

G.04 Open House #4 Sign-in Sheet, Frequently Asked Questions, Feedback Sheets, and Resource Material

Frequently Asked Questions (FAQs #8)

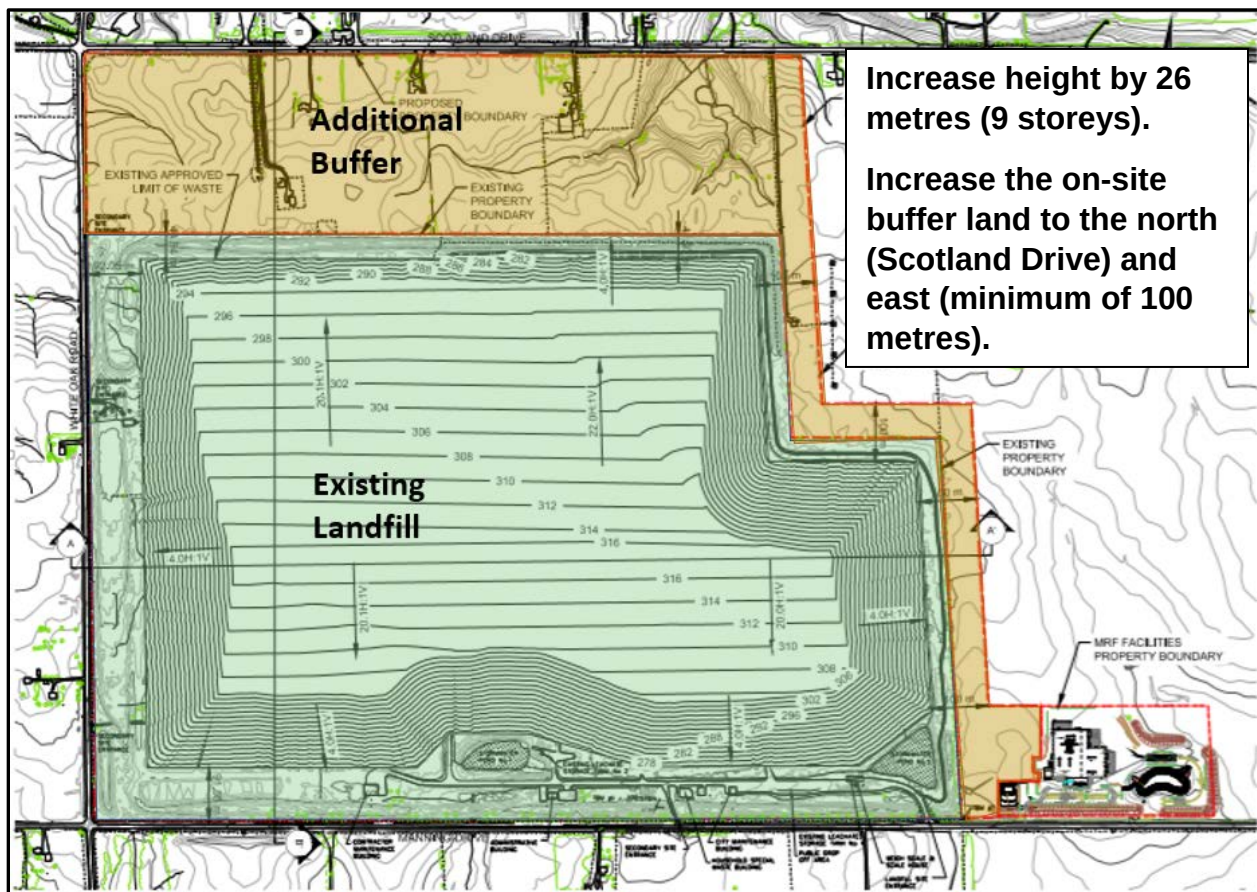
How much waste will the landfill expansion receive?

The design capacity for the proposed landfill expansion over the 25 year planning period is 9.6 million tonnes including 0.5 million tonnes from neighbouring municipalities (about 5%). The space required to hold the estimated waste quantities is approximately 13.8 million cubic metres.

For comparison purposes, the existing approved capacity of the W12A Landfill is approximately 10 million tonnes.

What is the preferred landfill expansion alternative?

Three landfill expansion alternatives (vertical expansion, expansion to the north and expansion to the east) were considered. Vertical expansion was selected as the preferred expansion alternative.



Frequently Asked Questions

Why has Alternative #1 been identified as the preferred expansion alternative?

A number of detailed investigations and studies were completed in order to compare the three landfill expansion alternatives across a number of environmental, social and technical considerations (see appendix "A").

The main advantages of Alternative #1 are:



- Highest degree of groundwater protection
- Best alternative to limit odours
- Fewest changes to existing stormwater management system
- Least potential for air quality, archaeology, agricultural, aquatic ecosystem, community, land use, noise and terrestrial ecosystem impacts
- Lowest cost alternative

The main disadvantages of Alternative #1 are:



- Greatest visual impact
- More complex design (more engineering infrastructure required to store leachate)

All three alternatives were considered to have similar transportation, heritage and cultural potential impacts.

Information on the various studies and investigations completed will be available at the open house.

Frequently Asked Questions

What changes will be made to the landfill's operation and infrastructure?

There will be only minor changes to some of the daily operations (e.g., hours of operation, equipment being used, etc.). There will be major changes (improvement upgrades) to the landfill's infrastructure as summarized below:

Landfill Gas Collection and Flaring System:

- Gas collection system will go from using only vertical wells to having vertical wells and horizontal gas collection piping which will increase the amount of landfill gas captured and reduce odours,
- The existing flare will be replaced by a two flares doubling the amount of landfill gas that can be combusted.

Stormwater Management Ponds:

- Two of the four stormwater management ponds will be enlarged,
- Sediment removal efficiency of all the ponds will be increased to 80% (some ponds currently only have 70% removal efficiency),
- Improvements to outflow structures and other pond infrastructure,
- Upgrades will further protect downstream watersheds.

Groundwater Protection:

- The perimeter leachate collection system in the older part of the existing landfill will be replaced/upgraded and stone drains installed in the waste to improve collection efficiency,
- The thick clay soils underneath the landfill are the primary groundwater protection measures and contaminant transport modelling shows no off-site impacts are anticipated.

Environmental Monitoring

- Improvements, as required, to the existing environmental monitoring programs (litter, landfill gas, surface water & groundwater),
- Additional monitoring of noise and air quality have been incorporated.

Further details on changes to the landfill's operation and infrastructure can be found in the accompanying document *Overview of Proposed W12A Landfill Expansion*.

Frequently Asked Questions

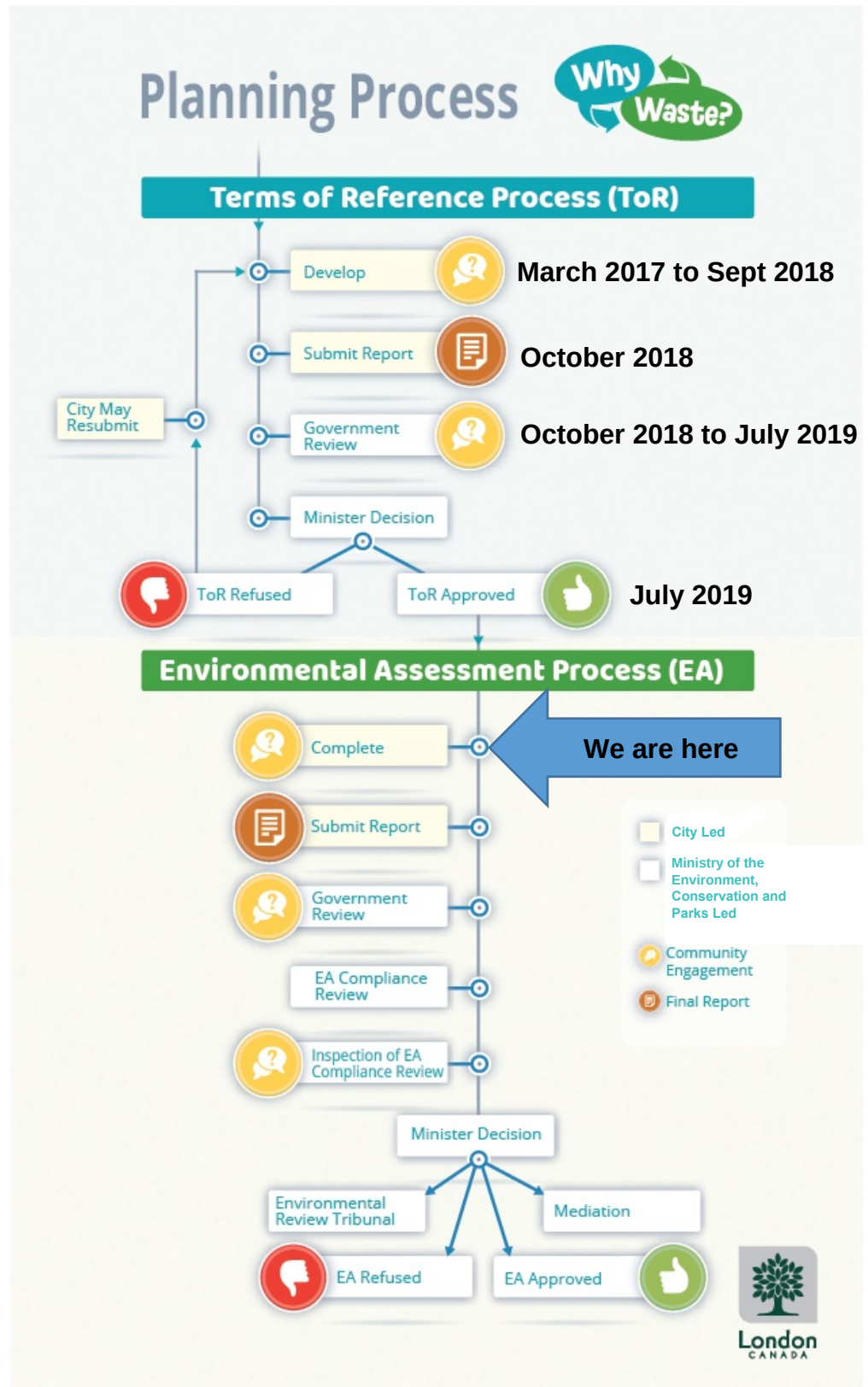
Where are we in the Process?

The EA process is expected to take approximately four to five years to complete (from the start date of March 2017).

The first phase was to develop the Terms of Reference that is the work plan or framework for completing the EA. This has been completed and was approved by the Minister of the Environment, Conservation & Parks.

The City is currently completing the EA study, which involves the completion of a number of technical investigations (e.g., groundwater) to help determine the best way to expand the landfill. The steps in completing the EA study are listed on page 5.

The completed EA must be approved by the Minister and Cabinet before the project can proceed.



Frequently Asked Questions

What are the remaining steps in completing the EA study?

Completion of the EA study will be undertaken in a series of nine steps, which are described below. The steps are described fully in the Terms of Reference. We are completing Step 6 at this time

Step listed in Terms of Reference		Description/Explanation
1	Characterize the existing environmental conditions	Complete technical studies (e.g., groundwater, surface water, traffic, air quality, archeology, etc.) on the area. This step is complete. Complete
2	Identify the 'Alternative Methods' of landfill expansion	Develop different vertical (higher) and/or lateral (northern or eastern) expansion alternatives. This step is complete. Complete
3	Qualitative or quantitative evaluation of 'Alternative Methods'	Determine the potential impact of each of the different expansion alternatives on the study areas. This step is complete. Complete
4	Compare the 'Alternative Methods' for landfill expansion and identify the preferred alternative	Select the expansion alternative that has the least overall impact. Complete
5	Determine the net effects of the preferred alternative	Detailed assessments will be completed on the potential impacts from the preferred expansion alternative. Complete
6	Describe the preferred 'Alternative Method' for landfill expansion	Prepare a detailed description of the preferred expansion alternative and confirm how leachate (water that has contacted garbage) will be managed. We are currently completing this step and seeking feedback at this open house.
7	Consideration of climate change	Look at how climate change (e.g. larger rainfall events) may impact the project and how to reduce the project's contribution to climate change.
8	Cumulative Impact Assessment	Consider the cumulative impact of expansion of the W12A Landfill with other facilities or activities in the area.
9	Preparation of the EA Study Report	Prepare the EA Study Report for review by stakeholders.

Frequently Asked Questions

Where can more details about the Environmental Assessment and the landfill expansion be found?

More information can be found at:

- **Overview of Proposed W12A Landfill Expansion** – Companion document to these FAQs.
- **Attend an Open House** – The fourth series of open houses will be held on Wednesday, November 18 and Thursday, November 19, 2020 at the Hellenic Community Centre, 133 Southdale Road West, London. To book an appointment to attend please contact Tracey Lee by phone at (519) 661-CITY (2489) ext. 8413 or by e-mail at tlee@london.ca.
- **Project Website** (getinvolved.london.ca/WhyWasteDisposal) – All key documents and technical studies can be found on the project website.

Will there be other opportunities to provide feedback?

In addition to Open House #4 (by appointment only due to the pandemic and gathering restrictions), as shown in the Planning Process figure (page 3), there will be other opportunities to provide feedback during the completion of the EA study, finalization of the EA study report and the government review of the EA study.

Opportunities to provide input and feedback during completion of the EA study will include:

- **Virtual Open House** – will be available online until December 11, 2020 on the project website getinvolved.london.ca/WhyWasteDisposal;
- **Project Website** (getinvolved.london.ca/WhyWasteDisposal) - will inform the public on the EA process, public engagement activities and solicit comments from the public. Information on how to seek information or ask questions about the environmental assessment by email, phone, virtual meeting or in-person meeting (with appropriate COVID-19 safety measures) will also be posted;
- **Group and Committee Meetings** - to discuss the EA project and provide feedback as applicable; and
- **Circulation of Draft EA** for public feedback prior to finalization and submission to the Ministry of the Environment, Conservation and Parks (MECP) for approval. There will also be a review by the MECP who will ask for feedback from the public after the final EA Study has been submitted.

You will be informed in advance of all key consultation opportunities.

Frequently Asked Questions

What other approvals are required?

If the EA for the proposed expansion of the W12A Landfill is approved by the Minister of the Environment, Conservation and Parks, there are still other regulatory approvals that will be required before the landfill can be expanded. These approvals are:

- **Environmental Protection Act** (design features and operations related to waste management, air and noise)
- **Ontario Water Resources Act** (stormwater management features)
- **Ontario Planning Act** (zoning amendment)
- **Conservation Authorities** (permits for construction may be required)

Questions? Comments?

Jay Stanford, M.A., M.P.A.
Director - Environment, Fleet & Solid Waste
Phone - (519) 661-CITY (2489) ext. 5411
Fax - (519) 661-2354
E-mail - jstanfor@london.ca

Wesley Abbott, P. Eng.
Project Manager
Phone - (226) 376-2311
Fax - (519) 661-2354
E-mail – wabbott@london.ca

Y:\Shared\SolWaste\WM Plan\EA\Community Engagement\Open Houses October 2020\FAQ 8.docx

Frequently Asked Questions

Appendix A

The table below lists the studies/investigations that were completed and which alternative is preferred for each study/investigation.

Environmental Component	Environmental Sub-component	Preferred (Overall Result)			Public Ranking Group
		Alternative 1	Alternative 2	Alternative 3	
Atmosphere	Air quality (including dust, odour and LFG)	✓			More Important
	Noise	✓			Less Important
Geology and Hydrogeology	Ground water quality	✓			More Important
Surface Water	Surface water quality	✓			More Important
	Surface water quantity	✓			Important
Biology	Aquatic ecosystems	✓			More Important
	Terrestrial ecosystems	✓			More Important
Land Use Agriculture	Current and planned future land uses	✓			Important
	Agriculture	✓			Important
Archaeology	Archaeology	✓		✓	Less Important
Cultural Heritage	Cultural heritage resources (including built heritage)	✓	✓	✓	Less Important
Socio-economic	Local economic	✓	✓	✓	Important
	Residents and community	✓			More Important
Visual	Visual			✓	Less Important
Transportation	Traffic	✓	✓	✓	Less Important
Design and Operations	Technical considerations			✓	Important
	Financial considerations	✓			Important

(✓ means least impact)



November 2020

Overview of Proposed W12A Landfill Expansion





Contents

Overview of Proposed Expansion of W12A Landfill	1
Why expand the landfill?	1
How will the landfill be expanded?	1
Alternative 1	2
Vertical Expansion over Existing Footprint	2
Alternative 2	3
Horizontal Expansion to the North and Vertical Expansion	3
Alternative 3	4
Horizontal Expansion to East and Vertical Expansion	4
Landfill Expansion Alternatives	5
What changes will be made when the landfill is expanded?	8
Proposed Landfill Development	8
Leachate Management and Treatment	10
Background	10
Proposed Changes	11
Groundwater Quality	12
Landfill Gas Management	13
Background	13
Proposed Changes	13
Stormwater Management	16
Background	16
Proposed Changes	16
Other Landfill Development Considerations	19
Archeology Site	19
Natural Environment	19
Noise	20
Visual	20
Site Operations and Site Features	21
Maintenance and Monitoring	23

Overview of Proposed Expansion of W12A Landfill

Why expand the landfill?

The current, approved area for landfilling waste (garbage) at the City's existing landfill (W12A Landfill) will be full by early 2024.

Expansion of the W12A Landfill is the overall preferred way to meet London's future waste management planning needs. This is based on the conclusion of a previous waste management planning study and the basis for the landfill expansion. It is a common desire for municipalities in Ontario to dispose of residential waste (garbage from citizens) within their own municipal boundaries.



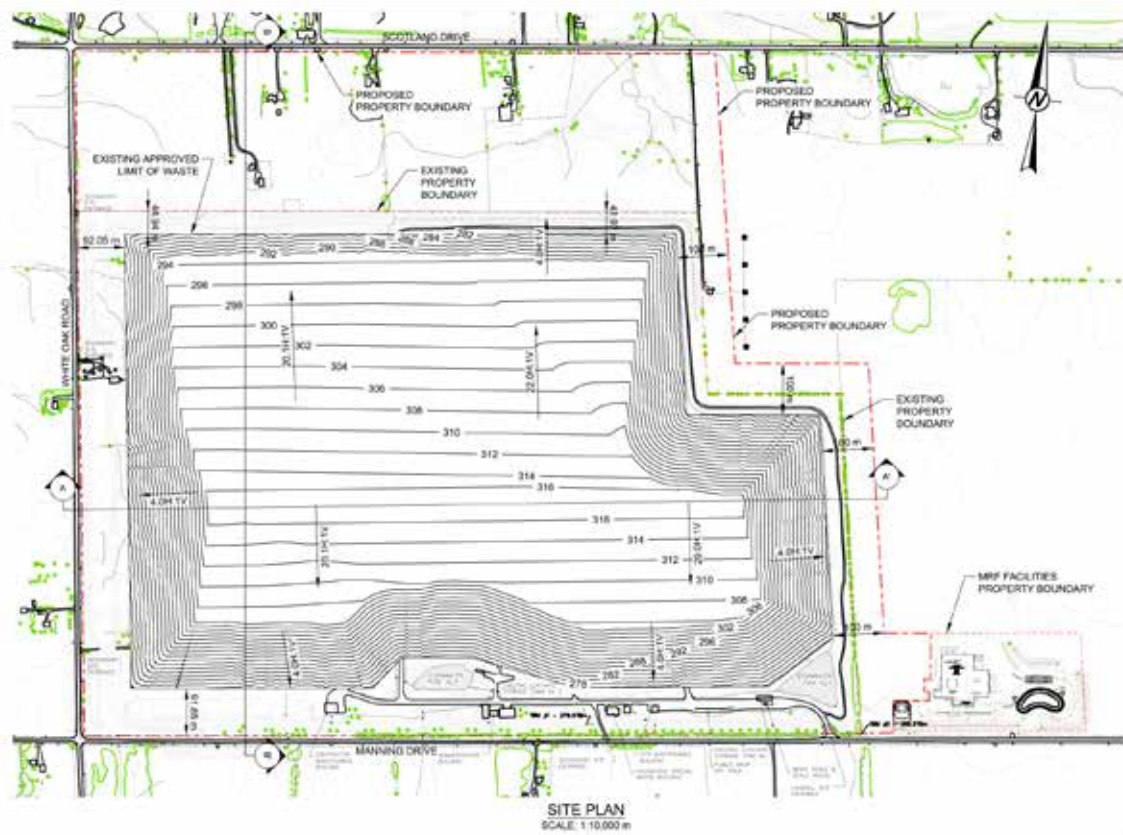
How will the landfill be expanded?

Three expansion alternatives (choices) were developed for consideration on and around the existing landfill:

- **Alternative 1** – vertical expansion above the existing footprint (going up),
- **Alternative 2** – horizontal expansion to the north with vertical expansion above the existing footprint (going up and to the north), and
- **Alternative 3** – horizontal expansion to the east with vertical expansion above the existing footprint (going up and to the east).

