

REPORT

Socio-Economic Existing Conditions and Impact Assessment

W12A Landfill Expansion EA, City of London, Ontario

Submitted to:

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November 2020

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Acronyms and Glossary of Terms

Term / Acronym	Definition
BMP	best management practices
EA	Environmental Assessment
EASR	Environmental Assessment Study Report
ha	hectare
HSW	Household Special Waste
MHSW	Municipal Hazardous or Special Waste
MRF	Material Recovery Facility
ToR	Terms of Reference

1.0 INTRODUCTION

The City of London is proposing an expansion of the existing W12A Landfill site (the Project) located at 3502 Manning Drive, part of Lots 18, 19 and 20 of Concession 6 in the former Township of Westminster, in the south end of the City of London, Ontario.

The environment is considered in broad terms to include the natural, social, cultural, and economic aspects of the environment. This document presents the Socio-Economic component existing conditions and impact assessment for the Environment Assessment (EA) of the proposed W12A Landfill expansion. This work has been conducted in accordance with the requirements set out in the approved Amended Terms of Reference (ToR), dated February 2019.

This report is a supporting document to the Environmental Assessment Study Report (EASR).

1.1 Approach and Methodology

The socio-economic environment considers those features that may be affected by landfill operations from the proposed landfill expansion such as residences, indoor and outdoor recreational facilities such as parks, trails and community centres, businesses (particularly ones with an outdoor component), community facilities such as schools, hospitals and emergency services, traffic and commute times, as well as municipal revenues and expenditures.

The socio-economic environment can be affected both directly and indirectly from both landfill construction work and operational activity. The most common socio-economic effects from landfill operations are nuisance effects such as dust, noise, litter and odour; these can be during both construction and operations phases and can affect the extent to which residents can use and enjoy their personal property and outdoor spaces. This has the potential to cause displacement of local residents who may leave the area due to these adverse effects. Vermin is another potential socio-economic concern associated with landfill sites, notably rats and gulls, and can be a concern for local residents and businesses (including farms). The visual appearance of the landfill is also an issue local residents will be aware of. Economically, the landfill contributes to municipal revenues and provides employment opportunities to the community. Costs to the City may be affected by increased heavy truck volume and effects on road surfaces as well as increased maintenance.

2.0 STUDY AREA CHARACTERIZATION

To characterize the existing environment in the vicinity of the proposed landfill expansion, secondary sources have been used. This includes Google maps, business and municipal websites and available reports on the existing landfill site as noted in Section 9.0. For the purposes of this EA, a radius of approximately 500 m from the Site Area has been used for characterization of relevant features and is identified as the Site-vicinity Study Area. Other notable features beyond that radius noted as the Wider Study Area have been noted where relevant, to give a more fulsome picture of the surrounding socio-economic environment.

2.1 Demographic Profile

The Project is located within the City of London, Middlesex County. The 2016 census provides the following demographic profile of the area and provides data for Ontario as a whole for comparison:

Table 1: Demographic Profile - City of London, 2016

	City of London	Ontario
Population change (2011-2016)	4.8%	4.6%
Average Age	40.5	41
Gender	51% Male, 49% Female	48% Male, 52% Female
Average Household Income	\$43,976	\$49,571
Labour Force Participation Rate	63.2%	64.7%
Unemployment rate	7.9%	7.4%

