

# **Appendix I-10**

**Social Environment Detailed Impact  
Assessment Report**



# Draft – Social Detailed Impact Assessment

## South Landfill Phase 2

### Walker Environmental

Client Office Address

Prepared by:

**SLR Consulting (Canada) Ltd.**

300 Town Centre Blvd., Suite 200, Markham, ON L3R 5Z6

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B	June 25, 2026	Tomasz Włodarczyk	Vanessa Ramos	Jennifer Owen



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## Acronyms and Abbreviations

CA	Conservation Authority
Campus	Walker Resource Management Campus
DSBN	District School Board of Niagara
EA	Environmental Assessment
ECA	Environmental Compliance Approval
EDU	Explosive Disposal Unit
ETU	Emergency Task Unit
FCR	Facilities Characteristics Report
GSP	Glendale Secondary Plan
ha	hectares
IC&I	Industrial, Commercial, and Institutional
km	kilometers
LOS	Level of Service
LSA	Local Study Area
m <sup>3</sup>	Metres cubed
Minister	The Minister of Environment, Conservation and Parks
NCDSB	Niagara Catholic District School Board
NEC	Niagara Escarpment Commission
NEP	Niagara Escarpment Plan
NEPC	Niagara Escarpment Planning Commission
NFOP	Official Plan for the City of Niagara Falls
NPCA	Niagara Peninsula Conservation Authority
NROP	Niagara Region Official Plan
NRPS	Niagara Regional Police Service
NSTS	Niagara Student Transportation Services
NWSP	Northwest Secondary Plan
OU	Odour Units
PAR	Public Attitude Research
Pollara	Pollara Strategic Insights Inc.
QEW	Queen Elizabeth Way
RSA	Regional Study Area
SLR	SLR Consulting (Canada) Ltd.
SLSA	St. Lawrence Seaway Authority



SSA	Site Study Area
TATMP	Trails and Active Transportation Master Plan
TMP	Transportation Master Plan
ToR	Terms of Reference
Walker	Walker Environmental Group



## 1.0 Introduction

This report documents the Social 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 (m<sup>3</sup>) 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 1<sup>1</sup>*) 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

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<sup>1</sup> 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.



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 13 stand-alone Detailed Impact Assessment Reports:

- Geology and Hydrogeology
- Surface Water Resources
- Noise and Vibration
- Air Quality
- Terrestrial and Aquatic Environment
- Land Use
- Agriculture
- Transportation
- Social Environment
- Economic Environment
- Built Heritage and Cultural Heritage Landscapes
- Archaeology
- Visual

## 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 m<sup>3</sup> of expanded landfill capacity and include 44 hectares (ha) of land compatible with an agricultural end use. From the Social Assessment perspective, these adjustments are to reduce the magnitude of the visual impact at nearby receptors.

## 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 m<sup>3</sup> of additional leachate per year at the time of closure (2050) and approximately 147,000 m<sup>3</sup> 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 Facility Characteristics Report (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.

## **2.0 Study Areas**

From a Social Environment perspective, the characterization of impacts within the following study areas are appropriate to this EA:

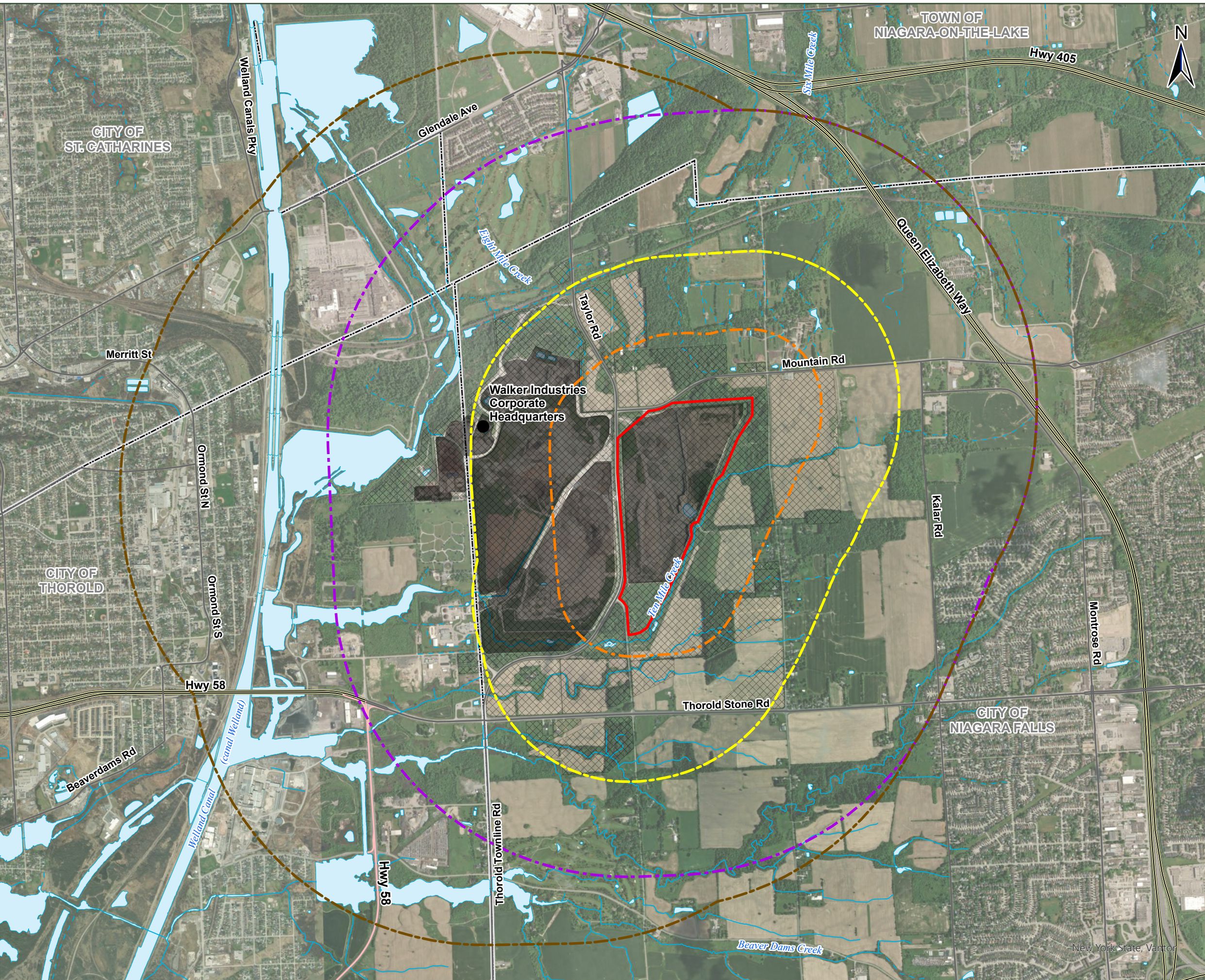
- **Site Study Area (SSA):** The SSA is consistent across all technical disciplines and encompasses a total of 81.30 ha of land owned and operated by Walker. The SSA includes the current Quarry extraction limit, and encompasses the proposed limit of fill, the buffer area, and aligns with the proposed 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 includes all properties within or bisected by a two (2) kilometer (km) radius line beyond the Walker Resource Management Campus boundary. The LSA will also extend to include the areas outside of the 2 km radius to include the White Oaks Conference Resort and Spa, located at Taylor Road north of Glendale Avenue and southwest of the Queen Elizabeth Way. The LSA includes areas that may have experienced nuisance impacts from the currently operating South Landfill and other Walker Resource Management Campus operations.
- **Regional Study Area (RSA) -** The RSA encompasses the municipalities of Niagara Falls, St. Catharines, Niagara-on-the-Lake and Thorold. The RSA includes communities with the closest municipalities that might be aware of; use the services available at the



Walker Resource Management Campus; visit the LSA and use its amenities; or have an interest in the Walker South Landfill Phase 2 Project.

The Social Environment study areas are illustrated in **Figure 2-1** and **2-2**.





**LEGEND:**

- SITE STUDY AREA
- 500m FROM PROPOSED LIMIT OF FILL
- LOCAL STUDY AREA (MIN. - 1km FROM PROPOSED WASTE DISPOSAL SITE BOUNDARY LIMITS)
- NEAR-NEIGHBOUR AREA (2000m FROM PROPOSED LIMIT OF FILL)
- LOCAL STUDY AREA (2km FROM WALKER RESOURCE MANAGEMENT CAMPUS)
- WALKER RESOURCE MANAGEMENT CAMPUS
- WALKER OWNED PROPERTY
- MUNICIPAL BOUNDARY
- FREEWAY
- EXPRESSWAY / HIGHWAY
- ARTERIAL
- INTERMITTENT WATERCOURSE
- PERMANENT WATERCOURSE
- WATERBODY

**DRAFT**

**NOTES:**  
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 WALKER WASTE SERVICES – NIAGARA CAMPUS  
 2800 THOROLD TOWNLINE RD., NIAGARA FALLS, ON L2E 6S4

EXISTING CONDITIONS

LOCAL STUDY AREA

**SLR** FIGURE NO:  
**2-1**



- LEGEND:**
- SITE STUDY AREA
  - REGIONAL MUNICIPALITY OF NIAGARA
  - REGIONAL STUDY AREA (RSA) MUNICIPALITIES
  - FREEWAY
  - EXPRESSWAY / HIGHWAY
  - WATERBODY

**DRAFT**



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 WALKER WASTE SERVICES – NIAGARA CAMPUS  
 2800 THOROLD TOWNLINE RD., NIAGARA FALLS, ON L2E 6S4

EXISTING CONDITIONS

**REGIONAL STUDY AREA**



FIGURE NO:  
**2-2**

## **3.0 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 (Social Environment Existing Conditions Report, Social Environment 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 from the EA consultation process was incorporated into the assessment approach, where appropriate.

With these additional investigations in mind, the potential impacts on the Social 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 Social Environment, the previously identified potential effects and recommended mitigation or compensation measures associated with the Preferred Method (documented in the Social Environment 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. In addition to identifying mitigation or compensation measures, potential enhancement opportunities associated with the preliminary design for the Preferred Method were also identified, where possible.

Following this confirmatory exercise, the requirement for monitoring in relation to net effects was identified, where appropriate. Finally, any Social Environment related approvals required as part of the implementation of the Preferred Method were identified.

### **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 Areas were reviewed to verify the accuracy of the assessment of net effects from the Preferred Method. From this review, it was determined that no further investigations were needed for the Social Environment. All data used for undertaken the Social Impact Assessment was collected during the baseline data collection program.

#### **3.2.1 Application of Discipline Study Predictions**

Predictions from the air quality, odour, noise, transportation, and visual discipline studies were applied in the assessment of the disruption in the social environment.

The discipline study predictions were compiled at individual receptor locations in the LSA for four scenarios that reflect the staged evolution of operations at the Walker Campus, together with the “Do Nothing” condition, which serves as a future no-build comparator. These scenarios follow the staged operating conditions modelled in the air quality and the noise and vibration design impact assessments, from which the dust, odour, and noise predictions were drawn, with the stage designations (End of Stage 1, 3, and 4) following the air quality



assessment. Where the noise assessment modelled two sub-stages within the Impact 2 period (Stage 2, when the Quarry ceases, and End of Stage 3), the tables report the higher of the two values for each noise metric under Impact 2. Traffic was modelled at horizon years of 2028, 2031, 2034, and 2036, presented under the Baseline, Impact 1, Impact 2, and Impact 3 scenarios respectively. For each receptor and scenario, the predictions comprise dust, odour, noise, traffic, and visual effects. Do Nothing predictions are reported for dust, odour, and continuous sound; Walker traffic is not generated under this condition.

**Table 3-1: Receptor Prediction Scenarios**

Scenario	Description
Baseline	Existing conditions, with South Landfill Phase 1 and the Southeast Quarry operating together and South Landfill Phase 2 not yet developed.
Do Nothing	Future condition without the undertaking: South Landfill Phase 2 is not developed, South Landfill Phase 1 closes and is capped on reaching capacity, and the Southeast Quarry completes extraction and is rehabilitated, with nuisance values declining to the residual levels of the continuing campus operations. Presented as a comparator rather than an assessment scenario.
Impact Scenario 1	End of Stage 1: closure of the existing South Landfill (Phase 1) and commencement of South Landfill Phase 2 Stage 1 filling, with the Southeast Quarry still operating.
Impact Scenario 2	South Landfill Phase 2 filling operations with the Southeast Quarry no longer operating (Stage 2 to End of Stage 3). Predicted values represent the worst case across this operating period.
Impact Scenario 3	End of Stage 4: the final operating stage, when South Landfill Phase 2 reaches its maximum filling extent and peak landform.

Predicted values under each impact scenario were compared against the baseline scenario and against the applicable regulatory thresholds to identify new threshold exceedances, changes to existing exceedances, and below-threshold changes at each receptor. These receptor-level results support the identification of residences, recreational resources and public institutions that may experience nuisance-related disruption. The predictions represent maximum predicted values at each receptor and are conservative; actual effects may vary within a given receptor location. The SLR Site Neighbour Survey informed the characterisation of baseline nuisance conditions in the LSA.

## 4.0 Description of the Environment Potentially Affected

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

### 4.1 Existing Conditions

The social environment was characterized within three study areas: (1) the SSA, which includes approximately 76 hectares of lands within the approved boundaries of the Southeast Quarry where the Phase 2 landfill is proposed; (2) the LSA, defined as properties within a 2-kilometre radius of the Walker Resource Management Campus boundary; and (3) the RSA, encompassing the municipalities of Niagara Falls, St. Catharines, Niagara-on-the-Lake, and



Thorold. RSA provides broader regional context while the LSA captures those receptors most likely to experience localized interactions with the Project, including Site Neighbours.

The characterization of existing social conditions was informed by a combination of quantitative and qualitative data sources. These included a review of relevant literature, municipal and provincial planning documents, and Statistics Canada Census data from 2011, 2016, and 2021. Primary data collection included Public Attitude Research (PAR) conducted in 2024 (with comparison to results from 2005 where possible), a Recreational Field Survey completed in 2024, a Site Neighbour Survey completed in early 2026, interviews with several institutional and other stakeholders from 2025-2026, and a review of Walker’s public complaints record for the period 2022 to 2024. Key findings are presented below.

- **Population and Demographics:** Niagara Region experienced population growth of approximately 10.8% between 2011 and 2021, similar to the Ontario average. Growth has been uneven across municipalities, with higher growth in Thorold and Niagara-on-the-Lake, and slower growth in St. Catharines. The Region has an aging population, with a higher proportion of residents aged 65 and older than the provincial average. Areas near the Walker Campus are generally stable, with low short-term mobility and a high proportion of long-term residents.
- **Public Attitudes and Well-Being:** PAR indicates that the most important issues facing study area communities relate to housing affordability, cost of living, healthcare, and homelessness. Waste management and landfill operations are not top-of-mind issues for most residents in either the LSA or RSA. Most respondents rated their overall health and sense of well-being as “excellent” or “good,” although there has been a modest decline since 2005, reflecting broader social and economic pressures. Overall satisfaction with living in the community remains high, with approximately 82% of RSA residents and 87% of LSA residents reporting that they are very or somewhat satisfied. Site neighbours reported particularly high levels of neighbourhood satisfaction (approximately 97%) despite the fact they are more likely than the general population to notice and experience nuisance effects associated with the activities and operations at the Walker Campus, including the operating South Landfill.
- **Use and Enjoyment of Residential Property:** Properties with residences in the immediate vicinity range from four (4) properties with dwellings within 500 m of the proposed expansion, located to the north and along Garner Road to the east and along Mountain Road, to approximately 30 properties between 500 m and 1,000 m and a further 308 dwellings between 1,000 m and 2,000 m, including concentrations at Pine Tree Village and Shady Oaks Mobile Park and within the Niagara Falls urban boundary to the east and southeast. The majority of RSA and LSA residents indicated that the Walker South Landfill has little to no effect on their daily lives. Among Site Neighbours, odour was identified as the most common concern, occasionally leading to changes in outdoor activities or window use. Traffic (including both Walker and non-Walker heavy vehicle use of arterial roads) and noise were identified less frequently but remain as ongoing sources of disruption. Walker’s public complaint records show a declining trend, with total complaints decreasing by approximately 60% between 2022 and 2024.
- **Recreational Resources and Community Facilities:** The LSA contains a wide range of recreational and cultural resources, including the Bruce Trail, Welland Canal Parkway Trail, Woodend Conservation Area, golf courses, places of worship and cemeteries. Recreational surveys indicate that most users of outdoor recreational resources have not altered their use or enjoyment of these resources due to ongoing landfill and Quarry operations. Nearby institutional and community facilities, including the nearest school,



emphasized the importance of protecting air quality, safety, and traffic conditions, particularly for children and other vulnerable users.

- **Community Character:** Community character within the LSA reflects a mix of rural, agricultural, suburban, industrial, and natural landscapes shaped by the Niagara Escarpment, the Welland Canal, and the long-established Walker Campus. Walker operations have been present in the area for over 150 years and are widely recognized as a defining land use. The Niagara-on-the-Green neighbourhood (below the escarpment) can be characterized as a planned suburban neighbourhood, while neighbourhoods on top of the escarpment east of the Walker Campus are more rural than suburban, and areas to the west of the Walker Campus are largely industrial. The Welland Canal also physically separates the urban area of Thorold to the west of the canal from a rural area to the east of the canal.
- **Community Cohesion:** Community cohesion remains strong, supported by long-term residency and high participation in local recreational and community activities. There are however differences between the character and cohesion of the neighbourhoods near the Walker Campus on top and below the escarpment. The Walker Campus has been an important part of the Niagara community for over 150 years, having started operations in 1887. Walker is a fifth-generation family-owned company. 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

#### 4.1.1 Common Receptor Locations

For the purposes of the Environmental Assessment, eighteen common receptor locations were identified within the study area (CR01, CR04 through CR08, and CR10 through CR21). Fifteen of the eighteen receptors lie within the 2 km of the Walker Campus. CR07 sits at 2,005 m southeast of the site, just beyond the LSA at Kalar Road and Thorold Stone Road. The remaining two receptors are in the broader LSA: CR06 at 2,577 m west, representing the eastern edge of Thorold's urban boundary; and CR16 at 2,893 m northwest in St. Catharines. Receptors generally represent areas of residential development or identified recreational or institutional features. Refer to **Figure 4-1** for the locations of common receptors.

Common receptors associated with the delineated neighbourhoods are as follows:

- Niagara-on-the-Green: CR15
- Rural Residential: CR01, CR04, CR05, CR11, CR12, CR13, CR14, CR17, CR18, and CR19
- Mount Carmel: CR07 and CR20
- Downtown Thorold: CR06

CR16, located in the City of St. Catharines at the corner of Glendale Avenue and the Welland Canal Parkway, sits in the industrial area and is a considerable distance from residences in Thorold or St. Catharines.

