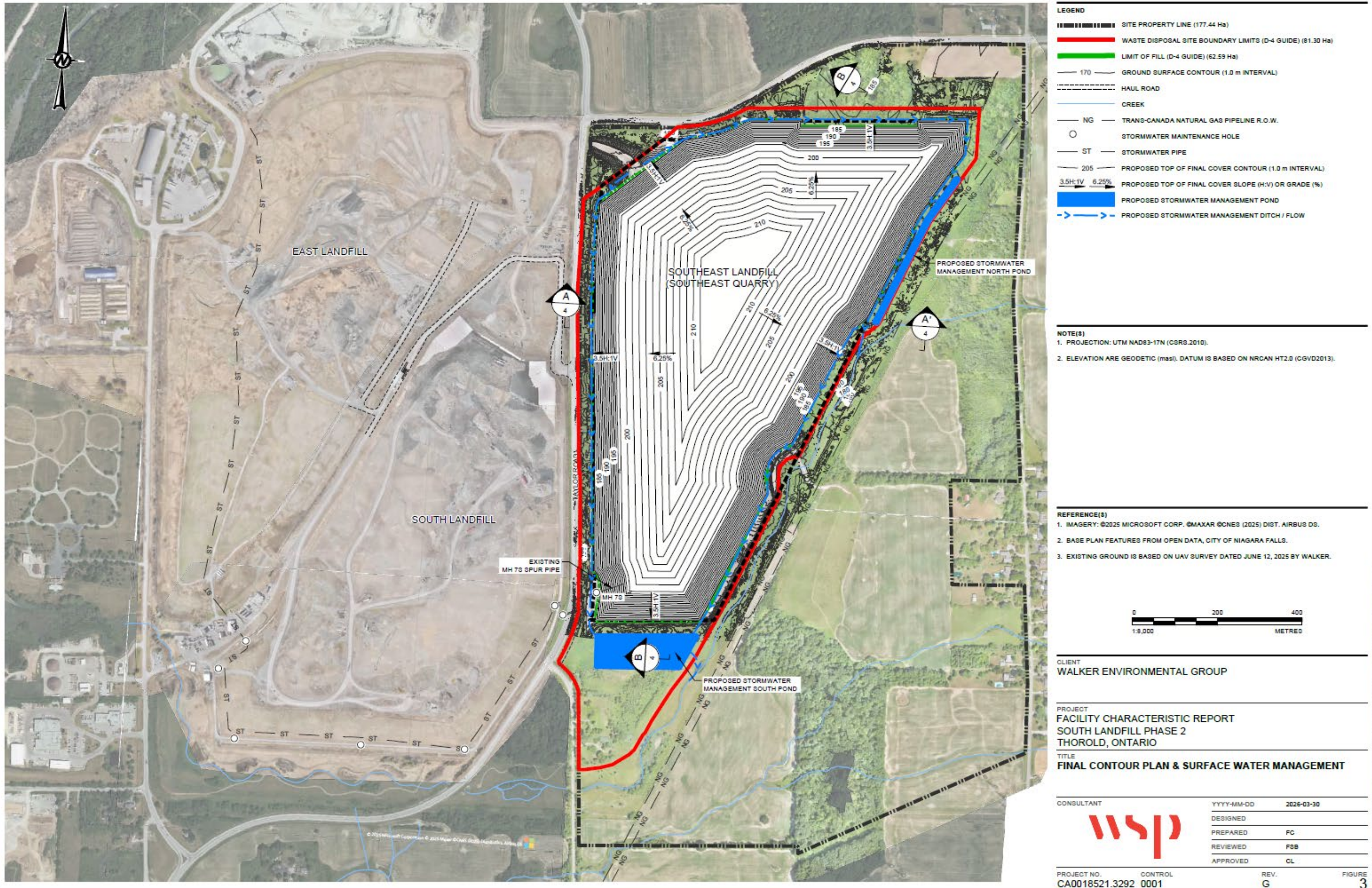


Figure 1.1 Preferred Landfill Configuration Option Final Contour Plan & Surface Water Management (extracted from Facility Characteristics Report)

1.2 Description of the preferred leachate management option

Leachate Management Option A builds upon the pre-existing leachate management system and approach while including the necessary expansion of the system capacity as South Landfill Phase 2 is expected to generate approximately 131,000 m³ of additional leachate per year at the time of closure (2050) and approximately 147,000 m³ of additional leachate per year in 2070 when considering climate change. The expansion of the leachate management system would include a leachate sump, including a pump station equipped with the needed metering equipment and controls for monitoring and contingency purposes, a forcemain to transport the leachate from the pump station to the lagoon area, and lagoon upgrades consisting of two additional lagoons, if required (located adjacent the existing two lagoons), for pretreatment and eventual discharge.

Once pretreated at the on-site lagoons, leachate will be conveyed via an existing force/gravity main to the Niagara-on-the-Lake sanitary sewer system for final treatment at the Region of Niagara's Port Weller Wastewater Treatment Plant. The need to upgrade the private sewer that connects to the Niagara-on-the-Lake sanitary sewer system has been identified and will be considered in the assessment.

1.3 Facility characteristic report for the preferred method

The FCR presents preliminary design and operations information for the Preferred Method and provides information on all main aspects of landfill design and operations including:

- Site layout design, including existing and proposed Site characteristics;
- stormwater management;
- leachate management;
- landfill gas management; and,
- landfill development sequence and daily operations.

The FCR also provides estimates of parameters relevant to the detailed impact assessment, including estimates of leachate generation, landfill liner performance, landfill gas generation, and traffic levels associated with waste and construction materials haulage. Site infrastructure associated with the Preferred Method is show in **Figure 1.2**.