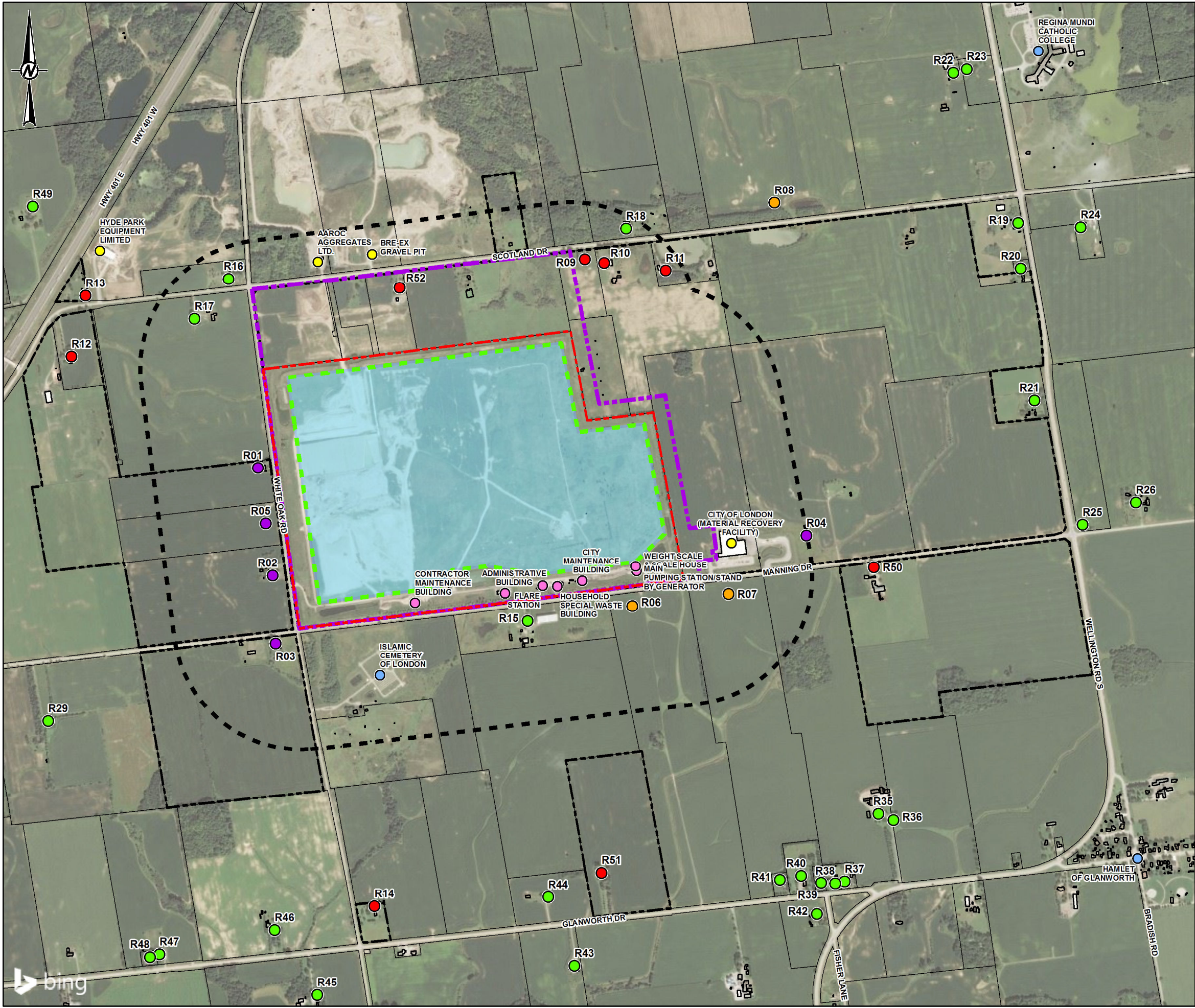
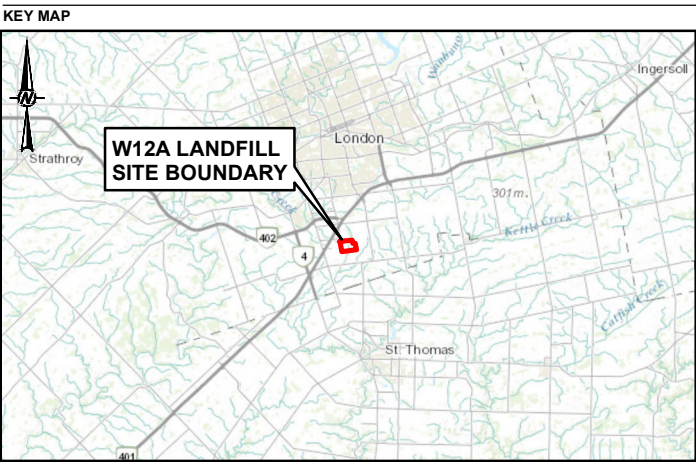
In 2016 the City of London had a population of 383,822, which represented an increase of 4.8% compared to 2011. This is similar to the provincial average. The average age of residents is 40.5 years, which is only slightly younger than the average for Ontario as a whole. The average household income is lower than the Ontario average and the labour force participation rate was also slightly lower. The unemployment rate is not significantly different to the province wide rate (Statistics Canada, 2016).