Alternative 1

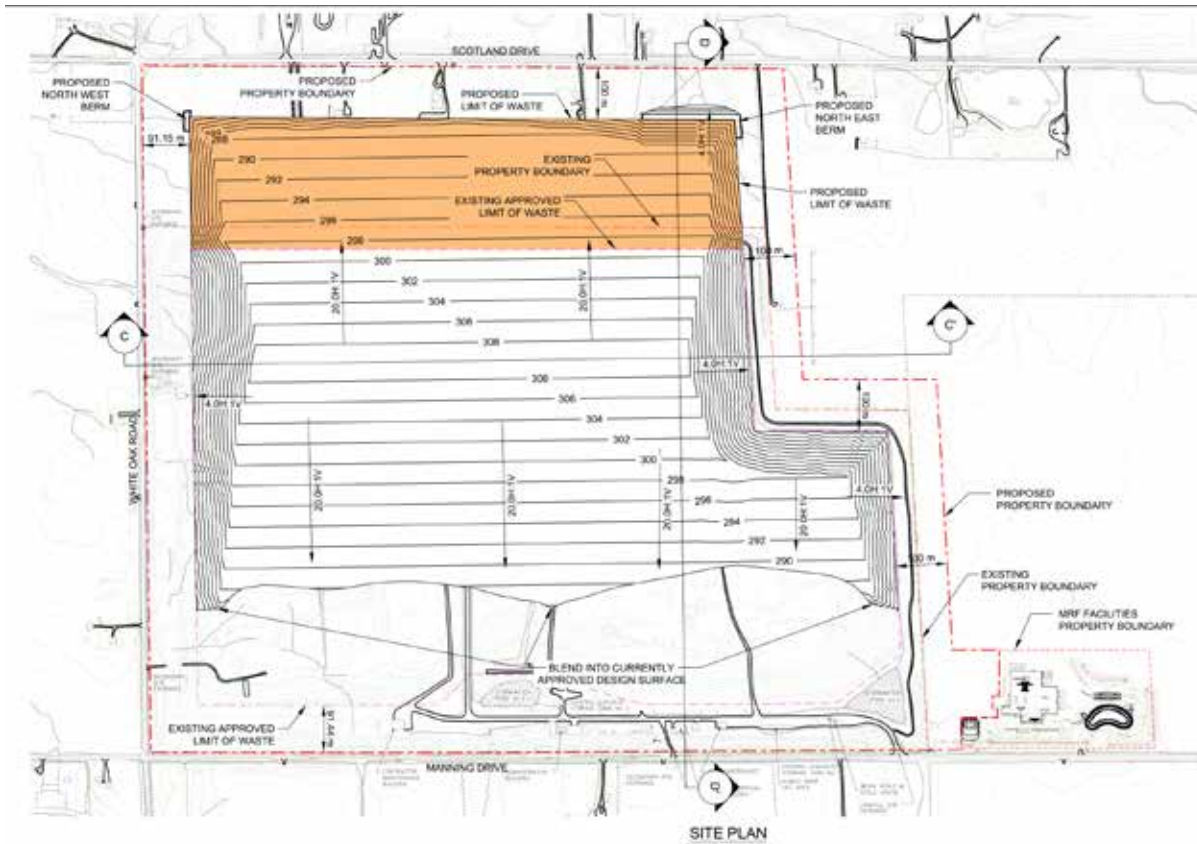
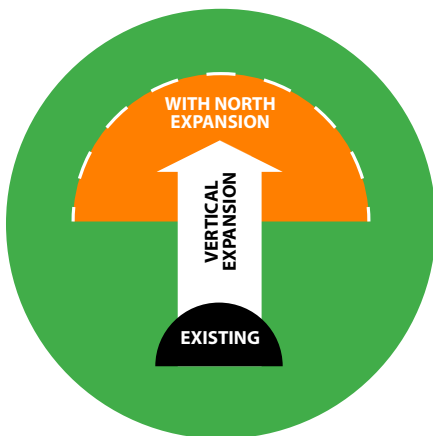
Vertical Expansion over Existing Footprint



- Increase peak height of landfill by 26 metres (approximately 9 storeys high)

Alternative 2

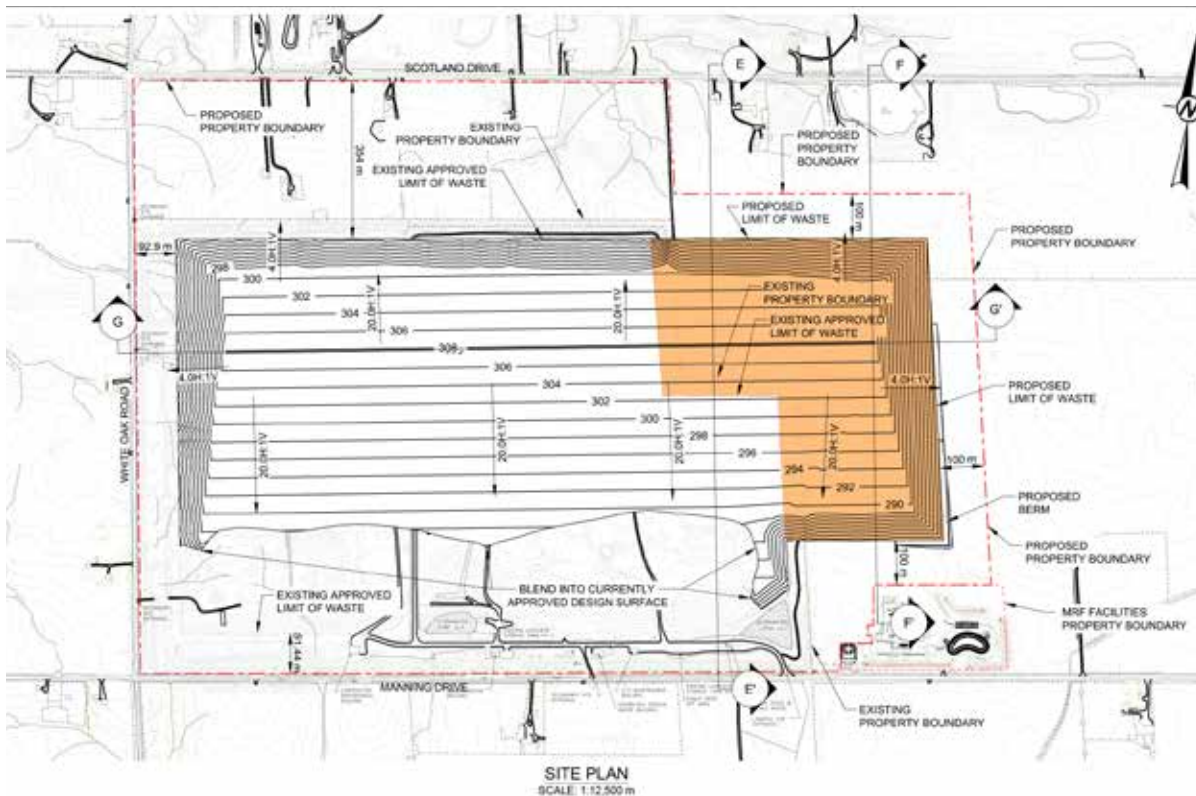
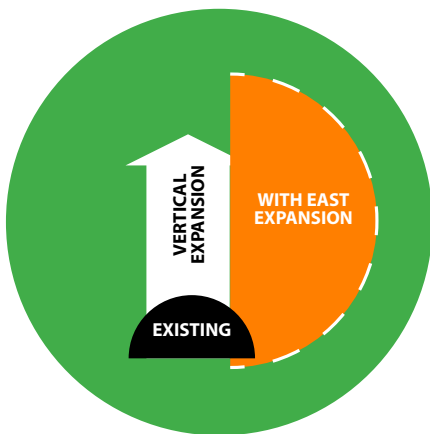
Horizontal Expansion to the North and Vertical Expansion



- Increase peak height of landfill by 26 metres (approximately 9 storeys high)

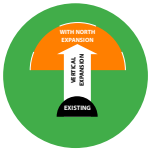
Alternative 3

Horizontal Expansion to East and Vertical Expansion



- Increase peak height of landfill by 21 metres (approximately 7 storeys high)
- Eastern expansion area of 28 hectares

Landfill Expansion Alternatives

Considerations	Existing Landfill	Alternative 1	Alternative 2	Alternative 3
Description		 Vertical expansion above existing footprint	 Horizontal expansion to north with vertical expansion above existing footprint	 Horizontal expansion to east with vertical expansion above existing footprint
Total Waste Footprint Area (hectares)	107	107	134	135
Height of Peak above Ground Elevation (metres)	17	43	36	38
Volume Excavation (cubic metres)	0	0	2,040,000	821,000
Total Additional Airspace (cubic metres)	—	13,800,000	13,800,000	13,800,000

Technical Consultants (specialists in their field of expertise with specific knowledge of landfill projects) were hired to conduct a “study of existing conditions” for various areas (Environmental Components) and identified their preferred landfill expansion alternative for their Environmental Component. Environmental Components considered were:

- Atmosphere (air quality and noise),
- Geology & Hydrogeology (groundwater quality),
- Surface water (quality and quantity),
- Biology (aquatic & terrestrial ecosystems),
- Land Use and Agriculture,
- Archaeology,
- Cultural Heritage,
- Socio-Economic,
- Visual,
- Transportation,
- Design & Operations.

Alternative 1 – Vertical Expansion over the Existing Footprint is the overall Preferred Alternative based on the results of the Technical Consultant's studies and public feedback (ranking the importance of the environmental components).

		Preferred (Overall Result)			Public Ranking Group
Environmental Component	Environmental Sub-component	Alternative 1	Alternative 2	Alternative 3	
Atmosphere	Air quality (including dust, odour and LFG)	✓			More Important
	Noise	✓			Less Important
Geology and Hydrogeology	Gound water quality	✓			More Important
Surface Water	Surface water quality	✓			More Important
	Surface water quantity	✓			Important
Biology	Aquatic ecosystems	✓			More Important
	Terrestrial ecosystems	✓			More Important
Land Use Agriculture	Current and planned future land uses	✓			Important
	Agriculture	✓			Important
Archaeology	Archaeology	✓		✓	Less Important
Cultural Heritage	Cultural heritage resources (including built heritage)	✓	✓	✓	Less Important
Socio-economic	Local economic	✓	✓	✓	Important
	Residents and community	✓			More Important
Visual	Visual			✓	Less Important
Transportation	Traffic	✓	✓	✓	Less Important
Design and Operations	Technical considerations			✓	Important
	Financial considerations	✓			Important

(✓ means least impact)

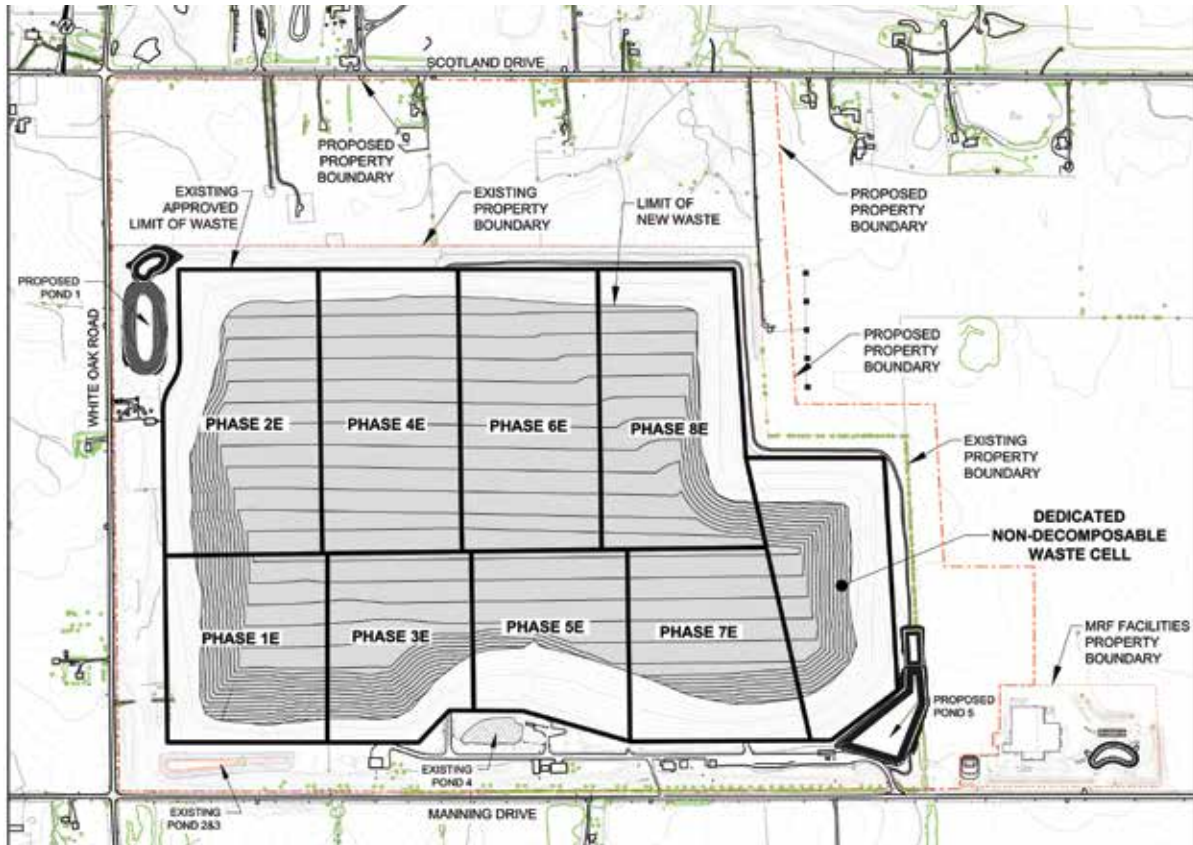
What changes will be made when the landfill is expanded?

Proposed Landfill Development

The proposed expansion will:

- approximately double the landfill's capacity (additional 13.8 million m³ of airspace),
- increase the highest part of landfill approximately 43 m above ground elevation (about 14 storeys high), and
- increase the on-site buffer land to the north (Scotland Drive) and east (minimum of 100 metres).

The proposed landfill will be developed in Phases (cells) starting at Phase 1E and ending with Phase 8E. Each Phase is designed to hold about 1 million tonnes of garbage. An area will also be dedicated for non-putrescible waste (waste that won't decompose such as street sweepings, water treatment plant process residuals, sewage sludge ash and contaminated soil). This area will not have a landfill gas collection system installed as there will be no decomposition and therefore no landfill is gas generated.



As each Phase is developed, the cover material from the existing landfill (found below the expanded area) will be stripped from an area large enough to accommodate the year's disposal, which is estimated to average approximately 4 ha. The area of exposed waste would be limited to that needed to spread, compact and cover the waste received on a daily basis and will vary depending on the quantity of daily waste received.

On an annual or biannual basis (twice per year), final cover will be constructed (and seeded to establish vegetation) over areas reaching final grade, and permanent vertical landfill gas wells will be installed and connected to the landfill gas collection system.

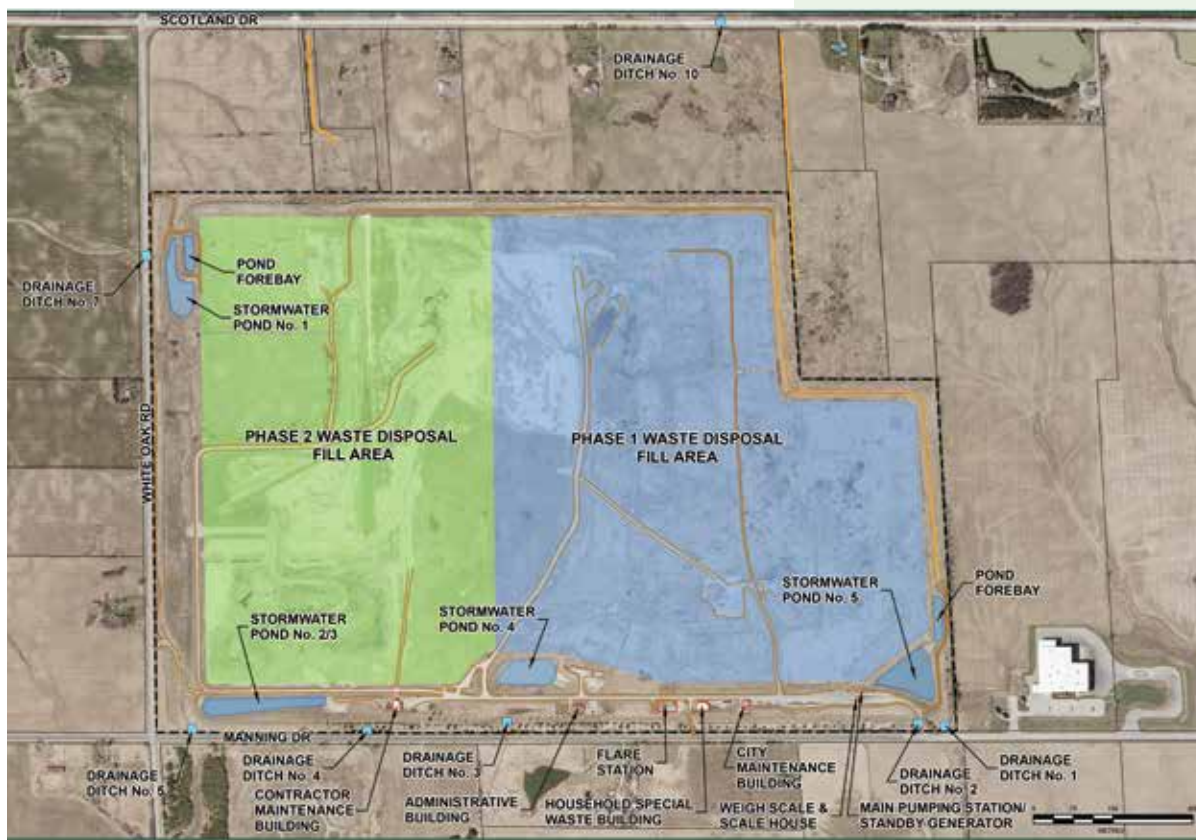
Leachate Management and Treatment

Background

The existing W12A Landfill was developed in two Phases. Phase 1 was filled in from 1977 – 2002. Phase 2 was filled in from 2003 and is still currently being used.

Phase 1 of W12A Landfill (approximately 59 hectares in size) has a perimeter leachate collection system; leachate builds up inside the landfill and is drained at

Leachate is the contaminated liquid generated by rain and snowmelt entering through the waste and dissolving part of the waste as the waste degrades over time.



the outer edges of the landfill into underground piping that directs it to a pumping station.

Phase 2 of W12A Landfill (approximately 47 hectares in size) has a more modern leachate collection system that includes leachate pipes under the waste as well. The base of the landfill (underneath the waste) has a system of granular stone and perforated (holes) pipes to capture leachate draining out of the bottom of the waste. Collected leachate is directed to a pumping station on-site.



Construction of leachate collection system in Phase 2 prior to placement of garbage

From the pumping station, leachate is pumped to Greenway Wastewater Treatment Plant.

Proposed Changes

For the portion of the proposed vertical expansion that will involve placement of additional waste above Phase 2, the existing leachate collection system will continue to be used to collect and remove leachate from the area.

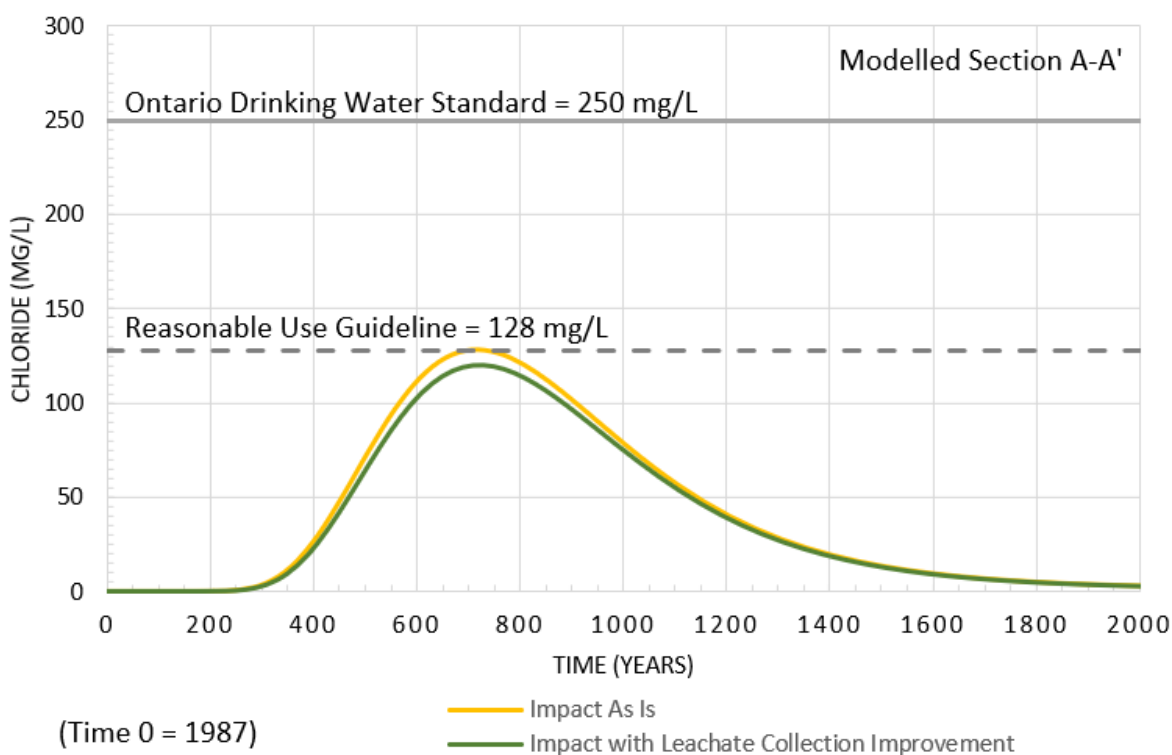
For the vertical expansion above Phase 1, upgrades are proposed to ensure compliance with groundwater quality standards and reduce the potential for leachate seeps. Upgrades include replacing and enhancing the existing perimeter leachate collection system. In addition, granular drains will be constructed along the sides and top of the existing Phase 1 area to collect additional leachate.

The proposed upgrades will ensure that the landfill protects the quality of the local groundwater and meets all groundwater quality guidelines and standards.

Groundwater Quality

Contaminant transport modelling (how materials of concern such as organic compounds spread from source, the landfill, and move towards water sources) shows:

- Heavy metals (such as lead, mercury, etc.) become trapped in the clay and do not migrate away from the landfill,
- Organic compounds (such as solvents, pesticides, etc.) breakdown before they travel any significant distance,
- One non-health-related parameter, chlorides, may exceed landfill groundwater quality standards beside the older part of the landfill (Phase 1). Without upgrades to the landfill, chlorides were predicted to peak at 129 mg/L in about 700 years. Landfill guidelines for chlorides (128 mg/L) are more stringent than drinking water standards (250 mg/L).



Leachate collected within the landfill Site and directed to the pumping station is pumped off-site for treatment at the Greenway Wastewater Treatment Plant. Based on estimates, leachate from the expanded W12A Landfill will represent less than 0.5 % of the flow receiving treatment at the wastewater treatment plant.

Currently, very large storm events could result in a discharge of the mixed leachate/sewage to Dingman Creek or the Thames River if the wastewater treatment plant is in a bypass situation. In the expansion, temporary storage will be added so that leachate will not be pumped from the landfill when the wastewater treatment plant is in a bypass situation.

Bypasses occur when sanitary sewers become overloaded during heavy rain events when too much rainwater enters the sanitary system.

Landfill Gas Management

Background

Landfill gas is created as waste in the landfill decomposes. The existing system uses a series of vertical wells to collect gas which is sent to a single flare to be combusted. The system currently collects about 1,500 cubic feet per minute or 60% of the landfill gas being produced.

Proposed Changes

The landfill gas collection system will go from using vertical wells to having vertical wells and horizontal gas collection piping. Existing landfill gas wells will be retrofitted (where feasible) so that they will continue to operate after they have been buried. Horizontal landfill gas collection pipes will be installed as waste is placed and begin collecting landfill gas immediately. Vertical landfill gas extraction wells will be installed to maximize gas collection efficiency from within the expanded waste mass as each

new part of the landfill is filled. The efficiency of the gas collection system is expected to increase from 60% to 85%.

The extraction wells will be connected by a series of pipes that will convey the collected landfill gas to the landfill gas control system. The collected landfill gas will ultimately be combusted via blowers and flares. The existing flare will be replaced by a two flares doubling the amount of landfill gas that can be combusted.

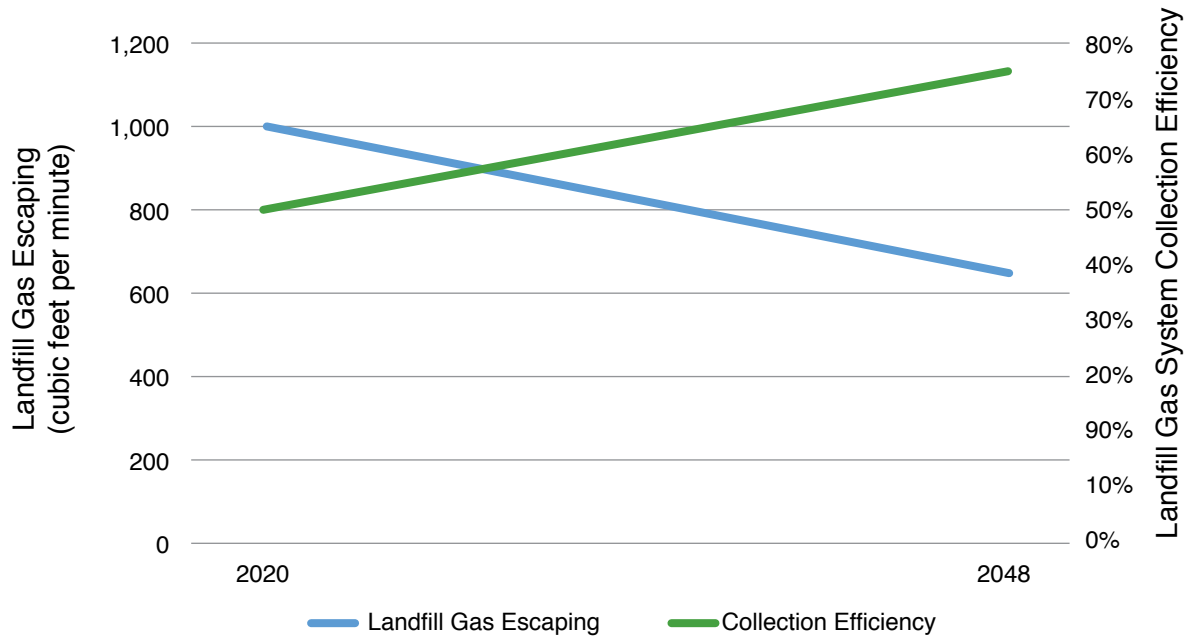
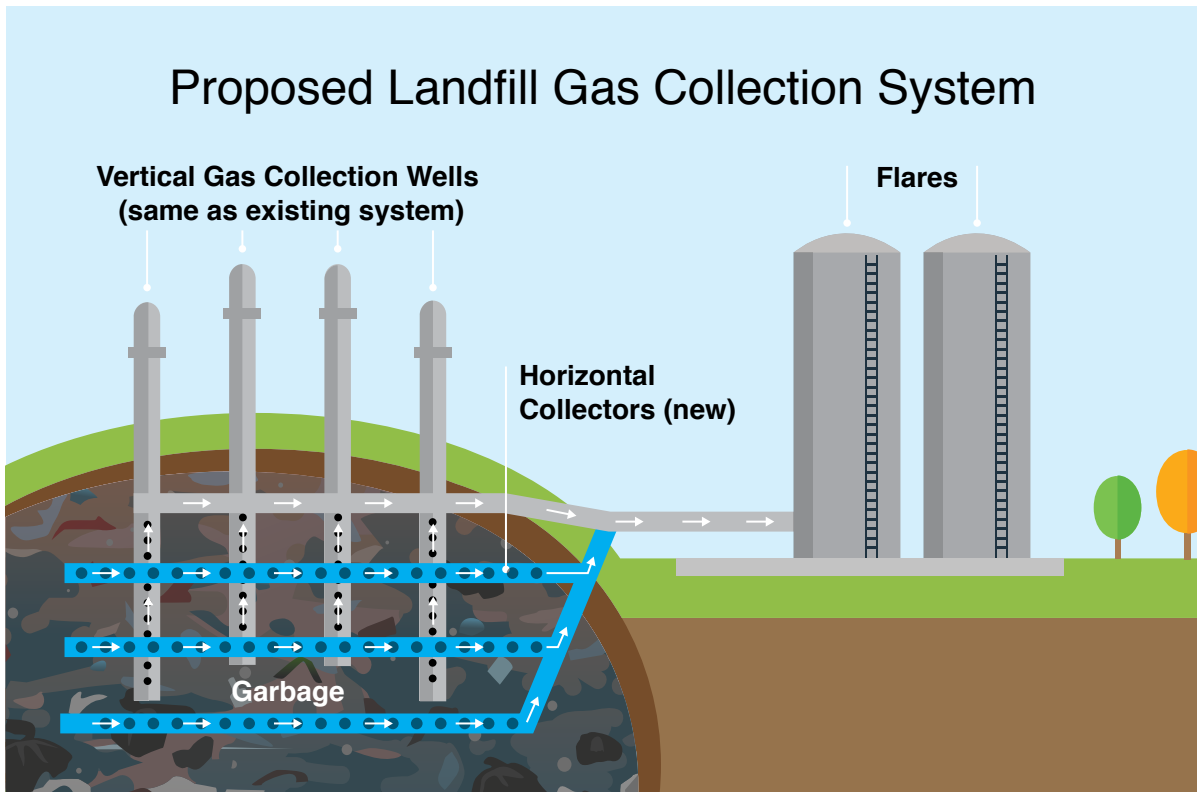
The condensate formed in the landfill gas collection system and at the blower/flare station location(s) will continue to be collected and transferred to the Site's leachate management system.