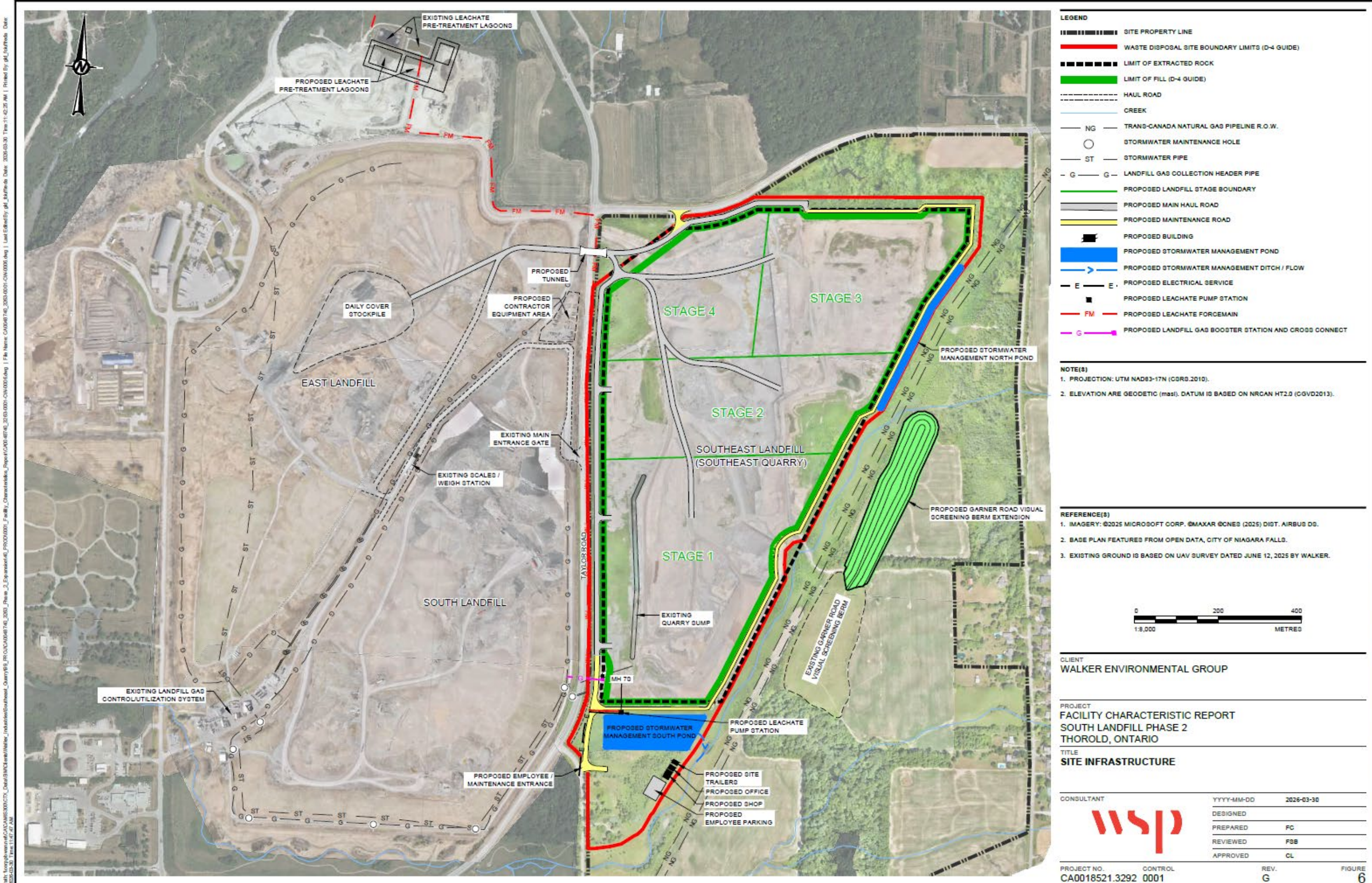


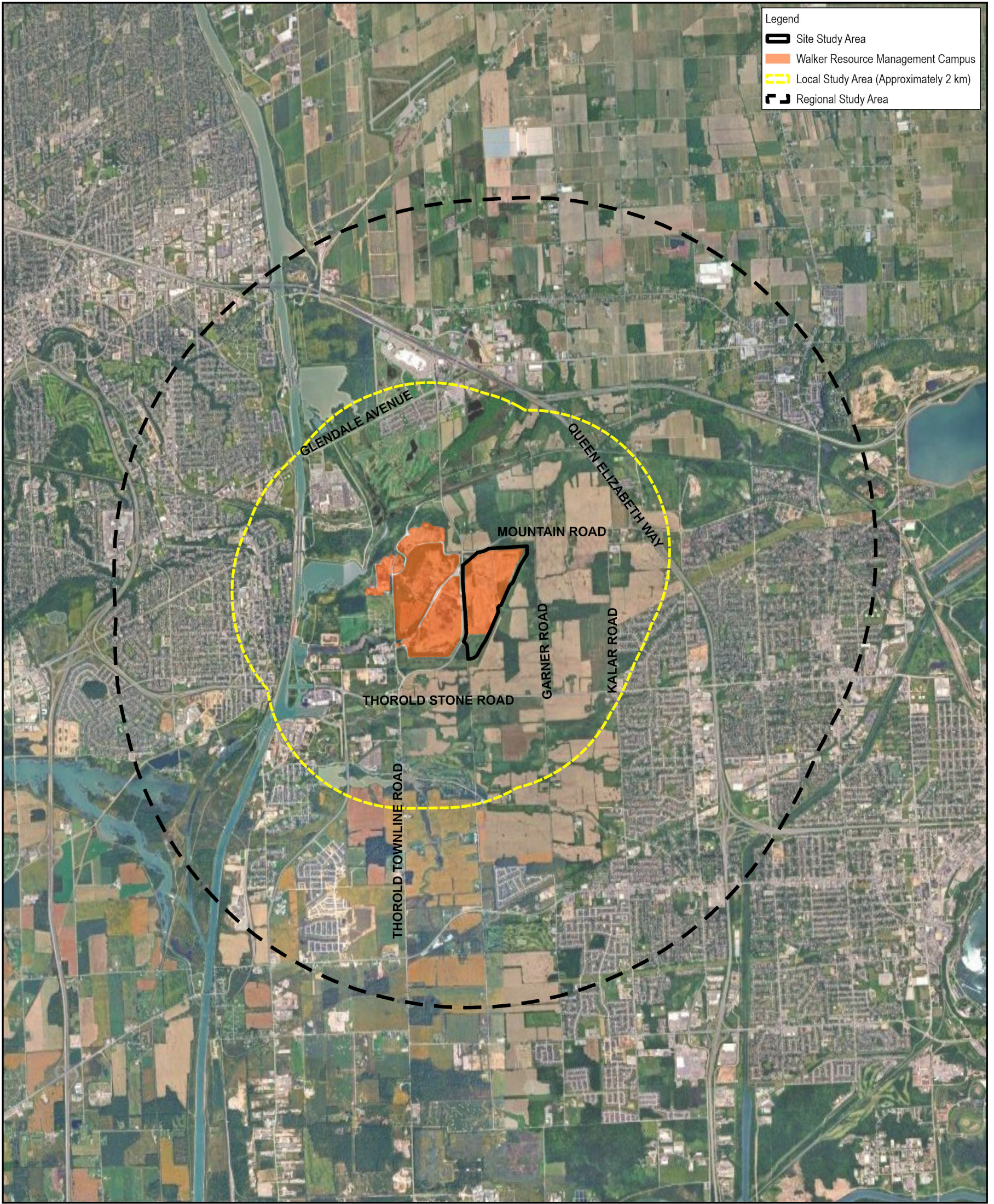
Figure 1.2 Site Infrastructure (extracted from Facility Characteristics Report)

2. Study area

From a visual perspective, the characterization of impacts within the following study areas are appropriate to this detailed impact assessment:

- Site Study Area (SSA): The SSA is consistent across all technical disciplines and encompasses a total of 81.30 ha of land owned and operated by Walker. The SSA includes the current quarry extraction limit, and encompasses the proposed limit of fill, the buffer area, and aligns with the proposed Waste Disposal Site Limit Boundary. While the SSA captures the core area of the proposed landfill development, certain ancillary features related to the landfill are proposed to be located outside the SSA. These features will be addressed within the broader Local Study Area.
- Local Study Area (LSA): The LSA is specific to each technical discipline but generally extends approximately 1 to 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 2.1** illustrates the LSA for this Visual Existing Conditions Report, which extends approximately 2 km from Walker's Resource Management Campus. The LSA was selected as a conservative estimation of the likely extent of visibility of the proposed South Landfill Phase 2 based on desktop review and confirmatory site inspection.
- Regional Study Area (RSA): The RSA is discipline-specific and may not be required by all disciplines. The RSA is generally based on administrative and/or natural boundaries applicable to each discipline and the parameters of their associated criteria. An RSA of 5 km was identified for the Visual Detailed Impact Assessment to align with Niagara Escarpment Commission (NEC) Visual Impact Assessment Technical Criteria study area requirements.

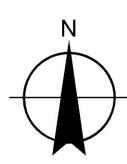
The visual detailed impact assessment study areas are illustrated in **Figure 2.1**.



Legend

- Site Study Area
- Walker Resource Management Campus
- Local Study Area (Approximately 2 km)
- Regional Study Area

Paper Size ANSI A
 0 0.5 1 1.5 2
 Kilometers
 Map Projection: Transverse Mercator
 Horizontal Datum: North American 1983
 Grid: NAD 1983 UTM Zone 17N



WALKER INDUSTRIES
2800 THOROLD TOWNLINE RD, NIAGARA FALLS, ON
VISUAL DETAILED IMPACT ASSESSMENT REPORT

Project No. **12567140**
 Revision No. **-**
 Date **Jun 8, 2026**

VISUAL STUDY AREA

FIGURE 2.1

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Data source: MNR/NRVIS, 2018. Produced by GHD under licence from Ontario Ministry of Natural Resources and Forestry, © Queen's Printer 2026. Service Layer Credits: Google Maps Sat; © OpenStreetMap (and) contributors, CC-BY-SA

Figure 2.1 Visual Detailed Impact Assessment Study Area

3. Methodology

3.1 Assessment approach and confirmation of effects

The assessment of impacts associated with the Preferred Method was undertaken through a series of steps that were based, in part, on a number of previously prepared reports (Visual Existing Conditions Report, Visual Comparative Evaluation Technical Memorandum). The net effects associated with the three Alternative Landfill Configuration Options and two Alternative Leachate Management Options identified during the Alternative Methods phase of the EA were based on conceptual designs. These effects were reviewed within the context of the preliminary design plans developed for the Preferred Method, as identified in the FCR, to determine the type and extent of any additional investigations required to ensure a comprehensive assessment of net effects. Additional investigations were then carried out, where necessary, in order to augment the previous work undertaken.

Feedback previously received through the EA consultation process was incorporated into the assessment approach, where appropriate, including input from the NEC regarding views of interest. In response to this feedback, an artistic impression was developed from a location on Taylor Road, approximately 250 m north of the proposed landfill (identified as Photo Location 40 in the updated Draft Visual Existing Conditions Report and in this Draft Visual Detailed Impact Assessment). In addition, the visual detailed impact assessment methodology is informed, in part, by the NEC Technical Criteria for Visual Impact Assessment, to align with NEC guidance, where appropriate.

With these additional investigations in mind, the potential impacts on the visual environment of the Preferred Method were documented.

With a more detailed understanding of the potential impact from the preliminary landfill and leachate treatment designs on the visual environment, the previously identified potential effects and recommended mitigation or compensation measures associated with the Preferred Method (documented in the Visual Comparative Evaluation Technical Memorandum) were reviewed to ensure their accuracy. Based on this review, the potential effects, mitigation or compensation measures, and net effects associated with the Preferred Method were confirmed and documented.

Artistic renderings from select locations were also developed and used as part of this assessment to better understand anticipated future visual conditions and to support the evaluation of potential impacts and mitigation measures from representative viewpoints. It was assumed that nighttime lighting effects would be negligible, limited to landfill gas flares and temporary, localized lighting required for construction and operational safety.

Following this confirmatory exercise, the requirement for monitoring in relation to net effects was identified, where appropriate. No visual approvals were required as part of the implementation of the Preferred Method.

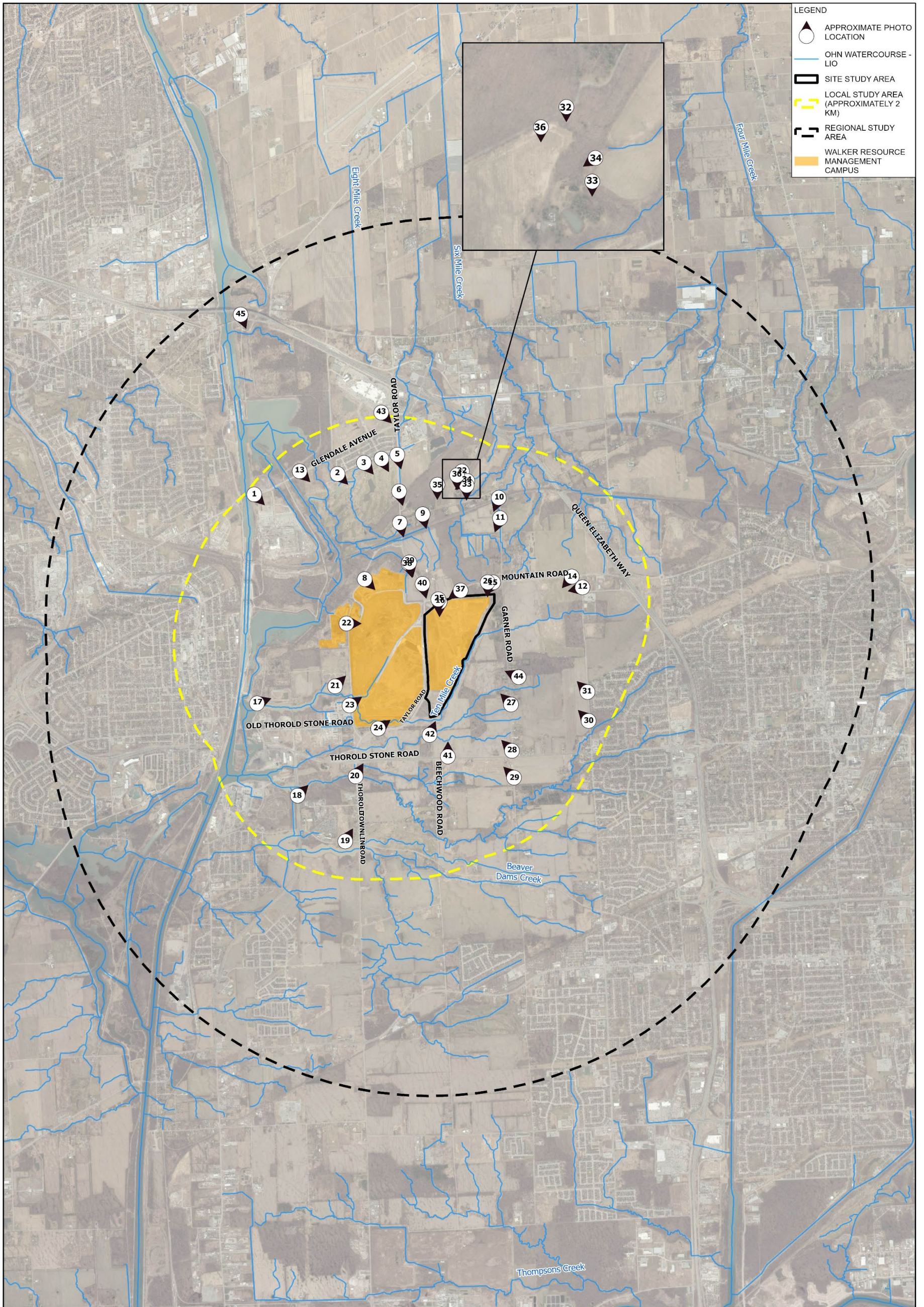
3.2 Additional investigations

Upon completion of the preliminary design for the Preferred Method, as documented in the FCR, the environmental characteristics of the Study Area were reviewed to verify the accuracy of the assessment of net effects from the Preferred Method. From this review, it was determined that additional investigations were required.