**Table 4-1** describes each receptor location.





**Table 4-1: Common Receptors Description and Businesses Within Proximity**

Receptor ID	Receptor Name	Receptor Description
<b>CR01</b>	Residences on Warner Road and the Niagara Escarpment	<ul style="list-style-type: none"> <li>• Located approximately 1,094m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of residences on Warner Road and the Niagara Escarpment.</li> </ul>
<b>CR04</b>	Nearest residences on Garner Rd	<ul style="list-style-type: none"> <li>• Located approximately 550m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of the residences on Garner Rd south of Mountain Rd and north of the transmission line that crosses Garner Rd north of Thorold Stone Rd.</li> </ul>
<b>CR05</b>	Nearest residence, South	<ul style="list-style-type: none"> <li>• Located approximately 450m from the proposed Waste Disposal Site Boundary Limits.</li> </ul>
<b>CR06</b>	Nearest residences West and City of Thorold urban boundary	<ul style="list-style-type: none"> <li>• Located approximately 2,577m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Located at the eastern edge of the urban boundary for the City of Thorold, it serves as representative of a wide variety of residential, institutional, recreational and commercial developments within the City.</li> </ul>
<b>CR07</b>	Nearest school: St. Vincent De Paul Catholic Elementary School	<ul style="list-style-type: none"> <li>• Located approximately 2,005m southeast from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of an important public facility, a cluster of residences backing onto Kalar Road at Thorold Stone Road, commercial businesses at the corner of Kalar Road and Thorold Stone Road and the Shriner's Woodlot Park off Kalar Road.</li> </ul>
<b>CR08</b>	Lakeview Cemetery	<ul style="list-style-type: none"> <li>• Located approximately 1,197m west from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves to represent an important public institutional feature along Thorold Townline Road, used for outdoor public ceremonies and informal recreational activities.</li> </ul>
<b>CR10</b>	Niagara Thorold Patrol Yard / Niagara Regional Police Fleet Centre	<ul style="list-style-type: none"> <li>• Located approximately 1,186m west from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of two public institutional facilities with outdoor components and industrial/commercial operations along Old Thorold Stone Road to the west and southwest.</li> </ul>
<b>CR11</b>	Woodend Conservation Area	<ul style="list-style-type: none"> <li>• Located approximately 1,295m north from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of the outdoor recreational uses at the Bruce Trail along the Niagara Escarpment, Walker's Living Campus and Royal Niagara Golf Club. Serves as a location along Taylor Road, often used for biking and country drives.</li> </ul>
<b>CR12</b>	Pine Tree Village Mobile Home Park	<ul style="list-style-type: none"> <li>• Located approximately 1,655m northeast from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of a cluster of residences east of the Queen Elizabeth Way. Can also be considered a control site that is not likely to have noticeable noise, dust, traffic or visual effects from the landfill.</li> </ul>



Receptor ID	Receptor Name	Receptor Description
CR13	Beechwood Golf & Social House	<ul style="list-style-type: none"> <li>• Located approximately 1,787m south from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of the outdoor recreational uses at the Beechwood Golf Course and along Beaver Dams Road.</li> </ul>
CR14	Northwest Secondary Plan Area	<ul style="list-style-type: none"> <li>• Located approximately 1,181m east from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of an area proposed for future residential development and the western edge of the City of Niagara Falls urban area boundary.</li> </ul>
CR15	Niagara-on-the-Green Subdivision / Glendale Secondary Plan Area	<ul style="list-style-type: none"> <li>• Located approximately 1,984m north from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of the southern edge of the Glendale Secondary Plan Area proposed for future residential development and the Niagara-on-the Lake urban area boundary. Additionally representative of the Royal Niagara Golf Club clubhouse and Niagara College. The golf club is a large property; the course grounds nearest the site are represented by CR21.</li> </ul>
CR16	St. Catharines	<ul style="list-style-type: none"> <li>• Located approximately 2,893m northwest from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Representative of nearest area within the City of St. Catharines municipal boundary at the corner of Glendale Road and the Welland Canal Parkway and recreational trail.</li> </ul>
CR17	Nearest residence Northeast and Gauld Nurseries	<ul style="list-style-type: none"> <li>• Located approximately 456m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Representative of the nearest residence northeast of the Waste Disposal Site Boundary Limits, and Gauld Nurseries, an important local business.</li> </ul>
CR18	Residences at South end of Garner Road	<ul style="list-style-type: none"> <li>• Located approximately 1054m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Serves as representative of the cluster of residences on Garner Rd south of the transmission line and north of Thorold Stone Rd.</li> </ul>
CR19	Nearest Residence Southwest	<ul style="list-style-type: none"> <li>• Located approximately 1033m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• This is a Walker-owned property that is currently tenanted.</li> </ul>
CR20	Residences east of Kalar Road	<ul style="list-style-type: none"> <li>• Located approximately 1585m from the proposed Waste Disposal Site Boundary Limits.</li> <li>• Representative of subdivision east of Kalar Road.</li> </ul>
CR21	Royal Niagara Golf Club	<ul style="list-style-type: none"> <li>• Located approximately 1146m from the proposed Waste Disposal Site Boundary Limits. The Royal Niagara Golf Club is a large property; its clubhouse and northern holes are represented by CR15.</li> </ul>



Overall, the existing social environment surrounding the proposed site for the Walker South Landfill Phase 2 expansion project is characterized by stable communities, strong recreational use, high levels of overall satisfaction, and generally positive attitudes towards community well-being. This area has many community assets that are important ingredients of sustainable development and are continually being upgraded.

Nuisance impacts such as dust, odour, noise, vibration, blowing litter, traffic and visual intrusion continue to be experienced by most residents living closest to the Campus, these impacts are not typically beyond regulatory limits nor widespread geographically, but tend to occur within a broader context where landfill operations are not a primary the source of the nuisance nor the primary community concern about their community.

## 4.2 “Future” Existing Conditions (Do Nothing Option)

This section describes the planned development context expected to prevail within the study areas in the absence of the proposed undertaking. The future baseline is characterised over the project's operating life to a planning horizon of 2051, consistent with the growth forecasts of the Niagara Region Official Plan (Niagara Region, 2022a).

Beyond the rehabilitation of the SSA Quarry lands to agriculture described above, the future baseline includes the planned development of the surrounding study area, which would proceed with or without the proposed undertaking. The Niagara Region Official Plan directs forecasted residential and employment growth predominantly to settlement areas, through intensification within built-up areas and development of designated greenfield areas (Niagara Region, 2022a). The Rural Area of Niagara Falls, within which the site is located, is allocated only 0.5% of the city's household growth to 2051 (Niagara Region, 2022a), equivalent to approximately 102 units; the principal development areas relevant to the LSA are identified in the Land Use Existing Conditions Report (MHBC, 2026).

The most significant of these is the Northwest Secondary Plan area, located west of the Queen Elizabeth Way, south of Mountain Road, and east of Kalar Road, which was brought into the City of Niagara Falls Urban Area Boundary through the 2022 Niagara Region Official Plan and is designated a Designated Greenfield Area (MHBC, 2026). The Secondary Plan is at an advanced stage of preparation, with a draft land use schedule providing for a mix of residential, mixed-use, institutional, and open-space uses planned as a complete community at a minimum density of 50 residents and jobs combined per hectare, and designated greenfield growth on the order of 10,010 housing units is allocated to Niagara Falls under the Plan (Niagara Region, 2022a) (MHBC, 2026).

To the northwest, within the Town of Niagara-on-the-Lake, the Glendale Secondary Plan area, which encompasses the Outlet Collection at Niagara, and the White Oaks Conference Resort and Spa, and is similarly identified for continued development and intensification (MHBC, 2026). The Niagara College Campus is located just outside the Glendale Secondary Plan area and continues to grow and diversify. Beyond these secondary plan areas, ongoing residential intensification, infill, and selected urban-boundary growth are anticipated within the broader LSA over the operating life of the project. Within ~1 km of the site, however, no new residential or employment development is designated or foreseen (MHBC, 2026). The immediate surroundings remain in prime agricultural and rural use, and the Quarry lands within the SSA are themselves slated for rehabilitation to agriculture under the Aggregate Resources Act (Colville Consulting Inc., 2026).



#### 4.2.1 Future Baseline Physical Disturbances/ Nuisance Effects

In the future, without the South Landfill Phase 2 in operation at the Walker Niagara Campus, the existing South Landfill Phase 1 would close and the Southeast Quarry would be worked out and rehabilitated to agriculture under its Aggregate Resources Act licence. Residual nuisance effects would arise from continuing on-site operations (composting, resource recovery, and post-closure landfill management), other non-Walker land uses, and background conditions including regional traffic growth. The predicted nuisance values at the common receptor locations under these conditions are summarised in **Table 4-24-2**. These conditions describe the future of the LSA if the undertaking does not proceed and provide context for interpreting the predicted effects; they are not the baseline for the nuisance assessment. The net nuisance effects of the South Landfill Phase 2 expansion are assessed against the existing conditions summarised in **Table 4-2**, in which South Landfill Phase 1 and the Quarry are operating together. Several of the changes described below, including the end of Quarry dust and Quarry truck traffic, would occur under either future.

All three baseline exceedances of the 120 µg/m<sup>3</sup> 24-hour TSP criterion (CR08 Lakeview Cemetery, CR21 Royal Niagara Golf Club and CR19 Nearest Residence Southwest) are eliminated. Maximum 24-hour concentrations fall to between 51 and 55 µg/m<sup>3</sup> and no receptor records an exceedance day over the five-year modelling period. Total odours fall below the 3 OU threshold at every receptor; the highest remaining 10-minute maximum is 2.1 OU at CR19 (Nearest Residence Southwest), compared with 6.8 OU under existing conditions.

Impulsive noise is no longer predicted at the common receptors. The landfill bird-scaring devices (banger, cracker and shotgun) end with the closure of South Landfill Phase 1.

Continuous noise declines at every common receptor except CR08 (Lakeview Cemetery), where the night level rises from 45 to 47 dBA while the daytime level declines. The largest change is at CR21 (Royal Niagara Golf Club), where daytime levels fall from 58 to 24 dBA as Quarry processing ceases. The highest remaining levels are at CR08 (Lakeview Cemetery) and CR10 (Niagara/Thorold Patrol Yard and Police Fleet Centre), each at 48 / 47 dBA day / night, and at CR19 (Nearest Residence Southwest), at 44 / 43 dBA, reflecting the continuing campus operations and ambient sources represented in the closure-condition, the remaining receptors record daytime levels of 31 dBA or below.



**Table 4-2: Predicted Nuisance Values at Common Receptor Locations – Do Nothing (Future Baseline: South Landfill Phase 1 Closed, Quarry Rehabilitated, No Phase 2)**

CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)
CR01	Residences on Warner Road and the Niagara Escarpment	>1000m	52; 0 days	Max 10-min OU: 1.3 Freq >1 OU: 0.1% $\approx$ 9-hrs/yr	—	26 / 26	—	—
CR04	Nearest residences on Garner Rd	500-1000m	52; 0 days	Max 10-min OU: 0.9 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	26 / 26	—	—
CR05	Nearest residence, South	<500m	52; 0 days	Max 10-min OU: 1.3 Freq >1 OU: 0.2% $\approx$ 18-hrs/yr	—	31 / 30	—	—
CR06	Nearest residences West and City of Thorold urban boundary	>1000m	53; 0 days	Max 10-min OU: 0.9 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	30 / 29	N/A	N/A
CR07	Nearest school: St. Vincent De Paul Catholic Elementary School	>1000m	52; 0 days	Max 10-min OU: 0.5 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	22 / 21	—	—
CR08	Lakeview Cemetery	>1000m	55; 0 days	Max 10-min OU: 1.9 Freq >1 OU: 1.1% $\approx$ 96-hrs/yr	—	48 / 47	—	—
CR10	Niagara Thorold Patrol Yard / Niagara	>1000m	53; 0 days	Max 10-min OU: 1.9 Freq >1 OU: 0.7% $\approx$ 61-hrs/yr	—	48 / 47	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBA) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)
	Regional Police Fleet Centre							
CR11	Woodend Conservation Area	>1000m	52; 0 days	Max 10-min OU: 1.4 Freq >1 OU: 0.2% $\approx$ 18-hrs/yr	—	25 / 25	—	—
CR12	Pine Tree Village Mobile Home Park	>1000m	52; 0 days	Max 10-min OU: 0.5 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	19 / 19	N/A	N/A
CR13	Beechwood Golf & Social House	>1000m	52; 0 days	Max 10-min OU: 1 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	29 / 29	—	—
CR14	Northwest Secondary Plan Area	>1000m	52; 0 days	Max 10-min OU: 0.6 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	21 / 21	—	—
CR15	Niagara-on-the-Green Subdivision / Glendale Secondary Plan Area	>1000m	52; 0 days	Max 10-min OU: 1.1 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	22 / 22	N/A	N/A
CR16	St Catharines	>1000m	52; 0 days	Max 10-min OU: 0.7 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	24 / 23	N/A	N/A
CR17	Nearest residence Northeast and Gauld Nurseries	<500m	52; 0 days	Max 10-min OU: 0.8 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	25 / 24	—	—
CR18	Residences at South end of Garner Road	>1000m	52; 0 days	Max 10-min OU: 0.8 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	27 / 26	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)
CR19	Nearest Residence Southwest	>1000m	53; 0 days	Max 10-min OU: 2.1 Freq >1 OU: 0.8% $\approx$ 70-hrs/yr	—	44 / 43	—	—
CR20	Residences east of Kalar Road	>1000m	51; 0 days	Max 10-min OU: 0.6 Freq >1 OU: 0.0% $\approx$ 0-hrs/yr	—	22 / 22	N/A	N/A
CR21	Royal Niagara Golf Club	>1000m	53; 0 days	Max 10-min OU: 1.8 Freq >1 OU: 0.5% $\approx$ 44-hrs/yr	—	24 / 22	N/A	N/A
R11	Residence (Boondocks Pet Resort)	500-1000m	52; 0 days	Max 10-min OU: 1.7 Freq >1 OU: 0.2% $\approx$ 18-hrs/yr	—	—	—	—
R12	Service Station (adjacent Broad Street Cheesesteaks)	>1000m	52; 0 days	Max 10-min OU: 1.5 Freq >1 OU: 0.3% $\approx$ 26-hrs/yr	—	—	—	—

Source: (RWDI AIR Inc., 2026a) (RWDI AIR Inc., 2026h) (RWDI AIR Inc., 2026b) (TYLin, 2026)

Note: For total odours, any of the >1, >3 or >5 OU frequency thresholds not listed for a receptor is zero (no predicted exceedance). Impulsive noise is shown as "—" because the landfill pest-control devices cease with the closure of South Landfill Phase 1 and Quarry ends with extraction; with no impulsive sources remaining, the RWDI Noise Detailed Impact Assessment makes no impulsive predictions for this condition. For traffic, South Landfill and Quarry heavy-vehicle trips cease under the Do Nothing condition; the Transportation Detailed Impact Assessment quantifies Walker site trips as landfill and Quarry heavy vehicles only, trips generated by the continuing campus operations are not quantified, and the Walker share of peak-hour traffic is therefore shown as "—" rather than zero.



Walker's landfill and Quarry heavy-vehicle trips are removed from the road network, while non-heavy site trips associated with the continuing campus operations continue unchanged. The 28 AM and 27 PM peak-hour one-way landfill truck trips end with waste receipt, and the 14 AM and 13 PM peak-hour one-way Quarry trips end as the Quarry is worked out, with no further Walker heavy-vehicle trips on the assessed road segments. Background traffic growth of approximately 1% per year on Taylor Road and 2% per year on Thorold Stone Road continues, and with the landfill and Quarry trips removed, traffic operations improve, primarily at the intersections immediately adjacent to the site, with the effects diminishing as traffic distributes through the surrounding network (TYLin, 2026).

The visual condition changes from an operating landfill and Quarry to a closed and rehabilitated landform: South Landfill Phase 1 is capped and revegetated, and the worked-out Quarry is rehabilitated to an agricultural condition similar to pre-extraction capabilities under the Aggregate Resources Act licence (Colville Consulting Inc., 2026).

#### **4.2.2 Summary of Future Baseline Conditions**

The future existing conditions are the reference state for the social effects of the undertaking, whose net effect is the difference from this no-build future; the nuisance effects are assessed against existing conditions, with these future conditions reported as context. Over the planning horizon, residential growth would occur across the LSA in the two secondary plan areas. Physical and nuisance disturbances in the LSA would generally fall below existing levels with the loss of the active landfill face and the Quarry, leaving lower-level odour and noise from the continuing campus operations and ongoing background traffic growth as the principal residual effects. The sections that follow assess the social and nuisance effects of the South Landfill Phase 2 within this context.

### **5.0 Social Environment 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.

The updated assessment of predicted potential effects, recommended impact management measures, and resulting net effects is provided in Error! Reference source not found. and further elaborated upon in the subsections that follow.

#### **5.1 Potential for Displacement of Residents from Houses**

The proposed South Landfill Phase 2 Project does not require the displacement (i.e., forced relocation) of any residents from their houses. As such, there will be no direct loss of residents from the community as a result of the Project. Notwithstanding this conclusion, some residents may choose to move voluntarily.

In general, when people experience changes to their levels of satisfaction or sense of health, safety or well-being, they are likely to conduct a mental 'cost-benefit' analysis of what they are satisfied or dissatisfied with in their communities. There is a tendency for people to tolerate certain conditions until a threshold is reached. At such a time, some individuals may become more motivated to leave and find a new location with more positive and satisfying features.



Based on the results of the PAR and the Site Neighbour Survey, it is concluded that there is an increased potential for this to occur for residents nearest the Walker Campus where concerns of the effects of the landfill are the strongest (i.e., voluntary out-migration of residents from their communities), rather than in the RSA.

For example, in the PAR, close to 88% of respondents residing in the RSA say that Walker's proposal has little-to-no impact on their decision to consider moving away from the landfill. Overall, only 10% say they are likely to move, and 15% within the LSA say that they may consider moving away from the landfill. Likelihood to move is higher among those who feel the proposal may adversely affect their community well-being, their levels of satisfaction and their sense of health and safety.

In the Site Neighbour Survey, approximately half (50%) of the respondents had considered moving from their property over the past 5 years, the others (50%) indicated that they did not consider moving or were not sure. The main reasons offered were largely nuisance related such as: the landfill's proximity to their property (78%); increased traffic (28%); and, increased noise (11%). People's lifestyle preferences (e.g., size of property and home) were also factors.

It is not possible to accurately estimate if any people will actually choose to move from their communities. There is anecdotal evidence that some people have already moved elsewhere in the LSA. However, it is anticipated that if approved by the Province of Ontario, the Project will increase the risk of people moving out of their communities. Those most likely to move from their community are:

- those currently dissatisfied residents that are already “not very” or “not at all satisfied”;
- those that have considered moving in the recent past; and
- those that have already expressed their intention to move because of the proposed landfill project.