Modelling indicates air quality and odour associated with the expansion will meet Ontario Regulations.

A landfill gas management system consists of three components:

- a landfill gas collection system (e.g., vertical landfill gas extraction wells, horizontal landfill gas collection piping, landfill gas conveyance piping to the flare),
- landfill gas control and flaring system (blowers to draw the gas through the piping and flares to burn the gas), and
- condensate management system (contaminated water that falls out of the landfill gas when collected is sent to the leachate collection system).

Landfill Gas Collection System



Stormwater Management

Background

Stormwater is rain or melted snow that has not been in contact with garbage.

The current stormwater drainage network within the W12A property is a system of berms, slopes and perimeter drainage ditches that directs “clean” surface water runoff to four separate stormwater management ponds. Leachate impacted surface water goes into the leachate collection system, not the ponds.

The stormwater management ponds provide treatment and attenuation (storage of excess water after a storm and controlled release of the stored water) prior to discharge off-site. Water is discharged off-site to two watersheds: Dodd Creek subwatershed (Kettle Creek watershed) to the south and Dingman Creek subwatershed (Thames River watershed) to the north.

A stormwater management pond is an engineered structure constructed to gather rainfall and surface water runoff. The pond temporarily stores water and then releases it at a controlled rate. A single pond can provide erosion and flooding control while enhancing water quality.

Proposed Changes

With the expansion, the landfill's peak will shift to the south, and the side slopes of the landfill will be longer and somewhat steeper in places. This will result in changes to the drainage boundaries to each of the ponds and, in general, reduced times to peak runoff. Overall drainage to the Dodd Creek subwatershed will be decreased by 20 hectares, while the drainage to the Dingman Creek subwatershed will be increased by 20 hectares. To address these changes in surface water runoff, some modifications to the existing stormwater management ponds will be required.

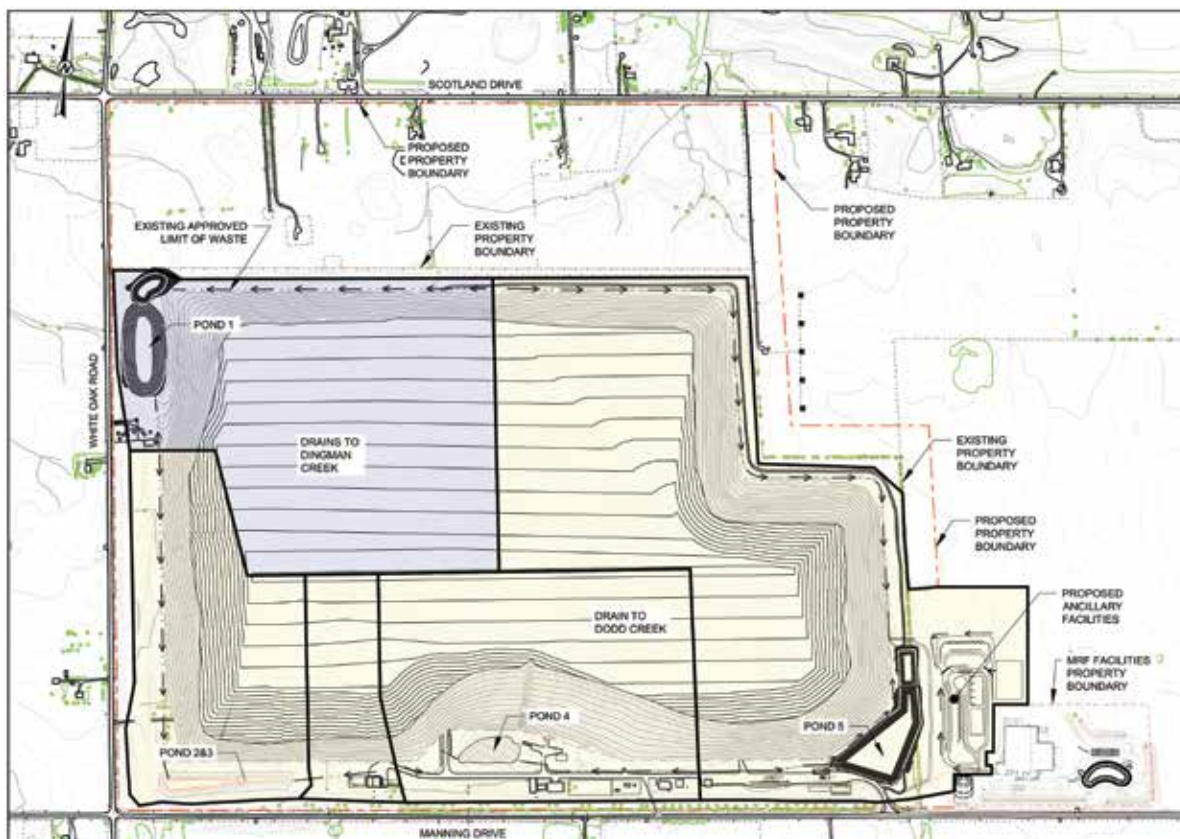
Proposed modifications include:

- Enlarging the size of two of the four stormwater management ponds,
- Increasing the sediment removal efficiency of all the ponds to 80% (some ponds currently only have 70% removal efficiency),
- Improvements to outflow structures and other pond infrastructure.

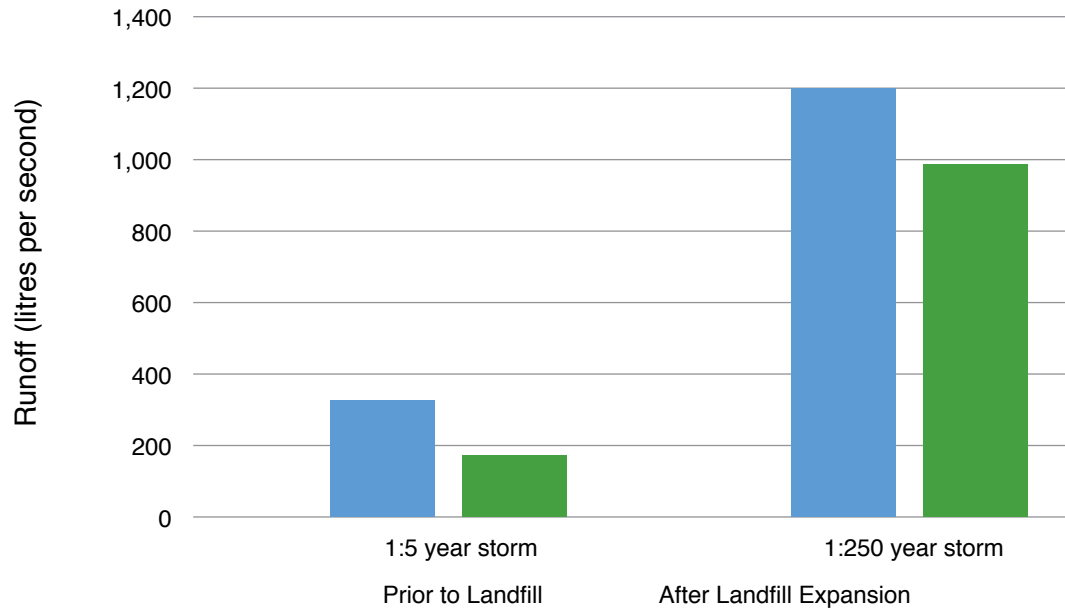
Overall, modifications will further protect downstream subwatershed areas.



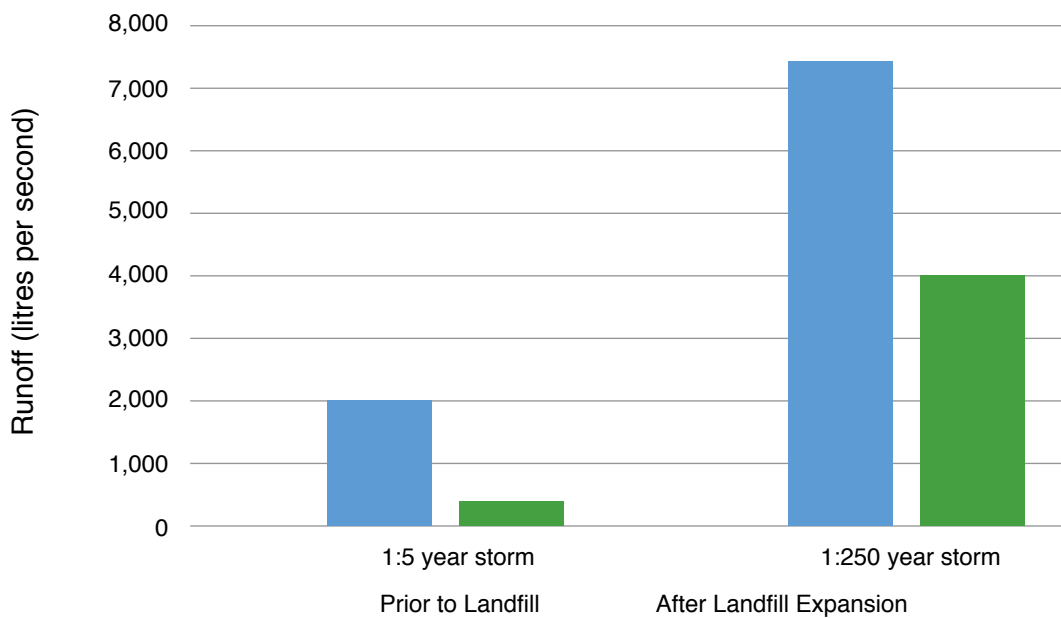
Forebay for existing
Stormwater
Management Pond



Dingman Creek - Peak Stormwater Runoff



Dodd Creek - Peak Stormwater Runoff



Other Landfill Development Considerations

Archeology Site

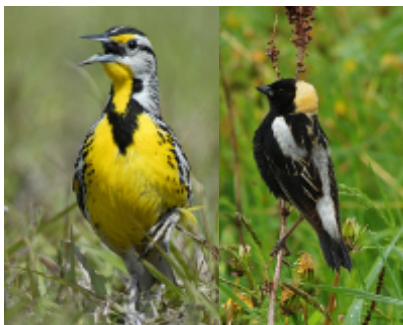
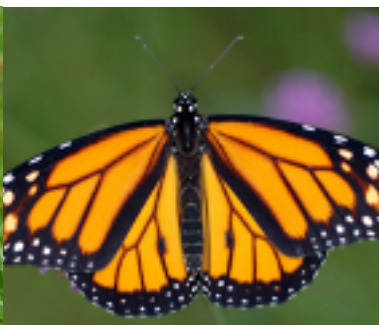
Investigations found a historical Indigenous Site (dating back to 1,500 to 500 BC) in the lands north of the existing landfill that will become part of the buffer lands for the expanded landfill. The preferred method of handling the Site after consulting with Indigenous groups and the Ministry of Heritage, Sport, Tourism and Culture is to leave the area undisturbed. It has been determined that this area can be avoided during development of the Site.

Natural Environment

Three provincially listed Species at Risk (Bobolink and Eastern Meadowlark and Monarch butterfly) were observed within the existing landfill lands.

A detailed Environmental Mitigation and Monitoring Plan (EMMP), Construction Monitoring Plan, and Species at Risk and Wildlife Observation Protocol will be developed to minimize impacts during the landfill's construction and operation.

Compensation measures such as habitat enhancement or creation for loss of habitat will be developed in consultation with the Ministry of the Environment, Conservation and Parks.



- Eastern Meadowlark
- Bobolink
- Monarch Butterfly

Noise

Noise modelling has found that there is the potential to exceed applicable noise guidelines when landfill operations are within 300 metres of a sensitive land use. Currently, one residence is within 300 metres of the future operations.

Nighttime operations will be prohibited in this near this residence and sound barriers (berms) will be constructed for day time operations.

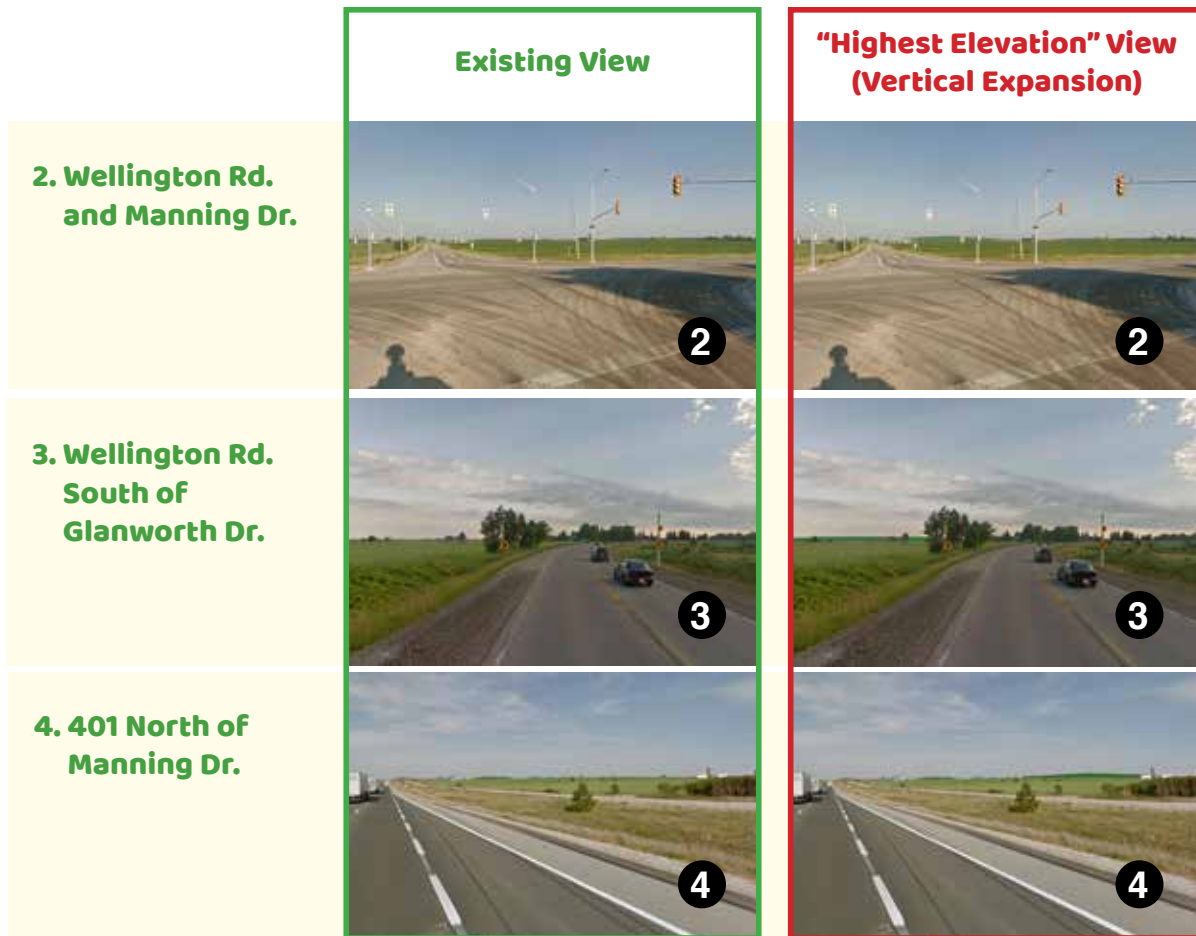
Visual

Views of the landfill from the roads beside the landfill (Manning Drive, White Oak Road and Scotland Drive) will be screened by the existing and new berms and trees. The landfill be able to be seen from further away (examples are shown below – Highway 401, Glanworth Drive and Wellington Road).

Location of View - Example Locations

1. W12A Landfill





The landfill will be most visible to the south. During operations, a berm will be constructed on the south side of the landfill to screen the view of subsequent filling operations north of the berm.

Consideration will be given to adding screening measures (e.g., trees) to individual properties if requested by the property owner.

Site Operations and Site Features

There will be no change to the currently approved maximum hours of operation which are from 7 a.m. to 5 p.m., Monday through Saturday plus one hour before (6 a.m. to 7 a.m.), for Site preparations and one hour after (5 p.m. to 6 p.m.) to complete placement of daily cover. The Site is only currently open from 8 a.m. to 4 p.m. and this

is not expected to change. The Site will be closed on Sundays. On statutory holidays Site operations will be as required to accommodate hauling contracts.

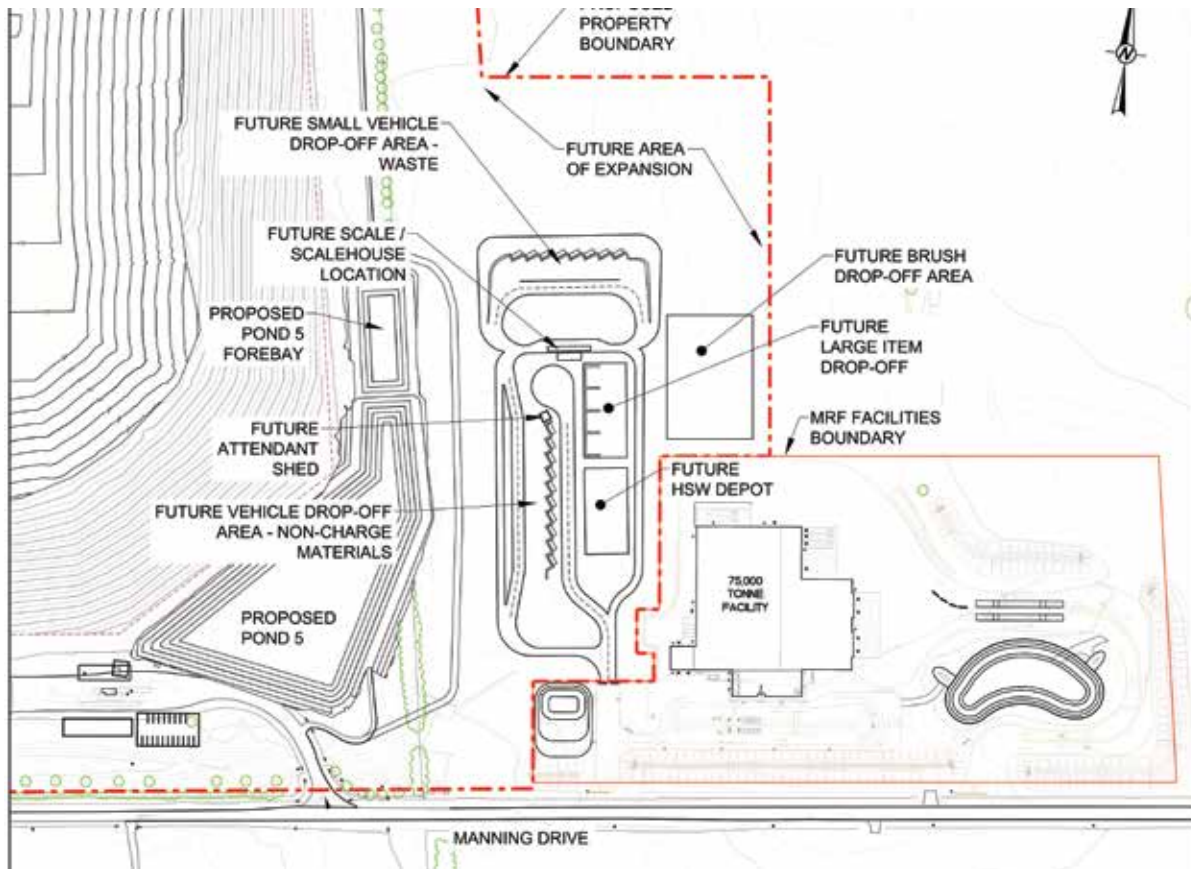
It is proposed that the maximum annual receipt of waste for the expanded landfill will be 500,000 tonnes/year, reduced from the 650,000 tonnes/year allowed for the existing landfill.

The expanded landfill will also need to continue to occasionally operate 24 hours per day, 7 days per week, when biosolids (sewage sludge with the majority of the water removed) are being received and disposed at the landfill. This occurs whenever the Greenway wastewater treatment plant incinerator is off-line for routine maintenance or for emergency repairs. The incinerator is typically shut down for three weeks per year for inspection and maintenance. During a shutdown, the landfill may receive a load of biosolids (approximately 15 tonnes) every 75 to 90 minutes.

The Site is also licenced to receive a small amount of garbage at nighttime which could occur if the City goes back to collecting garbage from the downtown and main road corridors (such as Wellington Road, Richmond Street, etc.) in the evening.

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 facilities are located along the perimeter road across the south side of the Site. Most of the existing facilities at the Site will be upgraded or replaced during the expansion.

It is anticipated that in the vacant southeast corner area between the landfill and the Material Recovery Facility (commonly called a recycling centre) will be the location of a new, larger small vehicle drop-off area. Acceptable items will be waste, recyclable materials (such as tires, scrap metal, ceramics, Blue Box materials, clean wood, electronics). There will be an area for drop-off of brush and a new Household Special Waste (HSW) depot. This area is also permitted to hold pilot project facilities.



Maintenance and Monitoring

A program for operational and environmental monitoring will continue to be carried out at the expanded W12A Landfill Site. Operational monitoring and inspections for litter, vermin, odours, dust, etc. will be ongoing.

Environmental monitoring will include:

- surface water sampling in the stormwater water management ponds and all watercourses leaving the Site,
- groundwater sampling in the many groundwater monitoring wells surrounding the landfill as well as nearby private drinking water wells,



- landfill gas migration in the ground by sampling in the landfill gas monitoring wells,
- air quality by sampling and analyzing landfill gas to determine emission rates and confirm landfill gas make-up, and
- noise monitoring when working within 330 metres of an existing residence.



getinvolved.london.ca/WhyWasteDisposal

Jay Stanford, M.A., M.P.A.
Director - Environment, Fleet and Solid Waste
Phone: 519-661-CITY (2489) ext. 5411
Fax: (519) 661-2354
jstanfor@london.ca

Wesley Abbott, P. Eng.
Project Manager
Phone: 226-376-2311
Fax: 519-661-2354
wabbott@london.ca

Solid Waste Management Division, 8th Floor, City Hall
300 Dufferin Avenue, P.O. Box 5035, London, ON N6A 4L9





Questions? Comments?