2.2 Existing Socio-Economic Landscape

The socio-economic environment surrounding the W12A Landfill site is predominantly rural with few residential properties and farms in the Site-vicinity Study Area, a number of which are owned by the City of London itself. The hamlet of Glanworth is the closest residential area to the Site Area (approximately 1.7 km away to the southeast) as well as the Shaver Subdivision, located approximately 2.0 km to the northeast.

Aerial imagery shows mostly agricultural land and properties with small scale industrial type operations (e.g. auto works). In terms of businesses (excluding farms), there are few in the area. The most notable feature is the Westcliff Pit, operated by AAROC Aggregates, and the Bre-Ex Gravel Pit, operated by Brekelmens Holdings, both located on the north side of Scotland Drive, just north of the existing landfill and the Site Area. There is also a heavy equipment sales (Hyde Park Equipment) located on Scotland Drive to the northwest of the Site Area, as well as a general contractor (Ron Murphy Contracting) located on Manning Drive to the west of the landfill. The City's Material Recovery Facility, separate from the landfill, is located just to the east of the Site along Manning Drive. There are no schools, hospitals or other emergency service facilities in the Site-vicinity Study Area. The above businesses are unlikely to have outdoor elements that are essential to their patronage. The Islamic Cemetery of London is located to the south of the Site Area and is the only notable cultural feature in the area; this facility may host ceremonies outdoors as well as having regular visitors to grave sites. These could potentially be affected by noise, odour or dust from landfill operations and construction activities.

Figure 1 below shows the existing socio-economic environment in the Site-vicinity Study Area and Wider Study Area.



LEGEND

- SITE OPERATIONS
- BUSINESS OPERATIONS
- OTHER OPERATIONS

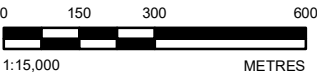
RESIDENTIAL

- CITY OWNED PROPERTY - EXISTING
- CITY OWNED PROPERTY - VACANT
- NON-CITY OWNED PROPERTY - EXISTING
- NON-CITY OWNED PROPERTY - VACANT

- BUILDING FOOTPRINT
- PROPERTY FABRIC
- CITY OWNED PROPERTY
- EXISTING PROPERTY BOUNDARY
- PROPOSED PROPERTY BOUNDARY
- EXISTING APPROVED LIMIT OF WASTE
- PROPOSED LIMIT OF WASTE
- SITE VICINITY STUDY AREA

REFERENCE(S)
1. DATA PROVIDED BY THE CITY OF LONDON.
2. PROJECTION: TRANSVERSE MERCATOR DATUM: NAD 83
COORDINATE SYSTEM: UTM ZONE 17 VERTICAL DATUM: CGVD28

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CLIENT
CORPORATION OF THE CITY OF LONDON

PROJECT
SOCIO-ECONOMIC ASSESSMENT - W12A LANDFILL EXPANSION

TITLE
SITE PLAN

CONSULTANT	YYYY-MM-DD	2020-09-02
DESIGNED	---	---
PREPARED	JEM	---
REVIEWED	---	---
APPROVED	---	---

PROJECT NO. 1648176 CONTROL 0021 REV. A FIGURE 1

2.3 Existing Operations

The City of London's W12A Landfill received approximately 304,000 tonnes of waste in 2019 (City of London, 2020) and collects waste generated within the City of London, the Municipality of Thames Centre, Lake Huron and Elgin Area Water Treatment Plants and the TRY Recycling Construction and Demolition Recycling Facility located just north of the City. There is also a Household Special Waste (HSW) facility and a public drop off depot for household garbage, appliances, Blue Box recyclables, brush, yard waste, cardboard, electronics, scrap metal, tires and wood. The HSW Depot accepts MHSW waste from the City of London, the County of Middlesex and the Oneida Nation of the Thames First Nations.

In 2019 the landfill component of the Site activities employed 11 full time and 2.1 full time equivalent seasonal staff working for the City directly, and about 4 to 5 full time equivalent staff working for a contractor at the landfill. The Project is not expected to change these numbers. In 2019, a total of 58 odour complaints were made by local residents; the majority of these complaints were in the evening between 6:00 pm and midnight. Complaints in recent years included 19 in 2014, 21 in 2015, 17 in 2016, 34 in 2017 and 60 in 2018 (City of London, 2020). The landfill's operating costs in 2019 were approximately \$4.5 million and revenues were approximately \$6.4 million.