Additional viewing locations were identified based on a review of existing site topography and vegetative cover to better capture a representative range of potential visual conditions in the assessment. In particular, consideration was given to receptor sensitivity, elevations of the receptor and site, elevations of topography between the receptor and site, natural breaks in vegetation, vegetation types, and locations where screening is limited, as these conditions may provide unobstructed or partial views of the proposed landfill. This approach resulted in the selected viewpoints better reflecting residential areas, outdoor recreational areas, and roads within the study area that might reasonably be anticipated to have a view of the proposed South Landfill Phase 2 and appropriately accounting for the influence of terrain and existing vegetation on visibility. The additional viewing locations were included in revisions to the Draft

Visual Existing Conditions Report. The complete set of viewing locations documented in the Draft Visual Existing Conditions Report is shown on **Figure 3.1** and their coordinates are documented in **Table 3.1**.





LEGEND

- APPROXIMATE PHOTO LOCATION
- OHN WATERCOURSE - LIO
- SITE STUDY AREA
- LOCAL STUDY AREA (APPROXIMATELY 2 KM)
- REGIONAL STUDY AREA
- WALKER RESOURCE MANAGEMENT CAMPUS

Paper Size ANSI B
 0 100 200 300 400 500
 Meters

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



WALKER INDUSTRIES
 VISUAL DETAILED IMPACT ASSESSMENT REPORT

Project No. 12567140
 Revision No. -
 Date Jun 8, 2026

**VISUAL EXISTING CONDITIONS
 PHOTO LOCATIONS**

FIGURE 3.1

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 Print date: 08 Jun 2026 - 11:27

Data source: OHN Watercourse - LIO: <https://www.ontario.ca/page/open-government-licences-ontario>
 Ontario Imagery Web Map Service (OIWMS): © King's Printer for Ontario, 2022. Created by: xyisorg2

Figure 3.1 Visual Existing Conditions Photo Locations

Table 3.1 Photo Location Description and Coordinates

Photo ID	Location Description	Coordinates
1	Glendale Avenue Bridge, view facing southwest	43° 8' 44.034" N, 79° 11' 27.57" W
2	Keith Crescent, view facing southeast	43° 8' 51.966" N, 79° 10' 38.826" W
3	Wright Crescent between Keith Crescent and Niagara on the Green Boulevard, view facing south-southeast	43° 8' 56.448" N, 79° 10' 23.298" W
4	Niagara on the Green Blvd at the Royal Niagara Golf Club, view facing south-southeast	43° 8' 58.014" N, 79° 10' 13.104" W
5	Taylor Road South of Glendale Avenue, Niagara College's Niagara-on-the-Lake campus, view facing south-southeast	43° 8' 59.58" N, 79° 10' 3.846" W
6	Taylor Road before the Woodend Conservation Area, view facing south-southeast	43° 8' 44.01" N, 79° 10' 3.282" W
7	Taylor Road at Warner Road, Bruce Trail, Woodend Conservation Area, view facing south-southeast	43° 8' 30.606" N, 79° 10' 3.216" W
8	Walker Campus, view facing southeast	43° 8' 6.93" N, 79° 10' 24.36" W
9	Warner Road East of Taylor Road, Bruce Trail, view facing south	43° 8' 34.02" N, 79° 9' 49.86" W
10	CN Rail, Garner Road, Bruce Trail, View facing southwest	43° 8' 40.302" N, 79° 9' 5.352" W
11	Garner Road, East of Warner Road, view facing southeast	43° 8' 31.614" N, 79° 9' 4.896" W
12	Kalar Road and Montrose Road, Club Italia and Regency Athletic Resort/Regency 76, view facing east	43° 8' 1.392" N, 79° 8' 17.844" W
13	Seaway Haulage Road and Glendale Road, view facing southeast	43° 8' 53.418" N, 79° 11' 0.846" W
14	Mountain Road between Garner Road and Kalar Road, view facing southwest	43° 8' 6.084" N, 79° 8' 23.922" W
15	Mountain Road West of Garner Road, view facing southeast	43° 8' 4.362" N, 79° 9' 9.804" W
16	Mountain Road, East of Taylor Road, view facing south	43° 7' 56.532" N, 79° 9' 41.082" W
17	Seaway Haulage Road and Hoover Street, view facing east-northeast	43° 7' 15.054" N, 79° 11' 28.548" W
18	Davis Road between Niagara Falls Road and Thorold Stone Road, view facing northeast	43° 6' 35.436" N, 79° 11' 6.072" W
19	Beaverdams Road west of Thorold Townline Road, view facing northeast	43° 6' 15.522" N, 79° 10' 38.988" W
20	Thorold Townline Road south of Thorold Stone Road, view facing northwest	43° 6' 43.104" N, 79° 10' 32.118" W
21	Lakeview Cemetery, view facing east	43° 7' 21.618" N, 79° 10' 42.924" W
22	Walker Biosolids Facility, Thorold Townline Road, view facing east	43° 7' 48.234" N, 79° 10' 35.55" W
23	Thorold Public Works, Thorold Townline Road, Niagara Region Fleet Garage, view facing east-northeast	43° 7' 13.35" N, 79° 10' 34.758" W
24	Taylor Road east of Thorold Townline Road, view facing northeast	43° 7' 3.24" N, 79° 10' 18.432" W
25	Mountain Road east of Taylor Road, view facing south	43° 7' 57.684" N, 79° 9' 41.832" W
26	Mountain Road West of Garner Road, view facing southwest	43° 8' 4.71" N, 79° 9' 13.272" W
27	Garner Road north of Thorold Stone Road, view facing northwest	43° 7' 12.252" N, 79° 9' 0.924" W
28	Garner Road just north of Thorold Stone Road, view facing northwest	43° 6' 52.512" N, 79° 9' 0.966" W
29	Garner Road South of Thorold Stone Road, view facing northwest	43° 6' 41.1" N, 79° 9' 0.114" W
30	Kalar Road North of Thorold Stone Road, Shriner's Woodlot Park, St. Vincent De Paul Catholic Elementary School, view facing northwest	43° 7' 4.542" N, 79° 8' 16.026" W
31	Kalar Road and Mount Carmel Boulevard, view facing west-northwest	43° 7' 16.824" N, 79° 8' 16.308" W
32	Bruce Trail, view facing south	48° 8' 51.864" N, 79° 9' 26.496" W
33	Bruce Trail at Warren Road, view facing south	43° 8' 45.888" N, 79° 9' 23.868" W
34	Bruce Trail Field, view facing south-southwest	43° 8' 47.748" N, 79° 9' 23.466" W
35	Bruce Trail Roadway, view facing south	43° 8' 46.44" N, 79° 9' 40.884" W
36	Bruce Trail Roadway, view facing south	43° 8' 50.292" N, 79° 9' 29.31" W
37	Mountain Road, view facing southwest	43° 8' 1.254" N, 79° 9' 28.776" W

Photo ID	Location Description	Coordinates
38	Taylor Road, view facing south-southeast	43° 8' 13.278" N, 79° 9' 58.674" W
39	Taylor Road, view facing south-southeast	43° 8' 13.644" N, 79° 9' 58.212" W
40	Taylor Road at nearest property driveway to the north-northwest, view facing south-southeast	43° 8' 4.386" N, 79° 9' 50.802" W
41	Thorold Stone Road at Beechwood Road, view facing north	43° 6' 50.622" N, 79° 9' 38.352" W
42	Beechwood between Taylor Road and Thorold Stone Road, view facing north-northeast	43° 7' 0.048" N, 79° 9' 48.576" W
43	300 Taylor Road, view facing south-southeast	43° 9' 17.64" N, 79° 10' 12.69" W
44	Garner Road between Mountain Road and Thorold Stone Road, view facing west-northwest	43° 7' 24.69" N 79° 9' 2.382" W
45	Garden City Skyway, view facing south-southeast (Google Earth view)	43° 10' 1.92" N 79° 11' 41.51" W

3.3 Applicable policy and agency engagement

A review of official provincial policies and local municipal development plans was conducted to identify key landscape and visual values within the SSA and the regulatory measures protecting them. Although the SSA is located outside of the Natural Heritage System for the Greenbelt Plan Area and the Niagara Escarpment Plan (NEP), the values outlined in these plans remain relevant in guiding landscape and visual considerations for development in adjacent areas. Collectively, the plans and policies reviewed emphasize built form and aesthetic quality, land use compatibility, scenic resource protection and infrastructure sustainability and rehabilitation as key landscape and visual values shaping development in the area. A more comprehensive policy review is available in the Land Use Existing Conditions Report. **Table 3.2** outlines the landscape and visual values corresponding to each relevant policy.

Table 3.2 Landscape and Visual Values Identified Through a Policy Review

Policy	Landscape/Visual Values Identified
Provincial	
Ontario Planning Act (1990)	<p>Part I Section 2 of the Planning Act requires that a municipality or other approval authority shall have regard for matters of Provincial interest when carrying out their responsibilities. The following matters of Provincial interest are required to be considered in relation to the landscape and visual aspects of proposed development proposal within the LSA:</p> <ul style="list-style-type: none"> (r) the promotion of built form that: <ul style="list-style-type: none"> (i) is well-designed, (ii) encourages a sense of place, and (iii) provides for public spaces that are of high quality, safe, accessible, attractive and vibrant
Provincial Planning Statement (PPS) (2024)	<p>The PPS is a streamlined province-wide land use planning policy framework that replaces both the Provincial Policy Statement, 2020 and A Place to Grow: Growth Plan for the Greater Golden Horseshoe, 2019, while building upon policies from both documents.</p> <p>Within the context of the PPS, the activities associated with South Landfill Phase 2 would be classified as a 'major facility', as well as a 'waste management system' and 'infrastructure'.</p> <p>Chapter 3, Infrastructure and Facilities, Section 3.5. Land Use Compatibility:</p> <p>3.5.1 <i>Major facilities</i> and <i>sensitive land uses</i> shall be planned and developed to avoid, or if avoidance is not possible, minimize and mitigate any potential <i>adverse effects</i> from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term operational and economic viability of <i>major facilities</i> in accordance with provincial guidelines, standards and procedures.</p> <p>3.5.2 Where avoidance is not possible in accordance with policy 3.5.1, planning authorities shall protect the long-term viability of existing or planned industrial, manufacturing or other <i>major facilities</i> that are vulnerable to encroachment by ensuring that the planning and development of proposed adjacent <i>sensitive land uses</i> is only permitted if potential <i>adverse effects</i> to the proposed <i>sensitive land use</i> are minimized and mitigated, and potential impacts to industrial,</p>