While most respondents are satisfied with living in their community or neighbourhood, levels of satisfaction are consistently high in the RSA, LSA and the areas closest to the Campus. PAR results from across the RSA indicate that:

- About 17% of RSA respondents indicated that they were already “not very” or “not at all satisfied”.
- Close to 88% of respondents residing in the RSA say that Walker's proposal has little-to-no impact on their decision to consider moving away from the landfill.
- About 10% of RSA respondents say they are likely to move. Likelihood to move is higher among those who feel the proposal may adversely affect their community well-being, their levels of satisfaction and their sense of health and safety.

PAR results from across the LSA indicate that:

- About 12% of LSA respondents indicated that they were already “not very” or “not at all satisfied”. Fewer people in the LSA said that they are “not very” or “not at all satisfied” with living in their community as compared to the 2005 total.
- Close to 80% of respondents residing in the LSA say that Walker's proposal has little-to-no impact on their decision to consider moving away from the landfill.
- About 15% of LSA respondents say they are likely to move.



The Site Neighbour Survey results indicate:

- About 3% of the Site Neighbour Survey respondents indicated that they were already “not very” or “not at all satisfied”. The South Landfill Phase 2 Project is likely to increase the numbers of Site Neighbours who are dissatisfied. Engagement with some neighbours suggest that they feel that they “have done and put up with enough”.
- Approximately 50% of respondents indicated that they have considered moving from their current property in the past 5 years, mostly because of the existing activities on the Walker Campus.

Because people do not or cannot (for a variety of reasons) act on their intentions to move, actual out-migration of residents attributable to the South Landfill Phase 2 Project is likely to be limited to those already highly dissatisfied with the landfill proposal being the “last straw” or “too much of the same”, those that have also considered moving for other reasons, and those that are highly mobile (e.g., those who are less attached to their place/newcomers, in a favourable housing, financial or employment position). As shown in **Table 5-1**, Site Neighbours continue to enjoy the amenities that exist in the vicinity of the Walker Campus, or just a moderate effects with both Quarry and South Landfill operating together. The South Landfill Phase 2 will have either no effect or only a moderate effect on these positive amenities.

**Table 5-1: Reasons Why Site Neighbours Have Not Moved Out**

Reasons offered by Site Neighbours	Number of Responses	Percentage
Beautiful neighbourhood/view (e.g., green space, clean, golf course)	10	63%
Love my property/home (e.g., no real problem, permanent home)	5	31%
Peaceful/relaxing (e.g., quiet area)	3	19%
Spacious/property size (e.g., no up-close neighbours)	3	19%
Convenient location (e.g., close to grocery stores)	2	13%
Other	3	19%
<b>Total</b>	<b>16</b>	<b>100%</b>

Notes:

Percentages may not add up to 100% due to rounding

Total responses less than 38 indicate that some questions were not answered by some respondents.

It is noteworthy that in 2021, Statistics Canada estimated that approximately 88% of RSA residents were considered “non-movers” within the past year. Similarly, between 52% and 64% of RSA residents were considered “non-movers” within the past 5 years. The Site Neighbour Survey results indicated that 66% of respondents have lived at their current property for more than 10 years, and 50% indicated that the property has been in their family for more than 20 years. Respondents also appear to have a vested financial interest in their property in that almost all of them own their property (i.e., most do not rent their place of residence) and very few of them rent any portion to someone else. These are all indicators of a very strong attachment to place among Site Neighbours who, in the absence of widespread and high magnitude physical disturbances from the South Landfill Phase 2 Project, are much less likely to move simply because of the Project.



Should some people decide to move from their homes they will likely be replaced by others who are more tolerant of local conditions, see fewer disadvantages to the presence of the landfill in their community or might realize a financial benefit from relocating to the LSA. In some cases, properties may be purchased by Walker themselves on a willing buyer / willing seller basis.

Finally, in the absence of sustained opposition and negative publicity, there is evidence from other controversial landfill cases that some residents may reappraise the landfill over time due to a combination of individual and landfill-related factors. This ex-post facto research is in regards to the siting of a non-hazardous solid waste landfill in Milton, Ontario commonly referred to as the Halton Landfill (approximately 70 km from the South Landfill in Niagara) and the expansion of a non-hazardous industrial, commercial and institutional solid waste landfill commonly known as the Taro East Landfill site located in Stoney Creek, Ontario (approximately 50 km from the Walker Campus.

Key findings from the Milton landfill case (Elliott S. , 1997)

- *“...residents’ reappraisal of the Milton landfill between 1990 and 1995 reveal little impact on neighbourhood satisfaction, more positive perceptions of the facility and a reduced level of concern” (pg.238)*
- *[Three sets of interviews undertaken by academic researchers over the five years following the approval of the landfill].. “showed a temporal gradient of change for several measures of concern, indicating that the trend towards positive perceptions and attitudes was concurrent with landfill construction (1990-1992) and waste sustained into the first half years of operations (1992-1995)” (pg. 238)*
- *“In the context of [people’s] lives as a whole, many residents had adapted to the facility. For some, the landfill remains a source of dislike and/or annoyance but is no longer perceived as a threat in once was.” (pg. 238).*
- *“...50% of respondents in 1995 remain concerned about the landfill and 36% maintained concerns about health.” (pg. 238)*
- *“Residents’ cognitive reappraisal of the site and situation was fundamentally affected by the non-realization of anticipatory fears...The absence of any measurable effects on property values contributed to residents’ reassurance.” (pg. 239).*

Further conclusions from the Milton case (Okeke & Armour, 2000) are:

- *“The research data indicate that the present attitudes of the residents are not a function of their prior opposition to the proposal to site the facility but rather are related to their experience of the facility’s operation. These findings corroborate previous research which concluded that the attitudes of residents towards an unwanted facility were a function of expected outcomes...that neighbourhood opposition to a facility in not longstanding but reversible” (pg.151-152).*

In contrast, key findings from the Taro East landfill case (Elliott & McClure, 2009) are:

- *“The results of this analysis of residents’ reappraisal of the Taro East Landfill site between 1996 and 2002 reveals little change in the frequency of landfill concerns over time, with over half of respondents maintaining concerns about the site and shift in health concerns from short term (e.g., rashes, headaches) to longer term (e.g., cancer). This shift is probably linked to the flashpoint in site history when illegal dumping of hazardous waste at this non-hazardous disposal site was discovered”. (pg. 253).*



- *“The findings imply an ongoing process of cognitive reappraisal due to a combination of contextual (e.g., lack of meaningful involvement/communication in the siting process, poor operational practices/incidents, loss of social networks/shared experience) , compositional (e.g., socio-economic status, dwelling tenure and type) and collective (e.g., distrust, inequity) factors.” (pg. 253).*

A third case study (Mason-Reton, 2017) reviews the siting of a biosolid (sewage sludge) processing facility, known as the Southgate Organic Material Recovery Centre (OMRC) located in the Township of Southgate, Ontario (approximately 175 km from the Walker Campus). Key findings from this study are:

- *“Following facility operations, concerns shifted from primarily anticipatory anxieties to increased facility acceptance, although concerns for invisible impacts remained alongside sustained intra-community conflict” (pg. i)*

These studies indicated that some, but not necessarily all, residents may reappraise the landfill over time due to a combination of individual, contextual and landfill-related factors. Elliot and McClure (2009) recommended that *“it is important to involve the public, engender trust, ensure equity and adequately deal with threats to way of life and core values of the community when attempting to site a landfill” (pg. 254).*

Given the magnitude of nuisance effects, widespread outmigration of residents from their current residential properties across the RSA and LSA are not anticipated because of the Project. Despite high levels of satisfaction with living in their neighbourhoods among Site Neighbours (i.e. 68% “very” satisfied and 29% “somewhat” satisfied) and that the existing operations on the Walker Campus (including the existing South Landfill and Quarry operations) are not top of mind among Site Neighbours, most Site Neighbour respondents anticipate the South Landfill Phase 2 Project will reduce their levels of satisfaction with living in their community. This is evidenced by responses to the Site Neighbour Survey. When asked “Considering your neighbourhood today, do you anticipate that your overall satisfaction with living here will change as a result from the South Landfill Phase 2 Project?”, 53% of respondent answered in the affirmative (i.e., Yes). Further, when asked “To what extent do you anticipate that your level of satisfaction with your neighbourhood will change?” almost all of respondents indicated they are likely to be “somewhat” (30%) or “much less” satisfied (65%).

The magnitude of any reduction in satisfaction will however depend on the performance of the South Landfill Phase 2 regarding nuisances (e.g., dust, noise, odours, litter, traffic and visual intrusion). Site Neighbour respondents offered the following suggestions or considerations to Walker so they can remain satisfied with living in your neighbourhood as they are today or better.

**Table 5-2: Suggestions to Walker to Maintain Satisfaction with Neighbourhoods**

Suggestions	Number of Responses	Percentage
Odour control/management (e.g., especially during heat)	4	36%
Improved communication with community (e.g., advance notices, respond to concerns)	3	27%
Dust control/improved air quality	2	18%
Noise mitigation (e.g., plant trees)	2	18%



Suggestions	Number of Responses	Percentage
Traffic routing/control (e.g., use Mountain Rd)	2	18%
Better road maintenance/repair	2	18%
Compensation from Walker (e.g., money)	1	9%
Other	5	45%
Don't know/refused	2	18%
<b>Total</b>	<b>11</b>	<b>100%</b>

Notes:

Percentages may not add up to 100% due to rounding

Total responses less than 38 indicate that some questions were not answered by some respondents

### 5.1.1 Proposed Mitigation and Compensation Measures

Considering Walker’s own best practices at its current landfill and Quarry operations, it is recommended that Walker implement measures identified under heading “Potential for Disruption of Use and Enjoyment of Residential Properties” (Section 5.2.1) to minimize reduced levels of satisfaction and mitigate the potential for voluntary outmigration of local residents.

### 5.1.2 Net Effects

Considering the implementation of all landfill design and operational measures and Walker’s mitigation commitments, the South Landfill Phase 2 Project may result in the following net effects:

It is likely that there will be increased dissatisfaction with living in the community potentially leading to an increased risk of voluntary out-migration by some residents during landfill development. The magnitude of this reduction in satisfaction and the severity of the risk of voluntary out-migration will depend on the performance of the South Landfill Phase 2 regarding nuisances (e.g., dust, noise, odours, litter, traffic and visual intrusion) and overall confidence in Walker in managing their operations in a safe manner.

Increased personal stress among some residents stemming from decreased satisfaction with community.

## 5.2 Potential for Disruption to Use and Enjoyment of Residential Properties

As shown in **Table 5-3**, Site Neighbours tend to use their residential properties for a wide range of outdoor social, recreational and household activities.



**Table 5-3: Site Neighbour Outdoor Uses of their Residential Properties**

Outdoor Uses	Number of Responses	Percentage
Barbecue/BBQ	36	97%
Gardening (e.g., vegetable garden, flower garden, cutting the grass)	30	81%
Hot tub/swimming pool	19	51%
Use patio/backyard/porch for lounging (e.g., with TV, enjoy being outdoors)	15	41%
Socializing and entertaining (e.g., parties, family and friend events)	13	35%
Rest/relaxation (e.g., peacefully enjoying the quiet, reading outdoor)	6	16%
Sports (e.g., recreational activities, quad riding, soccer)	5	14%
Children’s playground/kids playing	4	11%
Exercise (e.g., taking walks, bike riding)	4	11%
Dogs/cats (e.g., walking dogs, training, outdoor activities with pets)	3	8%
Outdoor fires (e.g., fireplace, bonfire)	3	8%
Other	4	11%
<b>Total</b>	<b>37</b>	<b>100%</b>

Notes:

Percentages may not add up to 100% due to rounding

Total responses less than 38 indicate that some questions were not answered by some respondents.

Approximately 58% of Site Neighbour respondents also indicated that the presence and activities undertaken at Walker's Resource Management Campus have affected their use and enjoyment of their residential property, while 32% said it has not. The main ways identified that their use and enjoyment of their residential property had been affected were largely nuisance related:

- 95% avoided outdoor activities/keep windows closed due to smell;
- 14% made modifications to their property to mitigate for noise/dust mitigation (e.g., plant trees, water feature, screens)
- 14% were disturbed by noise
- 9% avoided using certain roads (e.g., Taylor Road).
- 18% identified other effects (e.g., startled pets).

Site Neighbours were asked “Considering how you use and enjoy your property today, do you anticipate that your use or enjoyment of your residential property will change as a result from the South Landfill (Phase 2) Project?”. Approximately 61% of respondents answered in the affirmative (i.e., Yes, it would), 16% said it would Not, and 24% were not sure or preferred not to answer. Anticipated effects were similar to those experienced currently and largely nuisance



related. Some Site Neighbours emphasized that while no new types of effects are likely from the South Landfill Phase 2 Project, the ongoing disruption for another 20 years and further encroachment of the landfill to their properties were the “real issues”.

Within the context of these existing effects and anticipated effects by Site Neighbours, Error! Reference source not found.5-4 through Error! Reference source not found.5-6 present the predicted nuisance values at all of the common receptor locations, under each of the three operating scenarios assessed for the South Landfill Phase 2 Project, compiled from the odour, dust, noise, and traffic impact assessments; visual intrusion is addressed separately in the text. The predictions reflect the project design as modelled by each discipline; the continuous noise and visual results incorporate the proposed Garner Road berm extension, while the impulsive noise values are presented before the pest-control mitigation that the noise assessment recommends to address the predicted exceedances. Any further mitigation identified for a receptor that exceeds a criterion is noted in the discussion that follows.

Each table reports the predicted magnitude of every nuisance at each receptor. Predicted values are read against the applicable criteria: 120  $\mu\text{g}/\text{m}^3$  for dust, reported in the tables as the count of days above this level over the five-year modelling period; 55 dBA daytime and 45 dBA nighttime for continuous noise; and 70 dBAI for impulsive noise. Odour is reported as the maximum predicted ten-minute concentration and as the percentage of time concentrations exceed 1, 3, and 5 OU. Under the MECP modelling guidance applied in the Air Quality assessment, odour above the 1 OU detection threshold is acceptable where it occurs less than 0.5% of the time; 1 OU is the level at which odour is generally first detectable and is not necessarily a nuisance, while the 3 to 5 OU range is that associated with annoyance. Traffic is reported as the count and share of Walker heavy-vehicle peak-hour trips, and visual intrusion is addressed qualitatively on the basis of landfill visibility, accounting for topography, screening, and the rising landfill profile over the operating life. Receptors at which a predicted value periodically exceeds its criterion are identified in the discussion that follows the tables.

A predicted value below its criterion does not imply the absence of an impact; it indicates that the effect falls below the level at which most people would experience frequent annoyance. The tabulated values are cumulative predictions for each scenario, reflecting the active sources across the Walker Campus rather than the Phase 2 landfill in isolation; under Impact 1, for example, they include the Quarry and the closing Phase 1 landfill operating alongside the Phase 2 Stage 1 cell. The incremental effect of the Phase 2 expansion is reflected in the change from the existing baseline conditions and in the progression across the three scenarios.



**Table 5-4: Predicted Nuisance Values at Common Receptor Locations – Impact 1 (South Landfill Phase 1 Closing; Quarry and South Landfill Phase 2 Operating Together)**

CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr µg/m <sup>3</sup> ; MECP AAQC: 120) days >120 µg/m <sup>3</sup> over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBA) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR01	Residences on Warner Road and the Niagara Escarpment	>1000m	114.1; 0 days	Max 10-min OU: 3.3 Freq >1 OU: 1.5% ≈ 131-hrs/yr Freq >3 OU: 0.1% ≈ 9- hrs/yr	61 / 53 / 65	49 / 39	24 (4.3%)	25 (3.5%)
CR04	Nearest residences on Garner Rd	500-1000m	96.4; 0 days	Max 10-min OU: 4.5 Freq >1 OU: 2.4% ≈ 210-hrs/yr Freq >3 OU: 0.6% ≈ 53- hrs/yr	59 / 48 / 53	48 / 41	0 (0.0%)	2 (1.9%)
CR05	Nearest residence, South	<500m	83; 0 days	Max 10-min OU: 4 Freq >1 OU: 1.4% ≈ 123-hrs/yr Freq >3 OU: 0.1% ≈ 9- hrs/yr	62 / 53 / 56	46 / 40	12 (0.7%)	7 (0.3%)
CR06	Nearest residences West and City of Thorold urban boundary	>1000m	90.7; 0 days	Max 10-min OU: 3.5 Freq >1 OU: 0.9% ≈ 79- hrs/yr	57 / 50 / 64	43 / 34	—	—
CR07	Nearest school: St. Vincent De Paul Catholic Elementary School	>1000m	67.8; 0 days	Max 10-min OU: 2.2 Freq >1 OU: 0.5% ≈ 44- hrs/yr	54 / 46 / 54	39 / 31	9 (0.5%)	10 (0.5%)



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr µg/m <sup>3</sup> ; MECP AAQC: 120) days >120 µg/m <sup>3</sup> over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBA) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR08	Lakeview Cemetery	>1000m	126.9; 1 days	Max 10-min OU: 7 Freq >1 OU: 4.0% ≈ 350-hrs/yr Freq >3 OU: 0.7% ≈ 61- hrs/yr Freq >5 OU: 0.2% ≈ 18- hrs/yr	67 / 59 / 72	51 / 48	10 (11.4%)	26 (22.6%)
CR10	Niagara Thorold Patrol Yard / Niagara Regional Police Fleet Centre	>1000m	111.6; 0 days	Max 10-min OU: 7.2 Freq >1 OU: 2.4% ≈ 210-hrs/yr Freq >3 OU: 0.5% ≈ 44- hrs/yr Freq >5 OU: 0.1% ≈ 9- hrs/yr	64 / 57 / 72	51 / 48	14 (12.1%)	29 (20.0%)
CR11	Woodend Conservation Area	>1000m	107.4; 0 days	Max 10-min OU: 4.1 Freq >1 OU: 1.3% ≈ 114-hrs/yr Freq >3 OU: 0.1% ≈ 9- hrs/yr	60 / 52 / 63	50 / 38	24 (4.3%)	25 (3.5%)
CR12	Pine Tree Village Mobile Home Park	>1000m	94.7; 0 days	Max 10-min OU: 2.1 Freq >1 OU: 0.4% ≈ 35- hrs/yr	53 / 45 / 58	38 / 29	—	—
CR13	Beechwood Golf & Social House	>1000m	69.6; 0 days	Max 10-min OU: 2.7 Freq >1 OU: 0.3% ≈ 26- hrs/yr	56 / 48 / 62	38 / 33	12 (4.0%)	17 (4.1%)
CR14	Northwest Secondary Plan Area	>1000m	88.8; 0 days	Max 10-min OU: 3.2 Freq >1 OU: 0.6% ≈ 53- hrs/yr	56 / 48 / 58	43 / 33	9 (2.0%)	15 (3.0%)