Jay Stanford, M.A., M.P.A.
Director - Environment, Fleet & Solid Waste
Phone - (519) 661-CITY (2489) ext. 5411
Fax - (519) 661-2354
E-mail - jstanfor@london.ca



Wesley Abbott, P. Eng.
Project Manager
Phone - (226) 376-2311
Fax - (519) 661-2354
E-mail – wabbott@london.ca



Questions? Comments?

Jay Stanford, M.A., M.P.A.
Director - Environment, Fleet & Solid Waste
Phone - (519) 661-CITY (2489) ext. 5411
Fax - (519) 661-2354
E-mail - jstanfor@london.ca



Wesley Abbott, P. Eng.
Project Manager
Phone - (226) 376-2311
Fax - (519) 661-2354
E-mail – wabbott@london.ca



Questions? Comments?

Jay Stanford, M.A., M.P.A.
Director - Environment, Fleet & Solid Waste
Phone - (519) 661-CITY (2489) ext. 5411
Fax - (519) 661-2354
E-mail - jstanfor@london.ca



Wesley Abbott, P. Eng.
Project Manager
Phone - (226) 376-2311
Fax - (519) 661-2354
E-mail – wabbott@london.ca



City of London

Review of Current W12A Landfill Community Enhancement and Mitigative Measures Program (CEMMP) (September 2020)

Table of Contents

1.0 Purpose of this Report and Background	2
2.0 Current W12A Landfill Community Enhancement and Mitigative Measures Program (CEMMP)	3
3.0 Review of Other Communities in Southern Ontario	5
4.0 Review of Current W12A Landfill Community Enhancement and Mitigative Measures Program (CEMMP)	7
4.1 Measuring Distance from the W12A Landfill	7
4.2 Property Value Protection Plan	8
4.3 Right of First Refusal Program	10
4.4 Community Mitigative Measures Fund	12
4.5 No Charge Waste Disposal	13
4.6 Public Liaison Committee (PLC)	14
4.7 Potential Additions to the CEMMP and/or Landfill Operating Commitments	15
5.0 Next Steps, Proposed Timeline and How to Provide Feedback	17
Appendix A – Summary of Programs at Other Southern Ontario Landfills	18
Appendix B – Terms of Reference for the W12A Landfill Public Liaison Committee	24

1.0 PURPOSE OF THIS REPORT AND BACKGROUND

Purpose of this Document

This document has been designed to seek stakeholder feedback on potential changes to the Community Enhancement and Mitigative Measures Program (CEMMP) for the W12A Landfill. The CEMMP is not part of the current Environmental Assessment (EA) for the expansion of the W12A Landfill that is currently under way. It is considered a parallel or complimentary process in addressing issues associated with the expansion of the landfill.

This report has been designed to provide initial ideas on possible changes, where available.

City staff recently contacted other large municipal and private landfills in southern Ontario to update information collected on community enhancement and mitigative measures in 2006 when the City's first CEMMP began development. The updated information is summarized in Section 3.0 of this document with additional details found in Appendix A. Additional work is underway to obtain any further information that will be beneficial to the review.

Background

The W12A Landfill began operation in 1977. It has capacity to continue to accept waste until approximately the end of 2023 or early 2024 based on current disposal rates and approved capacity (volume-based).

In the last 20 years, the City has invested millions of dollars to enhance and upgrade the infrastructure at the landfill. These upgrades have included improvements to the stormwater management ponds, leachate collection system, expansion of landfill gas collection and flaring system and the supply of municipal water to the landfill. The City is committed to continue to improve the operation of the landfill by taking reasonable efforts to reduce or address negative effects of the W12A Landfill Site for the remainder of the approved capacity.

As part of the design features for the proposed expansion of the W12A Landfill Site, additional technical features are being proposed including enhanced control of leachate mounding via installation of finger drains; enhanced landfill gas and odour control via the use of horizontal landfill gas collectors during the active phase of landfilling followed by installation of permanent vertical landfill gas extraction wells once areas of the expanded site are completed; additional onsite leachate storage capacity to provide more control on how much leachate is pumped for disposal during periods of extended precipitation; and additional onsite berms to better control noise emissions for nearby sensitive receptors.

In the mid-2000s, it was determined that developing a community enhancement and mitigative measures program as part of the City's overall efforts to help reduce or address the negative effects of the landfill on the local community was a key step as part of the W12A Landfill Area Study (2005-2006). The W12A Landfill Community Enhancement and Mitigative Measures Program (CEMMP) was developed over a three year period between 2006 and 2009. The program was approved by Municipal Council in May 2009. The steps in the development of the CEMMP included:

- Review comments of area residents
- Review other landfill policies
- Preparation of Draft Guiding Principles
- Preliminary input from the community
- Revisions to Draft Guiding Principles
- Stakeholder meetings
- Updates on other landfill policies
- Additional stakeholder meetings
- Preparation of alternative Draft Mitigative Measures and Policies
- Review of additional comments
- Selection of Preferred Mitigative Measures and Policies
- Several public meetings at Environment & Transportation Committee (a Standing Committee of Council, now called the Civic Works Committee)
- Additional direction from Council and final Council approval

2.0 CURRENT W12A LANDFILL COMMUNITY ENHANCEMENT AND MITIGATIVE MEASURES PROGRAM (CEMMP)

The CEMMP is part of the City's overall effort to reduce and address the negative effects of the W12A Landfill on neighbouring properties surrounding the W12A Landfill. Work on developing the CEMMP began in 2006 and was approved by Council in 2009. The Program was updated in 2010 and again 2014. The program consists of five programs or actions:

1. Property Value Protection Plan
2. "Right of First Refusal" Program
3. Community Mitigative Measures Fund
4. No Charge Waste Disposal
5. Public Liaison Committee (PLC)

1. Property Value Protection Plan

The property value protection plan requires the City to buy properties in the vicinity of the landfill at fair market value inclusive of a hypothetical assumption that the property is not in proximity to the W12A Landfill or alternatively pay the difference between the fair market value and a bona fide offer. The City has purchased seventeen properties under the property value protection plan. Six properties near the landfill were purchased prior to the establishment of the CEMMP. An additional 21 properties in the vicinity of the landfill remain eligible for the property value protection plan.

2. "Right of First Refusal" Program

Property owners who are part of the "right of first refusal" program are obligated to allow the City to match any bona fide offers received for the property from others. In return these property owners receive an annual payment from the City which varies depending on the distance of their home from the landfill and the amount of garbage received at the landfill in the previous year. About 33 properties are currently eligible for the program.

3. Community Mitigative Measures Fund

The Community Mitigative Measures Fund is used to address special circumstances in the community that are not covered by the other sections of the Community Enhancement and Mitigative Measures Program.

The fund started with an initial balance of \$350,000 in 2009. This represents the amount of money (including inflation and interest) the City would have paid to the former Township of Westminster between 1993 and 2008 had the City not amalgamated the Town less funds already spent on community initiatives from the Sanitary Landfill Reverse Fund (i.e., funding connection to the municipal water system in Glanworth). Beginning in 2009, the fund received \$0.25 per tonne (adjusted for inflation annually) for each new tonne of waste buried at the landfill. The fund currently has a balance of approximately \$900,000. The per tonne fee in 2019 was \$0.30.

Funds in the Community Mitigative Measures Fund can be used to cover the expenses of the W12A Landfill Public Liaison Committee (PLC) and on projects recommended by the W12A Landfill PLC.

4. No Charge Waste Disposal Program

Residents in the rural portion of southern London are not subject to fees or charges for the disposal of residential waste from their property up to 200 kg per week at the landfill.

5. Public Liaison Committee (PLC)

The W12A Landfill PLC serves as a focal point for dissemination, review and exchange of information and monitoring results relevant to the operation of the landfill. The majority of PLC members is made up of persons living near the landfill. The PLC meets regularly and meetings are open to the public.

The PLC is responsible for recommending projects or undertakings to the City that are paid for from the Community Mitigative Measures Fund. The PLC may disburse up to \$15,000 per year from the fund without Council approval on certain items (e.g., technical consultants related to landfill matters, community projects that enhance local social and/or recreational facilities or programs). Projects over \$15,000 must be approved by Council.

**COMMENTS, FEEDBACK, IDEAS REGARDING THE CURRENT W12A
LANDFILL COMMUNITY ENHANCEMENT AND MITIGATIVE MEASURES
PROGRAM (CEMMP)**

3.0 REVIEW OF OTHER COMMUNITIES IN SOUTHERN ONTARIO

Staff contacted other large municipal and private landfills in southern Ontario to update information collected on community enhancement and mitigative measures in 2006 when the City’s CEMMP was developed. The updated information is summarized in Table 1. Further details are provided in Appendix A.

Table 1: Community Enhancement and Mitigative Measures Programs at Landfills in Southern Ontario

Municipality/ Company	Landfill	Most Recent Approval for Landfill Capacity	Property Value Protection Plan	Direct Payments to Residents	Community Trust Fund (or Equivalent)
Publically–owned (Municipal) Landfill Sites (large)					
City of London	W12A	1976	✓	✓	✓
City of Brantford	Mohawk Street	1974	✗	✗	✗
Essex-Windsor Solid Waste Authority	EWSWA Regional	1997 (expansion)	✓	✓	✗
Region of Halton	Halton	1989	✗	✗	✗
City of Hamilton	Glanbrook	1979	✗	✗	✗
Region of Niagara	Humberstone	2015 (expansion)	✗	✗	✗
	Road 12	2007 (expansion)	✓	✗	✗
City of Ottawa	Trail Road	2005 (expansion)	-	-	-
County of Oxford	Salford	1983	✗	✗	✗
City of Peterborough	Bensfort Road	2002 (expansion)	✓	✓	✗
City of Toronto	Green Lane	2006 (expansion)	✓	✗	✓
Region of Waterloo	Waterloo	1991 (expansion)	✓	✗	✗
Private (large) Landfill Sites					
GFL Environmental	Moose Creek	1999, EA underway	-	-	-
Taggart Miller	Ottawa	2017	✓	✓	✓
Terrapure	Stoney Creek	2019 (expansion)	✗	✗	✓
Waste Management	Twin Creeks	2008 (expansion)	✓	✓	✓
Waste Connections	Ridge	1998 (expansion) EA submitted	✓	✓	✓
	Navan Road	2007 (expansion)	✓	✗	✓
Walker Industries	South	2008 (expansion)	✓	✓	✗
	Southwestern	EA underway (proposed)	✓	✓	To be determined

COMMENTS, FEEDBACK, IDEAS REGARDING THE REVIEW OF OTHER COMMUNITIES IN SOUTHERN ONTARIO (INCLUDING APPENDIX A)

4.0 REVIEW OF CURRENT W12A LANDFILL COMMUNITY ENHANCEMENT AND MITIGATIVE MEASURES PROGRAM (CEMMP)

Key aspects of the City’s CEMMP are summarized below and potential revisions to the program discussed.

4.1 Measuring Distance from the W12A Landfill

Current Program

The CEMMP provides access to the Property Value Protection Plan and the “Right of First Refusal “ program based on distance from the landfill property boundary. The distance from the landfill property boundary is determined by combining the approved disposal area for the landfill (the area where waste is permitted to be disposed of) and the onsite buffer area (the area that includes ancillary features such as the buildings, screening berms, etc.). The on-site buffer varies from 30 to 90 metres.

Potential Revisions

For the proposed landfill expansion, the on-site buffer between the waste footprint and the property boundary will vary from 90 metres (west, east and south sides) to 330 metres (north side). Given that most of the nuisance impacts from a landfill come from the approved disposal area, it may not be appropriate to determine access to programs based on distance from the landfill’s property boundary. Options for determining access to programs are listed in Table 2.

Table 2: Current (Italics) and Options for Revising Measuring Distance from the Landfill

Option	Comments
<i>Distance from original landfill property boundary</i>	<i>No change to current policy. Consistent with historical measurements (on-site buffer ranges from 30 metres to 90 metres).</i>
Distance from landfill’s new (proposed) property boundary	No change to current policy except the buffer range distances have changed from 30 to 90 metres to 90 metres to 330 metres.
Distance from landfill’s waste disposal area	Most of the nuisance impacts from within waste disposal area (no on-site buffer used in measuring the overall distance).
Distance from landfill’s new property boundary or 100 metres whichever is less	Results in similar on-site buffer to current program (ranges from 90 metres to 100 metres) and consistent with recommended minimum buffer by MECP.

COMMENTS, FEEDBACK, IDEAS REGARDING MEASURING DISTANCE FROM THE EXANDED W12A LANDFILL

4.2 Property Value Protection Plan

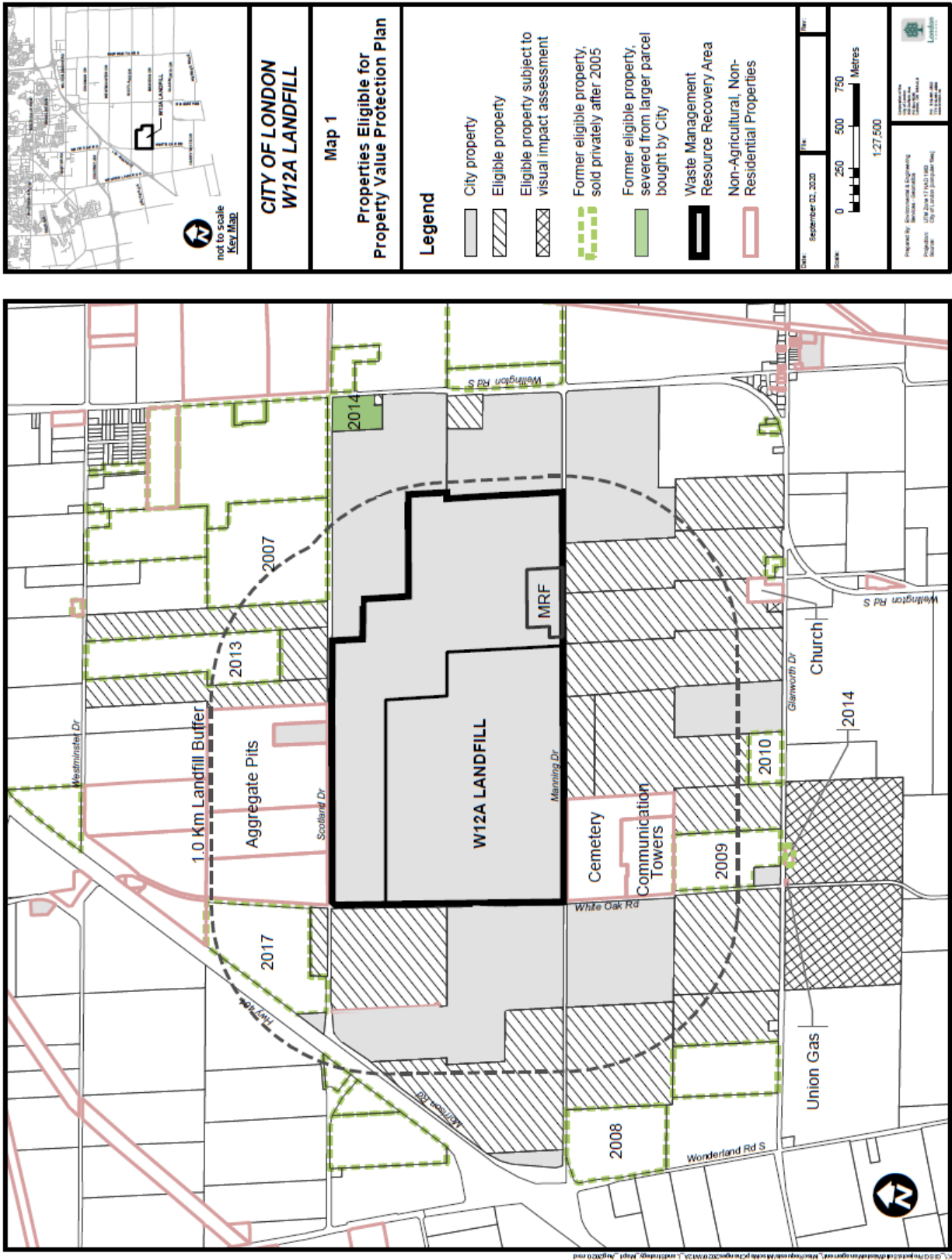
Current Program

The City offers property value protection to properties purchased prior to September 2006 and in the following context (eligibility criteria):

- 1. properties within the block of land bounded by White Oak Road, Manning Drive, Scotland Drive and Wellington Road;
- 2. residential or agricultural properties that are south of the 401, within a kilometre of the landfill; and,
- 3. residential or agricultural properties within 1.5 kilometres of the landfill with a residence having a significant visual impact.

There are currently 21 eligible properties (3 of which are eligible subject to determining if a significant visual impact exists) for the Property Value Protection Plan. When the program started the number was 44 properties. Eligible properties are shown in Map 1.

Map 1: Properties Eligible for the Property Value Protection Program



Potential Revisions

Eligibility to the property value protection program should continue to be restricted to persons who purchased their residential or agricultural property before August 31, 2006. Persons purchasing their property before that date may have bought their property expecting that the W12A Landfill would have closed in 2006 based on historical agreements between the City and the former Town of Westminster. By August 31, 2006 the City Council confirmed it planned to keep the landfill open and was in the process of completing an Area Study to provide for long term waste management planning in the area.

Persons purchasing properties after August 31, 2006 would have had the benefit of any price reduction resulting from being near the landfill and would have bought their property knowing about the likely continued existence of the landfill.

Consideration could be given to increasing the area where properties purchased before August 31, 2006 qualify for the property value protection plan given the increased height of the landfill and the potential for a greater visual impact. Only properties which have a house would be considered since properties without a house are considered not to have visual impacts.

It is recommended that there be no change to the first and second condition of eligibility for property value protection and the plan continue to include all properties within the block of land bounded by White Oak Road, Manning Drive, Scotland Drive and Wellington Road and all residential and agricultural properties within one kilometre of the landfill

Potential options for revising the third condition of eligibility to the property value protection that would enlarge the eligible area are listed in Table 3.

Table 3: Current (*Italics*) and Options for Revising Area Eligible for Property Value Protection Program (Within 1.5 Kilometres of the Landfill)

Option	Comments	# of Properties Added/Removed from Program
<i>Residential or agricultural properties within 1.5 kilometres of the landfill with a residence having a significant visual impact.</i>	<i>Current policy in use</i>	<ul style="list-style-type: none">• 21 properties currently eligible
Properties south of the 401 with a residential dwelling within 1.5 kilometres of a landfill	Will remove properties that are within 1.5 kilometres but whose house is more than 1.5 kilometres from the program. Eliminates the visual impact requirement for access to program.	<ul style="list-style-type: none">• 1 removed• 6 added• Net change of plus 5
Properties south of the 401 within 1.5 kilometres of a landfill with residential dwelling	Eliminates the visual impact requirement for access to program. This is similar to the wording currently used for the right of first refusal payments (right of first refusal does not exclude properties north of the 401).	<ul style="list-style-type: none">• 12 added
Properties south of the 401 with a residential dwelling within 1.5 kilometres of a landfill which have an increased visual impact	Will remove properties that are within 1.5 kilometres but whose house is more than 1.5 kilometres from the program. Reduces visual impact requirement for access to program.	<ul style="list-style-type: none">• 1 removed• 5 added• Net change of plus 4
Properties south of the 401 within 1.5 kilometres of a landfill with residential dwelling which have an increased visual impact	Reduces the visual impact requirement for access to program.	<ul style="list-style-type: none">• 11 added

COMMENTS, FEEDBACK, IDEAS REGARDING PROPERTY VALUE PROTECTION PLAN

4.3 Right of First Refusal Program

Current Program

The City offers to pay an annual fee for the “right of first refusal” on the sale of:

- properties within the block of land bounded by White Oak Road, Manning Drive, Scotland Drive and Wellington Road;
- residential or agricultural properties within 1.5 kilometres of the landfill with a residence; or,
- agricultural properties within 1.0 kilometres of the landfill.

Homeowners who purchased their home after August 2006 do not qualify.

The annual fee paid is based on distance from the landfill and the amount of waste being received. Payments are increased the closer the house is to the landfill and increased as the amount of waste going to the landfill increases. The level of payments range from approximately \$2,900 (Group 3) to \$8,800 (Group 1) per year.

Based on details until the end of 2019, there are currently 32 eligible properties and the majority have joined the program (Table 4). The current total annual payments are about \$78,500 based on the properties that are participating. Eligible properties are shown in Map 2.

Table 4: “Right of First Refusal” Program (2020)

Group	Eligible Properties		Properties Currently Participating	Approximate Annual Payment
	Program Start	Currently Eligible		
1. House within 500 m	10	3	2	\$8,800
2. House between 500 & 1,000 m	3	0	0	\$5,900
3. House between 1,000 & 1,500 m	46	29	21	\$2,900
Total	59	32	23	

Other Programs in Southern Ontario

Most private landfills, but only a few municipal landfills, provide annual payments to property owners in the vicinity of the landfill. The current City program provides funds to property owners further from the landfill than most other landfills. The level of funding is generally higher than payments in other programs.

Map 2: Properties Eligible for Right of First Refusal Program



Potential Revisions

The current approach seems reasonable but consideration could be given to adjusting the payment to two groups of home owners.

The program could include all homeowners who live on Manning Drive prior to August 2006 as Group 1 homes. In 2016, the City amended its Environmental Compliance Approval to allow waste collection vehicles to use the new intersection at Highway 401 and Wonderland Road South to access Manning Drive and approach the landfill entrance from the west. Waste collection vehicles were previously prohibited from this road. There are two residential properties on the new haul route and both properties are currently considered Group 3 homes which receive the lowest annual payment for their “right of first refusal”. Consideration could be given to making these Group 1 properties given the increase in traffic due to the landfill.

Homeowners who purchased their home after August 2006 do not qualify for the “right of first refusal”. Obtaining “right of first refusal” on these properties may be warranted given the continuation of the landfill. Consideration could be given to making these Group 3 properties or creating a new Group 4 level.

COMMENTS, FEEDBACK, IDEAS REGARDING RIGHT OF FIRST REFUSAL PROGRAM

4.4 Community Mitigative Measures Fund

Current Program

The Community Mitigative Measures Fund is to address any real or perceived nuisances that may not be reasonably mitigated. Nuisance impacts include odours, noise, dust, litter and traffic. The Fund:

- has a current balance of about \$900,000 and received approximately \$0.30 per tonne in 2019. The payment per tonne increases with inflation. Table 5 contains Fund payment details over the last five years; and,
- future payments (in today’s dollars) will total approximately an additional \$3,000,000 over 25 years.

Table 5: Annual Payments to the Community Mitigative Measures Fund (2015 to 2019)

Year	Number of Tonnes Managed at W12A Landfill	Fee Paid Per Tonne	Total
2015	214,950	\$0.28	\$60,186
2016	237,391	\$0.28	\$66,496
2017	271,566	\$0.29	\$78,754
2018	287,230	\$0.30	\$86,169
2019	301,357	\$0.30	\$90,407

As previously noted, the PLC is responsible for recommending projects or undertakings above the annual allocation of \$15,000 to the City that are paid for from the Community Mitigative Measures Fund. To date, approximately \$195,000 has been spent on two projects. Approximately \$180,000 towards a Point of Source Water Treatment Program in 2016 and \$15,000 towards the Glanworth Library in 2013.

Other Programs in Southern Ontario

Most private landfills, but only one other municipal landfill, have a Community Trust Fund (or Equivalent) like London. The level of funding is consistent with the level of funding at other landfills that have local community trust funds.

It is noted that most private landfills provide funding directly to the local municipality which is not applicable to municipal landfills.

Potential Revisions

Consideration could be given to increasing the per tonne fee.

Concerns have been expressed by some members of the PLC that the money from Community Mitigative Measures Fund could hypothetically be spent on initiatives anywhere. Consideration could be given to placing geographical restrictions on where the money could be spent. This could be within a set distance of the landfill (e.g., 2 kilometres) or within an area such as shown on Map 3.