Policy	Landscape/Visual Values Identified
	<p>manufacturing or other <i>major facilities</i> are minimized and mitigated in accordance with provincial guidelines, standards and procedures.</p> <p>The definition of <i>adverse effect</i>, as defined in the <i>Environmental Protection Act</i>, means one or more of:</p> <ul style="list-style-type: none"> a) impairment of the quality of the natural environment for any use that can be made of it; g) loss of enjoyment of normal use of property. <p>Both of these definitions can be identified as having a potential visual component.</p>
Greenbelt Plan (2017)	<p>The purpose of the Greenbelt Plan is to safeguard prime agricultural areas, natural heritage systems, and hydrological features from urban sprawl and incompatible uses. However, it does support sustainable infrastructure, including waste management facilities, provided they meet compatibility and environmental standards. The Greenbelt Plan does not mention its visual values explicitly.</p> <p>The SSA is outside the Greenbelt Plan boundaries. Portions of the LSA to the north, northwest and northeast are situated within the Greenbelt Plan Area, which overlaps with the NEP area (see below).</p>
Niagara Escarpment Plan (NEP) (2017)	<p>The NEP protects the scenic resources of the Escarpment, including natural scenery and open landscape character, and views to, from and through the Escarpment landscape as seen from public receptor points such as parks (e.g., Woodend Conservation Area), trails (e.g., Bruce Trail), and roads.</p> <p>The SSA is outside the NEP boundaries, with the Escarpment brow located approximately 260 m to the north of the SSA (at its closest point). Areas within the LSA are designated within the NEP as Urban Area, Mineral Resource Extraction, Escarpment Rural Area, Escarpment Protection Area, and Escarpment Natural Area. The corresponding sections of the NEP state that all development within those designations must be compatible with the <i>scenic resources</i> of the <i>Escarpment</i> and this is also summarized in Section 2.13, Scenic Resources and Landform Conservation:</p> <ul style="list-style-type: none"> 2.13.1 Development shall ensure the protection of the <i>scenic resources</i> of the <i>Escarpment</i>. 2.13.2 Where a <i>visual impact</i> on the <i>scenic resources</i> is identified as a concern by the <i>implementing authority</i>, a <i>visual impact assessment</i> shall be required. <p>Communication from the Niagara Escarpment Commission (NEC) on April 23, 2025 indicates that the scenic quality ranking for the NEP lands within the LSA, per the Niagara Escarpment Landscape Evaluation Study, is considered “very low;” the lowest possible ranking out of the NEC’s six categories.</p>
A Place to Grow; Growth Plan for the Greater Golden Horseshoe (2020)	<p>The Growth Plan for the Greater Golden Horseshoe establishes a land use planning framework that supports the achievement of complete communities, a thriving economy, a clean and healthy environment, and social equity. The Growth Plan provides for the identification and protection of a Natural Heritage System outside of the Greenbelt Area and settlement areas, and applies protections similar to those in the Greenbelt Plan to provide consistent and long-term protection throughout the Greater Golden Horseshoe.</p> <p>A portion of the LSA to the west of the site is designated as Natural Heritage System under the Growth Plan; however, visual values within this land use designation are not expressly noted.</p>
Municipal/Local	
Niagara Region Official Plan (NROP) (2022)	<p>The NROP is a long-range land use planning document that guides regional growth.</p> <p>The NROP acknowledges waste management as an essential service, provided it aligns with regional and provincial policies for environmental protection and land use compatibility.</p> <p>Section 5.2 (Infrastructure) sets out provisions for Infrastructure, including waste management. The objectives and policies in this Section that are particularly relevant include:</p> <ul style="list-style-type: none"> 5.2.1.8 Infrastructure will be planned through the appropriate environmental assessment process, ensuring full regard for the natural environment system, cultural heritage resources and natural hazard areas of the region. 5.2.1.9 The location, design, construction, and operation of infrastructure will be sustainable, strategic, and cost-efficient, and minimize adverse impacts on the natural environment system, agricultural lands, and existing landscape. 5.2.1.22 Waste management systems shall be located and designed in accordance with Provincial legislation and standards. 5.2.4.2 The disposal and treatment of solid wastes shall be provided in an integrated manner that evaluates full life cycle impacts with respect to financial and environmental sustainability, public health, and aesthetics. 5.2.4.6 The selection of all solid waste disposal sites will involve consideration of:

Policy	Landscape/Visual Values Identified
	<p>a. the compatibility of the methods of operation with adjacent land uses;</p> <p>5.2.4.7 Site and rehabilitation plans will be developed prior to the use of a particular site for solid waste disposal. These plans should make provision for:</p> <p>d. landscaping and berms;</p>
<p>City of Niagara Falls Official Plan² (1993, updated 2024)</p>	<p>The Official Plan is a policy document that guides the use of land within the City of Niagara Falls over the next 20 to 30 years.</p> <p>The City of Niagara Falls Official Plan governs the SSA. Within the Plan, the SSA is designated as Extractive Industrial. Section 9.2. of the Plan states that:</p> <p>[.] Final rehabilitation for all extractive industrial sites will be required following the expiration of any licensed site or extraction of material has been exhausted. [..]. The City will encourage the rehabilitation that will restore and create compatible land uses with adjacent properties and their occupants. An Official Plan and Zoning By-law amendment shall be required to consider new uses within extractive industrial sites that are not agriculturally related.</p> <p>Adjacent to the Official Plan, By-law 2007-082 also applies to the LSA which was approved April 16, 2007, designating some of the LSA as Special Policy Area “50”, allowing for the current landfilling operations in the area.</p> <p>Concerning visual values, By-law 2007-082 states:</p> <p>13.50.2. Landfilling will be done in phases. Final rehabilitation to an agricultural land use shall take surrounding land use and approved land use designations into consideration. Plantings and landscaping required through the approval of the Environmental Assessment shall remain throughout and subsequent to the rehabilitation of the lands to an agricultural use.</p>
<p>City of Thorold Official Plan (2016, consolidated 2025)</p>	<p>This Official Plan is a policy document that guides land use planning within the City of Thorold.</p> <p>The City of Thorold Official Plan governs the western portion of the LSA. Although the City does not overlap with the SSA, the lands within the LSA that are subject to the City of Thorold Official Plan are identified on Schedule A-2. The majority of these lands are designated Neighbourhood Rolling Meadows Secondary Plan Area, which is supported by a planned primary collector road network.</p> <p>In addition to this land designation, the LSA also includes land within the NEP Area, as well as areas designated Agricultural, Rural, Rural Industrial, Open Space and Parks, Environmental Protection One, and Environmental Protection Two.</p> <p>The City of Thorold Official Plan provides no policies addressing views, view corridors, or visual values that are applicable to the subject lands or relevant to the proposed project.</p>
<p>St. Catharines Official Plan (The Garden City Plan) (2010, amended 2025)</p>	<p>The City of St. Catharines Official Plan (The Garden City Plan) establishes policies that guide the use and development of lands within the community.</p> <p>The City of St. Catharines Official Plan governs the northwestern portion of the LSA. Within the Official Plan, land use designations applicable to the LSA include Parkland and Open Space, Natural Areas, and Employment Area. Although these designated lands are located within the LSA, a review of the City of St. Catharines Official Plan confirms that it contains no policies addressing views, view corridors, or visual values that are applicable to the subject lands or relevant to the proposed project.</p>
<p>Town of Niagara-on-the-Lake Official Plan (amended 2017)</p>	<p>The Town of Niagara-on-the-Lake Official Plan establishes a policy framework to guide future growth, land use, and the delivery of infrastructure within the community.</p> <p>The Official Plan governs the northern boundary of the Local Study Area (LSA). As identified on Schedule A, the applicable land use designations within this area include Agricultural, Escarpment Protection Area, and Major Open Space. In addition, portions of the LSA are located within the Niagara Escarpment Plan (NEP) Area.</p> <p>As the LSA encompasses lands subject to the NEP, any development proposed within or adjacent to these lands must conform to the applicable NEP policies, including the visual impact and landscape protection requirements outlined above.</p>

² As of April 2025, The City of Niagara Falls is in the process of developing a new Official Plan

4. Description of the environment potentially affected

In this section, a description of the existing visual environment is presented. The information is extracted from the Draft Visual Existing Conditions Report, and a more detailed description and list of reference sources can be found in that report.

4.1 Existing conditions

The Visual Study Area is located in a predominantly rural landscape outside the City of Niagara Falls urban settlement boundary, characterized by agricultural lands, natural heritage features, and scattered rural residences. The SSA comprises an active quarry excavated to approximately 20 m below grade, surrounded by perimeter berms and vegetative screening established through past and ongoing Campus operations and the realignment of Ten Mile Creek. The surrounding landscape is moderately flat to gently rolling, with elevations ranging from approximately 178 to 185 mAMSL, and is visually influenced by the adjacent Niagara Escarpment, a prominent regional landform located immediately north of the Campus.



Figure 4.1 Photo Location 16, Unobstructed View from Mountain Road

Vegetation within the SSA consists primarily of early successional native plantings designed for screening, including a healthy mix of coniferous and deciduous trees and abundant understory vegetation, which together provide effective visual mitigation despite some ash mortality associated with Emerald Ash Borer. The broader LSA includes a diverse mosaic of land uses and vegetation communities, including agricultural fields, hedgerows, woodlots, cultural meadows, wetlands, rural residences, golf courses, institutional uses, industrial lands, and waste management facilities associated with Walker's Resource Management Campus. Existing views toward the SSA from surrounding publicly accessible locations are generally limited or obstructed by topography, earth berms, and vegetation, with most views at eye

level screened along adjacent road corridors. One unobstructed view into the SSA was identified from Mountain Road at Photo Location 16 (Figure 4.1).

4.2 “Future” existing conditions (do nothing option)

From a visual perspective, the future existing condition under the “do nothing” option would be largely consistent with the current conditions within the LSA, as the majority of locations do not offer views to the SSA at grade. Under the approved Aggregate Resources Act (ARA) rehabilitation plan, quarry operations would cease and the SSA would be restored to an agricultural landscape consisting of approximately 48.2 hectares of rehabilitated farmland and a 2.4-hectare pond.

From locations within the LSA where the SSA is currently visible, views would transition from an active industrial/quarry setting to open, gently graded agricultural landforms, with earth berms and existing vegetation continuing to restrict or partially screen views. As a result, the level of visual contrast experienced by receptors would be reduced relative to existing conditions, with the conditions more closely matching the surrounding rural landscape.

5. Visual net effects

As described in Section 1, following the confirmation of the Preferred Landfill Configuration Option and the Preferred Leachate Management Option, these components, together with all other project elements that were consistent across the previously assessed alternative methods, collectively formed the “Preferred Method.” The potential effects and associated mitigation or compensation measures identified were re-evaluated to confirm their validity in the context of the preliminary design. This review incorporated the refined engineering design details described in the FCR.

As noted in Section 3.2, additional viewing locations were identified following review of the FCR to better reflect a range of receptor conditions and appropriately account for the influence of terrain and existing vegetation on visibility within the LSA. The complete set of viewing locations documented in the Draft Visual Existing Conditions Report is shown on Figure 3.1.

Potential effects were identified based on the characterized and documented existing visual conditions, a revisit of the Zone of Theoretical Visibility (ZTV) analysis presented in the comparative evaluation, and the consideration of artistic impressions developed for select photo locations provided in the following subsections. Measures to further minimize the potential effects on views within the Study Area, beyond those embedded in the design proposed in the FCR, were recommended, drawing from best practice approaches. Net Effects have been categorized according to the definitions in Table 5.1, in alignment with the categorization used for the comparative evaluation during the Alternative Methods phase.