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBA) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR15	Niagara-on-the-Green Subdivision / Glendale Secondary Plan Area	>1000m	89.8; 0 days	Max 10-min OU: 3.1 Freq >1 OU: 0.6% $\approx$ 53-hrs/yr	56 / 48 / 61	43 / 32	—	—
CR16	St Catharines	>1000m	81.9; 0 days	Max 10-min OU: 2.2 Freq >1 OU: 0.4% $\approx$ 35-hrs/yr	54 / 46 / 59	41 / 30	—	—
CR17	Nearest residence Northeast and Gauld Nurseries	<500m	133.1; 1 days	Max 10-min OU: 2.9 Freq >1 OU: 1.4% $\approx$ 123-hrs/yr	60 / 52 / 65	45 / 37	0 (0.0%)	0 (0.0%)
CR18	Residences at South end of Garner Road	>1000m	79.2; 0 days	Max 10-min OU: 2.9 Freq >1 OU: 0.8% $\approx$ 70-hrs/yr	59 / 51 / 55	43 / 36	0 (0.0%)	2 (1.9%)
CR19	Nearest Residence Southwest	>1000m	105.9; 0 days	Max 10-min OU: 7.4 Freq >1 OU: 2.6% $\approx$ 228-hrs/yr Freq >3 OU: 0.7% $\approx$ 61-hrs/yr Freq >5 OU: 0.1% $\approx$ 9-hrs/yr	65 / 57 / 72	48 / 44	14 (12.1%)	29 (20.0%)
CR20	Residences east of Kalar Road	>1000m	80.2; 0 days	Max 10-min OU: 2.7 Freq >1 OU: 0.7% $\approx$ 61-hrs/yr	55 / 48 / 55	41 / 33	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBA) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR21	Royal Niagara Golf Club	>1000m	182.1; 16 days	Max 10-min OU: 5.7 Freq >1 OU: 2.3% $\approx$ 201-hrs/yr Freq >3 OU: 0.5% $\approx$ 44- hrs/yr Freq >5 OU: 0.1% $\approx$ 9- hrs/yr	58 / 48 / 54	59 / 41	—	—
R11	Residence (Boondocks Pet Resort)	500- 1000m	85; 0 days	Max 10-min OU: 4.5 Freq >1 OU: 1.1% $\approx$ 96- hrs/yr Freq >3 OU: 0.2% $\approx$ 18- hrs/yr	—	—	—	—
R12	Service Station (adjacent Broad Street Cheesesteaks)	>1000m	87; 0 days	Max 10-min OU: 4.1 Freq >1 OU: 1.2% $\approx$ 105-hrs/yr Freq >3 OU: 0.3% $\approx$ 26- hrs/yr	—	—	—	—

Source: (RWDI AIR Inc., 2026a) (RWDI AIR Inc., 2026e) (RWDI AIR Inc., 2026b) (TYLin, 2026)



**Table 5-5: Predicted Nuisance Values at Common Receptor Locations – Impact 2 (South Landfill Phase 2 Operating; Quarry Ceased)**

CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR01	Residences on Warner Road and the Niagara Escarpment	>1000m	73.4; 0 days	Max 10-min OU: 2.2 Freq >1 OU: 1.4% $\approx$ 123-hrs/yr	63 / 55 / 66	42 / 38	22 (3.9%)	24 (3.2%)
CR04	Nearest residences on Garner Rd	500-1000m	76.7; 0 days	Max 10-min OU: 2.5 Freq >1 OU: 1.9% $\approx$ 166-hrs/yr	56 / 48 / 54	46 / 41	0 (0.0%)	2 (1.9%)
CR05	Nearest residence, South	<500m	66.8; 0 days	Max 10-min OU: 2.6 Freq >1 OU: 0.9% $\approx$ 79-hrs/yr	54 / 47 / 56	40 / 37	12 (0.6%)	11 (0.5%)
CR06	Nearest residences West and City of Thorold urban boundary	>1000m	69.5; 0 days	Max 10-min OU: 2.3 Freq >1 OU: 0.5% $\approx$ 44-hrs/yr	54 / 46 / 63	36 / 34	—	—
CR07	Nearest school: St. Vincent De Paul Catholic Elementary School	>1000m	59.2; 0 days	Max 10-min OU: 1.3 Freq >1 OU: 0.2% $\approx$ 18-hrs/yr	55 / 47 / 53	35 / 31	8 (0.4%)	10 (0.4%)
CR08	Lakeview Cemetery	>1000m	88.7; 0 days	Max 10-min OU: 5.1 Freq >1 OU: 2.8% $\approx$ 245-hrs/yr Freq >3 OU: 0.3% $\approx$ 26-hrs/yr	59 / 49 / 73	49 / 47	10 (11.4%)	27 (23.3%)



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR10	Niagara Thorold Patrol Yard / Niagara Regional Police Fleet Centre	>1000m	81.7; 0 days	Max 10-min OU: 4.5 Freq >1 OU: 1.6% $\approx$ 140- hrs/yr Freq >3 OU: 0.2% $\approx$ 18- hrs/yr	59 / 50 / 71	49 / 48	13 (11.2%)	30 (20.5%)
CR11	Woodend Conservation Area	>1000m	73.1; 0 days	Max 10-min OU: 2.3 Freq >1 OU: 1.0% $\approx$ 88- hrs/yr	62 / 54 / 65	41 / 37	22 (3.9%)	24 (3.2%)
CR12	Pine Tree Village Mobile Home Park	>1000m	77.6; 0 days	Max 10-min OU: 2.4 Freq >1 OU: 0.5% $\approx$ 44- hrs/yr	55 / 49 / 58	35 / 32	—	—
CR13	Beechwood Golf & Social House	>1000m	60.2; 0 days	Max 10-min OU: 2 Freq >1 OU: 0.2% $\approx$ 18- hrs/yr	53 / 45 / 62	34 / 31	12 (3.9%)	16 (3.8%)
CR14	Northwest Secondary Plan Area	>1000m	72.8; 0 days	Max 10-min OU: 2.4 Freq >1 OU: 0.9% $\approx$ 79- hrs/yr	58 / 51 / 58	39 / 36	8 (1.7%)	11 (2.1%)
CR15	Niagara-on-the- Green Subdivision / Glendale Secondary Plan Area	>1000m	63.6; 0 days	Max 10-min OU: 1.6 Freq >1 OU: 0.4% $\approx$ 35- hrs/yr	57 / 49 / 61	35 / 31	—	—
CR16	St Catharines	>1000m	63; 0 days	Max 10-min OU: 1.4 Freq >1 OU: 0.2% $\approx$ 18- hrs/yr	53 / 45 / 59	33 / 28	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR17	Nearest residence Northeast and Gauld Nurseries	<500m	94.5; 0 days	Max 10-min OU: 5.5 Freq >1 OU: 2.4% $\approx$ 210- hrs/yr Freq >3 OU: 0.5% $\approx$ 44- hrs/yr	64 / 56 / 66	44 / 41	0 (0.0%)	0 (0.0%)
CR18	Residences at South end of Garner Road	>1000m	63.7; 0 days	Max 10-min OU: 1.7 Freq >1 OU: 0.5% $\approx$ 44- hrs/yr	57 / 46 / 55	40 / 37	0 (0.0%)	2 (1.9%)
CR19	Nearest Residence Southwest	>1000m	76.9; 0 days	Max 10-min OU: 5.2 Freq >1 OU: 1.7% $\approx$ 149- hrs/yr Freq >3 OU: 0.2% $\approx$ 18- hrs/yr	46 / 39 / 71	46 / 44	13 (11.2%)	30 (20.5%)
CR20	Residences east of Kalar Road	>1000m	66.4; 0 days	Max 10-min OU: 1.7 Freq >1 OU: 0.6% $\approx$ 53- hrs/yr	57 / 50 / 54	38 / 34	—	—
CR21	Royal Niagara Golf Club	>1000m	81; 0 days	Max 10-min OU: 3.2 Freq >1 OU: 1.6% $\approx$ 140- hrs/yr Freq >3 OU: 0.1% $\approx$ 9- hrs/yr	60 / 54 / 55	41 / 37	—	—
R11	Residence (Boondocks Pet Resort)	500- 1000m	67; 0 days	Max 10-min OU: 3.2 Freq >1 OU: 0.8% $\approx$ 70- hrs/yr	—	—	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)
R12	Service Station (adjacent Broad Street Cheesesteaks)	>1000m	68; 0 days	Max 10-min OU: 3.9 Freq >1 OU: 0.8% $\approx$ 70-hrs/yr Freq >3 OU: 0.1% $\approx$ 9-hrs/yr	—	—	—	—

Source: (RWDI AIR Inc., 2026a) (RWDI AIR Inc., 2026b) (RWDI AIR Inc., 2026f) (TYLin, 2026)

Note: Impact 2 noise values represent the worst case across the Phase 2 operating sub-stages (Stage 2 and End of Stage 3).

**Table 5-6: Predicted Nuisance Values at Common Receptor Locations – Impact 3 (End of Stage 4 – Peak Operational Extent)**

CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days >120 $\mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy-Vehicle Trips (count; % of peak-hour traffic)
CR01	Residences on Warner Road and the Niagara Escarpment	>1000m	75.1; 0 days	Max 10-min OU: 2.9 Freq >1 OU: 1.2% $\approx$ 105-hrs/yr	64 / 54 / 66	42 / 38	13 (2.3%)	14 (1.9%)
CR04	Nearest residences on Garner Rd	500-1000m	70.9; 0 days	Max 10-min OU: 2.5 Freq >1 OU: 1.6% $\approx$ 140-hrs/yr	66 / 54 / 53	45 / 42	0 (0.0%)	1 (0.9%)
CR05	Nearest residence, South	<500m	66.3; 0 days	Max 10-min OU: 2.9 Freq >1 OU: 0.7% $\approx$ 61-hrs/yr	63 / 55 / 56	40 / 37	8 (0.4%)	6 (0.2%)
CR06	Nearest residences West and City of	>1000m	68.6; 0 days	Max 10-min OU: 2.6 Freq >1 OU: 0.4% $\approx$ 35-hrs/yr	55 / 47 / 63	33 / 30	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days $>120 \mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
	Thorold urban boundary							
CR07	Nearest school: St. Vincent De Paul Catholic Elementary School	>1000m	58.3; 0 days	Max 10-min OU: 1.3 Freq >1 OU: 0.1% $\approx$ 9-hrs/yr	55 / 48 / 54	34 / 30	5 (0.3%)	6 (0.2%)
CR08	Lakeview Cemetery	>1000m	87.1; 0 days	Max 10-min OU: 4.5 Freq >1 OU: 2.2% $\approx$ 193-hrs/yr Freq >3 OU: 0.1% $\approx$ 9-hrs/yr	63 / 54 / 73	48 / 47	6 (7.1%)	16 (15.2%)
CR10	Niagara Thorold Patrol Yard / Niagara Regional Police Fleet Centre	>1000m	80.4; 0 days	Max 10-min OU: 3.4 Freq >1 OU: 1.4% $\approx$ 123-hrs/yr	61 / 54 / 71	48 / 48	7 (6.4%)	18 (13.4%)
CR11	Woodend Conservation Area	>1000m	72.3; 0 days	Max 10-min OU: 2.3 Freq >1 OU: 1.1% $\approx$ 96-hrs/yr	60 / 53 / 65	40 / 36	13 (2.3%)	14 (1.9%)
CR12	Pine Tree Village Mobile Home Park	>1000m	70.4; 0 days	Max 10-min OU: 2.3 Freq >1 OU: 0.4% $\approx$ 35-hrs/yr	55 / 47 / 57	35 / 31	—	—
CR13	Beechwood Golf & Social House	>1000m	59.8; 0 days	Max 10-min OU: 1.9 Freq >1 OU: 0.2% $\approx$ 18-hrs/yr	55 / 47 / 62	33 / 31	8 (2.6%)	10 (2.4%)
CR14	Northwest Secondary Plan Area	>1000m	64.1; 0 days	Max 10-min OU: 2.8 Freq >1 OU: 0.7% $\approx$ 61-hrs/yr	58 / 50 / 57	39 / 35	5 (1.1%)	8 (1.6%)



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days $>120 \mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBA) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
CR15	Niagara-on-the-Green Subdivision / Glendale Secondary Plan Area	>1000m	65.4; 0 days	Max 10-min OU: 1.7 Freq >1 OU: 0.4% $\approx$ 35-hrs/yr	56 / 48 / 61	33 / 28	—	—
CR16	St Catharines	>1000m	63.3; 0 days	Max 10-min OU: 1.3 Freq >1 OU: 0.1% $\approx$ 9-hrs/yr	52 / 45 / 59	31 / 27	—	—
CR17	Nearest residence Northeast and Gauld Nurseries	<500m	87.7; 0 days	Max 10-min OU: 4.3 Freq >1 OU: 2.3% $\approx$ 201-hrs/yr Freq >3 OU: 0.3% $\approx$ 26-hrs/yr	63 / 54 / 65	44 / 39	0 (0.0%)	0 (0.0%)
CR18	Residences at South end of Garner Road	>1000m	62.2; 0 days	Max 10-min OU: 1.8 Freq >1 OU: 0.4% $\approx$ 35-hrs/yr	60 / 52 / 55	39 / 35	0 (0.0%)	1 (0.9%)
CR19	Nearest Residence Southwest	>1000m	76.3; 0 days	Max 10-min OU: 4.4 Freq >1 OU: 1.4% $\approx$ 123-hrs/yr Freq >3 OU: 0.1% $\approx$ 9-hrs/yr	56 / 45 / 72	45 / 43	7 (6.4%)	18 (13.4%)
CR20	Residences east of Kalar Road	>1000m	61.7; 0 days	Max 10-min OU: 1.7 Freq >1 OU: 0.4% $\approx$ 35-hrs/yr	58 / 50 / 55	37 / 33	—	—
CR21	Royal Niagara Golf Club	>1000m	80.3; 0 days	Max 10-min OU: 2.8 Freq >1 OU: 1.6% $\approx$ 140-hrs/yr	61 / 47 / 55	37 / 33	—	—



CR ID	Receptor Name / Location	Distance	TSP / Dust (Max 24-hr $\mu\text{g}/\text{m}^3$ ; MECP AAQC: 120) days $>120 \mu\text{g}/\text{m}^3$ over 5 yrs	Total Odours (Max 10-min OU; freq >1 / >3 / >5 OU)	Impulsive Noise (dBAI) Banger / Cracker / Shotgun	Continuous Noise (dBA) Day / Night	AM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)	PM Peak Walker Heavy- Vehicle Trips (count; % of peak-hour traffic)
R11	Residence (Boondocks Pet Resort)	500- 1000m	67; 0 days	Max 10-min OU: 2.8 Freq >1 OU: 0.7% $\approx$ 61- hrs/yr	—	—	—	—
R12	Service Station (adjacent Broad Street Cheesesteaks)	>1000m	68; 0 days	Max 10-min OU: 3.2 Freq >1 OU: 0.6% $\approx$ 53- hrs/yr	—	—	—	—

Source: (RWDI AIR Inc., 2026a) (RWDI AIR Inc., 2026b) (RWDI AIR Inc., 2026g) (TYLin, 2026)



## **Individual Nuisance Analysis**

In terms of privately owned residential properties, predicted 24-hour TSP concentrations exceed the 120 µg/m<sup>3</sup> criterion at only one assessed residential receptor location. This is at:

- CR17 (residences and Gauld Nurseries northeast of the site)

Under Impact 1, the 24-hour TSP concentration at this location is 33 µg/m<sup>3</sup> with a total of one exceedance day, Under Impact 2 and Impact 3, with the Quarry retired and the landfill working area shifted, the maximum predicted concentration falls to 94.5 µg/m<sup>3</sup>. No other assessed residential receptor records an exceedance day over the five-year modelling period, so the criterion is met at all other residential receptor locations. The dust exceedance effect is therefore confined to the Impact 1 transitional period.

Odour is assessed by the maximum predicted ten-minute concentration and by the frequency of excursions above the 1, 3, and 5 OU thresholds. Under Impact 1, the frequency above the 3 OU threshold is at or above 0.5% at two of the assessed residential receptor locations:

- CR04, Nearest residences on Garner Rd.
- CR19, Nearest Residence Southwest (Walker-owned residence)

Maximum 10-minute odour levels range from 4.5 OU (> 3OU ~53hr/yr) at CR04 to 7.4 OU (> 3 OU ~61 hr/yr) at CR19 under Impact 1 and declines to no exceedance of the 0.5% criterion under Impact 3. Exceedances above the 5 OU threshold remain rare at CR19. This decline across the three impact scenarios indicates that landfill odour potential is greatest during the transitional period when the Quarry and South Landfill Phase 2 are operating together.

Predicted continuous sound levels remain below the 55 dBA nuisance criterion at all of the common residential receptor locations under Impact 2 and 3.

Predicted impulsive sound levels reach or exceed the 70 dBAI limit at only one of the assessed residential receptor locations and persist across the operating scenarios: CR19 (Walker-owned residence). The predicted level is 72 dBAI at this location under Impact 1 and ranges to 73 dBAI under Impacts 2 and 3, driven by the shotgun pest-control device. The detailed noise assessment recommends relocating the shotgun toward the existing South Landfill entrance, where the elevated landfill mound provides shielding, or substituting a quieter device, either of which is predicted to remove the exceedance. It is noteworthy that this property is not an occupied third-party residential dwelling but a Walker-owned property.

Walker heavy-vehicles tend not to use Garner Road or Kalar Road as they are both considered to be low volume rural roads and not suitable for heavy vehicle use. Walker heavy-vehicle peak-hour traffic represents its largest proportion of total volume on Thorold Townline Road, a low-volume rural roads serving CR19 (Nearest Residence Southwest at a Walker-owned residence).

On the higher-volume arterials serving the homes associated with the common residential receptors, the Walker share is 4.3% or lower, for example 4.3% at CR01 (Residences on Warner Road and the Niagara Escarpment) and CR11 (Residences along Taylor Road, near the Woodend Conservation Area). Walker peak-hour trips decline from the baseline across the three scenarios. For example, at CR01, the morning Walker volume falls from 42 trips at baseline to 24, 22, and 13 trips under Impacts 1, 2, and 3 respectively.

Visual intrusion is greatest when the landfill operations are above grade. While filling remains below grade, the landfill is rated fully obscured at every residential common receptor. Once operations rise above grade, the upper portion of the working face becomes partially visible above intervening topography and vegetation at the nearer receptors:



- CR01, Residences on Warner Road and the Niagara Escarpment
- CR05, Nearest residence, South
- CR07, Nearest school: St. Vincent De Paul Catholic Elementary School and nearby homes backing and fronting onto Kalar Road
- CR17, Nearest residence Northeast and Gauld Nurseries
- CR18, Residences at South end of Garner Road
- CR20, Residences east of Kalar Road

Existing vegetation and berms provide some level of screening at these locations. The proposed Garner Road berm extension will result in some views at CR04 being partially obscured. The proposed berm extension will obscure all but the top-most portion of the northern mound. It is noteworthy that some Site Neighbours along Garner Road have expressed dissatisfaction with the existing vegetated berm, indicating that its promised design did not materialize. Three (3) residential properties back onto the landfill property and have views from their backyards, kitchen and living room windows. These three properties are considered to be most affected in comparison to residential properties on the west side of Garner Road (CR04) whose backyards do not face the landfill property. All remaining residential receptors are rated fully obscured, and no residential receptor is assigned an unobstructed view of the landfill during operations.