COMMENTS, FEEDBACK, IDEAS REGARDING COMMUNITY MITIGATIVE MEASURES FUND

4.5 No Charge Waste Disposal

Current Program

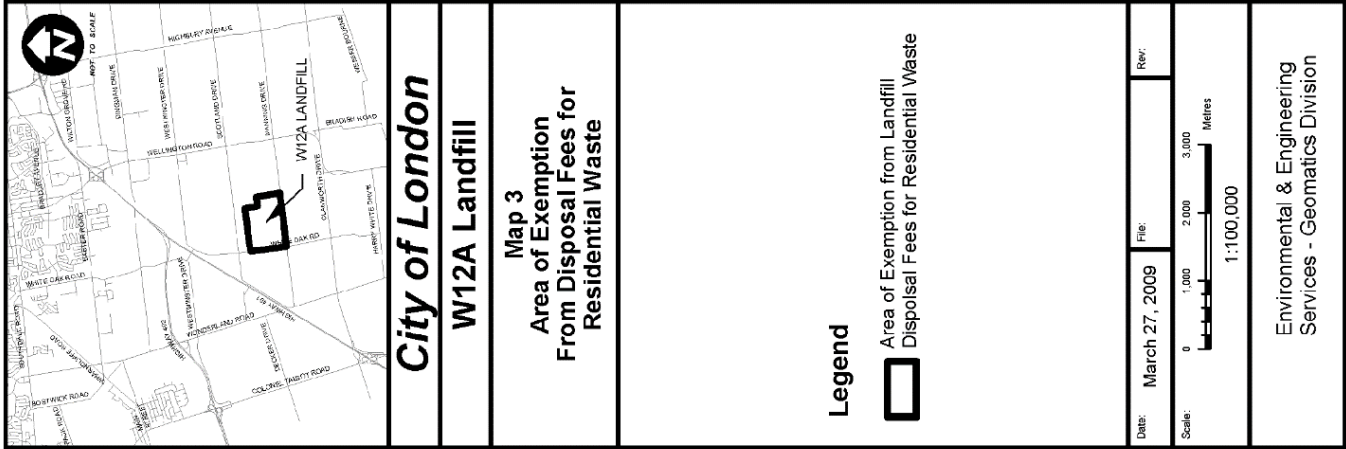
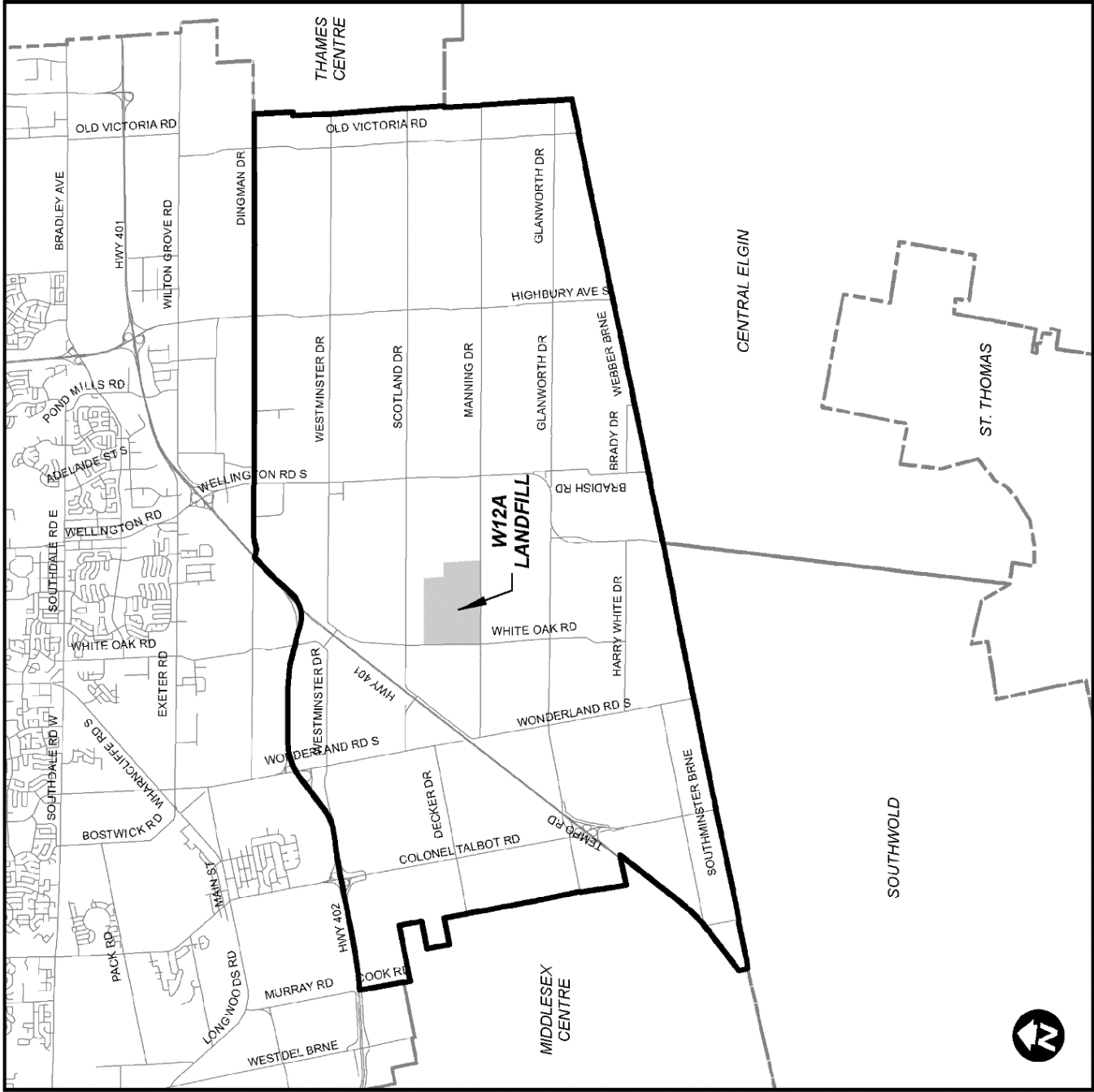
Residents in the area outlined in Map 3 are not subject to fees or charges for the disposal of residential waste from their property up to 200 kg per week at the landfill. These same households also have access to the curbside garbage collection program and all other waste management services.

Potential Revisions

The area eligible for free disposal and the quantity eligible seem reasonable. No revisions are proposed to this initiative.

COMMENTS, FEEDBACK, IDEAS REGARDING NO CHARGE WASTE DISPOSAL

Map 3: Area Exempt from Disposal Fees for Residential Waste



4.6 Public Liaison Committee (PLC)

Current Program

An effective PLC can serve as a focal point for dissemination, review and exchange of information and monitoring results relevant to the operation of the landfill. The W12A Landfill PLC has a Terms of Reference that governs its operation (Appendix B). The PLC is open to anyone in the City but the majority of members must be made up of residents living close to the landfill.

Potential Revisions
No revisions are proposed to the program.

COMMENTS, FEEDBACK, IDEAS REGARDING THE PLC

4.7 Potential Additions to the CEMMP and/or Landfill Operating Commitments

Broader Community Enhancements
Currently the broader area around the W12A Landfill Site has access to free disposal up to 200 kg per week. The area is best defined as being south of Highway 401 (see Map 3). Within this area and potentially outside this area, community members and/or businesses can make requests to the PLC to access the existing Community Mitigative Measures Fund.

Some private sector landfill sites provide funds that go beyond the immediate area of the landfill and support community based projects (e.g., parks projects, not-for-profit group projects, leisure events, etc.). In some cases these funds are used for projects that benefit people well beyond the immediate area of a landfill.

Should further enhancements be desired and/or supported in a broader area, ideas and criteria could include:

- Supporting projects that benefit the maximum number of residents and businesses south of Highway 401 (e.g., beautification projects along Wellington Road South; community projects that enhance community pride, etc.);
- Supporting partnership projects whereby funds are provided by others to create larger, more impactful projects;
- Ensuring that geographic boundaries as to where projects can occur is defined along with other criteria
- Funding could be obtained as a per tonne fee in a similar manner as the Community Mitigative Measures Fund which generally is focused on projects in close proximity to the W12A Landfill;
- Approval of the projects in a new category could be undertaken by the Civic Works Committee and Council twice per year as these initiatives are part of the broader community more so than neighbours of the landfill;

Potential Nuisance Control Measures
There are a number of nuisance control measures that have be discussed at the PLC over the years (Table 5). Some of these nuisance control measures could be included in the CEMMP.

Table 5: Potential Neighbourhood Nuisance Control Measures

Program	Current	Comments/ Potential Revisions
Off-site litter control	<ul style="list-style-type: none">• Twice daily inspections of White Oak/Scotland/ Wellington/Manning block• Daily inspections: Manning from White Oak to Wonderland and White Oak from Scotland to Church• Litter pick-up as required	<ul style="list-style-type: none">• Consider increasing the roads being monitored.
Bird Control – Gulls	<ul style="list-style-type: none">• Bring in hawk as required	<ul style="list-style-type: none">• Bring hawk on a regular/permanent basis.• Consider additional bird control measures such as noise-makers.
Bird Control - Vultures	<ul style="list-style-type: none">• No service in place	<ul style="list-style-type: none">• Proposed pilot project to test ways to protect buildings on private property rejected by PLC.• Consider building habitat in on-site buffer area to keep nesting off private property.
Area Roadway Maintenance (grass cutting)	Responsibility of Transportation, Roadside and Forestry Division	<ul style="list-style-type: none">• Area receives same level of service that other rural areas receive.
Management of City properties and roadways	Responsibility of Realty Services Division	<ul style="list-style-type: none">• Area receives same level of service that other rural areas receive.• Proposal for development of plan to enhance the area that would be jointly funded by the City and the Community Mitigative Measures Fund was rejected by the PLC.
Management of Private Properties	Responsibility of Licensing and Municipal Law Enforcement - By-Law Enforcement Division	<ul style="list-style-type: none">• Area receives same level of enforcement that other rural areas receive.

COMMENTS, FEEDBACK, IDEAS REGARDING POTENTIAL ADDITIONS TO THE CEMMP AND/OR LANDFILL OPERATING COMMITMENTS

5.0 NEXT STEPS, PROPOSED TIMELINE AND HOW TO PROVIDE FEEDBACK

Next Steps and Timeline

It is proposed to seek feedback from stakeholders and report back to CWC at a future meeting in 2021. Stakeholder feedback would include:

- Discussion with the W12A Landfill PLC;
- Information on the potential revisions included in the fourth Open House for the Environmental Assessment for the proposed expansion of the W12A Landfill;
- Information on the City website and GetInvolved website; and
- Direct mailings to residents in the vicinity of the W12A Landfill.

The proposed timeline for this review is between six and nine months, in part, depending on how challenging it is to solicit feedback, answer questions, conduct any new research, etc. during the pandemic.

CWC report	September 22, 2020
Council direction	September 29, 2020
Stakeholder engagement and feedback	October 2020 to March 2021
Update report to CWC	April 2021
Additional stakeholder engagement and feedback (if required)	Spring 2021
Final report to CWC	Spring/Summer 2021

.....

How to Provide Feedback

Feedback, comments and/or questions on this document can be directed to:

In writing, by email to: wroberts@london.ca (Will Roberts)

In writing, by mail to: Will Roberts, Technician, Solid Waste
City of London
300 Dufferin Avenue
P.O Box 5035
London, Ontario N6A 4L9

By telephone: 519 661-2489, ext. 7364 (Will Roberts)

Project Website: <https://getinvolved.london.ca/whywastedisposal>

Appendix A – Summary of Programs at Other Southern Ontario Landfills

Property Value Protection Plans

Community/ Landfill	Who qualifies	Method of Determining Value of Property	How the Process Works
Essex-Windsor EWSWA Regional	<ul style="list-style-type: none"> Property within 1km. Residential property owner within 1.6 km or on haul road. Owned land prior to landfill. 	<ul style="list-style-type: none"> EWSWA and property owner obtain appraisals at EWSWA expense. If the difference is <10%, higher value. If the difference is >10%, appraisers select 3rd appraiser and the average of 3 appraisals paid. 	<ul style="list-style-type: none"> Property owner places on market. Offer higher – no compensation. Offer lower - Landfill has the option of buying at appraised price or paying difference. EWSWA has first right of refusal in any sale.
Niagara Region Road 12 Landfill	<ul style="list-style-type: none"> Property owners within 700 metres of landfill. 	<ul style="list-style-type: none"> Region obtains appraisals. 	<ul style="list-style-type: none"> Homeowner places on market. Offer higher – no compensation. Offer lower – Region has the option of buying at appraised price or paying difference.
City of Peterborough Bensfort Road	<ul style="list-style-type: none"> Property owners with 500 metres. Owned land prior to landfill. 	<ul style="list-style-type: none"> Median of three appraisals plus 10%. All appraisals paid for by City. City selects 1st appraiser, landowner selects 2nd appraiser, appraisers select 3rd appraiser. 	<ul style="list-style-type: none"> Written offers with price adjustments will be given by City to homeowners for a period of five years (after expansion).

Property Value Protection Plans

Community/ Landfill	Who qualifies	Method of Determining Value of Property	How the Process Works
City of Toronto Green Lane	<ul style="list-style-type: none"> Property owners within 1 km. Residential property owners within 2 km. Owned land prior to expansion. 	<ul style="list-style-type: none"> Landfill gets 1st appraisal. Homeowner can accept or obtain 2nd appraisal. Landfill can accept higher of two appraisals or get a third appraisals and pay average. 	<ul style="list-style-type: none"> Homeowner places on market. Offer higher – no compensation. Offer lower - City has the option of buying at appraised price or paying difference.
Waterloo Region Waterloo Landfill	<ul style="list-style-type: none"> Residential property owner within 750 metres. Owned land prior to landfill. 	<ul style="list-style-type: none"> Region and homeowner each get an appraisal, paid for by Region. If within 10%, the average price is used. If difference is > 10%, the average will be used (if acceptable to both parties) or a third appraisal will be obtained by the Region. The average of the two closest appraisals will be used. 	<ul style="list-style-type: none"> Region purchases property for fair market value, less 6% for real estate commission. Region then lists property for sale; current homeowner can stay in the house for \$1/month until the property is sold.
Taggart Miller Ottawa (proposed)	<ul style="list-style-type: none"> Residential property owner within 5 kilometres. 	<ul style="list-style-type: none"> Taggart Miller obtains 1st appraisal. Homeowner can accept or get 2nd appraisal (cost split). Average appraisals if < 10% apart. If > 10%, the two appraisers select a third appraiser. 	<ul style="list-style-type: none"> Homeowner places on market. Offer higher – no compensation. Offer lower – Taggart Miller has the option of buying at appraised price or paying difference.
Waste Management Twin Creeks Landfill	<ul style="list-style-type: none"> Land owners within predicted significant visual impact zone. Owned land prior to landfill. 	<ul style="list-style-type: none"> Waste Management obtains appraisal. If disagreement, second appraisal conducted, at landfill expense, and average taken of two. 	<ul style="list-style-type: none"> Landowner places on market for 12 months. Waste Management can buy property at fair market value or pay the difference between highest offer and identified market value.

Property Value Protection Plans

Community/ Landfill	Who qualifies	Method of Determining Value of Property	How the Process Works
Waste Connections Ridge (Proposed)	<ul style="list-style-type: none"> Properties determined to have highest potential (level 1) for off-site impact as the result of a socioeconomic impact assessment. All properties are residential properties within 500 metres. May add level 2 properties. 	<ul style="list-style-type: none"> Independent property value assessment based on comparable properties not in proximity to the landfill. 	<ul style="list-style-type: none"> First right of refusal on property purchase. Waste Connections has the option of buying at appraised price or paying difference between market value and assessed value if necessary.
Waste Connections Navan Landfill	<ul style="list-style-type: none"> Residential property owners within a specified area (all properties within 500 metres). 	<ul style="list-style-type: none"> Independent property value assessment based on comparable properties. 	<ul style="list-style-type: none"> Waste Connections has the option of buying at appraised price or paying difference between market value and assessed value if necessary.
Walker Industries Niagara South Landfill ^a	<ul style="list-style-type: none"> Details not provided. 	<ul style="list-style-type: none"> Details not provided. 	<ul style="list-style-type: none"> Details not provided.
Walker Industries Proposed Southwestern Landfill (Proposed in EA Documents)	<ul style="list-style-type: none"> Residential or agricultural property owners within 500 metres. Owned land prior to landfill. 	<ul style="list-style-type: none"> Property owner obtains an appraisal from certified appraiser. If Walker doesn't agree with the property owner's appraisal, Walker gets its own appraisal. If property owner doesn't agree with Walker's appraisal, a third and independent appraisal is obtained and the value of the property determined by averaging all three appraisals. 	<ul style="list-style-type: none"> Walker has option to purchase the property or property owner markets the property. If property owner doesn't get appraised value from the market, Walker will pay the difference.

Notes a) There are other operations on the same property (including a quarry and organics management facility) that potentially create nuisance effects.

Direct Payments to Property Owners

Community/ Landfill	Who qualifies	Amount of Payment	How the Process Works
Essex-Windsor EWSWA Regional	<ul style="list-style-type: none"> ▪ Property owners within 0.5 km. ▪ Residential property owners with 1km or on haul route. 	<ul style="list-style-type: none"> ▪ \$0.30/tonne landfilled in 2020. ▪ Indexed to inflation. 	<ul style="list-style-type: none"> ▪ Fund divided equally among all qualifying properties. ▪ Subsequent owners and owners of new residences share in the fund.
City of Peterborough Bensfort Road	<ul style="list-style-type: none"> • Landowners with 1.0 km. • Owned land prior to landfill. 	<ul style="list-style-type: none"> ▪ \$5,000/year per landowner if within 0.5 km. ▪ \$2,500/year per landowner if within 1.0 km. ▪ Long term tenants of land acquired or expropriated may be compensated (no fixed amount). 	<ul style="list-style-type: none"> ▪ Owner must provide a release from any nuisance related claims.
Waste Management Twin Creeks Landfill	<ul style="list-style-type: none"> • Homeowners within impact zone for 2 or more nuisance impacts (dust, noise, odour). • Total of 15 properties all located within 1 kilometre of landfill and/or on primary haul route. 	<ul style="list-style-type: none"> ▪ Details not provided. 	<ul style="list-style-type: none"> ▪ Details not provided.
Waste Connections Ridge (Proposed)	<ul style="list-style-type: none"> ▪ Properties determined to have potential for off-site impact as the result of a socioeconomic impact assessment. 	<ul style="list-style-type: none"> ▪ \$X/tonne landfilled. ▪ Details not provided. 	<ul style="list-style-type: none"> ▪ Residents are divided into high, medium and low potential impact based on socioeconomic study. Higher tiers gets a higher percentage of payment.
Niagara South Landfill ^a	<ul style="list-style-type: none"> ▪ Details not provided. 	<ul style="list-style-type: none"> ▪ Details not provided. 	<ul style="list-style-type: none"> ▪ Details not provided.

Direct Payments to Property Owners

Community/ Landfill	Who qualifies	Amount of Payment	How the Process Works
Walker Industries Proposed Southwestern Landfill (Proposed in EA Documents)	<ul style="list-style-type: none"> Envisioned where residual nuisance effect can't be mitigated (one property). Details to be determined at a later date. 	<ul style="list-style-type: none"> Details to be determined at a later date. 	<ul style="list-style-type: none"> Details to be determined at a later date.

Notes a) There are other operations on the same property (including a quarry and organics management facility) that potentially create nuisance effects.

Community Trust Fund (or Equivalent)

Community/ Landfill	Amount of Funding	Method for Determining Use of Funds	Other
Toronto Green Lane	<ul style="list-style-type: none"> 5% of gross landfill revenue. 	<ul style="list-style-type: none"> Local directors decide how money will be spent. 	<ul style="list-style-type: none"> -
Taggart Miller Ottawa (proposed)	<ul style="list-style-type: none"> \$0.47 per tonne. 	<ul style="list-style-type: none"> To be administered by a new community based group. 	<ul style="list-style-type: none"> -
Terrapure Stoney Creek Landfill	<ul style="list-style-type: none"> \$0.44 per tonne. 	<ul style="list-style-type: none"> Fund is administered by a third-party group (Heritage Green Community Trust) who determined allocation of funding in the community. 	<ul style="list-style-type: none">
Waste Connections Ridge (Proposed)	<ul style="list-style-type: none"> Amount is determined by X/tonne landfilled minus direct payments to property owners. 	<ul style="list-style-type: none"> Fund is administered by a third-party group of residents who determined allocation of funding in the community. 	<ul style="list-style-type: none"> -

Community Trust Fund (or Equivalent)

Community/ Landfill	Amount of Funding	Method for Determining Use of Funds	Other
Waste Connections Navan Landfill	<ul style="list-style-type: none">▪ \$0.44 per tonne.	<ul style="list-style-type: none">▪ Fund is administered by a third-party group (Friends of Mer Bleue) who determined allocation of funding in the community.	<ul style="list-style-type: none">▪ -
WM – Twin Creeks Landfill	<ul style="list-style-type: none">▪ \$ provided annually.	<ul style="list-style-type: none">▪ Funds administered through Community Fund Committee.	<ul style="list-style-type: none">▪ -
Walker Industries Proposed Southwestern Landfill	<ul style="list-style-type: none">▪ To be determined.	<ul style="list-style-type: none">▪ To be determined.	<ul style="list-style-type: none">▪ Not noted in the EA document but will be considered as the EA process moves forward.

COMMENTS, FEEDBACK, IDEAS REGARDING APPENDIX A

Appendix B

Terms of Reference for the W12A Landfill Public Liaison Committee



City of London W12A Landfill
London, Ontario

Public Liaison Committee

TERMS OF REFERENCE

1. BACKGROUND

1.1. Establishment of a Public Liaison Committee (PLC, Committee)

This is a Terms of Reference for the establishment and operation of a Public Liaison Committee (PLC) to advise the City of London (Owner) on the operation of the W12A Landfill Site (Site), located at 3502 Manning Drive, London, ON.

Establishment and operation of the PLC is a component of the W12A Landfill Site Community Enhancement and Mitigative Measures Program, adopted by the City of London, which is committed to a positive and constructive relationship with the general public and with the owners and tenants of properties located in the vicinity of the Site.

1.2. Approval of Terms of Reference

This Terms of Reference and any future amendments thereto, shall be subject to review by the PLC and in consultation with the Owner.

2. NAME OF COMMITTEE

The PLC shall be named the W12A Landfill Public Liaison Committee.

3. MANDATE

3.1. The purpose of the PLC will be to provide for regular communication between the major stakeholders, to identify and remedy issues in a timely and cooperative manner, to enable development of goodwill initiatives with the community, and to recommend projects or undertakings to the Owner that funds in the Community Mitigative Measures Fund should be spent on.

The PLC shall not exercise any supervisory, regulatory or approval functions in connection with the Site or its operation.

For the purposes of carrying out its mandate, members of the PLC shall have reasonable access to the Site during regular business hours, subject to health and safety requirements and the fair and reasonable availability of representatives of the Owner to accompany PLC members while on-Site. Members are asked to confirm their intention to visit the Site ahead of time.

3.2. The PLC's responsibilities shall include:

- Hearing deputations from any member of the public pertaining to Site operations.
- Reviewing for its purpose necessary technical documents pertaining to the operation of the Site.
- Acting as a liaison between and among the public (including owners/tenants of properties around the Site), the Owner and the Ministry of the Environment, Conservation and Parks.
- Reviewing and providing comments on the Annual Operating Report submitted by the Owner to the Ministry of the Environment, Conservation and Parks.

- Carrying out their responsibilities under Section 3.0 of the W12A Landfill Community Enhancement and Mitigative Measures Program.
- Initiating neighbourhood enhancement/mitigation projects.
- Implementing public input procedures/participation for area residents.
 - Welcoming the public as observers at meetings.
 - Providing a brief window at the end of meetings for non-member input.
 - Advertising meetings and developing a distribution system to keep interested persons informed.

4. MEMBERSHIP

4.1. Composition of PLC

PLC seats shall be available on the following basis:

- A maximum of 12 members, plus a Chair (13 total).
- When applicable, a Vice-Chair may be appointed.
- Seats are open to any resident of the City of London.
- Members will be selected by the City of London to provide broad representation based on:
 - Reasons for wanting to join
 - Geographical location, and
 - Background.
- The 7 residents or property owners closest to the W12A Landfill (measured from the landfill property boundary) who apply for membership are automatically appointed to the PLC and not subject to term limits.
- All persons applying are automatically appointed to the PLC if 13 or fewer apply.