Table 5.1 *Categorization of Net Effects*

Net Effect Category	Description
No Effect	No departure from the existing condition is expected.
Low Effect	Effects are likely to be negligible or minor in scale if they are negligible or low in magnitude, of short duration, infrequent, small in spatial extent, reversible or readily avoided, and generate few or minor impacts in social or ecological contexts. Mitigation measures will allow baseline conditions to remain largely unchanged.
Moderate Effect	Effects are likely to be medium in scale if they are moderate in magnitude, of moderate duration, occasionally frequent, possibly/partially reversible, and to generate a moderate level of impacts in social or ecological contexts. Mitigation measures may not fully eliminate, reduce, control or offset effects but should enable affected communities to maintain economic and social well-being, and should prevent the diminishment or loss of key components of the environment and its ecological functioning.
High Effect	Effects are likely to be severe in scale if they are high in magnitude, permanent/long term, frequent, irreversible, and over a large spatial extent or within an area of exclusive/preferred Indigenous use or of ecological/environmental sensitivity. High levels of impacts in social or ecological contexts are expected. There is a high degree of uncertainty of the effectiveness of mitigation measures, or mitigation measures are unable to fully address effects.

The updated assessment of predicted potential effects, recommended impact management measures, and resulting net effects is provided in Table 5.3 and further elaborated upon in the subsections that follow.

A set of 18 Common Receptors was developed for the Social and Economic Environment detailed impact assessment reports to allow for assessment of the combination and interaction of multiple effects of the Preferred Method on the same receptor. Effects on these Common Receptors are documented in Section 5.1 for use in the Social and Economic Environment detailed impact assessment reports. As not all Common Receptors correspond with a documented Photo Location, the nearest Photo Location to each receptor is also noted.

5.1 Potential effects on views

As noted above, potential effects of the Preferred Method were identified based on the characterized and documented existing visual conditions, a revisit of the ZTV analysis, the selection of a set of Photo Locations representative of

sensitive visual receptor locations (e.g., residential areas, outdoor recreational areas, roads) that might reasonably be anticipated to have a view of the proposed South Landfill Phase 2 within the SSA, and the consideration of artistic impressions developed for these selected sensitive receptor Photo Locations.

It is noted that, given the proposed location relative to the existing landforms and vegetation, the Preferred Leachate Management option is not expected to be visible from areas outside the Walker Campus; therefore, the focus of the following potential effects analysis is on the Preferred Landfill Configuration.

Zone of theoretical visibility

The Zone of Theoretical Visibility (ZTV) illustrates land from which it is theoretically possible to view the Preferred Method in the absence of mitigation. This is based on the potential visibility of the Preferred Method landform at a maximum height of 31 m and using the following parameters for the analysis:

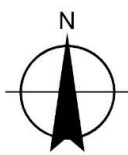
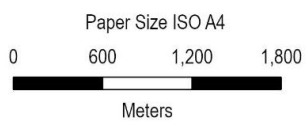
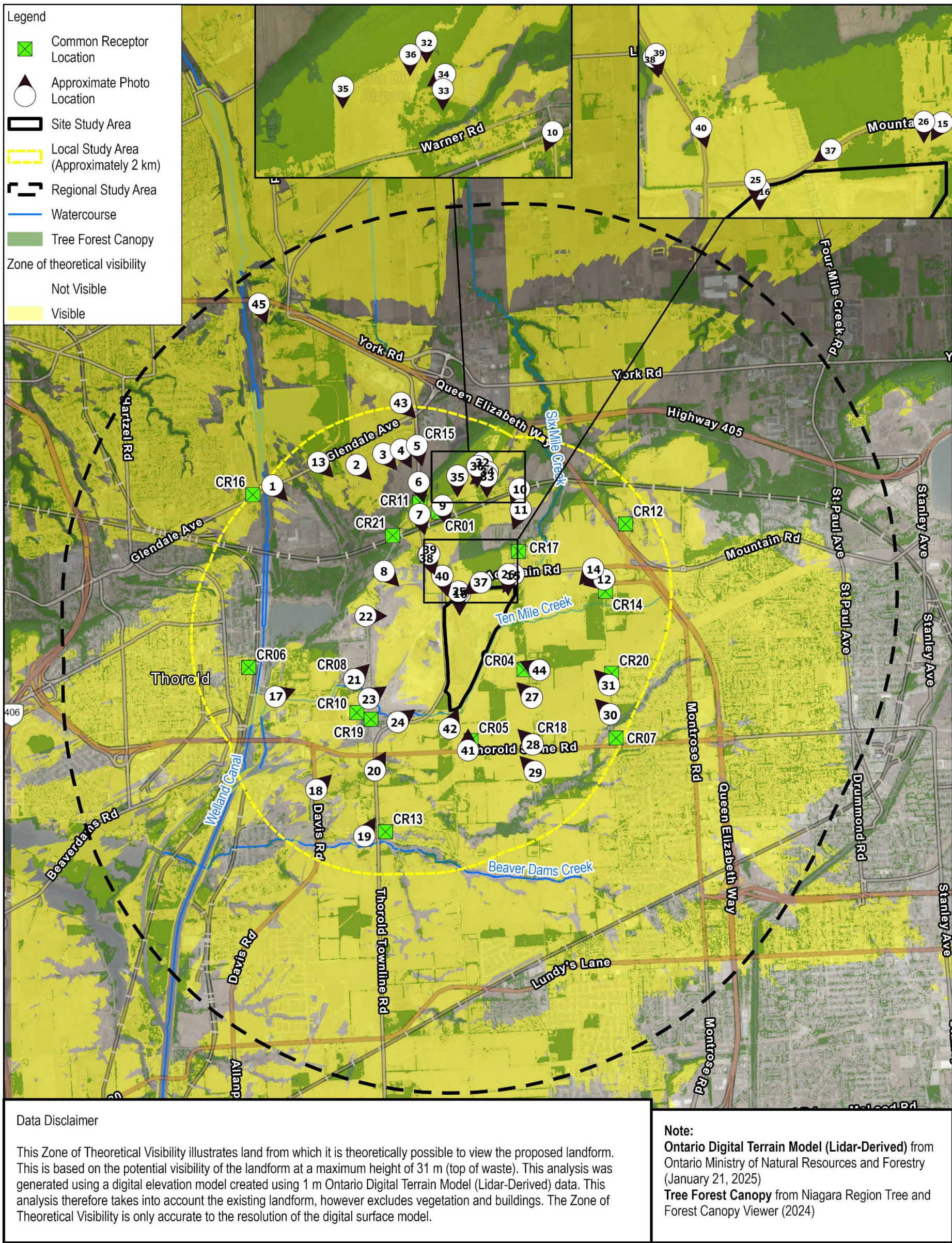
- A viewing height of 1.7 m, which is the average within the typical viewing level range of an adult.
- Approximately 30 to 33 points spread evenly across the proposed landform, referencing the proposed design elevations above the Lidar used.
- A digital surface model, created using 1 m Ontario Digital Terrain Model (Lidar-Derived) data, from Ontario Ministry of Natural Resources and Forestry (date Updated: January 21, 2025).

The GIS software digitally determines the likely extent over which the Preferred Method landform would be visible or not visible. In interpreting the ZTV, the following issues must be considered:

- The ZTV only takes into account the landform and does not include land cover factors such as the presence of buildings and trees or the final height of the existing South Landfill Phase 1. It therefore represents the worst-case scenario of potential visual impacts.
- The ZTV does not take into account the effect of distance. The greater the distance from the proposal, the lower the impact, as the development will take up a smaller portion of the view, and atmospheric conditions may reduce the visual prominence of the proposal.
- The ZTV is only accurate to the resolution of the elevation model.

With the above parameters and considerations in mind, the ZTV analysis for the Preferred Method in relation to the 45 existing conditions photo locations and 18 Common Receptor locations is provided in Figure 5.1.

As shown in Figure 5.1, the majority of the lands within the southern half of the RSA are located within the ZTV visible area for the Preferred Method, in addition to the areas in the northwest and north-northeast of the RSA.



Walker Industries
 Visual Detailed Impact Assessment Report

Project No. 12567140
 Revision No. -
 Date Jun 10, 2026

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

Zone of Theoretical Visibility

FIGURE 5.1

Q:\GIS\PROJECTS\12567000s\12567140\GIS\Maps\Deliverables\202504_ZTV\12567140_202504_ZTV_GIS001\12567140_202504_ZTV_GIS001.aprx
 Print date: 10 Jun 2026 - 17:39

Data source: Copy of Copy of Hybrid Reference Layer:
 imagery\Niagara_Land_Classification_2023:
 Ontario Imagery Web Map Service (OIWMS). © King's Printer for Ontario, 2022. Created by: yxiong2

Figure 5.1 Preferred Method Zone of Theoretical Visibility

Artistic impressions

In order to further refine the potential effects of the Preferred Method on the visual environment, artistic impressions were developed. It is noted that the artistic impressions do not incorporate any mitigation measures that may be applied to reduce visual impact beyond those embedded in the design, as described in the FCR. Further, the visual impact illustrated in the artistic impressions may be naturally screened during the different seasons of the year.

Considering the ZTV analysis, 8 photo locations and one near-neighbour location within the LSA, as shown on Figure 5.2, Photos 1 through 28, and Appendix A, were selected for photomontages depicting the following:

1. Existing condition
2. Existing condition with red overlay of Preferred Method landform at full build out (i.e. 31 m TOW)
3. Existing condition with yellow overlay of existing South Landfill Phase 1 landform at full build out, where it is anticipated to mitigate views of the Preferred Method (i.e. Photo Locations west of Walker Campus only)
4. Artistic impression presenting the Preferred Method at full build out (i.e. 31 m TOW) in the absence of mitigation
5. Artistic impression presenting the Preferred Method at full build out (i.e. 31 m TOW) with mitigation as proposed in the FCR (i.e. northerly extension of the Garner Road Berm), where applicable

Site inspection and artistic impression methodology

Site inspections were undertaken on 17 January 2025 and 14 April 2026 during both winter and spring conditions. During the visit, site photography was undertaken to gain representative views from publicly accessible locations, with the addition of one private location. All photographic images were captured using a Canon EOS 5D, 50 mm fixed focal length lens on a 35 mm full frame format camera, at eye level at approximately 1.6 m. All photograph GPS locations were recorded and mapped.

Existing views are represented using a panorama technique, which involves stitching together a number of adjoining images using Adobe Photoshop software, representing a 75 degree horizontal field of view and 21 degree vertical field of view.

Artistic impressions were produced to represent proposed views of the Preferred Method final landform in the absence of mitigation. The software used to model and render the photomontages was Autodesk 3D Studio Max, and a digital terrain model was used to model the surrounding landform. Once the 3D model incorporating both the landscape and new project elements was created, a virtual camera was placed in the software at the same location the photographs were taken. The film, focal lens and height of the virtual camera match the real camera utilised to take the photographs. The photographs of the project area were used in 3D Studio Max as a background to accurately match the 3D model with the project elements to the perspective of the photographs. From the camera view, rendered images of the project were produced to match the daylight exposure of the photographs. The rendered images were imported into Adobe Photoshop for post-production editing and collation of the photomontages.

Where both summer and spring views were available from the same location, the worse-case winter view with the least amount of intervening leaf cover was selected for the production of artistic impressions.