### **Combined Nuisance Analysis**

Across the nuisance categories, the predicted dust, odour and continuous-noise effects are greatest under Impact 1, when the Quarry, the closing Phase 1 landfill, and the Phase 2 Stage 1 cell operate concurrently, and they decline through Impact 2 and Impact 3 as the Quarry is retired and operations consolidate within the landfill working face.

The exceptions are odour at CR17 (Nearest residence Northeast and Gauld Nurseries), which peaks under Impact 2, when its frequency above the 3 OU threshold rises to 0.5% (~44 hr/yr) before easing under Impact 3, and impulsive pest-control noise, which does not decline across the operating scenarios and can be highest in the later stages.

The receptors that periodically exceed a numerical nuisance criterion (dust, continuous sound, or impulsive sound) are:

- CR17, Nearest residence Northeast and Gauld Nurseries
- CR19, Nearest Residence Southwest (Walker-owned residence)

In addition, the frequency above the 3 OU threshold exceeds 0.5% at CR04, the receptor representing the nearest residences on Garner Road, reaching 0.6% (~53 hr/yr) under Impact 1, and falling below 0.5% (~44 hr/yr) under Impacts 2 and 3.

Three (3) residential properties back onto the landfill property and have views from their backyards, kitchen and living room windows. These three properties are considered to be most affected regarding visual intrusion in comparison to residential properties on the west side of Garner Road (CR04) whose backyards do not face the landfill property. All remaining receptors are rated fully obscured, and no receptor is assigned an unobstructed view of the landfill during operations.

### **Nuisance Associated with Rodents, Birds and Insects**

Although not identified as a major concern by Site Neighbours, some residents and often health officials have concerns that landfills can attract rodents, birds and insects to the area because of



its potential as food source or suitable habitats. Some people also raise concerns over the potential for the spread of disease. However, the key nuisance issues identified by residents was the problem of gulls and other birds being attracted to the landfill. Some residents fear that birds will be annoying to see and hear, and their droppings another vector of the spread of disease.

Although not specifically identified by Site Neighbours, there is the potential for a landfill to produce mosquitoes that may be both a nuisance and a vector for West Nile Virus. Similarly, there are health concerns associated by some species of Ticks. Some areas of a landfill property, particularly in the surrounding buffer zone may already serve as habitat for Ticks, that may need to be managed better. It is noteworthy that Ticks cannot fly or jump; they must make direct contact with a host (e.g., landfill worker). They do this by climbing vegetation (tall grasses or shrubs). When approached by a potential host, a tick may grab the passing host.

The key to managing nuisance issues associated with vermin, birds and insects are good operational practices and good on-site housekeeping. As set out by Walker practices and procedures:

- Birds of prey, noisemakers and other industry standard bird control methodologies will be used daily during operating hours to discourage birds from gathering and scavenging at the landfill; and
- Pest control measures will be employed if vermin are found at the site.

Based on years of operating experience at the existing South Landfill, the operational measures to be implemented to minimize access of rodents, birds and insects to exposed wastes and to manage odours include, but are not limited to, the adaptive application of a small working face and ensuring the use of daily cover. Walker will operate landfill gas collection and leachate treatment systems to minimize odours that may be attractive to rodents and birds. Walker will undertake ongoing refinements to these systems to ensure their effectiveness. When necessary, Walker may also utilize bio-filter product that have shown to be very effective in managing odours at localized “hot spots”.

On-site housekeeping measures to discourage rodents and birds will include:

- Using road sweepers/cleaners regularly on internal paved roads, parking areas, and adjacent, external roadways to remove dirt and dust.
- Erecting permanent and temporary/mobile litter fencing at key locations around the working areas to catch blowing litter. Highly mobile fences that can easily be moved throughout any given day to accommodate alternating wind directions will reduce the amount of litter that reached the perimeter high fence.
- Litter collection will be regularly carried out on-site and in the vicinity of the site to remove any fugitive blowing litter.

### **Implications for Residential Property Values**

Property value effects can arise where a facility changes the nuisance conditions at nearby homes (odour, dust, noise, traffic, and views) or changes how the market sees an area. To find where that potential exists, the predictions from each discipline study were assessed at every residential receptor against two questions:

- whether a predicted value exceeds the criterion set by that discipline, and,

where a criterion is already exceeded today, whether the project makes conditions worse.



The market evidence and Walker's operating record shows the market has not priced homes near the existing landfill any differently from comparable areas. The market has lived with Walker generated nuisance conditions throughout the years the Walker Campus has operated and grown. The nuisance analysis points to a small set of homes nearest the site where predicted conditions change most and where there are too few recent sales to confirm the no-effect finding property by property. The one residence where odour above the 3 OU annoyance threshold persists is the nearest one to the northeast (CR17, Nearest residence Northeast and Gauld Nurseries) where the strongest ten-minute reading rises above today's level to a strength already found at other homes nearby. Any remaining potential is therefore specific to the individual properties closest to the site, and the project is not expected to have a significant adverse effect on real estate values.

### **Groundwater and Surface Water Considerations**

Disruption to people's use and enjoyment of residential property is not anticipated due to changes to groundwater or surface quantity or quality for the following reasons:

- Modelling of the landfill's effect on groundwater supply to water wells indicated no marked difference between current groundwater levels and those simulated during landfill operations or in the post-closure phase.
- The proposed liner landfill design meets stringent requirements under Ontario Regulation 232/98 and current landfill standards which are considered by the Province as providing full protection of groundwater quality at the property boundary. The landfill performance will be monitored, and proven contingencies implemented if required, in the event of unanticipated issues with landfill performance to ensure that there are no unacceptable offsite impacts on groundwater quality.
- Relevant water quality standards in the receiving watercourse(s) will be met as a result of the design of stormwater management and leachate management ponds. Therefore, no significant effects on water quality are anticipated in surface waters. The site area and receiving watercourses are not currently used as a source of drinking water. Monitoring and enforceable site-specific discharge criteria will be included on the Environmental Compliance Approvals (ECAs) for the site. As a result of compliance with the site-specific discharge criteria, no adverse water quality effects are expected in the receiving watercourses.
- No net effects on the receiving watercourse are anticipated from an increase in flooding and erosion as a result of the landfill.

Nevertheless, some Site Neighbours that rely on private wells for their water supply may have concerns over the quality of their drinking water and may be skeptical of the landfill's performance.

The magnitude of any reduction in people's use and enjoyment of residential property will depend on the performance of the South Landfill Phase 2 regarding nuisances (e.g., dust, noise, odours, litter, traffic and visual intrusion). Site Neighbour respondents offered the following suggestions or considerations to Walker to minimize disruption from the Project.



**Table 5-7: Suggestions to Walker to Maintain Use and Enjoyment of Residential Property**

Suggestions	Number of Responses	Percentage
Odour control/management (e.g., especially during heat)	7	39%
Noise mitigation (e.g., plant trees)	6	33%
Traffic routing/control (e.g., use Mountain Rd)	6	33%
Dust control/improved air quality	5	28%
Improved communication with community (e.g., advance notices, respond to concerns)	5	28%
Good waste management practices	3	17%
Compensation from Walker (e.g., money)	2	11%
Water quality assurances	2	11%
Better road maintenance/repair	1	6%
Other	3	17%
<b>Total</b>	<b>18</b>	<b>100%</b>

Notes:

Percentages may not add up to 100% due to rounding

Total responses less than 38 indicate that some questions were not answered by some respondents.

Examining these suggestions and considerations indicates that most of these suggestions reflect Walker’s own best practices at the South Landfill and its Quarry operations. Walker has established a sound and long-standing record of regulatory compliance. The complaint record demonstrates Walker’s commitment to continuous improvement and working with its Site Neighbours and others to address issues of concern.

### 5.2.1 Proposed Mitigation and Compensation Measures

Considering suggestions offered by Site Neighbours and Walker’s own best practices at its other landfills and Quarry operations, it is recommended that Walker:

- Attempt to establish and/or continue operation of the South Landfill Phase 2 Community Liaison Committee (CLC) as an advisory body to Walker.

Establish formal protocols to demonstrate to regulators, community leaders and members of the general public its full compliance with all landfill design and operational measures and its mitigation commitments aimed at avoiding or minimizing the physical disturbances of the Project (i.e., odour, noise, particulate matter, dustfall), effects on the traffic network, visual intrusion and effects of the landfill operations on groundwater and surface water resources.

Develop and offer a compensation package to accommodate for multiple adverse effects on households at CRO4 backing onto Walker property and at CR17 that have the greatest potential to result in reduced use and enjoyment of property.

Offer property value protection agreements to nearest neighbours whose properties are within approximately 1000 m of the landfill (Avaanz, 2026).

Review its current complaint reporting and resolution procedure to allow for the resolution of complaints, whereby all complaints received are recorded, investigated and tracked by Walker and reported publicly (subject to privacy or confidentiality provisions).



Provide regular community updates during the construction, operation and closure of the proposed landfill, over-and-above its regulatory reporting requirements, to convey information about the site in a more regular, transparent and user-friendly style. Walker should seek advice from its CLC on the matters of most interest to the community, and the most effective means of disseminating information and undertaking communications.

Undertake regular communications with the City of Niagara Falls, developers and residents in the Northwest Secondary Plan Area.

Establish a good neighbour program focused on neighbourhood enhancement projects (e.g., road maintenance or repairs) or activities in the immediate vicinity of the landfill site, in addition to Walker's corporate sponsorship and donations program which is aimed at the broader community. This would be directed by Walker with advice from the CLC, neighbourhood representatives and community leaders where appropriate.

### 5.2.2 Net Effects

Considering the implementation of all landfill design and operational measures and Walker's mitigation commitments, the South Landfill Phase 2 Project may result in the following net effects:

- The potential for reduced use and enjoyment of residential property at locations that are likely to experience multiple nuisance effects or simple proximity to the Project site:
  - CR17, Nearest residence Northeast and Gauld Nurseries
  - CR19, Nearest Residence Southwest (Walker-owned residence)
  - CR04 at three (3) residential properties on Garner Road that back onto the landfill property and have views from their backyards, kitchen and living room windows.

Once operations rise above grade, the upper portion of the working face becomes partially visible above intervening topography and vegetation at several nearby receptors. This is not expected to result in a demonstrable change in people's ability to use and enjoy their residential properties.

## 5.3 Potential for Disruption to Use and Enjoyment of Public Facilities and Institutions

### Individual Nuisance Analysis

Predicted 24-hour TSP concentrations exceed the 120  $\mu\text{g}/\text{m}^3$  criterion at one of the assessed institutional receptor locations, and only under Impact 1:

- CR08 (Lakeview Cemetery) at 127  $\mu\text{g}/\text{m}^3$  with a total of one exceedance day over the five-year modelling period. The dust exceedance effect is therefore confined to the Impact 1 transitional period.

Predicted maximum ten-minute odour concentrations reach 7.2 OU at CR10 (Niagara Region facility on Old Thorold Stone Road), and 7.0 OU at CR08 (Lakeview Cemetery) under Impact 1, the highest values among the common receptors.

Odour is assessed by the maximum predicted ten-minute concentration and by the frequency of excursions above the 1, 3, and 5 OU thresholds.

Under Impact 1, the frequency above the 3 OU threshold is at or above 0.5% at two of the assessed receptor locations:



- CR08, Lakeview Cemetery
- CR10, Niagara Region facility on Old Thorold Stone Road

Here the frequencies above the threshold were 61 hr/year at CR08 and ~44 hr/yr at CR10. The frequencies above the 1 OU threshold were ~350 hr/yr at CR08 and ~210 hr/year at CR10 under Impact 1, declining to ~193 hr/yr at CR08 and 123 hr/yr under Impact 3, while exceedances above the 5 OU threshold remain infrequent at 18 hr/yr at CR08 and 9 hr/yr at CR10 under Impact 1 only. This decline across the impact scenarios indicates that landfill odour potential is greatest during the transitional period when the Quarry and South Landfill Phase 2 are operating together.

Odour impacts above the 1 OU threshold but below the 3 OU threshold were infrequent (< 80 hr/year) at:

- CR7, St. Vincent de Paul Catholic Elementary School
- CR15, Niagara College
- CR6, MacMillan Park, Thorold

Predicted continuous sound levels remain below the 55 dBA nuisance criterion at all of the common receptor locations under Impact 1. The maximum predicted daytime level is 49 dBA (CR10, Niagara Patrol Yard) under Impact 2 and 48 dBA under Impact 3, and every other common receptor location is below the 55 dBA criterion under both scenarios.

Predicted impulsive sound levels reach or exceed the 70 dBAI limit at two of the assessed institutional receptor locations and persist across the operating scenarios:

- CR08, Lakeview Cemetery
- CR10, Niagara Region facility

The predicted level is 72 dBAI at both receptors under Impact 1 and ranges from 73 to 71 dBAI, respectively under Impacts 2 and 3, driven by the shotgun pest-control device. The detailed noise assessment recommends relocating the shotgun toward the existing South Landfill entrance, where the elevated landfill mound provides shielding, or substituting a quieter device, either of which is predicted to remove the exceedance.

Walker heavy-vehicle peak-hour traffic represents a very small proportion of total volume on the low-volume rural roads serving:

- CR08, Lakeview Cemetery
- CR10 Niagara Region facility

At most, the Walker heavy-vehicle peak-hour traffic represents between 8.3% (CR08) and 9.2% (CR10) of the total volume (Impact 3). Walker heavy vehicle peak hour traffic represents between 0.25% (Impact 3) and 0.51% (Impact 1) at Thorold Stone Road - East of Thorold Stone Road / Garner Road Intersection nearest CR 07, St. Vincent de Paul Catholic Elementary School.

Visual intrusion is greatest when the landfill operations are above grade. While filling remains below grade, the landfill is rated fully obscured at every institutional receptor. Once operations rise above grade, the upper portion of the working face becomes partially visible above intervening topography and vegetation at the nearer receptor:

- CR 07, St. Vincent de Paul Catholic Elementary School.



Existing vegetation and berms provide screening at this location. The remaining institutional receptors are rated fully obscured, and no institutional receptor is assigned an unobstructed view of the landfill during operations.

The magnitude and frequency of these nuisances at the assessed institutional receptor locations indicates that changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required. Moreover, all institutional facilities at the assessed receptor locations have experienced similar impacts as a result of the existing South Landfill, with conditions improving over baseline conditions once the Quarry and the existing South Landfill cease operation.

### **5.3.1 Proposed Mitigation and Compensation Measures**

Considering Walker's own best practices at its other landfills and Quarry operations, no further mitigation or compensation is warranted.

### **5.3.2 Net Effects**

The potential for disruption of the use and enjoyment of public facilities and institutions limited at the following receptor locations:

- CR08, Lakeview Cemetery
- CR10, Niagara Region facility on Old Thorold Stone Road
- CR7, St. Vincent de Paul Catholic Elementary School
- CR15, Niagara College
- CR6, MacMillan Park, Thorold

The nature, magnitude and frequency of these nuisances at the assessed institutional receptor locations indicates that changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required.

## **5.4 Potential for Disruption of Recreational Resources**

The potential for disruption was assessed using the results of the Recreational User Survey, Stakeholder Interviews and the Site Neighbour Survey and through a combined nuisance analysis.

Recreational users provided numerous ways in which their use and enjoyment of the recreational resources in the vicinity of the Walker Campus are affected. Things that diminished or enhanced people's use and enjoyment are identified in **Table 5-8**.



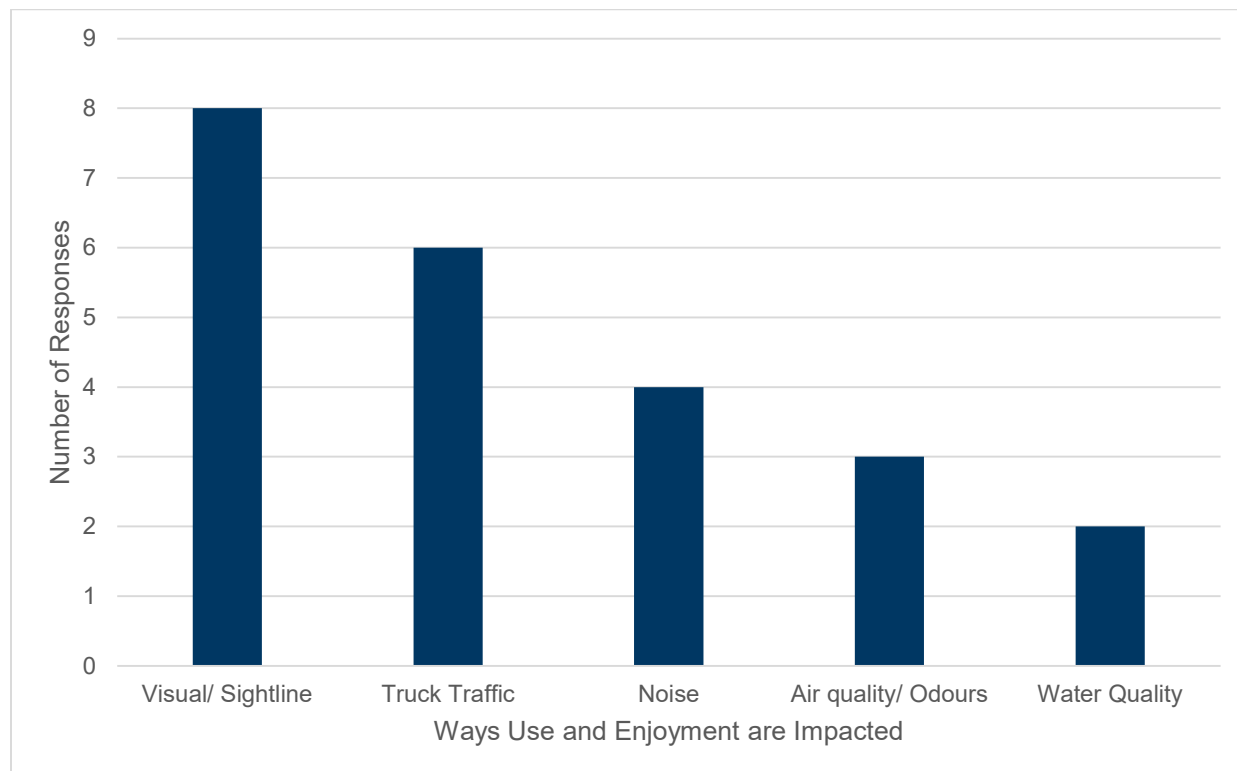
**Table 5-8: Influences on Use and Enjoyment of Recreational Resources**

Things that Diminish Use and Enjoyment or Recreational Resources	Things that Enhance Use and Enjoyment or Recreational Resources
<ul style="list-style-type: none"> <li>• Traffic/road safety concerns (12%);</li> <li>• Number of people using the recreational resources (10%);</li> <li>• Air quality/odour (7%);</li> <li>• Noise (4%);</li> <li>• Road conditions (3%).</li> </ul>	<ul style="list-style-type: none"> <li>• Proximity to home, family and friends (11%);</li> <li>• Quality of the Trails (11%);</li> <li>• Access to parking (7%);</li> <li>• Countryside surroundings (5%);</li> <li>• Natural Setting (4%);</li> <li>• Available fish and water quality (4%);</li> <li>• Cleanliness/no litter (3%);</li> <li>• Safety on the Trails (3%).</li> </ul>
<p>More neutral influences on peoples use and enjoyment of the places they visit near the Walker Campus were:</p> <ul style="list-style-type: none"> <li>• Weather conditions (10%, n=11);</li> <li>• Wayfinding/Signage (2%, n=2).</li> </ul>	

The majority of the respondents (62%) indicated that the presence of ongoing waste management and Quarrying activities at the Walker Campus does not affect where and how they currently use and enjoy the area for recreational purposes. About 36% indicated that the Walker Campus does affect where and how they currently enjoy the area for recreational purposes. The respondents that responded in the affirmative (i.e., Yes), were asked to describe the nature of the impact on their use and enjoyment of recreational resources in the area. These are shown on **Figure 5-1**. Overall, the impacts are all nuisance related and included visual impact, truck traffic and noise



**Figure 5-1: Impacts to Use and Enjoyment of Recreational Resources**



The operations at the Walker Campus are also not top-of-mind among those using the recreational resources near the Campus. About 68% said that they “Never” think about the presence of Walker Campus or “Not Very Often”. Only five (5) respondents (10%) said that they think about the Walker Campus “Very Often” or “Often” when in the area.