Existing noise in the area will likely come from agricultural operations, limited industry and traffic as well as from the existing Site. Odour sources are related to agricultural practices and the landfill (see Volume IV, Appendices D.01 and D.02 for more information on odour and noise existing conditions, respectively). Vermin such as gulls are present at landfill sites but can be reduced through good site maintenance (e.g. litter control program, hawk program, etc.); no complaints were received regarding vermin or litter from the site in 2019 (City of London, 2020).

3.0 PROJECT DESCRIPTION

The landfill expansion consists of a vertical expansion over the existing landfill footprint to provide 13.8 million m³ of airspace for waste and daily cover. To accommodate ancillary features and provide additional on-Site buffer width compared to the existing landfill, the northern boundary of the landfill property will be extended northward to Scotland Drive and a 100 m buffer width will be provided on the east side of the landfill footprint and some additional area in the southeast corner to tie into the adjacent MRF property line. This results in a 106.3 hectares (ha) landfill footprint within a 192.4 ha landfill property, with a highest ridge elevation of waste of 318.43 metres above sea level.

The expanded landfill will operate, at the maximum, from 7 a.m. to 5 p.m., Monday through Saturday plus one hour before, i.e., 6 a.m. to 7 a.m., for site preparations and one hour after, i.e., 5 p.m. to 6 p.m. to complete placement of daily cover. The Site will be closed on Sundays; on statutory holidays site operations will be as required to accommodate hauling contracts.

It is proposed that the maximum annual receipt of waste for the expanded landfill will be 500,000 tonnes per year, reduced from the 650,000 tonnes/year allowed for the existing landfill.

The expanded landfill will also need to continue to occasionally operate 24 hours per day, 7 days per week when lime stabilized dewatered biosolids (dewatered sewage sludge) from the Greenway Wastewater Treatment Plant are being received and disposed at the landfill. This is typically required for three weeks per year; however, some years this period could be extended. In addition, re-builds or major equipment repairs typically occur approximately every five years or longer and can take up to two to three months to complete. The landfill typically receives a load of biosolids (approximately 15 tonnes) every 75 to 90 minutes. Disposal of the biosolids involves excavating a hole in the existing waste in the active area (when practical) prior to the load arriving and covering the biosolids with daily cover soil as soon as the load has been dumped.

The main site access for the expansion will be at the same location as for the existing site, off Manning Drive at the southeast corner of the Site. The main ancillary facilities are located along the perimeter road across the south side of the Site. It is proposed that many of the existing ancillary facilities at the site will be progressively upgraded or replaced during the expansion at or close to their existing location, except for a new site office / administration building to be relocated close to the site entrance and the small vehicle drop-off area to be relocated to the vacant southeast corner area between the landfill and the MRF. These facilities consist of the contractor's office and garage; administration building; flare and control system; weigh scales and scale house and leachate pump station; and small vehicle waste drop-off. A new enclosed night waste storage facility for receipt and temporary storage of three to five loads of waste may also be constructed; access to the landfill at night will be done using card key access and automatic gates. The new small vehicle drop-off area will include a new scale and scalehouse, a grade-separated small vehicle drop-off for waste, a grade-separated small vehicle drop-off for recyclable materials, an area for drop-off of brush, tires and large items, and a new Household Special Waste depot.

The source of heating for all site buildings will be natural gas.

The existing paved roads on the south and west sides of the landfill are paved and will remain paved for the expansion. It is proposed that the perimeter access road around the north and east sides of the landfill will also be asphalt surfaced, as will the vehicle access roads for the proposed recycling drop-off facilities in the southeast corner between the landfill facilities and the MRF. Access for collection vehicles to the expansion Phases will be mainly from the south side perimeter road, and for Phases 1E and 2E from the west side perimeter road. From the south side it is anticipated that the two existing granular surfaced haul roads will continue to be utilized.

An access off Scotland Drive will be used as a secondary site access and service road for operations and maintenance vehicles to the north part of the landfill property and as an emergency access/exit. The secondary access will have a locked gate to prevent unauthorized usage and will be gravel surfaced.

Figure 2 below shows the proposed landfill expansion area.