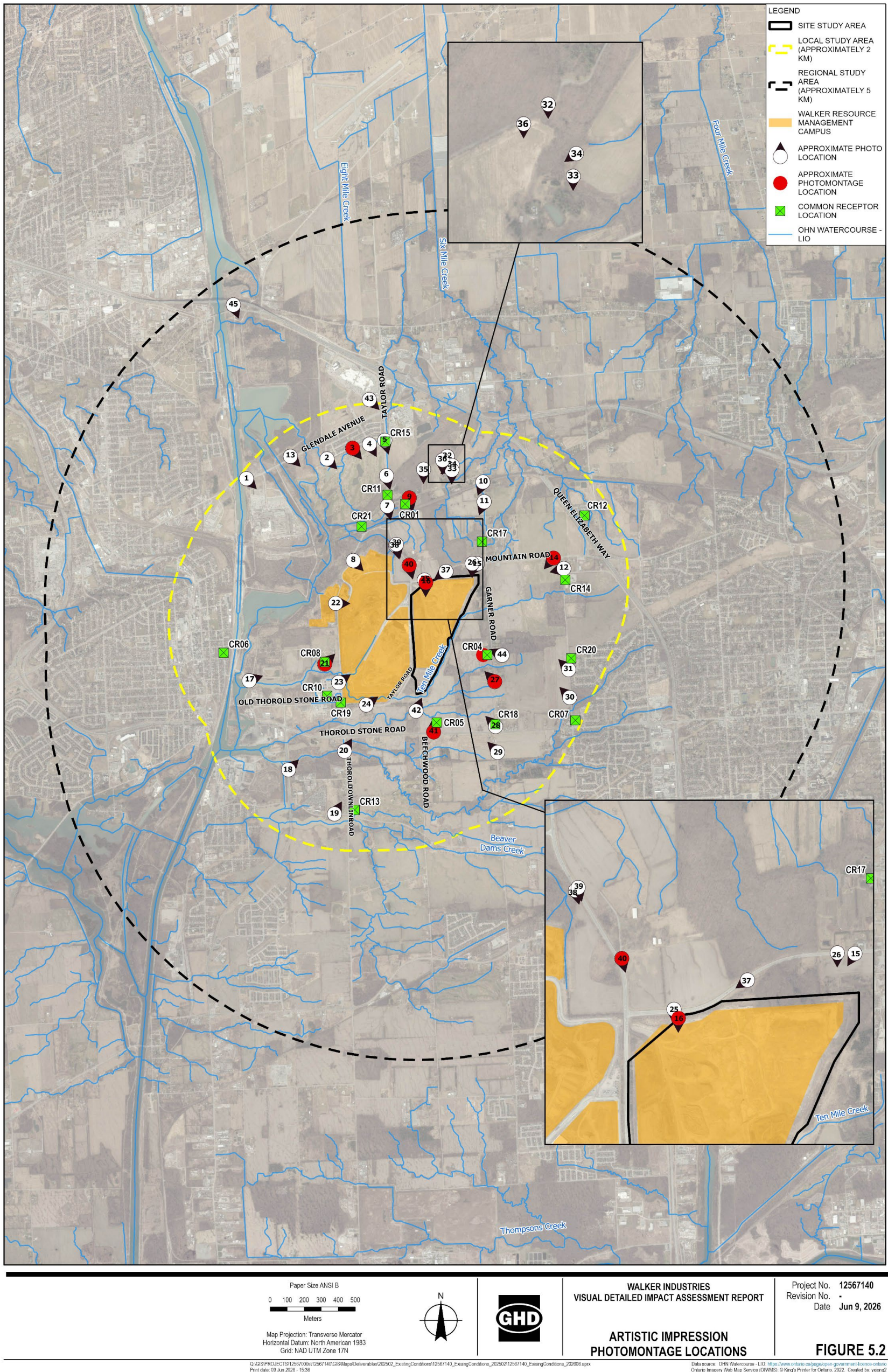


Figure 5.2 Artistic Impression Photomontage Locations

Photo Location 3 – Wright Crescent between Keith Crescent and Niagara-on the-Green Boulevard (view facing south-southeast)



Photo 1 Photo Location 3 – Existing Condition



Photo 2 Photo Location 3 – Preferred Method Overlay



Photo 3 Photo Location 3 – Artistic Impression of Preferred Method with no mitigation (view fully obscured)

Photo Location 9 – Warner Road east of Taylor Road, Bruce Trail (view facing south)



Photo 4 **Photo Location 9 – Existing Condition**



Photo 5 **Photo Location 9 – Preferred Method Overlay**



Photo 6 **Photo Location 9 – Artistic Impression of Preferred Method with no mitigation (view partially obscured)**

Photo Location 14 – Mountain Road between Garner Road and Kalar Road (view facing southwest)



Photo 7 Photo Location 14 – Existing Condition



Photo 8 Photo Location 14 – Preferred Method Overlay



Photo 9 Photo Location 14 – Artistic Impression of Preferred Method with no mitigation (view partially obscured)

Photo Location 16 – Mountain Road east of Taylor Road (view facing south)



Photo 10 **Photo Location 16 – Existing Condition**



Photo 11 **Photo Location 16 – Preferred Method Overlay**



Photo 12 **Photo Location 16 – Artistic Impression of Preferred Method with no mitigation (fully visible)**

Photo Location 21 – Lakeview Cemetery (view facing east)



Photo 13 Photo Location 21 – Existing Condition



Photo 14 Photo Location 21 – Preferred Method Overlay



Photo 15 Photo Location 21 – Existing South Landfill Phase 1 Full Build Out Overlay (view fully obscured)

Photo Location 27 – Garner Road to the east of the site (view facing west)



Photo 16 **Photo Location 27 – Existing Condition**



Photo 17 **Photo Location 27 – Preferred Method Overlay**



Photo 18 **Photo Location 27 – Artistic Impression of Preferred Method with no mitigation (view partially obscured)**

Photo Location 40 – Taylor Road at nearest property driveway to the north (view facing south)



Photo 19 **Photo Location 40 – Existing Condition**



Photo 20 **Photo Location 40 – Preferred Method Overlay**



Photo 21 **Photo Location 40 – Artistic Impression of Preferred Method with no mitigation (view partially obscured)**

Photo Location 41 – Thorold Stone Road at Beechwood Road (view facing north)



Photo 22 **Photo Location 41 – Existing Condition**



Photo 23 **Photo Location 41 – Preferred Method Overlay**



Photo 24 **Photo Location 41 – Artistic Impression of Preferred Method with no mitigation (view partially obscured)**

Near-Neighbour Back Deck – West side of Garner Road, immediately adjacent to SSA (view facing west)



Photo 25 Near-Neighbour back deck on west side of Garner Road – Existing Condition



Photo 26 Near-Neighbour back deck on west side of Garner Road – Preferred Method Overlay



Photo 27 Near-Neighbour back deck on west side of Garner Road – Artistic Impression of Preferred Method with no mitigation (view partially obscured)



Photo 28 Near-Neighbour back deck on west side of Garner Road – Artistic Impression of Preferred Method with northerly extension of Garner Road Berm proposed as mitigation in FCR (view partially obscured)

Additional inputs and considerations

In order to consider the potential effect of the facility on views of the Niagara Escarpment, the location of the Walker Campus was estimated within a view of the Escarpment from the QEW, near the Garden City Bridge (Photo Location 45). The image used was obtained from Google Street View and is dated 2023. From this viewpoint, features of the Walker Campus are not readily discernible, and it is expected that the proposed South Landfill Phase 2 would similarly not stand out as an easily discernible feature in views of the Escarpment. The exception to this could be when machinery is operating at the maximum top of waste, as it could introduce greater visual contrast and thus stand out on the horizon.

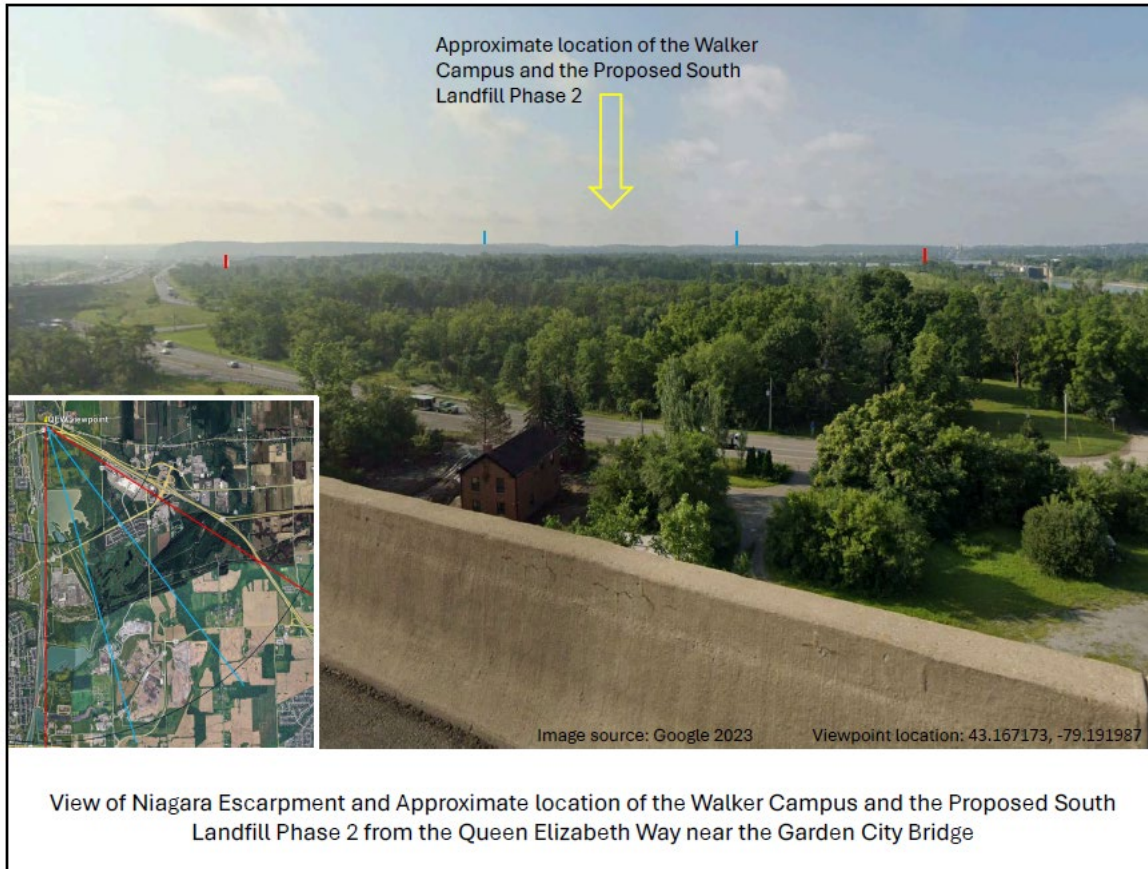


Photo 29 View of Niagara Escarpment and approximate location of the Walker Campus and the proposed South Landfill Phase 2 from the Queen Elizabeth Way near the Garden City Bridge

Common receptors

Potential views from Common Receptor locations, as documented in **Table 5.2** were predicted based on ZTV mapping, existing condition images from nearby Photo Locations, aerial imagery, Google Earth streetview and, where applicable, artistic impression photomontages. Of note, the locations were assessed prior to leaf-out, thus the existing conditions and potential visibility columns represent a conservative assessment of the worst-case scenario.