Even with all the ongoing operation at the Campus, including the existing South Landfill a clear majority of the respondents (72%) rated the area as either “Very Attractive” or “Somewhat Attractive”. Only six (6) respondents (12%) deemed the general area surrounding the Walker Campus “Somewhat Unattractive” and no respondents deemed the area “Very Unattractive”.

Recreational users were asked “Understanding that Walker plans to develop the next phase of its landfill in the adjacent mined out portion of its Quarry, would this change your image of this area?” The vast majority of respondents (94%) indicated that the South Landfill Phase 2 Project would have no impact on their image of the area. Only two (2) respondents indicated that the image of the area might change. The two respondents who responded in the affirmative (i.e., Yes) noted that the area would become more industrialized. Similarly, most of the respondents (94%) indicated that they do not foresee themselves doing anything differently in the future if the South Landfill Phase 2 Project was to be approved. Only two respondents indicated that their activities or behaviours might change. The two respondents who responded in the affirmative (i.e., Yes), noted the things they would do differently are:

- being more vigilant and keeping kids away from the road with truck traffic, and
- would strive to learn more about Walker Industries.

These data indicate that while nuisance effects from the Walker Campus have the potential to diminish people’s use and enjoyment of recreational resources near the Campus, very few of these users consider the existing operations at the Campus to be a source of diminished use



and enjoyment of the nearby resources. They also don't consider the area as unattractive even though nuisance effects have been experienced from Walker's operations.

Most people do not anticipate an impact on their use and enjoyment of recreational resources as a result of the South Landfill Phase 2 Project given their experiences in the past. PAR results support this conclusion where 52% across the RSA feel there will be no impact on their outdoor activities.

Recreation User Survey respondents indicated that they would not likely change their activities or behaviours should the South Landfill Phase 2 Project proceed. As noted below, some of the recreational resources near the Walker Campus already operate within an environment that experiences nuisances from the existing Walkers Campus, including the operating South Landfill Phase 1, the active Quarry, and composting facility. Moreover, the duration of peoples stay in the area is relatively short. Typically, recreational users stay up to 2 hours, while others use the area more quickly and move on. The average time spent in the area was 3.3 hours. People who stay longer than two hours were taking longer hikes on the Bruce Trail, at Woodend Conservation Area or were fishing. As such, the likelihood that people might experience a strong dust, odour or noise event is low on any given day.

Recreational users were asked "If the South Landfill Phase 2 Project were to proceed, what might be the most important thing you would want Walker Environmental Group to know? What is the most important concern or comment you have regarding this Project?". Respondents provided 50 items that they wanted Walker to know (through this survey) about the South Landfill Phase 2 Project, if it were to proceed. These included matters relating to:

- Protecting the Local Environment (40%) (e.g. protect air and water quality, protecting/conserving farmland, undertaking nuisance control (e.g. focused on odour, noise, and gulls)).
- Road Safety/traffic (20%) (e.g. patrol roads for speeding trucks, keep garbage trucks on designated routes).
- Invest in community (16%) (e.g. investing in local sports team and more trails to be built, pay taxes to contribute to local economy, and being a sponsor for local community events).
- Rehab Infrastructure (6%) (e.g. components at the existing Walker Campus).
- Educational Awareness (2%) (e.g. educate the general public regarding the services Walker currently provides).
- Protect Property Values (2%).

Some illustrative comments and questions provided by respondents to the Recreational User Survey are:

- *"Keep garbage trucks off rural roads"*
- *"Sometimes I smell rotting garbage or compost – but this is not often"*
- *"Reclaim the site in a progressive manner"*
- *"Manage traffic on Taylor Road, sometimes dangerous to enter Woodend CA"*
- *"What is the total effect of a new Quarry and landfills together?"*

Site Neighbour Survey identified that many LSA residents and visitors from further away use local roads for a variety of recreational purposes, including country drives, walking their dogs,



jogging etc. Site Neighbours tend to stay away from arterial roads and undertake their recreational activities near their homes (e.g., Garner Road, Kalar Road, Warner Road). These roads are not used by Walker's heavy vehicles, but some have complained about their physical state and safety of use.

Further, there are members of several cycling clubs that use the arterial roads near the Walker Campus for sport and exercise. Rides tend to avoid Thorold Stone Road. Those routes that are also used by Walker's heavy vehicles and may pose a safety hazard are:

- Taylor Road (north of Thorold Stone Road).
- Mountain Road (West of the Queen Elizabeth Way / QEW).

Stakeholder interview with cycling club representatives indicated that these roads are considered to be very busy with heavy vehicle traffic (Walker and non-Walker traffic). Quarry trucks and landfill trucks are seen as being major contributors to these poor roadside conditions. Nevertheless, cycling club representatives indicate that time spent on these roads is very short, typically only a few minutes in duration given to moderate to high speeds of their rides, particularly down the escarpment on Taylor Road.

### **Combined Nuisance Analysis**

Given the relationship between nuisance effects and people's use and enjoyment of recreational resources near the Walker Campus, the potential for disruption of recreational users is assessed at the receptor that most closely represents its location, comparing the predicted values under the three impact scenarios with the existing-conditions baseline. These resources already operate within an environment that experiences nuisances from the existing Walker Campus, including the operating South Landfill Phase 1, the active Quarry, and composting facility, so the net effect of the South Landfill Phase 2 project is the change from those baseline conditions. As the predictions show, the period of greatest potential change is the Impact 1 transitional period, when the Quarry and South Landfill Phase 2 operate together; under Impacts 2 and 3, once the Quarry is retired, most nuisance values fall below the existing baseline.

**McMillan Park, Thorold / Welland Canal Parkway / Lock 7 Visitor Centre and the Thorold Conservation Club** are located on the west side of the Welland Canal, and assessed at CR06. The frequency of odour exposure does not increase above baseline under any scenario; the maximum ten-minute concentration rises only as an isolated Impact 1 peak of 3.5 OU before returning to near baseline, with no time above 3 OU at any point. All other values remain below their criteria, the landfill is fully screened, and no Walker traffic is predicted on the receptor's roads. No significant change from existing conditions, and no significant impact on this business, is anticipated.

**Shriners Woodlot / St. Vincent De Paul Catholic Elementary School / YMCA Day Care** are assessed as CR07. These resources are located southeast of the proposed landfill at Kalar Road. All predicted nuisance values remain below their criteria under every scenario. Dust sits at 62 µg/m<sup>3</sup> at baseline, rises to 67.8 µg/m<sup>3</sup> during the Impact 1 transition, well within the 120 µg/m<sup>3</sup> criterion and with no exceedance days over the five-year modelling period, and falls below baseline thereafter. Odour is low throughout, with the maximum ten-minute concentration rising from 1.6 OU to 2.2 OU under Impact 1, the frequency above 1 OU rising from 0.4% (~35 hr/yr) to 0.5% (~44 hr/yr), and no time above the 3 OU annoyance threshold (0 hr/yr) at any point; under Impacts 2 and 3 the maximum ten-minute concentration falls to 1.3 OU and the frequency above 1 OU declines to 0.2% and 0.1% (~18 and ~9 hr/yr). Impulsive sound stays well below the 70 dBAI criterion, and continuous sound rises transitionally under Impact 1, by



about 2 dB to 39 dBA during the day and by about 5 dB to 31 dBA at night, but remains far below the 55 dBA day and 45 dBA night limits in every scenario, with daytime sound then falling below its baseline. Walker heavy-vehicle traffic is a small and declining share of the peak hour at this receptor, falling from 2.8% in the morning peak at baseline to 0.5% under Impact 1 and 0.3% by 2036. The one residual above baseline is visual, as the upper working face becomes partially visible at CR07 once landfilling rises above grade, where existing vegetation provides partial screening. No significant impact on the school, the co-located YMCA, or the adjacent Shriner's Woodlot Park is anticipated.

**Lakeview Cemetery / Walker 10 Mile Trail** are assessed as CR08. They are outdoor public features used for ceremonies and informal recreation. The cemetery is not a place of continuous occupancy. Its baseline is among the most affected of the common receptors: dust stands at 156  $\mu\text{g}/\text{m}^3$  with one day above the 120  $\mu\text{g}/\text{m}^3$  criterion over the five-year modelling period, the maximum ten-minute odour concentration is 5.7 OU at 1.0% of the time above the 3 OU annoyance threshold (~88 hr/yr), impulsive sound is at the 70 dBAI limit, and night continuous sound is at the 45 dBA night limit. Under Impact 1 the maximum odour rises to 7.0 OU, among the highest of the common receptors, though the frequency above 3 OU falls to 0.7% (~61 hr/yr); dust eases to 127  $\mu\text{g}/\text{m}^3$ , still with one exceedance day over the five-year modelling period; impulsive sound rises to 72 dBAI and night sound to 48 dBA. Once the Quarry is retired, dust and odour improve: dust falls to about 87 to 89  $\mu\text{g}/\text{m}^3$  with no exceedance days over the five-year modelling period, confining the dust exceedance to the Impact 1 transition, and the maximum odour drops to 5.1 then 4.5 OU with the frequency above 3 OU declining to 0.3% (~26 hr/yr) and 0.1% (~9 hr/yr). Two nuisances do not decline: impulsive sound holds at 72 dBAI under Impact 1 and 73 under Impacts 2 and 3, and night continuous sound stays at 47 to 48 dBA, both above their limits. The noise assessment classifies CR08 as not noise-sensitive under MECP guidelines, so neither exceedance is treated as a concern at this receptor. On the low-volume Thorold Townline Road, Walker heavy-vehicle traffic forms only a small share of peak-hour volume that stays roughly flat and slightly below its baseline of 10.0% and 6.3%, at about 8.0% in the morning peak and 5.2% in the afternoon across Impacts 1 and 2, on counts of about seven and six vehicles, easing to 8.3% and 5.7% by 2036. The Phase 2 landfill is fully obscured throughout. The net effect is a transitional Impact 1 peak in dust and odour that improves below existing conditions thereafter, with persistent impulsive and night-noise exceedances at a receptor that is not noise-sensitive under MECP guidelines, and no significant impact on the cemetery's use is anticipated.

**Woodend Conservation Area / Bruce Trail / Niagara Escarpment** are assessed as CR11. representing outdoor recreational uses along the Niagara Escarpment, together with the stretch of Taylor Road used for cycling and country drives. The baseline already reflects the operating Quarry and Phase 1 landfill, with dust at 92.2  $\mu\text{g}/\text{m}^3$ , below the 120  $\mu\text{g}/\text{m}^3$  criterion and with no exceedance days over the five-year modelling period, and a maximum ten-minute odour concentration of 4.1 OU with the frequency above the 3 OU annoyance threshold at 0.1% of the time (~9 hr/yr). The only predicted increase occurs during the Impact 1 transition, when dust rises to 107.4  $\mu\text{g}/\text{m}^3$ , remaining below the criterion with no exceedance days, while the maximum ten-minute concentration is unchanged at 4.1 OU, the frequency above 1 OU rises from 1.1% (~96 hr/yr) to 1.3% (~114 hr/yr), and the frequency above 3 OU is unchanged at 0.1% (~9 hr/yr). Once the Quarry is retired, dust falls roughly 19 to 20  $\mu\text{g}/\text{m}^3$  below baseline and the maximum ten-minute concentration drops to 2.3 OU under Impacts 2 and 3, with the frequency above 3 OU falling to none (0 hr/yr) and the frequency above 1 OU holding at about 1.0% to 1.1% (~88 to 96 hr/yr). Impulsive and continuous sound remain below their criteria throughout, with daytime continuous sound peaking at 50 dBA against the 55 dBA limit before falling to about 40 dBA once the Quarry is retired. On Taylor Road, Walker heavy-vehicle traffic is highest at baseline, at 7.9% of total volume in the morning peak, and declines under the project at every horizon, to 4.3% during the Impact 1 transition and about 2% by 2036. The



landfill remains fully obscured until the final landform, at which point it becomes partially visible. The net effect is a brief transitional increase within all criteria, followed by a sustained reduction below existing conditions, and no significant impact on the recreational uses represented by this receptor is anticipated.

**Beechwood Golf Club / Beaver Dam Creek** are assessed as CR13. The course and creek are located south of the proposed landfill. Predicted odour falls below the existing baseline under every scenario, dust records no exceedance days over the five-year modelling period, continuous and impulsive sound remain below their criteria, and Walker traffic is a small share of the peak hour. No net adverse effect, and no significant impact on this business, is anticipated.

**JAM Sports / Regency Athletic Resort / Club Italia / Redeemer Bible Church** are assessed as CR14. Here odour rises above its existing baseline as brief peaks, reaching 3.2 OU under Impact 1, but the frequency above 3 OU remains nil under every scenario; the change is an isolated peak rather than recurring exposure. Dust records no exceedance days over the five-year modelling period, Walker traffic is a small and declining share of the peak hour, and the landfill is rated fully obscured at this receptor throughout operations. No significant impact on this business is anticipated.

**Niagara College, Campus and Teaching Winery / Laura Secord Legacy Trail / White Oaks Conference Resort and Spa** are assessed as CR15. Predictions at CR15 are conservative for these resources. Predicted values change little from baseline: odour peaks at 3.1 OU under Impact 1 before falling below baseline, with negligible time above the 3 OU annoyance threshold, dust records no exceedance days over the five-year modelling period,

**Royal Niagara Golf Club.** The golf club is assessed at CR21. Its baseline already reflects the nuisance impacts of the Walker Campus, including dust above the 120  $\mu\text{g}/\text{m}^3$  criterion with a total of six exceedance days over the five-year modelling period. The only predicted increase occurs during the Impact 1 transition, when dust peaks at 182  $\mu\text{g}/\text{m}^3$  with a total of sixteen exceedance days over the same period, daytime sound changes little, while the maximum odour peaks at 5.7 OU and the frequency above 3 OU rises from approximately 0.4% to 0.5% of the time (35 to 44 hr/yr), for the duration of the transition only. Once the Quarry is retired, dust, sound, and odour all fall well below the existing baseline, with no exceedance days over the five-year modelling period under Impacts 2 and 3. The net effect is a brief transitional increase followed by a sustained reduction below existing conditions; no significant impact on this business is anticipated. The clubhouse and northern holes lie nearer CR15, where predicted dust and sound remain below their criteria and predicted odour shows negligible time above the 3 OU annoyance threshold under all scenarios.



**Table 5-9: Summary of Potential for Disruption of Recreational Resources by Representative Receptor**

Recreational Resource	Representative Receptor Location	Summary of Nuisance Effects	Potential for Disruption
<ul style="list-style-type: none"> <li>• McMillan Park, Thorold</li> <li>• Welland Canal Parkway / Lock 7 Visitor Centre</li> <li>• Thorold Conservation Club</li> </ul>	CR06	Odour frequency not above baseline; isolated Impact 1 peak	Potential for very low magnitude, short term and infrequent nuisance events that may be noticeable to some users during Impact 1.
<ul style="list-style-type: none"> <li>• Shriners Woodlot</li> <li>• St. Vincent de Paul Catholic Elementary School</li> <li>• YMCA Day Care</li> </ul>	CR07	All predicted nuisance values remain below their criteria under every scenario. Small increased dust during the Impact 1 transition, well within the criterion	Increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment is not likely.
<ul style="list-style-type: none"> <li>• Lakeview Cemetery</li> <li>• Walker 10 Mile Trail</li> </ul>	CR08	<p>Baseline conditions are among the most affected of the common receptors.</p> <p>Under Impact 1 the maximum odour rises but the frequency above 3 OU falls; dust levels improve but the frequency remains at one exceedance day over the five-year modelling period; impulsive sound rises. Once the Quarry is retired, dust and odour improve. Two nuisances do not decline: impulsive sound and night continuous sound stay above their limits.</p>	Potential for very low magnitude, short term and infrequent nuisance events that may be noticeable to some users during Impact 1. The cemetery and trail are used infrequently and for short durations.
<ul style="list-style-type: none"> <li>• Woodend Conservation Area</li> <li>• Bruce Trail / Niagara Escarpment</li> </ul>	CR11	Odour at or below baseline; dust below criterion	Increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment is not likely.
<ul style="list-style-type: none"> <li>• Beechwood Golf Club</li> <li>• Beaver Dam Creek</li> </ul>	CR13	Odour below baseline in all scenarios	Increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment is not likely.
<ul style="list-style-type: none"> <li>• JAM Sports</li> </ul>	CR14	Brief odour peaks above baseline; no sustained exceedance	Potential for very low magnitude, short term and infrequent



Recreational Resource	Representative Receptor Location	Summary of Nuisance Effects	Potential for Disruption
<ul style="list-style-type: none"> <li>Regency Athletic Resort</li> <li>Club Italia</li> <li>Redeemer Bible Church</li> </ul>			nuisance events that may be noticeable to some users during Impact 1. Patrons tend to use these resources for several hours at a time.
<ul style="list-style-type: none"> <li>Niagara College, Campus and Teaching Winery</li> <li>Laura Secord Legacy Trail</li> <li>White Oaks Conference Resort and Spa</li> </ul>	CR15	Little change; values below criteria	Increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment is not likely.
<ul style="list-style-type: none"> <li>Royal Niagara Golf Club</li> </ul>	CR21 and clubhouse near CR15	Brief rise during Impact 1 (dust, odour); falls below baseline once the Quarry retires	Potential for very low magnitude, short term and infrequent nuisance events that may be noticeable to some users during Impact. Patrons tend to use these resources for several hours at a time.