4.0 IMPACT ASSESSMENT OF THE PROPOSED LANDFILL EXPANSION

This section evaluates the effects from the proposed landfill expansion (vertical expansion) on the socio-economic environment.

4.1 Methodology

The socio-economic environment is evaluated in a number of different ways and looks at both direct and indirect effects and the level of change that may result to the baseline environment described in Section 2.0.

Direct effects – These are effects to the socio-economic environment that occur as a direct result of a change to a socio-economic feature such as population change or employment effects.

Indirect effects – these are effects to the socio-economic environment that occur indirectly as a result of project related changes on other aspects of the environment (e.g., increased noise, dust or odour creating nuisance effects).

This assessment was completed in collaboration with data collection and analyses undertaken by other disciplines (including noise, air quality and visual). These data and analyses were used to determine the effects (both beneficial and adverse) associated with the measurable changes in the socio-economic environment resulting from the Project and identify mitigation measures that are technically and economically feasible to prevent, reduce or otherwise ameliorate the adverse environmental effects. For more detail on Air Quality, Noise and Visual impacts, refer to Volume IV, Appendices D.01, D.02 and D.11, respectively.

4.2 Evaluation of Effects

4.2.1 Local Economy

The following indicators were evaluated to assess effects to the local economy:

- Expected effect on local employment;
- Expected effects on local businesses and commercial activity; and
- Expected effects on municipal finances.

Potential Effects

The following criteria were used to evaluate potential effects on the local economy:

- Employment opportunities during landfill expansion construction and operation;
- Potential effects to local commercial businesses in the Site-area (excludes agriculture); and
- Capital costs associated with construction and operation.

The local economy can be affected through the potential for the creation of new employment opportunities at the site. Effects to local businesses could occur through increased usage of services during construction or effects on operations that may change patronage. Increased capital costs associated with construction and operation may affect municipal finances, e.g., maintenance, equipment replacement, etc. These are evaluated using relevant figures and information provided by the City of London and findings from applicable discipline studies.

Evaluation of Effects on the Local Economy

The Project is not expected to create any new jobs in the community, the existing landfill workforce is deemed sufficient. It is estimated that with the additional infrastructure operations associated with the expansion, the annual operating cost could increase to \$5 million. Several stop-controlled approaches along the haul routes are forecast to operate at a poor level of traffic control in the future (2048) conditions. However, traffic signals, if warranted, would be due to the projected increase of background traffic volume and/or movement of this background traffic and not the traffic associated with the landfill expansion. Other businesses (excluding farms) in the Site-vicinity Study Area are not anticipated to be affected negatively or positively as a result of the landfill expansion.

In terms of capital costs, the proposed expansion design has an estimated budget of \$55 to \$90 million, with a midpoint estimate of approximately \$72 million (in 2020 dollars). Waste projections by the City of London show an increase in Industrial, Commercial and Industrial (IC&I) and water treatment plant residuals, both of which are charged tipping fees. It is also planned to increase the service area that may result in new waste coming to the landfill, which will be charged a tipping fee. Overall, revenue to the landfill will increase if the waste coming to the landfill matches the waste quantity projections.

4.2.2 Residents and Community

The following factors were evaluated to assess effects to the local economy:

- Displacement of residents; and
- Expected interference with use and enjoyment of residential properties (nuisance effects).

Potential Effects

The following criteria were used to evaluate potential effects on residents and communities in the Site-vicinity Study Area.

- Proximity to nearby residences; and
- Biophysical and social interactions with nearby residential and community receptors (i.e., noise, dust, odour, and nuisance wildlife/pests).

The effect of landfill operations on the local population and on the use and enjoyment of residences are typical public concerns. The proximity of the expanded landfill to residences may cause out-migration of local residents or discourage new residents from moving in. The extent to which local residents can use and enjoy their properties and outdoor spaces can be affected by project-related activity that results in, for example, litter, noise, odour, dust and/or vermin or change the visual aspect in an objectionable way. These are evaluated using

findings from the respective studies for these components of the environment, as well as qualitative findings from engagement and professional judgement.