Table 5.2 Common Receptor location potential views

Common Receptor ID	Closest Photo Location	Distance from SSA	Potential Existing Condition view of SSA	Potential above-grade visibility (operation)	Potential full build-out visibility (post-closure; landfill capped and closed)
CR01	9 (Artistic Impression Available)	1,094 m	Fully obscured	Partially obscured by existing vegetation and topography (no mitigation proposed in FCR)	Partially obscured by existing vegetation and topography (no mitigation proposed in FCR)
CR04	44 (Artistic Impression Available)	550 m	Fully obscured from the public road; however, may be visible from the dwelling immediately west of CR04	Fully obscured (FCR-proposed Garner Road berm extension obscures full view)	Partially obscured (FCR-proposed Garner Road berm extension obscures all but top-most portion of northern portion of mound)
CR05	41 (Artistic Impression Available)	450 m	Partially obscured	Partially obscured by existing vegetation (no mitigation proposed in FCR)	Partially obscured by existing vegetation (no mitigation proposed in FCR)
CR06	17	2,577 m	Fully obscured	Fully obscured	Fully obscured (no mitigation proposed in FCR)
CR07	30	2,005 m	Fully obscured	Partially obscured by existing vegetation, existing Garner Road berm, and FCR-proposed Garner Road berm extension	Partially obscured by existing vegetation, existing Garner Road berm, and FCR-proposed Garner Road berm extension
CR08	21 (Artistic Impression Available)	1,197 m	Fully obscured	Fully obscured	Fully obscured by vegetation and full build out of existing South Landfill Phase 1 (no mitigation proposed in FCR)
CR10	23	1,186 m	Fully obscured	Fully obscured	Fully obscured by vegetation and full build out of existing South Landfill Phase 1 (no mitigation proposed in FCR)
CR11	6	1,295 m	Fully obscured	Fully obscured	Partially obscured by existing vegetation (no mitigation proposed in FCR)
CR12	12	1,655 m	Fully obscured	Fully obscured	Partially to fully obscured by existing vegetation and topography (no mitigation proposed in FCR)
CR13	19	1,787 m	Fully obscured	Fully obscured	Partially to fully obscured by existing vegetation (no mitigation proposed in FCR)

Common Receptor ID	Closest Photo Location	Distance from SSA	Potential Existing Condition view of SSA	Potential above-grade visibility (operation)	Potential full build-out visibility (post-closure; landfill capped and closed)
CR14	12	1,181 m	Fully obscured	Fully obscured	Partially obscured bWy existing vegetation and FCR-proposed Garner Road berm extension
CR15	5	1,984 m	Fully obscured	Fully obscured	Fully obscured (no mitigation proposed in FCR)
CR16	1	2,893 m	Fully obscured	Fully obscured	Partially to fully obscured by existing vegetation (no mitigation proposed in FCR)
CR17	26	456 m	Fully obscured	Partially obscured by existing vegetation (no mitigation proposed in FCR)	Partially obscured by existing vegetation (no mitigation proposed in FCR)
CR18	28	1,054 m	Fully obscured	Partially obscured by existing vegetation (no mitigation proposed in FCR)	Partially obscured by existing vegetation (no mitigation proposed in FCR)
CR19	24	1,033 m	Fully obscured	Fully obscured by vegetation and full build out of existing South Landfill Phase 1	Fully obscured by vegetation and full build out of existing South Landfill Phase 1 (no mitigation proposed in FCR)
CR20	31	1,585 m	Fully obscured	Partially obscured by existing vegetation, existing Garner Road berm, and FCR-proposed Garner Road berm extension	Partially obscured by existing vegetation, existing Garner Road berm, and FCR-proposed Garner Road berm extension
CR21	7	1,146 m	Fully obscured	Fully obscured	Partially to fully obscured by existing vegetation and topography (no mitigation proposed in FCR)

5.2 Proposed mitigation and compensation measures

The FCR includes the following mitigation measures relevant to the visual environment that are embedded in the design of the Preferred Method:

- Northerly extension of the Garner Road Berm
- Maintenance, where possible, and enhancement, where practicable, of existing screening planting and/or perimeter berms (e.g. Taylor Road screening vegetation, existing Garner Road Berm)

Considering the potential effects on views described in Section 5.1 and best practice approaches the following additional mitigation measures are proposed to further reduce the visibility of the Preferred Landfill Configuration Option from surrounding visual receptors:

– **Screening**

- In addition to the proposed northerly extension of the Garner Road Berm, screen planting and/or berms should be considered in the following locations to mitigate views from sensitive receptors:
 - Along northern site boundary, particularly on the north-western side close to Mountain Road, to mitigate views from Mountain Road, Taylor Road, and receptors to the north.
 - Within the southern boundary of the SSA and along the 10-mile Creek riparian corridor, where appropriate, to mitigate views from receptors to the south.
 - The proposed northerly extension of the Garner Road berm should be planted with appropriate species to screen views from residential receptors on Garner Road, and to tie into the planting strategy of the existing Garner Road Berm. Where appropriate, consult with residents regarding the design of the berm.
 - Taylor Road screening vegetation to screen views from road users on Taylor Road adjacent to the project site.
- Screen planting should use endemic grass, shrub and tree species that are compatible with the existing surrounding vegetation.
- Where possible, screen planting and/or berms should be designed to respond to the natural patterns in the surrounding landscape.
- Screen planting should be of adequate depth and density to screen views of the proposed development from sensitive receptor locations.
- Maintenance of vegetation screening should continue to be undertaken over the life of the project.

– **Construction**

- Locate construction equipment, stockpiles, and other visible elements away from the key sensitive receptor views. Should any equipment or stockpiles be located in a visually prominent location for any reasonable period of time, incorporate screening measures and practices to ensure the site is kept tidy and visibility reduced.
- Minimize the removal of existing vegetation, particularly where existing trees may provide visual mitigation to the project site.
- Implement no-go-zones and tree protection fencing to areas of vegetation retention for the duration of the construction and operation phase
- Where possible, vegetation screening and berms should be implemented at the start of the project, to allow for plant establishment and to mitigate views throughout the construction, operation and post-operation stages.

– **Rehabilitation**

- Rehabilitation should be undertaken in accordance with a developed landscape rehabilitation strategy and/or rehabilitation plan.
- Rehabilitation should be undertaken progressively, where possible, to reduce the contrast between the landfill activities and the surrounding environment.
- Rehabilitation should be undertaken with selected grass, shrub and tree species, comprised of endemic plants, where possible, that are compatible with the existing surrounding vegetation.
- Rehabilitation planting should respond to the existing character and conditions, including topography, landform, slope, and natural systems.

No additional impact management measures are required to mitigate views of the Preferred Leachate Management Option if existing berm and vegetation are retained.

5.3 Net effects

As identified through the ZTV analysis and illustrated through the artistic impression photomontages for select locations within the LSA, the Preferred Method will become visible from points in the surrounding area. A northerly extension of the Garner Road Berm, as proposed in the FCR, will partially to fully obscure views from locations to the east of the Preferred Method. Visual impact can be further minimized through application of the mitigation measures proposed in Section 5.2, including retention of existing screening measures, addition of new permanent and temporary screening features, as well as through operational planning. Visual effects are expected to decrease post-closure following cessation of operations and full capping and the landfill mound.

As noted in Section 5.1, given the proposed location relative to the existing landforms and vegetation, the Preferred Leachate Management option is not expected to be visible from areas outside the Walker Campus.

Specific to Common Receptors, the application of mitigation measures, as proposed in Section 5.2, are expected to further reduce visibility at CR01, CR04, CR05, CR07, CR11, CR12, CR13, CR14, CR16, CR17, CR18, CR20 and CR21.

Table 5.3 Visual Potential Environmental Effects, Proposed Impact Management Measures, and Net Effects

Criteria	Indicator	Potential Effects	Impact Management Measures	Net Effects
Effect on views of the facility	Predicted changes in views of the facility from the surrounding area	<ul style="list-style-type: none"> - As the landfill reaches and exceeds existing grade it will begin to be visible from viewpoints in the surrounding area. During initial stages it will be below existing grade and not visible. - Theoretical visibility of the maximum top of waste extends beyond the LSA; however, existing vegetation will screen the site from much of the area identified in the ZTV modelling; views from the west will largely be obscured by the full build-out of South Landfill Phase 1; and views from the east will be partially obscured by the proposed northerly extension of the Garner Road Berm. - Views of the landfill from below the Niagara Escarpment are possible as maximum top of waste is reached; however, it is expected that at such distances the effect will be minimal, with the exception of machinery operation at the top of waste, which may be more visible at such distance as it presents higher visual contrast to the surrounding landscape. - No changes to views of the leachate management lagoons are expected from the addition of a third lagoon. 	<ul style="list-style-type: none"> - Retain and enhance existing visual screening features associated with the quarry. - Implement no-go-zones and tree protection fencing to areas of vegetation retention for the duration of the construction and operation phase - Install additional permanent screening features (e.g., berms and vegetation), where appropriate, along northern site boundary, within southern SSA boundary, along 10-mile Creek riparian corridor, and Taylor Road. Where possible, vegetation screening and berms should be implemented at the start of the project, to allow for plant establishment and to mitigate views throughout the construction, operation and post-operation stages. - Where possible, locate construction equipment, stockpiles, and other visible elements away from the key sensitive receptor views. - Deploy temporary screening features (e.g., fencing/netting to screen the active face) and best practices, as needed, to ensure the site is kept tidy and visibility reduced. - Limit frequency and duration of instances where machinery is visible through operational planning. - Include consideration of the visual landscape in development of the Closure Plan, such as prioritising vegetative cover where feasible to reduce contrast with the rest of the landscape. - No additional impact management measures are required to mitigate views of leachate management operations if existing berm and vegetation are retained. 	<ul style="list-style-type: none"> - The landfill will become visible from points in the surrounding area. Visual impact can be reduced through retention of existing screening measures, addition of new permanent and temporary screening features, as well as through operational planning. Visual effects are expected to decrease post-closure and as the landfill is capped, as grass and groundcover is expected to reduce visual contrast - No changes to existing views of leachate management operations are expected. <p>LOW NET EFFECTS</p>
	Visibility of project features from selected receptor locations	<ul style="list-style-type: none"> - Features that may become visible include: <ul style="list-style-type: none"> • The landfill mound • Active face • Machinery • Landfill gas flares - Artistic impressions show the landfill mound at maximum top of waste will be: <ul style="list-style-type: none"> • Partially visible from location #9. • Partially visible from location #14. • Visible from location #16. • Partially visible from location #27; this view is partially screened by the existing Garner Road Berm. • Visible from location #40. • Partially visible from back deck of near-neighbour on west side of Garner Road, immediately adjacent to the SSA. This view is partially screened by the existing Garner Road Berm and proposed northerly extension of the Garner Road Berm. - The leachate management lagoon is not expected to be visible from viewpoints outside the Walker Campus. 	<ul style="list-style-type: none"> - Retain and enhance existing visual screening features associated with the quarry. - Implement no-go-zones and tree protection fencing to areas of vegetation retention for the duration of the construction and operation phase - Install additional permanent screening features (e.g., berms and vegetation), where appropriate, along northern site boundary, within southern SSA boundary, along 10-mile Creek riparian corridor, and Taylor Road. Where possible, vegetation screening and berms should be implemented at the start of the project, to allow for plant establishment and to mitigate views throughout the construction, operation and post-operation stages. - Where possible, locate construction equipment, stockpiles, and other visible elements away from the key sensitive receptor views. - Deploy temporary screening features (e.g., fencing/netting to screen the active face) and best practices, as needed, to ensure the site is kept tidy and visibility reduced. - Limit frequency and duration of instances where machinery is visible through operational planning. - Include consideration of the visual landscape in development of the Closure Plan, such as prioritising vegetative cover where feasible to reduce contrast with the rest of the landscape. - No additional impact management measures are required to mitigate views of leachate management operations if existing berm and vegetation are retained. 	<ul style="list-style-type: none"> - The landfill will become visible from some receptor locations (e.g., 9, 14, 16, 27, 40, near-neighbour on west side of Garner Road). Visual impact can be minimized through retention of existing screening measures, addition of new permanent and temporary screening features, as well as through operational planning. Visual effects are expected to decrease post-closure. - Leachate management lagoons is not expected to be visible from outside the Walker Campus. <p>MODERATE NET EFFECTS</p>