City staff are a resource to the PLC and will attend meetings as required.

Ministry of the Environment, Conservation and Parks representatives will attend as a resource when available.

4.2. Voting

Voting will occur by simple majority. Simple majority requires a single vote more than half of the votes cast. All members, including the Chair and Vice-Chair, are allowed to participate in all votes. Recorded voting will be used at the request of a member of the committee. Proxy voting will not be allowed.

4.3. PLC Chair and Vice-Chair

A member of the PLC will be elected to serve as the Chair of the Committee. The members of the PLC shall, by vote of a majority of members, elect the Chair of the Committee from the nominated candidate members. The Chair shall serve at the pleasure of a majority of PLC members and the term of office shall coincide with his/her one-year term of membership, at which time it will be subject to renewal by a vote of a majority of PLC members. In accordance with Section 4.4, the Chair may serve for a maximum of three consecutive terms. In the interim, the Chair may be replaced at any time by a vote of the majority of PLC members. The responsibilities and functional conduct of the Chair include:

- To act as a facilitator for the Committee (i.e. call meeting to order, organize meeting conduct, etc.).
- To monitor issues to ensure adequate input and discussion by members.
- To remind the Committee of its mandate, purpose and mission.
- To give clear direction to staff concerning the Committee's priorities.

The Chair may speak to a motion brought forth by a member, but cannot place a motion on the floor themselves. Should the Chair wish to place or move a motion, they must first appoint a member to act as the Chair in their place. Once the vote has taken place, the Chair will resume their responsibilities.

In the interest of sharing administrative responsibilities and allowing PLC members with a potential interest in serving as Chair to gain experience, a position of Vice-Chair shall be established. The filling of the Vice-Chair position is not a mandatory requirement for the function of the PLC and shall be filled on an ad-hoc basis if it is requested. The Vice-Chair position shall be filled by vote of majority of the PLC members.

4.4. Terms of Office

The Terms of Office shall be enforced in accordance with the two scenarios outlined below.

4.4.1 All PLC seats are filled and additional interested potential members are known.

All PLC members shall serve for one year from their initial date of appointment. Members will be able to serve for a maximum of three consecutive terms. Under this scenario the Chair and Vice-Chair positions shall operate as outlined in Section 4.3.

4.4.2 All PLC Seats are not filled and there is no perceived strong public interest

All PLC members shall preserve their seats until the appropriate public interest is regained in order to operate the PLC in accordance with Section 4.4.1. Under this scenario the Chair and Vice-Chair shall maintain their positions unless voted out by a majority of the PLC members.

4.5. Replacement of Members

Members may be replaced on an as-needed basis as a result of resignation or incapacity. Vacancies will be advertised to the public through the local newspaper, City website, current members and local libraries. Members may be removed from the PLC by a vote of a majority of PLC members.

Should the situation arise where all current PLC members are due to be replaced at the same time as the result of maximum terms of office, three members nominated by the PLC shall be permitted to extend their term of office by a maximum of one year to preserve the PLC's knowledge and continuity.

4.6. Removal of Members in the Instance of Non-Participation

In the event that during the term of a sitting member and/or members of the PLC does not attend three consecutive meetings, the City at the request of the Chair will contact the absent member and/or members by mail to request their attendance or written notification of special circumstances which prevent them from attending. If the member and/or members do not respond, and following a fourth missed consecutive meeting, the City will advise the member in writing of the PLC's intention to entertain a motion to declare the aforementioned absent member and/or member's seat(s) vacant.

5. FREQUENCY AND NOTICE OF MEETINGS

5.1. Schedule

The PLC shall meet on the third Thursday of the month, every two months (6 meetings per year) or at the call of the Chair. The PLC may determine an appropriate meeting frequency which may be adjusted over the term, but in any event shall be no less than once per operating year.

Notice of meetings will be communicated to members of the PLC via email and/or by postage addressed mail. Agendas and minutes of meetings will be disseminated to PLC members by email and/or by postage addressed mail 1.5 weeks prior to any scheduled meeting.

5.2. Agenda

An agenda will be prepared prior to each meeting by a City of London designate. The agenda will contain a general outline of all matters to be discussed at the upcoming meeting. No motions can be brought forward on business not listed in the agenda.

5.3. Minutes

Meeting minutes will be recorded by a City of London designate. The minutes will include a brief description on the outcome of agenda topics, any arising action items and voting outcomes.

6. CONDUCT OF MEETINGS

6.1. A quorum shall consist of at least half of the current voting members of the PLC.

6.2. Respect and courtesy shall be observed by all PLC members at all times during meetings. Discussion and debate shall be confined to the agenda and those matters that are within the mandate of the PLC.

6.3. If any member of the PLC or the public is disruptive at a meeting, the Chair has the authority to ask that person to leave the meeting place. If the person refuses to leave, the Chair shall terminate the meeting and, at his/her discretion, call for assistance from the police. Examples of this type of behavior include:

- Interrupting fellow members during discussions
- Intimidation/bullying of other members
- Dominating the discussion on the floor.

6.4. Members are generally allowed to speak to a maximum of five minutes on an individual agenda item. The Chair has the option to extend this time period, depending on the circumstance.

7. AMENDMENT TO THESE TERMS OF REFERENCE

These terms of Reference may be amended from time to time by approval of a majority of members of the PLC and with approval of the Owner.

8. ADMINISTRATIVE COSTS FOR THE OPERATION OF THE PLC

The Owner shall provide for administration costs of operating the PLC including the cost of meeting places and clerical services.

G.05 Open House #4 Materials

WELCOME

to the Fourth Series of Open Houses
Residual Waste Disposal Strategy

Why

Waste?



getinvolved.london.ca/whywastedisposal





Today you will learn about:

Environmental Assessment (EA) for Proposed W12A Landfill Expansion, including:

- The EA Process
- Details about the proposed landfill expansion alternative
- Results from various impact assessment studies (e.g. groundwater, air quality, etc.)
- Next steps in the approval process
- How you can be involved, stay informed and provide feedback



City staff and project consultants are available to answer your questions and discuss the information presented.

getinvolved.london.ca/whywastedisposal





The Proposed Project



Expansion of the W12A Landfill is the overall preferred way to meet London's future waste management planning needs. This is based on the conclusion of a previous waste management planning study.

The Proposed Project includes:

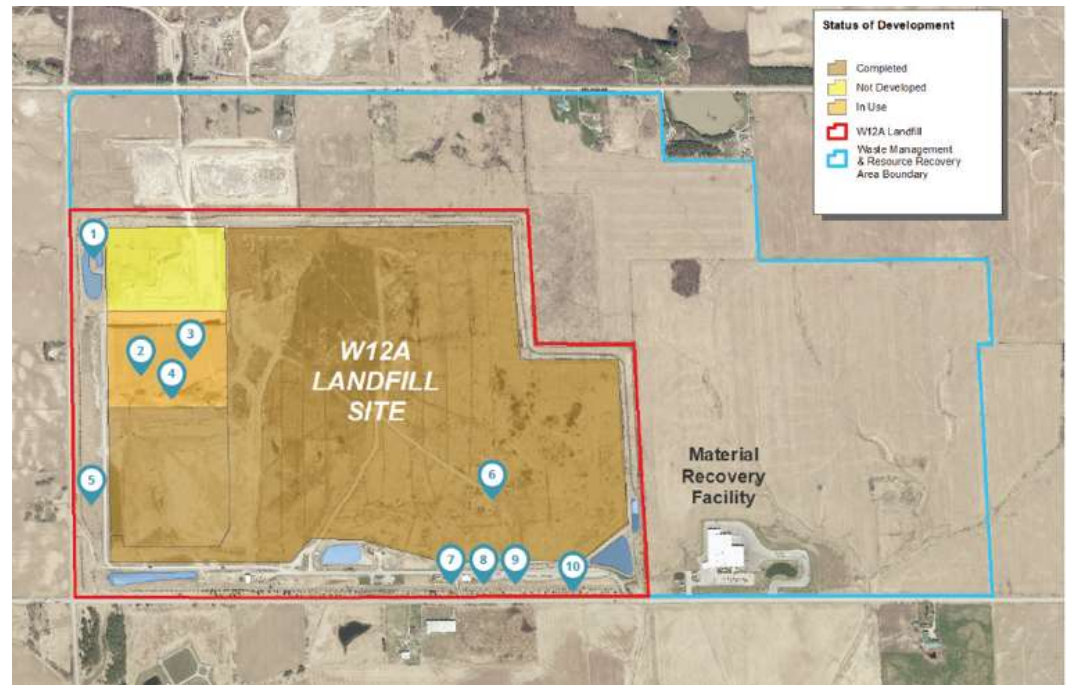
- Expansion of the W12A Landfill (the subject of this EA) within a portion of the Waste Management & Resource Recovery Area
- The landfill expansion alternatives have been compared and a vertical expansion of the existing landfill is the preferred alternative
- Development of a Resource Recovery Strategy to maximize waste reduction, reuse, recycling, composting and resource recovery in an economically viable and environmentally responsible manner



W12A Landfill - Site Features

Approximately 9,000,000 tonnes of waste has been disposed of since 1977

- Current approved waste fill area is 107 hectares
- Average height of 9 to 12 metres above ground
- Has room for another 1,000,000 tonnes of waste
- Expected to reach capacity in 2024





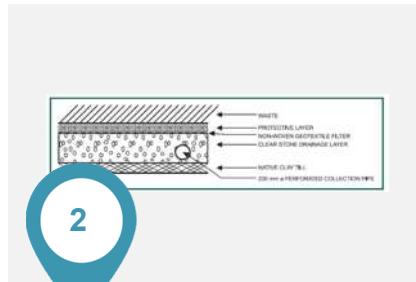
W12A Landfill –Site Features

Stormwater Management Ponds



- 4 ponds
- Provides flow control (flooding) and quality control (sediment removal)

Leachate Collection System



- Leachate is water that has come into contact with the garbage
- More than 10 kilometres of leachate collection pipe and more than 200,000 tonnes of clear stone (drainage layer) installed to date

Portable Litter Fence



- Placed close to where garbage is dumped (tipping face)
- Moved based on wind direction

Fill Area



- Areas where garbage is placed
- Covered with 150 millimetres of material (e.g. soil) at the end of each day



W12A Landfill –Site Features

Perimeter Litter Fence & Vegetation Berm



- 2 kilometres of perimeter litter fence
- 4 kilometres of berms

Landfill Gas Collection System



- 70 landfill collection wells
- More than 5 kilometres of gas collection pipe installed to-date

Landfill Gas Flare



- Flares 1,000 to 1,500 cubic feet (28 to 42 cubic metres) per minute of landfill gas
- Greenhouse gas destroyed equivalent to removing 26,000 to 40,000 cars from London's roads

Household Special Waste Depot



- 8,000 to 12,000 visitors per year
- 350,000 to 450,000 litres collected per year for off-site recycling/disposal

getinvolved.london.ca/whywastedisposal



W12A Landfill –Site Features

Public Drop-Off Depot



- 8,000 to 12,000 visitors per year
- 3,000 to 4,000 tonnes/year collected for composting and recycling

Leachate Pumping Station



- Manages 150,000 to 220,000 cubic metres of leachate per year
- Sends leachate to Greenway Wastewater Treatment Plant to be treated



W12A Landfill – Environmental Monitoring



Private Well Monitoring

15 water wells sampled
annually

Tested in accordance with
the Ministry of the
Environment, Conservation
and Parks regulations and
requirements

There have been no impacts
to the private wells identified



Groundwater Monitoring

25 groundwater monitoring
wells sampled 3 times
per year

Tested in accordance with
the Ministry of the
Environment, Conservation
and Parks regulations and
requirements

There have been no impacts
to the groundwater identified



Surface Water Monitoring

6 drainage ditches and
4 stormwater
management ponds

Sampled 4 times per year
Tested in accordance with
the Ministry of the
Environment, Conservation
and Parks regulations and
requirements

getinvolved.london.ca/whywastedisposal





W12A Landfill – Environmental Monitoring



Landfill Gas Monitoring

2 on-site landfill gas
monitoring wells

Monitored 4 times per year



Leachate Monitoring

3 leachate monitoring wells
sampled 3 times per year

1 pumping station sampled
monthly

Tested in accordance with
the Ministry of the
Environment, Conservation
and Parks regulations and
requirements



Other Monitoring

Odour

Slope inspections

Litter

Weather station

getinvolved.london.ca/whywastedisposal





Addressing Landfill Concerns



Property Values

Current Mitigative Measures

Property value protection plan
Community enhancement fund



Traffic

Current Mitigative Measures

Roadway improvements as required
Dedicated haul routes



Visuals

Screening berms

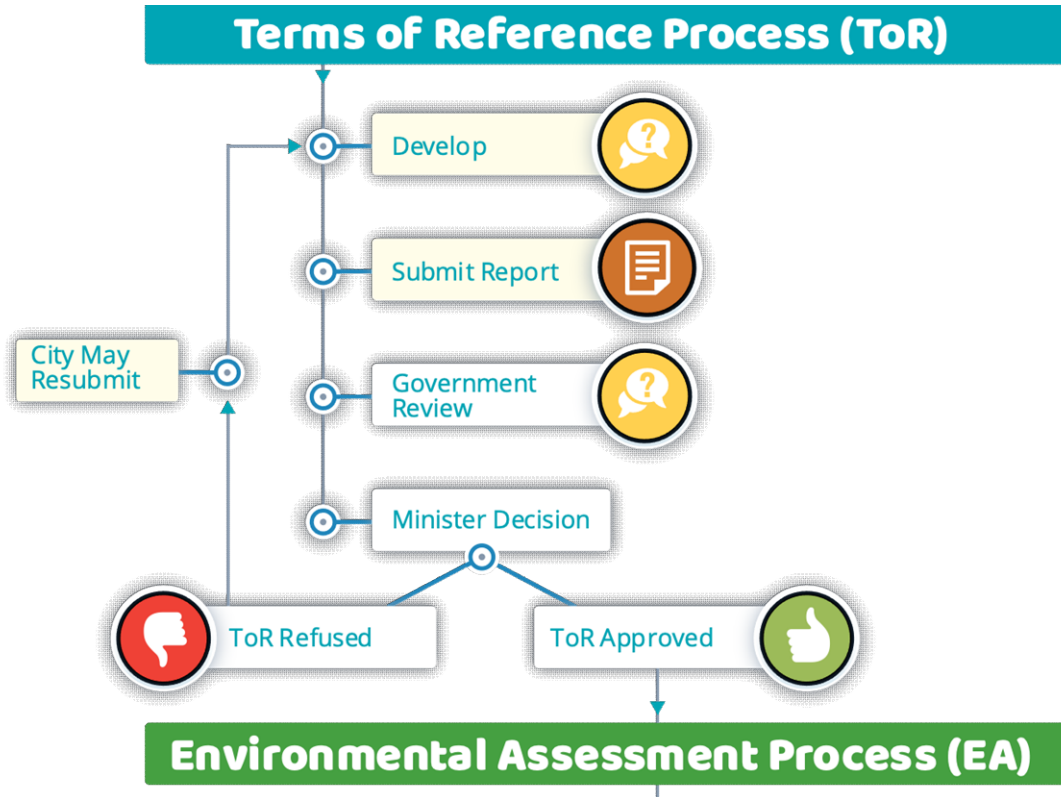
Plant vegetation around perimeter

getinvolved.london.ca/whywastedisposal





Timeline: Environmental Assessment Process

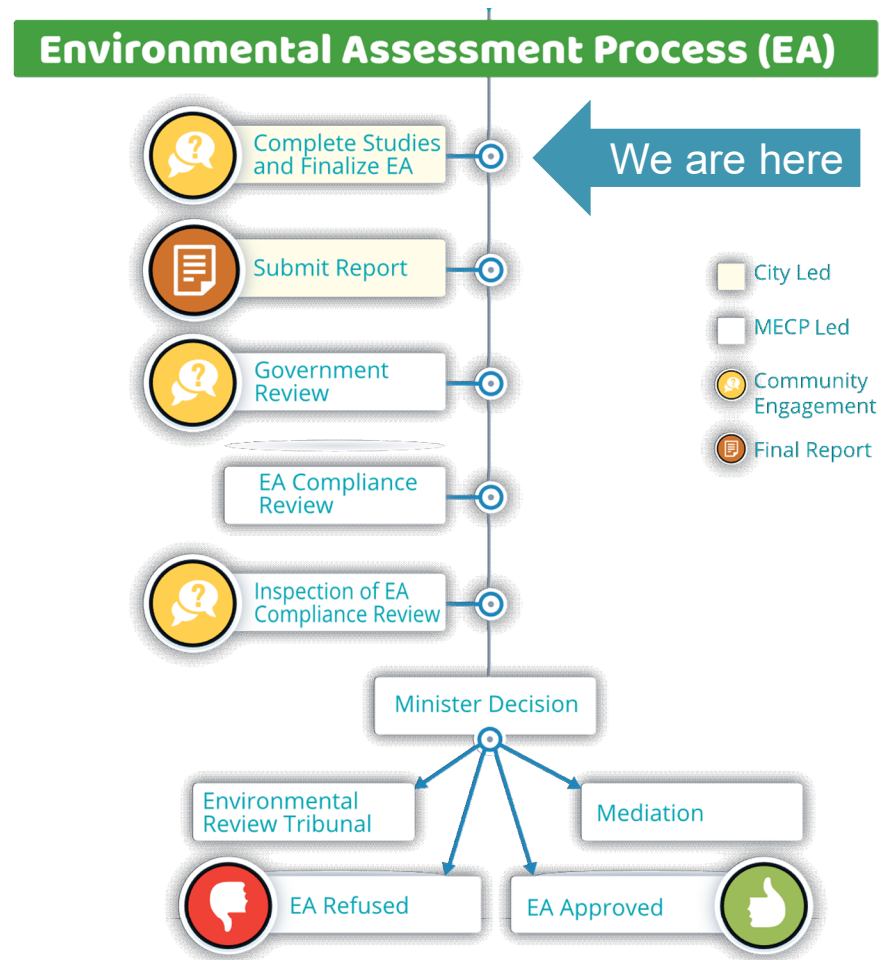


(continued)

getinvolved.london.ca/whywastedisposal



Timeline: Environmental Assessment Process



getinvolved.london.ca/whywastedisposal





Complete Studies and Finalize EA

Steps	Status
1. Characterize the existing environmental conditions	Complete
Work Plans online for review and comment Indigenous community review	
2. Identify the alternatives for landfill expansion (and incorporate conceptual design mitigation measures)	Complete
3. Evaluation of alternatives	Complete
4. Comparison of the alternatives for landfill expansion for each component of the environment and then identify the overall preferred alternative for landfill expansion	Complete
Open House #3 – February 2020 Indigenous community review	
5. Refine the mitigation measures and determine the net effects on the environment of the preferred alternative for landfill expansion	Complete
6. Describe the preferred alternative for landfill expansion	Complete
Open House #4 – Today	
7. Consideration of climate change	90% Complete
8. Cumulative impact assessment	90% Complete
9. Preparation of the EA Study Report	Started, to be completed
Various opportunities will be available to comment on the EA Study Report through the City and the Ministry of Environment, Conservation and Parks (MECP)	



Website
getinvolved.london.ca



Meetings
W12A Landfill PLC, Waste Management CLC, Waste Management Working Group



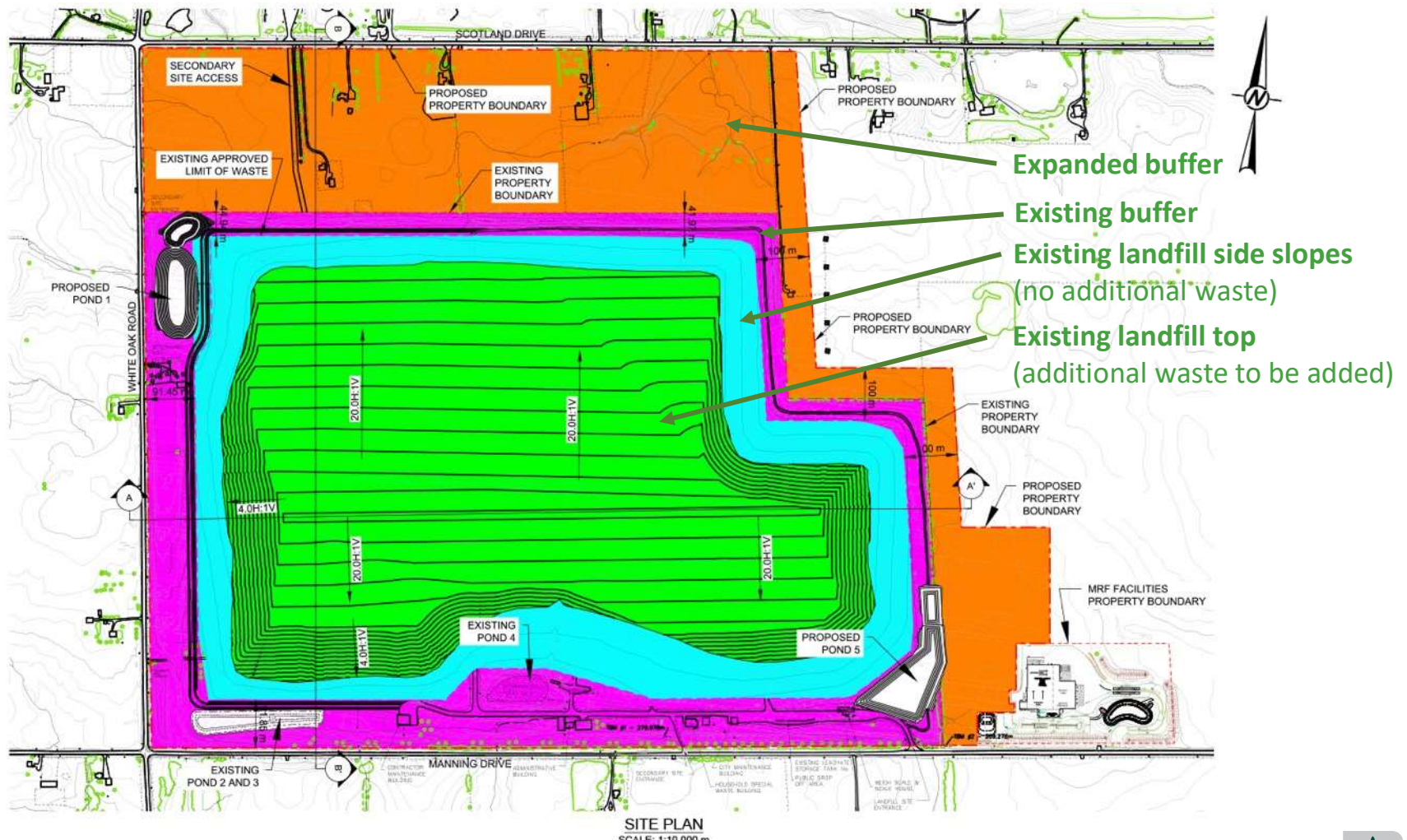
Meet with residents
(if requested)

getinvolved.london.ca/whywastedisposal





Proposed Expansion Design - Vertical Expansion Over Existing Footprint



getinvolved.london.ca/whywastedisposal





Proposed Expansion Design - Vertical Expansion Over Existing Footprint

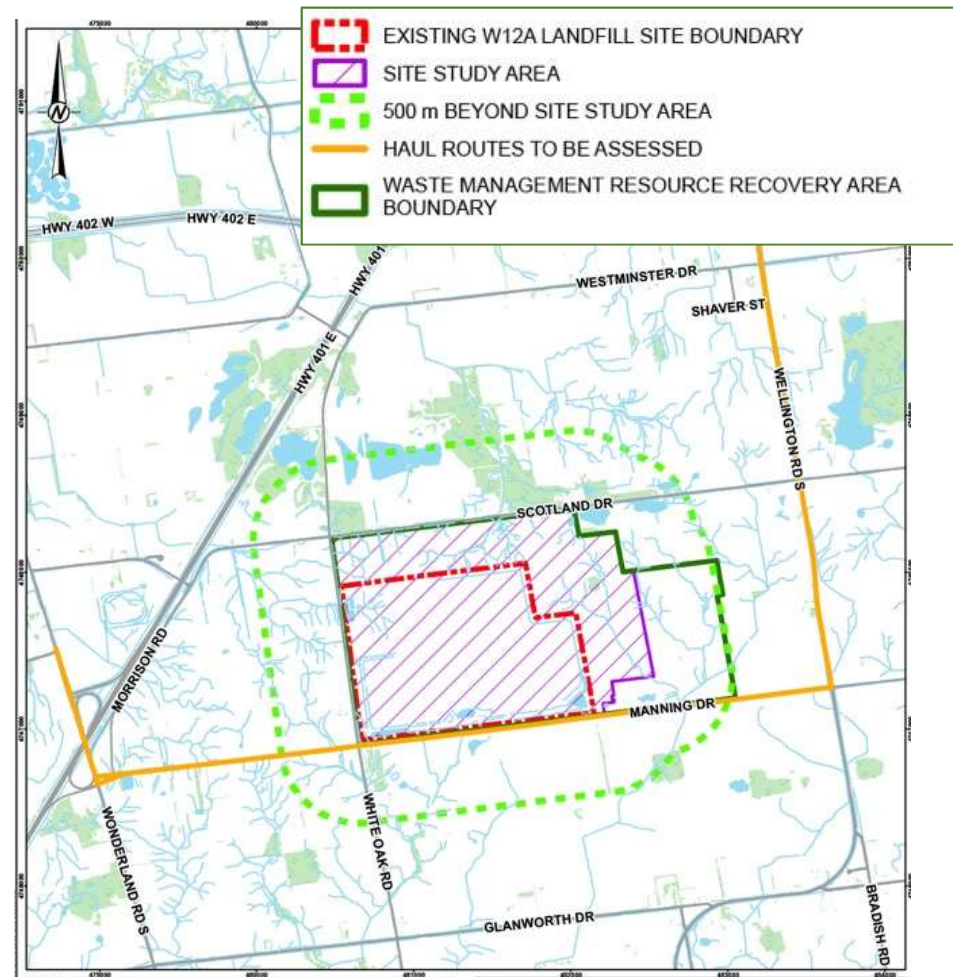
- Approximately doubles capacity (additional 13.8 million m³ of airspace, 9.8 million tonnes)
- Highest part of landfill approximately 43 m above ground elevation (about 14 storeys high)
- On-site buffer land increased to the north (Scotland Drive) and east (minimum of 100 m)
- Reasons for selecting this alternative include:
 - Most protection to groundwater quality off-Site
 - Best alternative to limit odours
 - Least modifications required for stormwater management systems
 - Least potential for air quality, archaeology, agricultural land, terrestrial and aquatic ecosystems, community, noise and land use impacts
 - Lowest cost alternative