Evaluation of Effects on Local Residences and Community Features

There are eight properties that can be considered residential and have existing homes within the Site-vicinity Study Area; there are residences located on farm operations and about half of the residences in the Site-vicinity Study Area are owned by the City of London. The physical landfill expansion does not require any displacement of residences although the buffer lands identified by the City as being beneficial for on-going landfiling will require the removal of one residence located on a City-owned property north of the landfill expansion. The Islamic Cemetery to the south of the site is the only community feature within the Site-vicinity Study Area. Nuisance effects may affect use of outdoor spaces such as funeral ceremonies or visitors to the cemetery. To date, the City has never received a complaint from the Islamic Cemetery about the operation of the landfill. Current noise, dust and odour sources within the Site-vicinity Study Area will primarily be agricultural and traffic as well as potential noise, dust and odour from the existing site.

Air quality studies identified anticipated measurable air emissions and evaluated them to determine effects. The residual effects were evaluated and concluded that they do not result in adverse effects in terms of air quality, dust or odour for the neighbouring existing residences as they meet appropriate provincial regulatory limits. As such, interference with use and enjoyment of property and other outdoor spaces from air quality, dust or odour are not expected. Appropriate monitoring and best practice measures will control air quality, dust and odour levels such that they do not exceed acceptable levels.

Potential noise impacts were evaluated using existing information and predictive modelling. Ancillary equipment and emergency equipment are expected to operate below provincial sound level limits. The change in traffic noise levels between the existing landfill and the landfill expansion is insignificant to noticeable using the provincial scale to quantify this change; this is considered an acceptable change. On-site noise from the landfill expansion itself is predicted to require mitigation when the landfill operations are within 330 m of existing residential properties. There is only one residence that presently is located in this proximity and the mitigation is a berm that will act as a sound barrier when landfiling occurs in this limited area along the southern boundary of the expanded landfill. With this berm, the noise is predicted to be within allowable provincial requirements.

Concerns relating to traffic may include changes to access/egress to the site for trucks, increased truck traffic and noise from vehicles during construction and operations. No changes to access and egress are anticipated from the expanded site. As noted above, the anticipated increase in traffic as a result of increasing population and additional communities using the expanded landfill is not forecast to cause any issues with traffic movement along the haul routes. Applicable by-laws will be adhered to for truck traffic and operational hours, and good housekeeping practices will be maintained such that noise and emissions are not above acceptable levels.

Close views of the existing landfill are mainly seen by local residents and truck drivers on the landfill haul routes but can also be viewed from private residences in areas where individuals may be enjoying their property. Depending on the location from which the W12A Landfill is

viewed, features in the immediate landscape such as landscaping and buildings can take visual precedence over the landfill. The landfill expansion will have a high visual impact to three properties and have a moderate-high visual impact on two properties. Three of the five properties with moderate-high to high visual impacts are owned by the City and two properties are privately owned. All other properties will have a moderate visual impact or less. To reduce the visual impact of daily operations, waste would be placed initially to build a berm along the south side of the landfill's waste disposal area and will be covered with final cover soil and seeded to establish vegetation. With the expansion, the landfill property boundary will be moved northward to Scotland Drive and new berms with tree plantings will be constructed along the new property boundary (White Oak Road northward to Scotland Drive, Scotland Drive). The existing Community Enhancement and Mitigative Measures Program will be seeking stakeholder feedback on how the program can be improved including what are appropriate screening measures for private properties. Vermin such as rats and gulls are concerns associated with landfill sites. No complaints regarding vermin have been noted and continued good site maintenance practices (e.g., application of daily cover, litter control program) will continue.

4.3 Summary of Effects Assessment

Table 2 below summarizes the criteria and indicators and potential effects from the proposed expansion.