Criteria	Indicator	Potential Effects	Impact Management Measures	Net Effects
	Level of visual contrast of project features from selected receptor locations	<ul style="list-style-type: none"> - Given proximity to the East Landfill, and South Landfill Phase 1, the proposed South Landfill Phase 2 would be situated within an area where the local existing visual landscape already includes landfill mounds. - The level of visual contrast with the surrounding landscape is expected to change over time, with the highest potential for visual contrast occurring if and when the active face, machinery, and/or flares become visible to viewpoints outside the Walker Campus. - The level of visual contrast is expected to decrease as the interim and final cap is installed. - The level of visual contract is expected to be low at closure and post-closure as the site transitions to its end-use (agriculture, naturalization, recreation, or a combination of the three; to be determined prior to closure). - The lagoon is not expected to be visible from viewpoints outside the Walker Campus. - The leachate management lagoon would be situated adjacent to existing lagoons and within the Walker Campus where the visual landscape is characterized by a variety of aggregate and waste management operations. As such, the introduction of an additional lagoon would not be perceived as in contrast to the existing visual landscape. 	<ul style="list-style-type: none"> - Retain and enhance existing visual screening features associated with the quarry. - Implement no-go-zones and tree protection fencing to areas of vegetation retention for the duration of the construction and operation phase - Install additional permanent screening features (e.g., berms and vegetation), where appropriate, along northern site boundary, within southern SSA boundary, along 10-mile Creek riparian corridor, and Taylor Road. Where possible, vegetation screening and berms should be implemented at the start of the project, to allow for plant establishment and to mitigate views throughout the construction, operation and post-operation stages. - Where possible, locate construction equipment, stockpiles, and other visible elements away from the key sensitive receptor views. - Deploy temporary screening features (e.g., fencing/netting to screen the active face) and best practices, as needed, to ensure the site is kept tidy and visibility reduced. - Limit frequency and duration of instances where machinery is visible through operational planning. - Include consideration of the visual landscape in development of the Closure Plan, such as prioritising vegetative cover where feasible to reduce contrast with the rest of the landscape. - No additional impact management measures are required to mitigate views of leachate management operations if existing berm and vegetation are retained. 	<ul style="list-style-type: none"> - Given the proposed location within the existing Walker Campus, and adjacent landfill mounds, the degree of visual contrast is expected to be low and can be further reduced through visual screening measures and operational planning. - An additional leachate management lagoons at the proposed location is not expected to alter the existing visual character. <p>LOW NET EFFECTS</p>

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6. Cumulative impact analysis

As part of the approved Terms of Reference (ToR), Walker committed to undertaking an assessment of the cumulative effects of the landfill and other Campus components/facilities and other non-Walker projects that are existing, planned, approved or reasonably foreseeable. The following were considered in the assessment of cumulative impacts:

- Walker Activities/Projects on Campus
 - Ongoing quarry operations
 - RNG 2 – expansion of existing renewable natural gas facilities
 - Potential relocation of Residential Drop-Off (RDO)
- Walker Projects off Campus
 - Uppers Quarry
- Non-Walker Projects
 - Garden City Bridge Twinning
 - Glendale Secondary Plan Area development
 - Development at Niagara College's Niagara-on-the-Lake Campus
 - Northwest Secondary Plan Area development
 - Golf course/agro-tourism development to east of the Walker Campus
 - Garner West Secondary Plan Area development
 - Welland Thorold Power Line Project

Given the full build-out height of the existing South Landfill Phase 1 and proposed height of the South Landfill Phase 2 mound, both at 31 m, these features will feature most prominently in views of the Walker Resource Management Campus from within the Study Area. Therefore, it is not anticipated that the noted proposed or potential Walker activities and/or projects within the Campus will have an incremental effect on views of the Campus.

The location of Uppers Quarry within the RSA, approximately 2.2 km directly south of the SSA, and situated within the ZTV, would likely lead to additive impacts at locations south of Uppers Quarry within the RSA where the South Landfill Phase 2 would be visible.

There may be incremental effects on views from the Garden City Bridge Twinning for locations in the northwesternmost extent of the RSA where the South Landfill Phase 2 would be visible.

Development at Niagara College's Niagara-on-the-Lake Campus, which is located adjacent the Glendale Secondary Plan Area, combined with Glendale Secondary Plan Area development may result in incremental effects on views from within the northernmost extent of the LSA and northwestern portion of the RSA where the South Landfill Phase 2 would be visible.

There may be additive effects on views from locations within the eastern portion of the RSA where the South Landfill Phase 2 would be visible resulting from Northwest Secondary Plan Area development.

Given the nature of the golf course/agro-tourism development proposed to east of the Walker Campus, it is unlikely to have a cumulative effect on views.

Given its location at the southernmost extent of the RSA, it is unlikely that the Garner West Secondary Plan Area would have additive effects on views within the RSA.

There may be potential for additive effects from the Welland Thorold Power Line Project for locations within the southwestern-most portion of the LSA and southwestern portion of the RSA from locations where the South Landfill Phase 2 would be visible.

7. Climate change considerations

In accordance with the Minister-approved ToR, the detailed impact assessment is to include consideration of climate change. In support of the province of Ontario's Climate Change Action Plan, the Ministry of the Environment, Conservation and Parks (MECP) developed a Guide entitled "Consideration of Climate Change in Environmental Assessment in Ontario" (the Guide) to aid proponents in considering climate change as part of EAs for infrastructure and facilities (MECP 2016).

The Guide outlines the Ministry's expectations for considering climate change throughout the EA process. As stated in Section 3 of the Guide, consideration is to include:

- Greenhouse gas (GHG) emissions
- Effects of a project on climate change
- Effects of climate change on a project
- How the project will minimize identified negative effects on climate change.

The preceding was considered as part of the South Landfill Phase 2 EA in addressing the potential climate risks to the Alternative Methods. During the impact assessment, the climate change adaptation and mitigation analysis undertaken for the Alternative Methods stage was used and augmented, as needed, to develop climate change mitigation and adaptation measures for the Preferred Method. Climate change considerations relevant to visuals are documented in the following subsections.

7.1 Potential effects of the undertaking on climate change

The visual components of the undertaking are not expected to result in measurable effects on climate change.

7.1.1 Mitigation

Post-closure, following installation and vegetation of the landfill cap, and considering installation of screen planting and berms to mitigate views of site operations upon project construction; it is anticipated that there would be a net increase in total site vegetation compared to the existing condition. Given the scale; however, the associated potential increase in carbon sequestration capacity from the additional vegetation within the SSA is considered negligible and is not expected to contribute meaningfully to GHG or climate change.

7.2 Potential effects of climate change on the undertaking

Based on the Ontario Provincial Climate Change Impact Assessment Technical Report, the risk profile of waste management facilities within the South Landfill Phase 2 region was determined to be 'medium' under existing climate conditions and is expected to remain similar until mid-century, effectively covering the duration of the operations phase of the landfill (Climate Risk Institute et al. 2023).

The main effects of climate change on the undertaking within the context of the visual environment are as follows:

- Periods of extreme heat or cold may affect the establishment, health, and long-term performance of vegetative screening along with the grass cover of the capped landfill, which is relied upon to maintain effective visual buffering of the Site.

7.2.1 Adaptation

Planned design measures, operational controls, and BMPs provide appropriate adaptation to the potential effects of climate change on the visual components of the undertaking. Adaptation measures include the following:

- Vegetative screening will be established and maintained using species appropriate for local and projected climate conditions, with consideration of temperature extremes, moisture tolerance, and long-term survivability.
- Ongoing vegetation maintenance, including replanting where required, will be implemented to ensure adequate coverage, vegetation health, and continued effectiveness of visual screening over the life of the Site.

8. Environmental monitoring

To ensure that the mitigation measures identified in Section 0 are implemented as envisioned, a strategy and schedule was developed for monitoring environmental effects. With these mitigation measures and monitoring requirements in mind, commitments have also been proposed for ensuring that they are carried out as part of the construction, operation, and maintenance of the landfill.

8.1 Environmental effects monitoring

A monitoring strategy and schedule was developed based on the Visual Detailed Impact Assessment carried out for the Preferred Method to ensure that 1) predicted net negative effects are not exceeded, and 2) unexpected negative effects are addressed. Table 8.1 lists the proposed monitoring requirements identified in the Visual Detailed Impact Assessment.

Table 8.1 Visual Environment Proposed Monitoring Requirements

Potential Effect	Proposed Monitoring Requirement	Associated Licences, Permits or Authorizations
As the landfill reaches and exceeds existing grade it will begin to be visible from viewpoints in the surrounding area.	Annual monitoring is recommended to confirm that existing and enhanced visual vegetative screening features remain healthy, continuous, and effective for visual screening purposes.	NA

8.2 Development of an environmental management plan

An Environmental Management Plan (EMP) will be prepared following approval of the undertaking by the Minister of the Environment, Conservation and Parks and prior to construction. The EMP will include a description of the proposed mitigation measures, commitments, and monitoring.

9. Commitments

The following commitments have been proposed for ensuring that the identified mitigation or compensation measures and monitoring requirements are carried out as part of the construction, operation, and maintenance of the undertaking:

- Retain and enhance existing visual screening features associated with the quarry.
- Implement no-go-zones and tree protection fencing to areas of vegetation retention for the duration of the construction and operation phase
- Install additional permanent screening features (e.g., berms and vegetation), where appropriate, along northern site boundary, within southern SSA boundary, along 10-mile Creek riparian corridor, and Taylor Road. Where possible, vegetation screening and berms should be implemented at the start of the project, to allow for plant establishment and to mitigate views throughout the construction, operation and post-operation stages.

- Where possible, locate construction equipment, stockpiles, and other visible elements away from the key sensitive receptor views.
- Deploy temporary screening features (e.g., fencing/netting to screen the active face) and best practices, as needed, to ensure the site is kept tidy and visibility reduced.
- Limit frequency and duration of instances where machinery is visible through operational planning.
- Include consideration of the visual landscape in development of the Closure Plan, such as prioritising vegetative cover where feasible to reduce the landform's contrast with the rest of the landscape

10. Visual approvals required for the undertaking

No approvals are anticipated with respect to the visual environment.

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