### 5.4.1 Proposed Mitigation and Compensation Measures

Considering the implementation of all landfill design and operational measures, Walker's mitigation commitments, the South Landfill Phase 2 Project and the potential for very low magnitude, short term and infrequent nuisance events, further mitigation is not warranted.

As noted previously, the Site Neighbour Survey respondents were offered the opportunity to record suggestions or considerations for Walker to help address effects on their neighbourhoods. Considering these suggestions and Walker's own best practices, it is recommended that Walker:

- Establish a good neighbour program focus on neighbourhood enhancement projects in addition to Walker's corporate sponsorship and donations program which is aimed at the broader community. These programs could support municipal or cycling club initiatives related to establishing or maintaining public recreational resources, establishing new cycling routes, road maintenance or repairs, or cycling/service club activities in the immediate vicinity of the landfill site,

### 5.4.2 Net Effects

Considering the implementation of all landfill design and operational measures, Walker's mitigation commitments, the South Landfill Phase 2 Project is not likely to result in increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment of recreational resources. Changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required.

A possible exception is the disruption of the use and enjoyment at CR08 (Lakeview Cemetery and the Walker 10 Mile Trail). Here there is some potential for very low magnitude, short term and infrequent nuisance events that may be noticeable to some users.

## 5.5 Potential for Changes to Community Character

Community character refers to the unique or distinctive qualities of a community. Community character is determined by a community's land uses and other community features such as population, employment, business activity, and geographical/environmental features. Community character also includes community image, which is largely defined by people's image of the community. This image may be locally defined (i.e., by area residents themselves) or externally defined (i.e., by people from outside an area).

As described previously, PAR results indicate that there are a wide range of things that influence the image or community character in the RSA and LSA. The South Landfill Phase 2 Project might adversely affect the character of the community(ies) if it fundamentally changes those community assets, attributes or qualities that are valued by its residents for their positive influence on community character or attributes a negative stigma, potentially associated with waste disposal.

In physical terms, the South Landfill Phase 2 Project will strengthen an existing industrial presence of the Walker Campus, being located within a mined-out Quarry within a large ongoing operating Campus. In addition:

- Landfill operations are not expected to measurably increase the population of local communities through a large construction or operations workforce. As such, the rural nature of the local communities, particularly outside the City of Niagara Falls urban boundary, is not at risk.



- The primary haul route to the facility is along a two-lane arterial road, Taylor Road. This haul route does not traverse the City of Niagara Falls or rural areas. Strict restrictions will be in place to avoid travel by waste haul trucks outside the primary haul route.
- The cultural heritage assessment has demonstrated that there are no negative impacts to cultural heritage resources. There are no on-site cultural heritage resources, and nearby cultural heritage resources will be conserved.
- No potentially meaningful effects on terrestrial or aquatic ecosystems are anticipated as a result of the proposed landfill that might affect the image of the area among residents, recreational users, tourists and occasional visitors.

With respect the rural, agricultural character of the LSA, it is concluded that:

- The project does not consume any existing farmland or meaningfully interfere with farming operations. Its physical disturbances and other environmental effects are not expected to adversely affect livestock or crop farming operations.
- There is no new impact on farmland values associated with the landfill;
- There are no new farm operational disruption or land resource impacts that might contribute to economic or farm business losses;
- There are no market impacts on fresh or direct market produce sales; and
- There is no loss or impairment of local farm business infrastructure and/or supply and support services.

Therefore, the South Landfill Phase 2 Project will not result in a change to the agricultural character of the area or to the cohesion and continuity of farmland and use.

Results from some of interviews, the Site Neighbour survey and meetings with site neighbours demonstrate a concern by some for a “stigma” to be attributed to their neighbourhoods. For the purposes of this Social Assessment, stigma refers to the negative images attached to a neighbourhood or community by the residents themselves or others from outside the community (e.g., tourists and other visitors). Social science theorists have proposed that people’s images of places become “marked” by positive and negative attitudes and that these attitudes motivate action or changes in behaviour. When a negative marker is linked to an image, it sounds an alarm and motivates avoidance. Such behaviour may mean that people choose not to visit a place, undertake a certain activity or buy a product.

Much of the more recent stigma research has been done in the context of technologies or facilities that are considered ‘risky’ such as nuclear plants, radioactive or hazardous waste facilities. According to the proponents of this “stigma theory”, there are five identifying features of stigma:

- the source of the stigma is a hazard with consequences that typically contribute to high perceptions of risk (e.g., they are particularly dreaded or involuntary);
- a standard of what is “right and natural” has been violated or overturned because of the abnormal nature of a precipitating event or “trigger”;
- the effects of the event are perceived as being inequitably distributed across social groups (e.g., children are affected disproportionately) or geographic areas (e.g., one community experiences adverse effects disproportionately);



- the effects of the event are unbounded in the sense that their magnitude or persistence over time is not well known; and
- management of the hazard is brought into question (i.e., concerns over competence, failure to apply precautions, lack of trust).

In the case of the South Landfill Phase 2 Project, some people fear that:

- negative stigma will occur and that their community image will suffer;
- the landfill will create negative public attitudes;
- nobody will want to live near the landfill;
- friends and relatives may not want to visit the area or their loved ones;
- that people will move away;
- property values will drop; and
- there will be fewer visitors and tourists.

While the anticipated effects of the landfill may be considered “dreaded” or seen as “unnatural” or “abnormal” in nature by some, operating landfills are commonplace throughout Ontario and their effects are familiar and measurable. The physical effects people anticipate from a landfill are like those of the existing Quarry operations (i.e., noise, dust, traffic, alterations to groundwater and surface water resources, etc.). The notable exceptions are odours, visual intrusion and the potential for rodents, birds and insects being attracted to the site. In addition, there is no evidence of a stigma at present based on historic property value trends. The analyses reveal steady growth trends in sale prices for all parts of the study area.

Although Walker may not be trusted by some community members, their ability to manage a landfill is not in question by many members of the public. Walker has established a positive environmental track record at its landfill operations in the Niagara Region. They have operated waste disposal facilities on the campus since pre-1982 and have been compliant with regulatory requirements and the terms and conditions of operations. Here, Walker has made continual improvements to their operations through on-site and off-site litter pick-up, implementation of new odour and dust controls, gull management, and traffic management. Finally, Walker actively works with its neighbours and community stakeholders to develop solutions that improve performance and reduce impacts. Because “stigma” involves in part the experience of how one is seen by outsiders, the potential for stigma is enhanced should the landfill be visible or its effects noticeable across a large area surrounding the campus, and particularly at “gateway” locations, important tourist facilities or festival locations. In this case:

- landfill operations will occur below grade and behind an existing berm for most of the landfill’s operating life and once covered and revegetated it will become part of the landscape;
- Its operational effects are largely limited to the area within approximately 500 m of the site and along the primary haul route. The haul route will not change from that used for the existing South Landfill operations and has already been utilized by Walker and non-Walker heavy trucks;
- there are no significant visual effects predicted at receptors;
- most residents and tourists do not regularly use the area in the vicinity of the site for community or recreational purposes.



Sociological research also indicates that several things must happen before a community becomes stigmatized and adverse social or economic effects begin to emerge. Stigma requires a precipitating event or trigger that brings about widespread behavioural changes and adverse effects. Apart from the initial announcement of the EA process, there has been no event to date that could trigger widespread behaviour change among residents, tourists or visitors. In addition, the potential for such a trigger to occur in the future is also considered remote for the following reasons:

- the landfill will not accept hazardous wastes that might pose a significant hazard to workers or the public;
- the landfill project does not involve dangerous works or activities that might result in major accidents or explosions that could cause widespread loss of life.
- there are also no credible scenarios that would result in off-site environmental contamination that could not be detected and rectified using known technologies or approaches.

For a stigma to occur, the operating facility itself would have to become a salient issue among not only local residents but also people living outside of the local community, tourists or other visitors. They would have to have a very high level of awareness of the facility and feel threatened by it to the extent that they would seek out and accept “information” about a facility from their neighbours, family and friends, government, the media and the facility operator. In this case, it is expected that the continuation of Walker’s positive operating record and the confidence Walker has engendered across the LSA and RSA communities, most people will not feel “threatened” by the Project. As such, it will be important for Walker to continue to provide clear and accurate information such that people understand that the facility does not threaten them personally or their community.

Therefore, unless widespread environmental contamination occurs during operation or in the post-closure, there is little reason to expect that the South Landfill Phase 2 Project would emerge as a salient issue among most residents to the extent that a stigma might occur during the operations and post-closure phases. Rather, the landfill site will likely continue to be viewed by some study area residents as an unwanted facility that is not compatible with people’s vision of what their community is now or should remain as in the future.

One potential source of adverse effect on community character is ongoing property purchases and building demolitions by Walker. Residents are concerned that properties may become “derelict” or poorly maintained if Walker chooses to rent the property to new residents.

### **5.5.1 Proposed Mitigation and Compensation Measures**

As noted previously, the Site Neighbour Survey respondents were offered the opportunity to record suggestions or considerations for Walker to help address effects on their neighbourhoods. Considering these suggestions and Walker’s own best practices at its other landfill and Quarry operations, it is recommended that Walker:

- Establish a good neighbour program focused on neighbourhood enhancement projects (e.g., road maintenance or repairs) or activities in the immediate vicinity of the landfill site, in addition to Walker’s corporate sponsorship and donations program which is aimed at the broader community. This would be directed by Walker with advice from the CLC, neighbourhood representatives and community leaders where appropriate.
- Establish practices and procedures to determine the need to demolish buildings on Walker purchased properties and for enhanced maintenance of purchased properties



rented to others or remaining empty. Input on maintenance and use of Walker owned properties should be sought from the neighbours.

### 5.5.2 Net Effects

Considering the implementation of all landfill design and operational measures and Walker's mitigation commitments, the South Landfill Phase 2 Project may result in the following net effects:

- The South Landfill Phase 2 Project will continue and strengthen the existing industrial presence in the general area, being located within a mined-out Quarry within a large operating resource management Campus

## 5.6 Potential for Changes to Community Cohesion

Community cohesion refers to people's sense of belonging to a self-defined community. A cohesive community maintains and generates relationships and community pride, it helps in defining a common vision among its residents that serves to maintain and enhance overall community well-being.

The South Landfill Phase 2 Project would be considered a negative influence on community cohesion should people change those behaviours that support community cohesion as a result of the Project. For example, community cohesion might be adversely affected if service clubs, which play an important role in engaging volunteers and community members such as youth and young adults, and other organizations and individuals, are unable to make use of facilities that are used for socializing or other community-based activities. Based on feedback from stakeholders, the Project is not expected to have any direct adverse effect on public facilities, institutions or recreational opportunities in the area that support community cohesion. The landfill site itself will not act as a physical barrier to the movement of people to places they want to go. The primary haul route will continue to function at acceptable Levels of Service and should not be a reason for people to change their travel patterns.

Notwithstanding these conclusions, there is some evidence that Walker's ongoing operations and recent property purchases may have already affected the cohesion of local neighbourhoods. Site neighbours have made the following observations that may contribute to a loss of community pride and cohesion should they continue:

- Poor renovations/neighbourhood upkeep (e.g., roadways repaved, new interchange);
- More renters (e.g., family rentals, people/owners moving away); and
- House demolitions by Walker.

Section 5.1 concluded that should some people decide to move from their homes they will likely be replaced by others who are more tolerant of local conditions, see fewer disadvantages to the presence of the landfill in their community or might realize a financial benefit from relocating to the neighbourhoods nearest the landfill. As such, widespread or severe changes in people's participation in family and community activities and events that contribute to cohesion are not expected. Widespread outmigration is not an inevitable outcome of the Project.

The community features that contribute to most to community cohesion that are nearest the proposed landfill site or along the primary haul route are:

- Lakeview Cemetery;
- St. Vincent de Paul Catholic Elementary School and YMCA daycare operations;



- Shriner's Woodlot;
- Niagara College and Teaching Winery;
- Redeemer Bible Church
- Royal Niagara Golf Course and Country Club;
- Woodend Conservation Area;
- Club Italia;
- Beechwood Golf and Country Club;
- Welland Canal Parkway Trail.

Based on the results of air quality and noise modelling, physical disturbances (odour, PM, dustfall, noise) above criterion will not be experienced at any of these receptor locations. These facilities will be largely unaffected by landfill traffic, although many people use Thorold Stone Road, Taylor Road and Mountain Road to access some of these community facilities and resources or to travel to other places they want to go. Overall traffic and traffic noise, albeit below criterion, will continue to exacerbate existing concerns expressed by Site Neighbours and some facility operators, however, this should not make facility operation much less attractive as a destination or places to undertake community and social events.

Overall, noticeable physical disturbances or traffic effects are not predicted to occur at any other facility or feature that contributes to community cohesion. No widespread, long term noticeable effects are anticipated at any of the area's most important features such as downtown Thorold, the City of Niagara Falls, or neighbourhoods and businesses below the escarpment along Glendale Road or Taylor Road. People can continue to use and enjoy the full range of recreational facilities, parks, trails and sports fields as they have in the past.

Finally, for the past several decades, Walker has been undertaking a variety of corporate sponsorships, community investments and donations that benefit residents and community organizations across the Local and Regional Study Areas. Many of these activities positively contribute to community cohesion. For example, Walker hosts several events during the year for its local neighbours, including an annual BBQ, holiday gatherings and various other consultation events associated with their planned and ongoing operations.

### **5.6.1 Proposed Mitigation and Compensation Measures**

As noted previously, Site Neighbour Survey respondents were offered the opportunity to record suggestions or considerations for Walker to help address effects on community character and cohesion. A handful of respondents and other stakeholders interviewed recommended that Walker "*Give back to the community*", through taxes and financial contributions toward community projects such as a new arena, or water treatment plant. Considering this suggestion and Walker's own best practices at its other landfill and Quarry operations, it is recommended that Walker:

- Continue its legacy of corporate sponsorship and its community investment/donations program for the life of the South Landfill Phase 2 Project in alignment with the goals, objectives, needs and priorities of LSA and RSA municipalities, community groups and organizations



## 5.6.2 Net Effects

Considering the implementation of all landfill design and operational measures and Walker's mitigation commitments, the South Landfill Phase 2 Project is not likely to contribute to any adverse effect on community cohesion. A continued corporate sponsorship and community investment / donations program in alignment with the goals, objectives, needs and priorities of LSA and RSA municipalities, community groups and organizations will be a positive contributor to community cohesion.

## 5.7 Summary of Effects on the Social Environment

**Table 5-11** summarizes the potential environmental effects, proposed impact management measures and the net effects on the Social Environment.



**Table 5-10: Social Environment Potential Environmental Effects, Proposed Impact Management Measures, and Net Effects**

Criterion	Indicators	Potential Effects	Impact Management Measures	Net Effects
Displacement of Residents from Houses	<ul style="list-style-type: none"> <li>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</li> <li>The potential for or likelihood of voluntary out-migration of residents for consideration of the indirect effects on community character and cohesion</li> </ul>	<ul style="list-style-type: none"> <li>Displacement of residents (property owners and tenants) by the project itself (regardless of whether their property has been purchased or not)</li> <li>Decreased satisfaction, resulting in voluntary out-migration of residents</li> <li>Increased personal stress</li> </ul>	4. Walker to implement measures identified under heading “Potential for Disruption of Use and Enjoyment of Residential Properties” to minimize reduced levels of satisfaction and mitigate the potential for voluntary outmigration of local residents	<p>The South Landfill Phase 2 Project will not result in the displacement of residents (property owners and tenants). The Project may result in:</p> <ol style="list-style-type: none"> <li>Increased dissatisfaction with living in the community potentially leading to an increased risk of voluntary out-migration by some residents during landfill development.</li> <li>Increased personal stress among some residents stemming from decreased satisfaction with community.</li> </ol>
Disruption to Use and Enjoyment of Residential Properties	<ul style="list-style-type: none"> <li>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</li> <li>The number of existing residential households fronting/backing onto a haul route and potentially affected by changes in project related traffic and traffic noise</li> <li>Potential for or likelihood of changes in peoples’ use of residential property</li> </ul>	<ul style="list-style-type: none"> <li>Disruption to people’s use and enjoyment of residential properties.</li> </ul>	<ol style="list-style-type: none"> <li>Attempt to establish and/or continue operation of the South Landfill Phase 2 Community Liaison Committee (CLC) as an advisory body to Walker.</li> <li>Establish formal protocols to demonstrate to regulators, community leaders and members of the general public its full compliance with all landfill design and operational measures and its mitigation commitments aimed at avoiding or minimizing the physical disturbances of the Project (i.e., odour, noise, particulate matter, dustfall), effects on the traffic network, visual intrusion and effects of the landfill operations on groundwater and surface water resources.</li> <li>Develop and offer a compensation package to accommodate for multiple adverse effects on households at CRO4 backing onto Walker property and at CR17 that have the greatest potential to result in reduced use and enjoyment of property.</li> <li>Offer property value protection agreements to nearest neighbours whose properties are within approximately 1000 m of the landfill.</li> <li>Review its current complaint reporting and resolution procedure to allow for the resolution of complaints, whereby all complaints received are recorded, investigated and tracked by Walker and reported publicly (subject to privacy or confidentiality provisions).</li> <li>Provide regular community updates during the construction, operation and closure of the proposed landfill, over-and-above its regulatory reporting requirements, to convey information about the site in a more regular, transparent and user-friendly style. Walker should seek advice from its CLC on the</li> </ol>	<ol style="list-style-type: none"> <li>Reduced use and enjoyment of residential property at locations that are likely to experience multiple nuisance effects or simple proximity to the Project site: <ul style="list-style-type: none"> <li>CR17, Nearest residence Northeast and Gaud Nurseries</li> <li>CR19, Nearest Residence Southwest (Walker-owned residence)</li> <li>CR04 at three (3) residential properties on Garner Road that back onto the landfill property and have views from their backyards, kitchen and living room windows.</li> </ul> </li> <li>Once operations rise above grade, the upper portion of the working face becomes partially visible above intervening topography and vegetation at several nearby receptors. This is not expected to result in a demonstrable change in people’s ability to use and enjoy their residential properties.</li> </ol>