Table 2: Evaluation of Effects on the Socio-Economic Environment

	Indicator	Factors Used to Evaluate Potential Effects	Assessment of Effects	Conclusion
Local Economy	<p>Expected effect on local employment.</p> <p>Expected effects on local businesses and commercial activity.</p> <p>Expected effects on municipal finances.</p>	<p>Employment opportunities during landfill expansion construction and operation.</p> <p>Potential effects to local commercial businesses in the Site-vicinity area (excludes agriculture).</p> <p>Capital costs associated with construction and operation.</p>	<p>There will be no decrease or increase in employment numbers at the landfill during operations. Contractors to be hired for construction.</p> <p>Local businesses neither positively nor negatively affected by the landfill expansion</p> <p>Increased costs will be incurred to construct the new landfill, which could be partially offset by increased revenues from an expanded service area and fees incurred from increased volume of industrial and water treatment plant waste. Operational costs are projected to be marginally higher than existing conditions.</p>	<p>The Project is not anticipated to have any lasting positive or negative effects on the local economy. Over time, the landfill will cost more and be a higher source of revenue for the City of London than currently.</p>
Residences and Community	<p>Displacement of residents.</p> <p>Expected interference with use and enjoyment of</p>	<p>Proximity to nearby residences.</p> <p>Biophysical and social interactions with nearby residential receptors (i.e., noise, dust, odour,</p>	<p>There are 8 residences within the Site-vicinity Study Area, most of which are owned by the City of London.</p> <p>Air quality and odour impacts are not anticipated to exceed</p>	<p>Out-migration is not anticipated since residents are already accustomed to living in an agricultural area and near the existing landfill</p>

	Indicator	Factors Used to Evaluate Potential Effects	Assessment of Effects	Conclusion
	residential properties (nuisance effects).	and nuisance wildlife/pests).	<p>regulatory limits during construction or operations.</p> <p>Noise impacts associated with ancillary and emergency equipment and traffic are not anticipated to exceed regulatory limits. Noise impacts associated with landfill filling could exceed regulatory limits at one residence, but mitigation measures are available and will be used to reduce noise to within regulatory limits at this residence.</p> <p>Visual impacts are predicted at five residences that could be considered high or moderately-high but these impacts can be mitigated and will be discussed with the community.</p> <p>–Additional traffic related to the landfill expansion is not predicted to cause negative traffic-related issues.</p>	<p>where any noise, odour or dust associated with existing conditions are fairly commonplace. Nuisance effects are expected to be managed and mitigated appropriately so as not to cause increased issues for local residents and users of outdoor spaces.</p>

5.0 MITIGATION

Adherence to applicable municipal and provincial guidelines and best management practices (BMP) for effects such as litter, noise, dust or odour will assist in reducing potential effects to local residents. Examples include:

- Updating the existing Odour Management Plan
- Dust Management Plan
- Noise Best Management Practices
- Best practice measures and good housekeeping practices such as vehicle and equipment maintenance, use of mufflers, minimal idling, etc.
- Updating Complaints Response Protocol.

6.0 MONITORING

Appropriate monitoring of biophysical environment components such as noise, odour and dust are important such that potential effects to the socio-economic environment are minimized. Refer to the monitoring plans for air quality, noise, odour in Volume IV, Appendices D.01 and D.02. In addition to these, appropriate measures to respond to complaints and maintaining good community relations will help monitor public concerns and any unanticipated socio-economic complaints and address them as required.

7.0 OTHER APPROVALS

No specific approvals for the socio-economic environment apply; however, approvals for biophysical disciplines will be required.

8.0 CONCLUSION

The W12A Landfill site is located in a largely agricultural area with few socio-economic features of note. The most likely potential impact to the socio-economic environment is from nuisance effects such as litter, noise, odour or dust, which can affect use and enjoyment of private properties or outdoor spaces. The presence of the landfill and proposed changes to it associated with the expansion are not expected to result in any out-migration of existing residents who are accustomed to living in an area where agricultural and industrial noise is commonplace. Adherence to applicable by-laws and provincial guidelines as well as implementation of best management practices and mitigation will minimize potential effects on the existing environment. In terms of the local economy, no changes to employment or use of local vendors is anticipated and over time the landfill is expected to have increased costs and generate additional revenue for the City of London. Continued use of a complaints protocol and ensuring good community relations will be key tools in monitoring socio-economic effects during construction and operations.

9.0 LIMITATIONS

This report was prepared for the exclusive use of the City of London. The report, which specifically includes all tables, figures and attachments, is based on data and information collected by Golder Associates Ltd. and is based solely on the conditions of the properties at

the time of the work, supplemented by historical information and data obtained by Golder Associates Ltd. as described in this report.

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The services performed, as described in this report, were conducted in a manner consistent with that level of care and skill normally exercised by other members of the engineering and science professions currently practicing under similar conditions, subject to the time limits and financial and physical constraints applicable to the services.

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The findings and conclusions of this report are valid only as of the date of this report. If new information is discovered in future work, including excavations, borings, or other studies, Golder Associates Ltd. should be requested to re-evaluate the conclusions of this report, and to provide amendments as required.

Signature Page

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