Study Areas

Study area for impact assessments was 500 m except for:

- Odour study extends 1.5 km from Site Study Area
- Visual study area extends 5 km from Site Study Area
- Surface water study area extends to drainage boundaries of sub-watersheds
- Cultural heritage study area extends to all parcels within, and adjacent to, the Site Study Area (approximately 500 m)



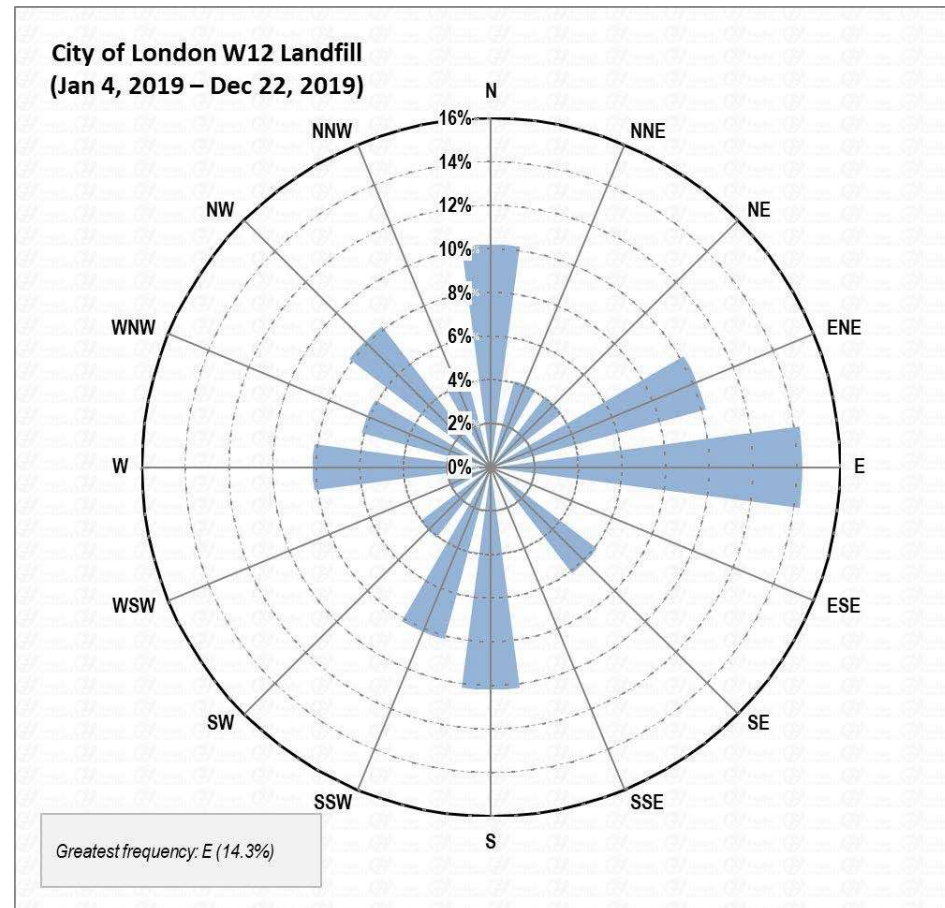


Atmosphere – Air and Odour Impact Assessment

Existing Conditions

- Existing background air quality from Provincial monitoring stations meets applicable Ontario criteria
- 7 sensitive receptor locations have been identified within 500 m of the Site

**Odour Rose for 2019 Odour Complaints
Potentially Attributed to W12A Landfill**

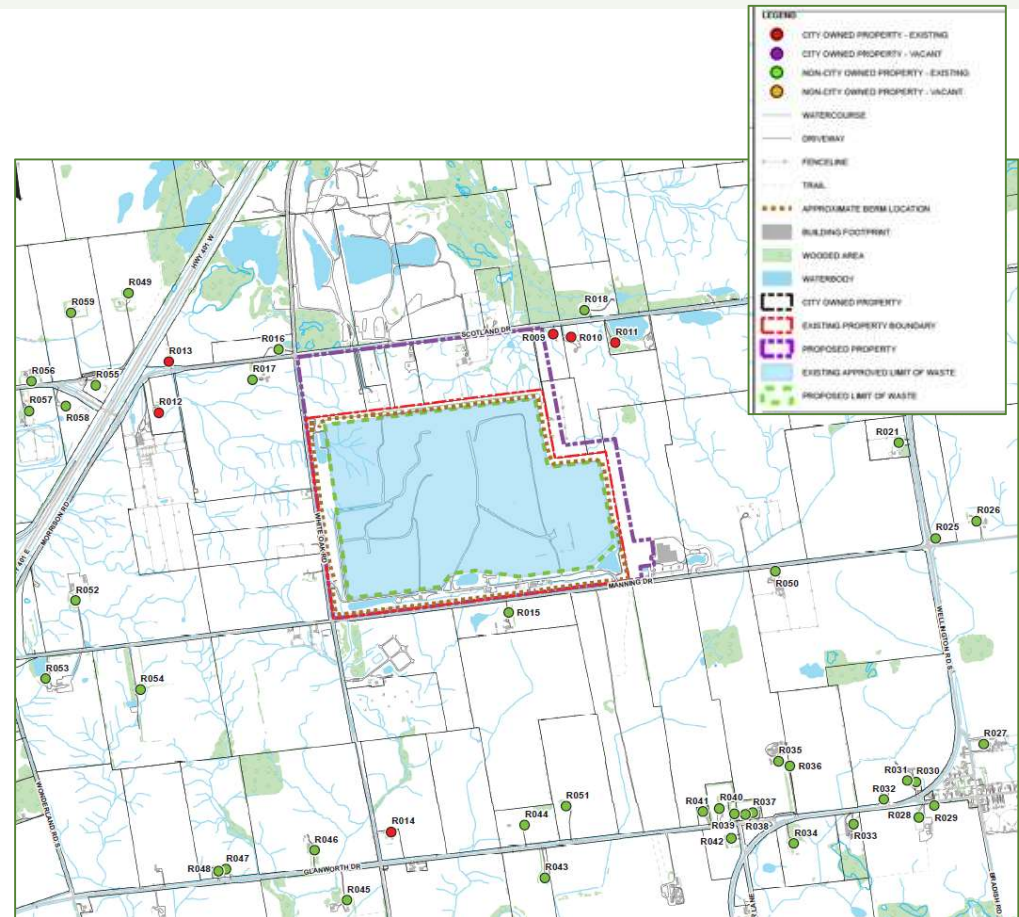




Atmosphere – Air and Odour Impact Assessment

Assessment Methods

- Air quality and odour emissions were simulated with an advanced atmospheric dispersion model (AERMOD)
- Indicator compounds modelled were:
 - Suspended particulate matter
 - Combustion gases
 - Other Indicator Compounds (hydrogen sulphide, vinyl chloride and odour)
- Typical best management operational practices and mitigation will be in place (e.g., dust suppression, speed limits enforced)



getinvolved.london.ca/whywastedisposal



Atmosphere – Air and Odour Impact Assessment

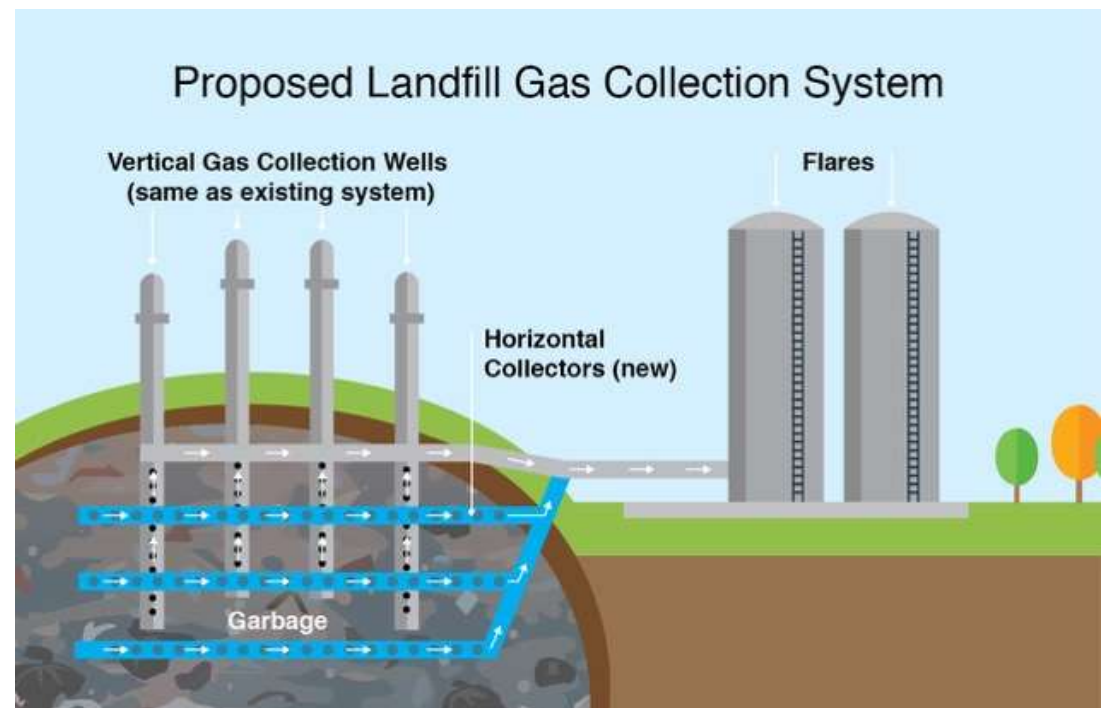
Addressing Predicted Impacts of the Proposed Expansion

- Air quality and odour associated with the expansion are predicted to meet relevant Ontario Regulations at sensitive receptors

Mitigation and Monitoring

- Follow-up one-time monitoring program for air quality and odour to validate model
- Review and update existing odour management plan and complaints response protocol
- Develop new fugitive dust management plan

getinvolved.london.ca/whywastedisposal

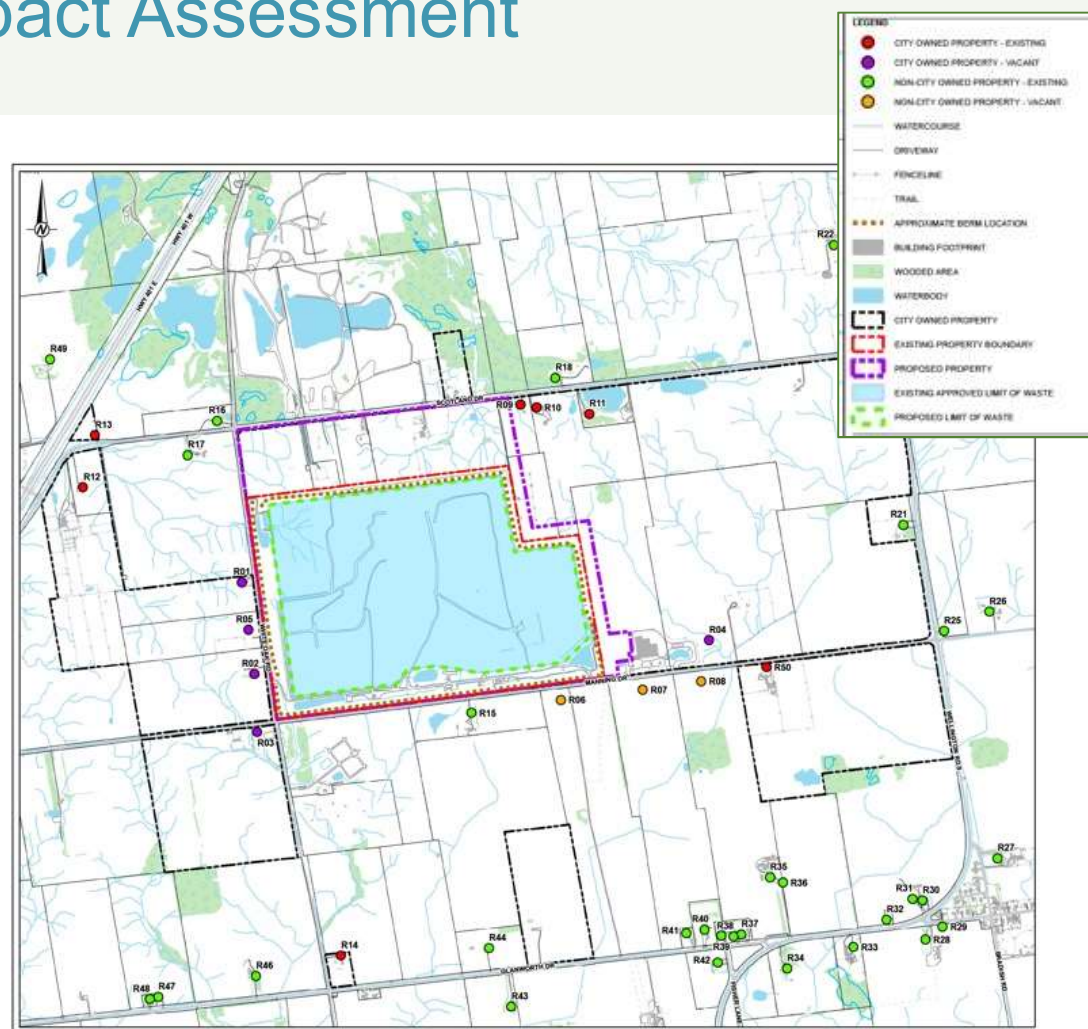




Atmosphere – Noise Impact Assessment

Existing Conditions

- Existing noise levels are influenced by landfill operations, ancillary and emergency equipment (e.g., backup generators), traffic
- 11 noise-sensitive receptors were identified within 500 m of the Site
- Existing noise levels measured at 10 locations

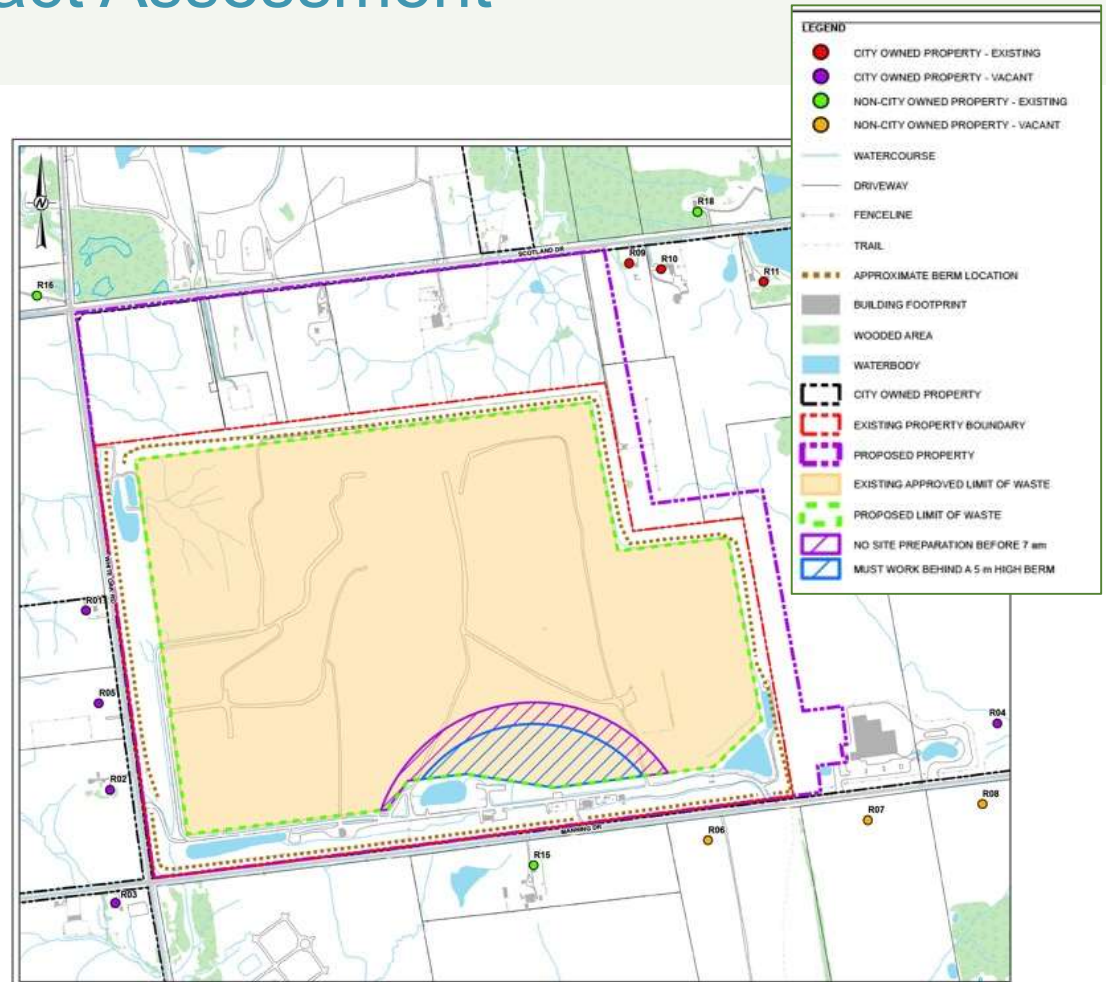




Atmosphere – Noise Impact Assessment

Assessment and Addressing Predicted Impacts of the Proposed Expansion

- Additional on-Site noise mitigation required for landfill operations within 330 m of an off-Site noise sensitive receptor
- Ancillary equipment and emergency equipment are expected to operate below the NPC-300 sound level limits
- Change in traffic noise levels between existing landfill and proposed landfill expansion is insignificant to noticeable; this is considered an acceptable change

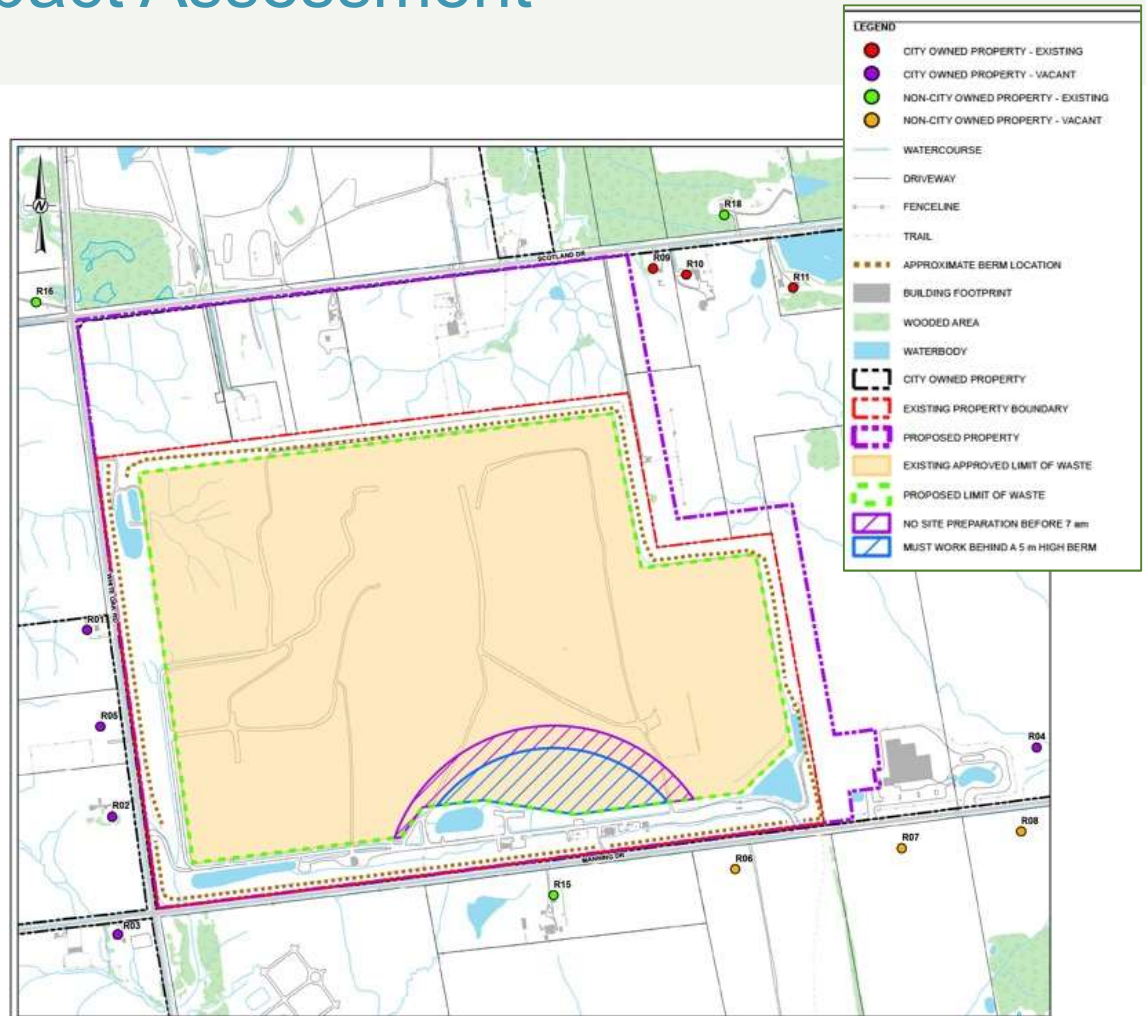




Atmosphere – Noise Impact Assessment

Mitigation and Monitoring

- Only one residence within 330 m of landfill operations; working in this area will require berms to act as sound barriers
- Follow-up noise monitoring program is recommended when landfill operations are within 330 m of an off-Site noise sensitive receptor