Criterion	Indicators	Potential Effects	Impact Management Measures	Net Effects
			<p>matters of most interest to the community, and the most effective means of disseminating information and undertaking communications.</p> <p>7. Undertake regular communications with the City of Niagara Falls, developers and residents in the Northwest Secondary Plan Area.</p> <p>8. Establish a good neighbour program focused on neighbourhood enhancement projects (e.g., road maintenance or repairs) or activities in the immediate vicinity of the landfill site, in addition to Walker's corporate sponsorship and donations program which is aimed at the broader community. This would be directed by Walker with advice from the CLC, neighbourhood representatives and community leaders where appropriate.</p>	
Disruption to Use and Enjoyment of Public Facilities and Institutions	<ul style="list-style-type: none"> <li>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</li> <li>Potential for or likelihood of changes in operations of public facilities and institutions</li> <li>Potential for or likelihood of changes in use and enjoyment of public facilities and institutions</li> </ul>	<ul style="list-style-type: none"> <li>Disruption of use and enjoyment of public facilities and institutions</li> <li>Disruption of operations at public facilities and institutions.</li> </ul>	<p>1. Considering Walker's own best practices at its other landfills and Quarry operations, no further mitigation or compensation is warranted.</p>	<p>1. Disruption of the use and enjoyment of public facilities and institutions limited at the following receptor locations:</p> <ul style="list-style-type: none"> <li>CR08, Lakeview Cemetery</li> <li>CR10, Niagara Region facility on Old Thorold Stone Road</li> <li>CR7, St. Vincent de Paul Catholic Elementary School</li> <li>CR15, Niagara College</li> <li>CR6, MacMillan Park, Thorold</li> </ul> <p>Changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required.</p>
Loss/Disruption of Recreational Resources	<ul style="list-style-type: none"> <li>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</li> <li>Potential for or likelihood of changes in operations of recreational features</li> <li>Potential for or likelihood of changes in use and enjoyment of recreational resources</li> </ul>	<p>Loss of Recreational Resources</p> <p>Disruption to the use and enjoyment of recreational resources</p> <p>Disruption of operations at recreational resources</p>	<p>1. Establish a good neighbour program focus on neighbourhood enhancement projects in addition to Walker's corporate sponsorships and investment / donations program which is aimed at the broader community.</p>	<p>The South Landfill Phase 2 Project is not likely to result in increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment of recreational resources,</p> <p>1. There is some potential for very low magnitude, short term and infrequent nuisance events that may be noticeable to some users. at CR08 (Lakeview Cemetery and the Walker 10 Mile Trail).</p> <p>Changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required.</p>
Changes to Community Character	<ul style="list-style-type: none"> <li>Compatibility of landfill operations with the existing and likely future character of the community</li> </ul>	<ul style="list-style-type: none"> <li>Adverse changes to community character</li> <li>Positive contribution to community character</li> </ul>	<p>1. Establish a good neighbour program focused on neighbourhood enhancement projects in addition to Walker's corporate sponsorship and investment / donations program.</p>	<p>1. The South Landfill Phase 2 Project will continue and strengthen the existing industrial presence in the general area, being located within a mined-out Quarry</p>



Criterion	Indicators	Potential Effects	Impact Management Measures	Net Effects
	<ul style="list-style-type: none"> <li>Compatibility of the proposed end use with the existing and likely future character of the community</li> </ul>		<ol style="list-style-type: none"> <li>Establish practices and procedures to determine the need to demolish buildings on Walker purchased properties and for enhanced maintenance of purchased properties rented to others or remaining empty. Input on maintenance and use of Walker owned properties should be sought from the neighbours.</li> </ol>	<p>within a large operating resource management Campus</p>
Changes to Community Cohesion	<ul style="list-style-type: none"> <li>The extent of displacement</li> <li>The potential for or likelihood of voluntary out-migration</li> <li>Loss and the extent of disruption of recreational resources, public facilities and institutions, and the use and enjoyment of residential properties</li> </ul>	<ul style="list-style-type: none"> <li>Adverse changes to community cohesion</li> <li>Positive Contribution to community cohesion</li> </ul>	<ol style="list-style-type: none"> <li>Continue Walker’s legacy of corporate sponsorship and its community investment/donations program for the life of the South Landfill Phase 2 Project in alignment with the goals, objectives, needs and priorities of LSA and RSA municipalities, community groups and organizations</li> </ol>	<p>The South Landfill Phase 2 Project is not likely to contribute to any adverse effect on community cohesion.</p> <ol style="list-style-type: none"> <li>A continued corporate sponsorship and community investment / donations program will be a positive contributor to community cohesion.</li> </ol>



## 6.0 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
- New residential drop off area
- RNG 2 – expansion of existing renewable natural gas facilities

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

**Table 6-1** provides a high-level description of the potential for the identified project and activities to contribute to effects of the South Landfill Phase 2 Project, potentially resulting in cumulative effects.



**Table 6-1: Potential for Cumulative Effects**

Criteria	Net Effect of the South Landfill Phase 2 Project	Potential for Cumulative Effects
Displacement of Residents from Houses	<p>The South Landfill Phase 2 Project will not result in the displacement of residents (property owners and tenants). The Project may result in:</p> <ul style="list-style-type: none"> <li>• Increased dissatisfaction with living in the community potentially leading to an increased risk of voluntary out-migration by some residents during landfill development.</li> <li>• Increased personal stress among some residents stemming from decreased satisfaction with community.</li> </ul>	<p>None of the identified projects are likely to require the displacement of residents, particularly in the communities and neighbourhoods near the Walker Campus.</p> <p>New industrial facilities in the LSA, new residential developments, additional industrial or waste management facilities and operations at the Walker Campus and its Uppers Quarry may contribute to further dissatisfaction with living in the community among some Site Neighbours. This might contribute further to increased personal stress among some residents and increasing the risk of voluntary out-migration.</p>
Disruption to Use and Enjoyment of Residential Properties	<p>3. Reduced use and enjoyment of residential property at locations that are likely to experience multiple nuisance effects or simple proximity to the Project site:</p> <ul style="list-style-type: none"> <li>• CR17, Nearest residence Northeast and Gauld Nurseries</li> <li>• CR19, Nearest Residence Southwest (Walker-owned residence)</li> <li>• CR04 at three (3) residential properties on Garner Road that back onto the landfill property and have views from their backyards, kitchen and living room windows.</li> </ul> <p>4. Once operations rise above grade, the upper portion of the working face becomes partially visible above intervening topography and vegetation at several nearby receptors. This is not expected to result in a demonstrable change in people’s ability to use and enjoy their residential properties.</p>	<p>Further disruption to the use and enjoyment of residential properties nearest the Walker Campus is possible should construction activities associated with development of the Secondary Plan Areas result in addition dust, noise, traffic or visual intrusion at the common residential receptor locations affected by the South Landfill Phase 2 Project.</p>



Criteria	Net Effect of the South Landfill Phase 2 Project	Potential for Cumulative Effects
<p>Disruption to Use and Enjoyment of Public Facilities and Institutions</p>	<p>2. Disruption of the use and enjoyment of public facilities and institutions limited at the following receptor locations:</p> <ul style="list-style-type: none"> <li>• CR08, Lakeview Cemetery</li> <li>• CR10, Niagara Region facility on Old Thorold Stone Road</li> <li>• CR7, St. Vincent de Paul Catholic Elementary School</li> <li>• CR15, Niagara College</li> <li>• CR6, MacMillan Park, Thorold</li> </ul> <p>Changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required.</p>	<p>Further disruption to the use and enjoyment of public facilities and institutions affected by the South Landfill Phase 2 Project is possible should construction activities associated with the development of the secondary plan areas nearest the Walker result in addition dust, noise, traffic or visual intrusion at the common residential receptor locations affected by South Landfill Phase 2 Project.</p>
<p>Loss/Disruption of Recreational Resources</p>	<p>The South Landfill Phase 2 Project is not likely to result in increased nuisance effects of sufficient magnitude to result in reduced use and enjoyment of recreational resources,</p> <p>2. There is some potential for very low magnitude, short term and infrequent nuisance events that may be noticeable to some users. at CR08 (Lakeview Cemetery and the Walker 10 Mile Trail).</p> <p>Changes or modification to facility operations due to the South Landfill Phase 2 Project are not likely to be required.</p>	<p>None of the identified projects are likely to affect the use and enjoyment of recreational activities undertaken at CR08 (Lakeview Cemetery and the Walker 10 Mile Trail). These other projects are located well away from these recreational resources.</p>



Criteria	Net Effect of the South Landfill Phase 2 Project	Potential for Cumulative Effects
Changes to Community Character	<ul style="list-style-type: none"> <li>The South Landfill Phase 2 Project will continue and strengthen the existing industrial presence in the general area, being located within a mined-out Quarry within a large operating resource management Campus</li> </ul>	<p>New industrial facilities in the LSA, new residential developments, additional industrial or waste management facilities and operations at the Walker Campus and its Uppers Quarry will further strengthen the industrial presence of the Walker Campus within a largely rural area of the LSA. Conversely, new residential developments in the secondary plan areas will also diminish the rural character of the LSA. Both may be considered incompatible with the largely rural character of the neighbourhoods in the immediate vicinity of the Walker Campus.</p>
Changes to Community Cohesion	<p>The South Landfill Phase 2 Project is not likely to contribute to any adverse effect on community cohesion.</p> <ul style="list-style-type: none"> <li>A continued corporate sponsorship and community investment / donations program will be a positive contributor to community cohesion.</li> </ul>	<p>Development of the Secondary Plan Areas with the presence of new residents near may be a positive or negative contributor to community cohesion. Walker's corporate sponsorship and community investment / donations program could benefit more people.</p>



## 7.0 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 the Social Environment are documented in the following subsections.

### 7.1 Potential effects of the Undertaking on Climate Change

There are no aspects of the South Landfill Phase 2 Project related to the Social Environment that could result in potential impacts on climate change.

#### 7.1.1 Mitigation

There are no aspects of the South Landfill Phase 2 Project related to the Social Environment that could result in potential impacts on climate change that warrant additional mitigation.

### 7.2 Potential effects of Climate Change on the Undertaking

For people living, playing or working near the Walker Campus and the proposed South Landfill Phase 2 Project, climate change might act as a "risk multiplier". While modern engineered landfills, such as proposed by Walker, utilize highly advanced liners, gas-capture infrastructure, and surface water management systems, shifting climate patterns can stress these controls, potentially resulting in more variation in the magnitude and duration of nuisances such as odours and dust that affect people's use and enjoyment of nearby residential properties, public facilities and institutions and recreational resources. For example:

- Higher summer temperatures and prolonged heatwaves can accelerate the biological decomposition of wastes within the landfill, potentially increasing the production rate of landfill gases and leachate, putting additional pressure on gas-capture networks and increasing the likelihood of off-site odours.
- Changes in regional weather systems can alter prevailing wind directions or increase the frequency of thermal inversions potentially directing odours dust and blowing litter toward new residential or agricultural properties.



- Heavy, concentrated downpours can overwhelm local drainage ditches and containment ponds.
- Longer, hotter droughts during summer months could dry out unpaved haul roads, stockpiles and daily soil covers, and operational areas within the landfill, increasing the potential for dust generation and its settling on neighboring properties, vehicles, outdoor living spaces.
- Milder winters and prolonged warm seasons could expand the breeding windows and survival rates for vectors such as rodents, gulls and insects. While the South Landfill Phase 2 Project will employ rigorous vector control strategies, a changing climate could increase the presence of rodents, birds and insects, which can spill over into surrounding properties to diminish outdoor uses and enjoyment, and visa versa.

### **7.2.1 Adaptation**

Based on years of operating experience at the existing South Landfill, the operational measures to be implemented to minimize access of rodents, birds and insects to exposed wastes and to manage odours include, but are not limited to, the adaptive application of a small working face and ensuring the use of daily cover. To address the “risk multiplier” effect, Walker might need to be more vigilant and flexible in how it operates its systems (e.g., the landfill gas collection and leachate treatment systems) to minimize odours or other on-site features that may be attractive to rodents, birds and insects. Walker may need undertake ongoing refinements to these systems and its housekeeping practices to ensure their effectiveness. On-site housekeeping measures to discourage rodents, birds and insects may need to be undertaken more frequently or in a more targeted manner. For example, Walker may need to undertake road sweeping/cleaning more frequently on internal paved roads, parking areas, and adjacent, external roadways to remove dirt and dust. If necessary, Walker could incorporate broader buffers, manage both on-site and off-site habitats, and/or advance its rehabilitation plans for transitioning completed cells to agriculture.

## **8.0 Environmental Monitoring**

To ensure that the mitigation measures identified in Section 5.1.1 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**

Walker’s overall monitoring strategy and schedule will be developed based on recommendations that have been put forward in various technical studies to monitor leachate, ground water, surface water, air emissions gas, odour, dust and noise. Specifics regarding these monitoring plans and related contingency responses are contained within those technical reports. These specific monitoring plans to be carried out for the Preferred Method will be sufficient to determine that 1) predicted net negative effects are not exceeded, and 2) unexpected negative effects are addressed. Walker’s public complaints reporting, and response system will also provide means to monitor unanticipated social effects.



## 8.2 Development of an Environmental Management Plan

An Environmental Management Plan (EMP) will be prepared by Walker 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 that will inform determinations regarding effects to the Social Environment.

## 9.0 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:

- Walker shall attempt to establish and/or continue operation of the South Landfill Phase 2 Community Liaison Committee (CLC) as an advisory body to Walker. Among other functions, the CLC will be a forum to discuss the implementation and effectiveness of the identified mitigation or compensation measures.

Walker shall establish formal protocols to demonstrate to regulators, community leaders and members of the general public its full compliance with all landfill design and operational measures and its mitigation commitments aimed at avoiding or minimizing the physical disturbances of the Project (i.e., odour, noise, dustfall), effects on the traffic network, visual intrusion and effects of the landfill operations on groundwater and surface water resources.

## 10.0 Social Environment Approvals Required for the Undertaking

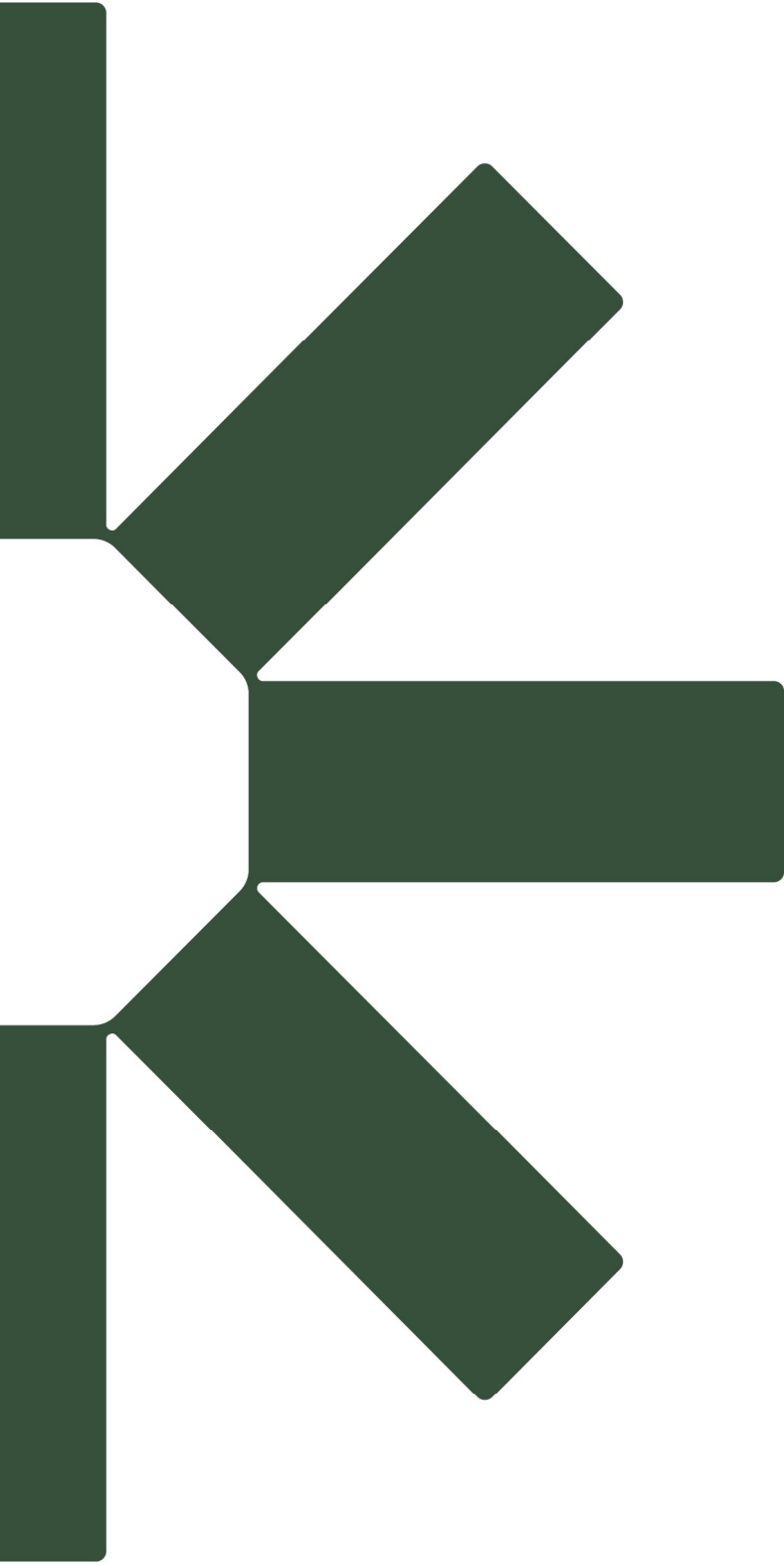
No specific Social Environment approvals are required for the proposed undertaking beyond those related to odour, noise, and dustfall identified by other environmental disciplines in various technical studies.



## 11.0 References

- Avaanz. (2026). *Detailed Economic Impact Assessment Report (Draft), South Landfill Phase 2 Project*. Walker Environmental Group Inc.
- Elliott, S. (1997). It's Not Because You Like It Any Better...': Residents' Reappraisal of a Landfill Site. *Journal of Environmental Psychology*, 17, 229-241.
- Elliott, S. (2004, May). A Comparative Analysis of the Psychosocial Impacts of Waste Disposal Facilities. *Journal of Environmental Planning and Management*, 47(3), 351-363.
- Elliott, S. M., & McClure, J. (2009, March). "There's just hope that no one's health is at risk": residents' reappraisal of a landfill siting. *Journal of Environmental Planning and Management*, 52(2), 237-255.
- Mason-Reton, S. A. (2017). Confrontational Stigma and Contested 'Green' Developments: Biosolid Facility Siting in the Rural Landscape. *Electronic Thesis and Dissertation Repository*.
- Okeke, C. U., & Armour, A. (2000). Post-landfill siting perceptions of nearby residents: a case study of Halton landfill. *Applied Geography* 20, 137-154.





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