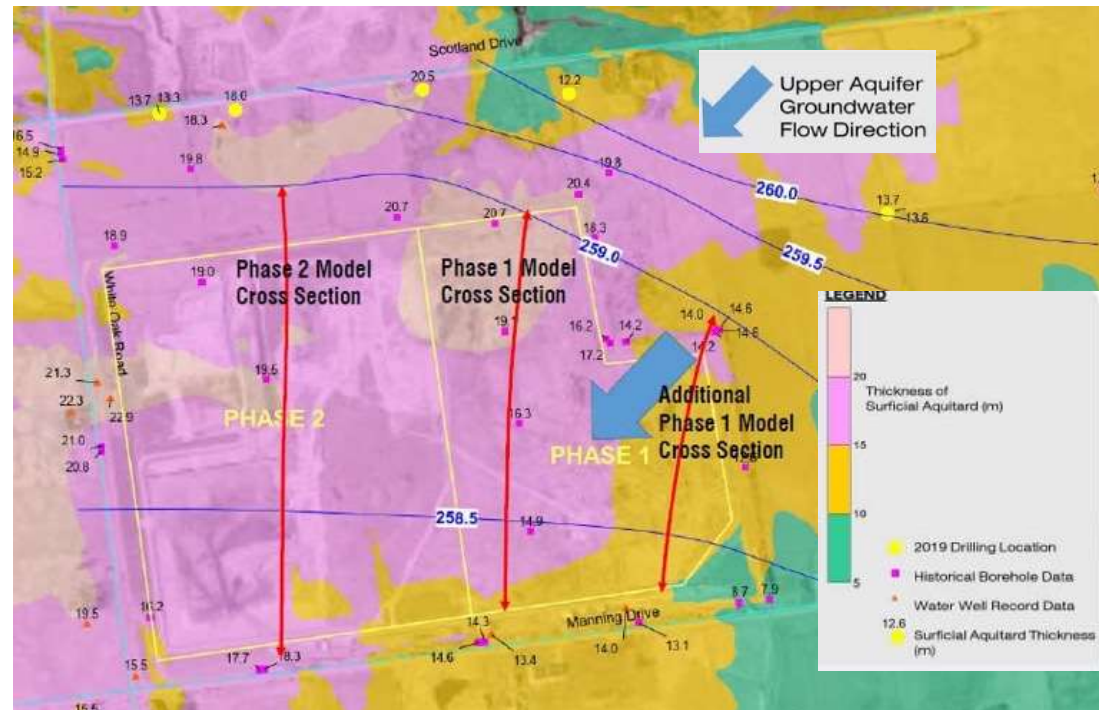




Geology and Hydrogeology Impact Assessment

Existing Conditions

- The Surficial Aquitard (clay soils) protects groundwater beneath the Site
- The upper approximately 3 m of the Surficial Aquitard has fractures that have the potential to allow increased flow and hence increased impacts to groundwater
- Groundwater flows toward the southwest
- Existing groundwater meets MECP water quality guidelines for landfills (Reasonable Use Guideline)





Geology and Hydrogeology Impact Assessment

Assessment Methods

- The POLLUTE model was used to evaluate potential groundwater impacts
- Key water quality parameters were evaluated including chlorides (most likely parameter to exceed water quality guidelines)
- Model assumed upgrades to perimeter leachate collection system in older part (eastern half) of the landfill

Addressing Predicted Impacts of the Proposed Expansion

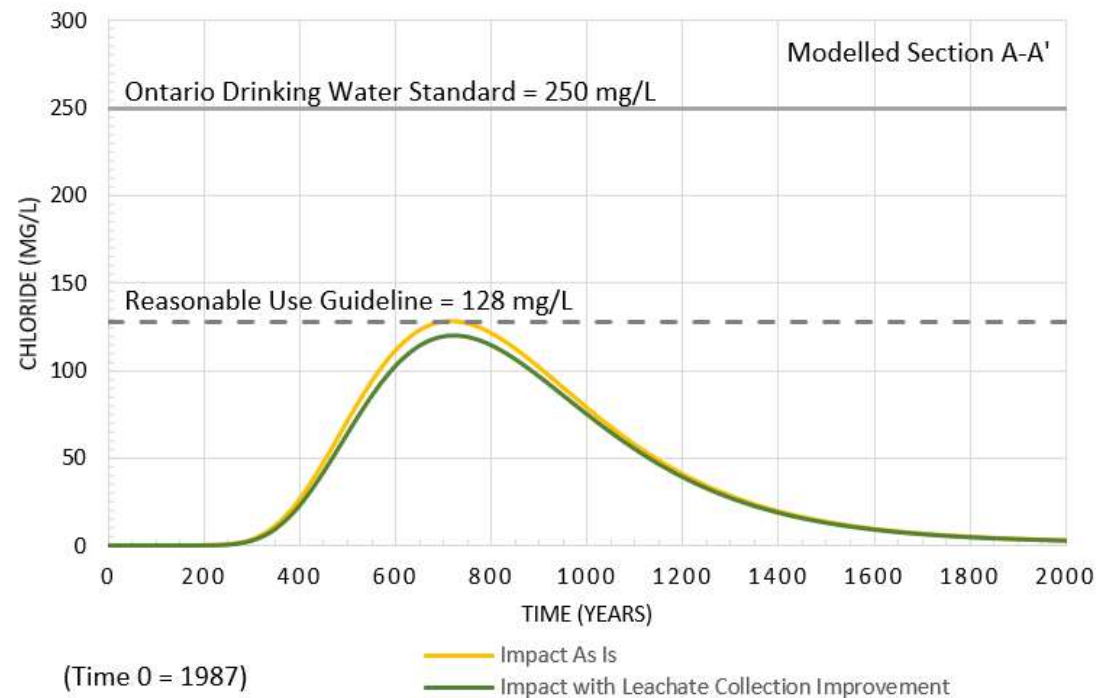
- All parameters and conditions modelled met the required water quality guidelines for landfills except chloride in the older part of the landfill
- Chloride (aesthetic parameter) was predicted to be 129 mg/L in about 700 years
- Drinking water standard is 250 mg/L; water quality guideline for landfills is 128 mg/L



Geology and Hydrogeology Impact Assessment

Mitigation and Monitoring

- Additional mitigation (using the horizontal landfill gas collectors to collect additional leachate) is expected to result in meeting the water quality guideline for landfills. Additional mitigation cost estimated to be \$5,000,000
- Annual groundwater monitoring program (similar to existing program)

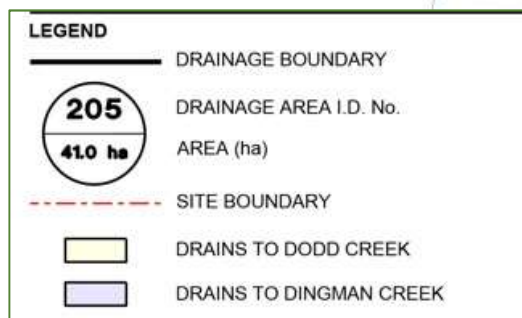
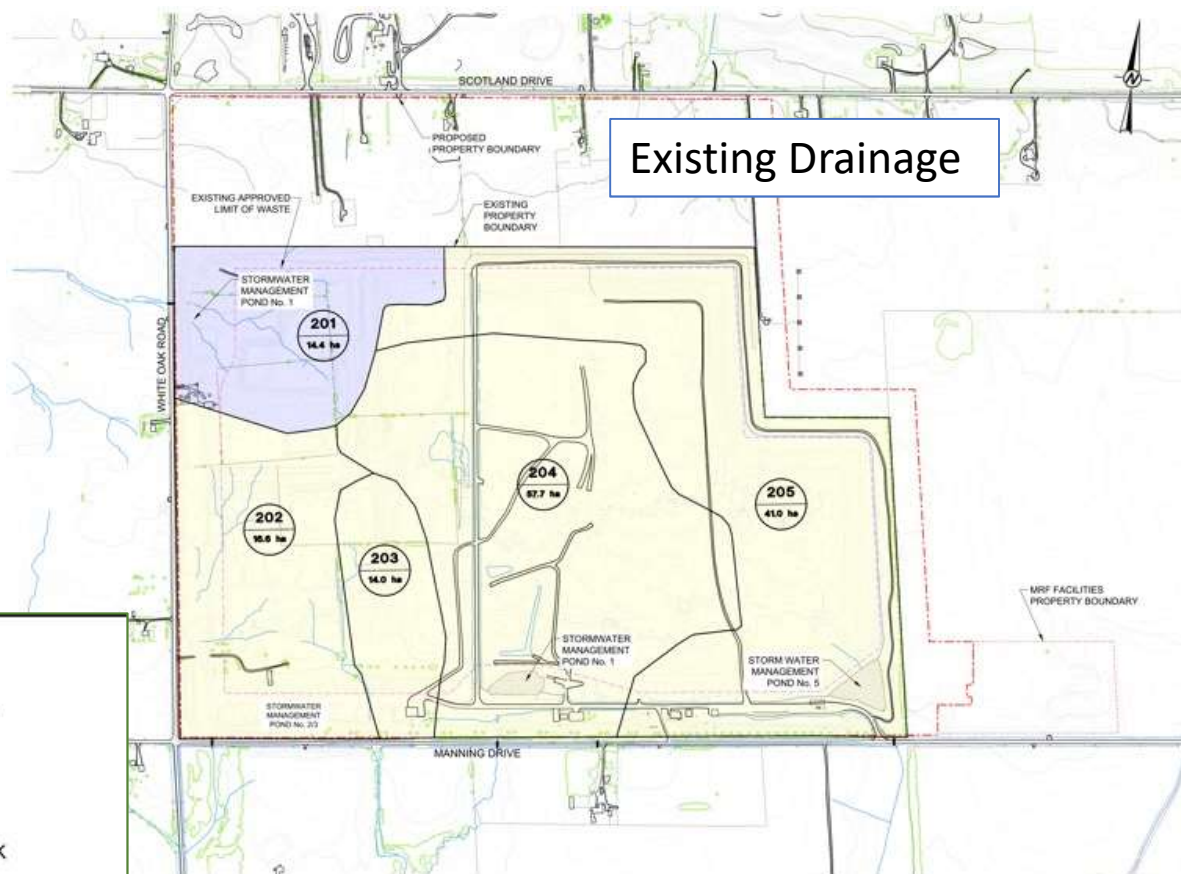




Surface Water Impact Assessment

Existing Conditions

- 4 stormwater (SWM) management ponds provide flow control (to prevent flooding) and quality control (sediment removal) of drainage from the landfill



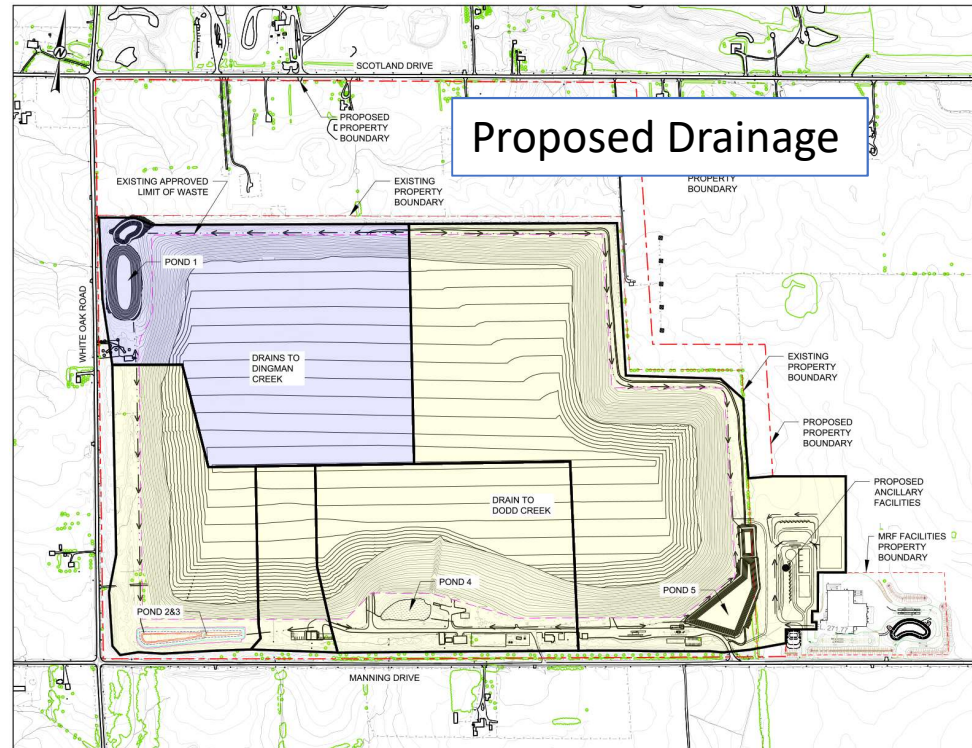


Surface Water Impact Assessment

Assessment Methods

Designed such that:

- Waste related activities and leachate are isolated from surface drainage
- Surface drainage and SWM ponds protect water quality and limit peak water quantity leaving the Site
- Runoff scenarios were assessed with the Visual Otthymo model





Surface Water Impact Assessment

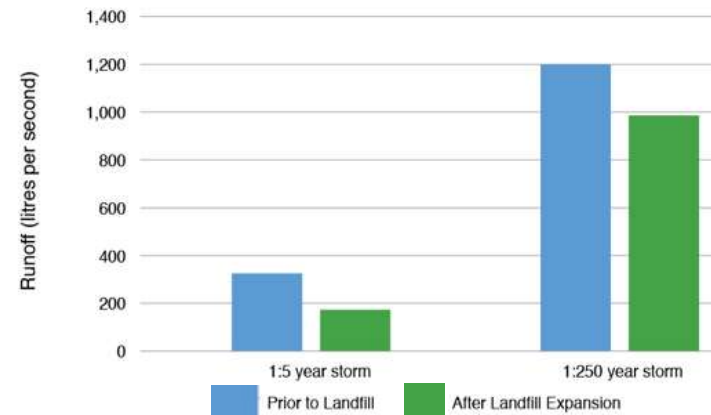
Addressing Predicted Impacts of the Proposed Expansion

- Improved sediment removal at SWM Ponds (80% for all SWM Ponds; existing SWM Ponds provide 70 to 80% removal)
- No adverse impacts from changes to subwatershed areas

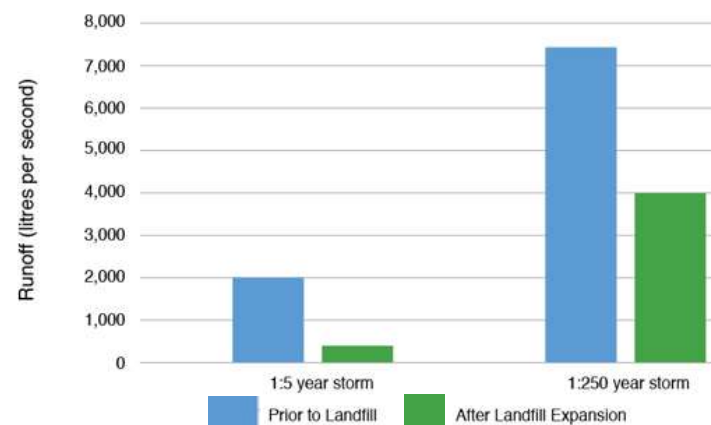
Mitigation and Monitoring

- Annual surface water monitoring program (similar to existing program)

Dingman Creek - Peak Stormwater Runoff

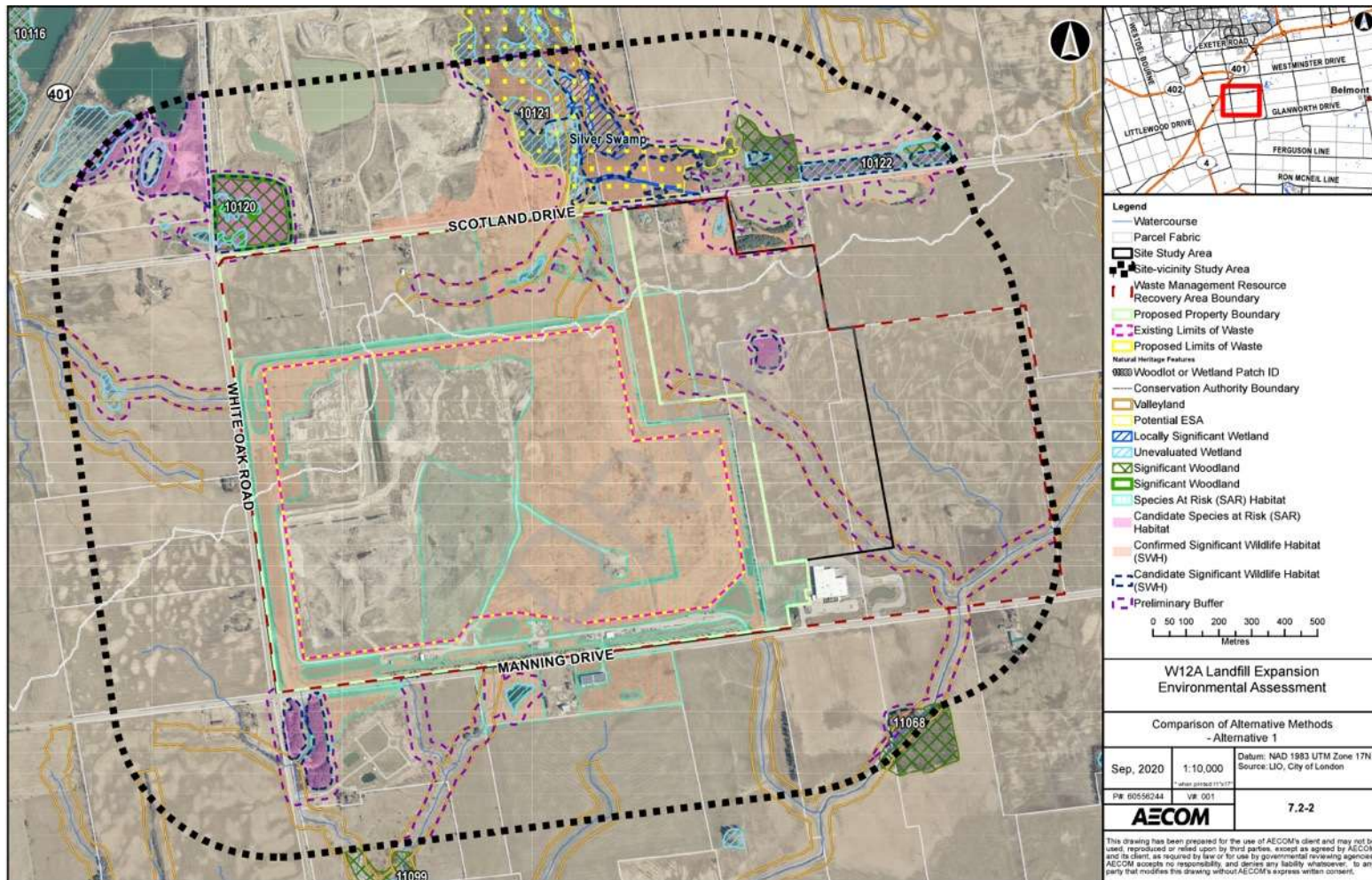


Dodd Creek - Peak Stormwater Runoff





Biology Impact Assessment



getinvolved.london.ca/whywastedisposal

AECOM





Biology Impact Assessment



Existing Conditions

- Silver Swamp Locally Significant Wetland is located within the Site-vicinity Study Area
- 4 provincially listed Species at Risk (3 bird species and Monarch butterfly) were observed within the Site and Site-vicinity Study Areas

Assessment Methods

- Potential adverse effects on the terrestrial and aquatic environment were assessed using both quantitative and qualitative methods
- Indirect effects assessed based on results from other component study teams, i.e., air, noise, groundwater, surface water



Biology Impact Assessment

Addressing Predicted Impacts of the Proposed Expansion

- No direct impacts to aquatic species or habitat are anticipated
- Potential indirect impacts to aquatic ecosystems resulting from a reduction in the volume of surface water drainage to Dodd Creek
- Direct impacts to habitat for Monarch and Species at Risk grassland birds (Bobolink and Eastern Meadowlark)
- No direct impacts to habitat for other species identified during field investigations

Eastern
Meadowlark



Bobolink



getinvolved.london.ca/whywastedisposal

AECOM





Biology Impact Assessment

Mitigation and Monitoring

- A detailed Environmental Mitigation and Monitoring Plan (EMMP), Construction Monitoring Plan, and Species at Risk and Wildlife Observation Protocol will be developed to minimize impacts during construction and operation
- Compensation for habitat loss will be developed in consultation with the MECP for Bobolink and Eastern Meadowlark

Eastern
Meadowlark



Bobolink





Land Use and Agriculture Impact Assessment

Existing Conditions

The following provides a characterization of land uses in the vicinity of the existing W12A Landfill site:

- **North:** Small area of soybeans between the existing landfill berm and Scotland Dr, remaining lands in this area are considered fallow and hilly; 2 aggregate pits and soybean and corn production on the north side of Scotland Dr.; 5 rural residential dwellings
- **East:** The City of London Material Recovery Facility; remaining lands actively used for conventional cash crop production (corn, soybeans, wheat rotation); 3 rural residential dwellings
- **South:** Livestock operation south of Manning Dr.; large agricultural parcels with conventional cash crop production (corn); 1 rural residential dwelling; the Islamic Cemetery of London
- **West:** Lands are primarily comprised of large agricultural parcels used for cash crops (soybeans); 2 rural residential dwellings

getinvolved.london.ca/whywastedisposal





Land Use and Agriculture Impact Assessment

Assessment Methods

- Review relevant policy documents, plans, mapping, aerial imagery, inventories, etc.

Addressing Predicted Impacts of the Proposed Expansion

- No impacts to degree of agriculture investment, soil capability or agriculture system
- Some loss of non-productive lands at the Site to the north and minimal loss of productive lands at the Site to the east
- No loss of agriculture land base in the Site-vicinity Study Area
- It is unlikely that any new sensitive land uses would be developed within or near the Site-vicinity Study Area within the 2035 planning horizon. Accordingly, the proposed landfill expansion should not adversely impact on any future land uses

Mitigation and Monitoring

- No specific mitigation or monitoring for land use or agriculture but plans identified for air, noise and biology will be important to ensure no negative impacts to existing land use and agriculture



Archaeology Impact Assessment

Existing Conditions

- There are no registered archaeological sites located within a 1 km radius of the Site Study Area according to the Ontario Archaeological Sites Database
- A Stage 1 Archaeological Assessment from Scotland Drive to Manning Drive between White Oak Road and Wellington Road in 2005 determined that portions of the area had archaeological potential

Assessment Methods

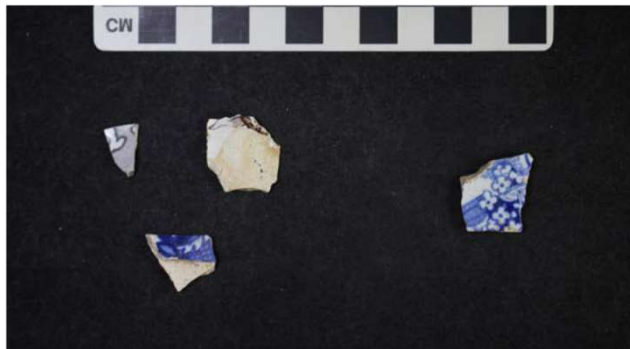
- **Stage 2 Archaeological Assessment**
 - Pedestrian surveys were used to assess agricultural fields. Artifacts were retained for laboratory analysis
 - Test Pit surveys were used to assess the remaining areas (overgrown fields, woodlot, and residential properties)
 - Found site of potential interest (White Oak 1)
- **Stage 3 Archaeological Assessment**
 - Stage 3 assessment of White Oak 1
 - Hand excavation of 28 one-metre square test plots

getinvolved.london.ca/whywastedisposal





Archaeology Impact Assessment



Addressing Predicted Impacts of the Proposed Expansion

- The White Oak 1 site appears to represent a briefly occupied area dating to the Late Archaic Period (ca. 1500 – 500 B.C.)
- No direct impact because only vertical expansion proposed for the landfill
- Potential indirect impacts if ancillary features (e.g., road, SWM Ponds) built in area of White Oak 1

Mitigation and Monitoring

- The Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) preferred method of Stage 4 mitigation is through avoidance and protection
- It has been determined that the White Oak 1 site can be avoided



Cultural Heritage Impact Assessment

Existing Conditions

- 7 known and potential cultural heritage resources identified within all parcels, and parcels adjacent to, the Site Study Area

Assessment Methods

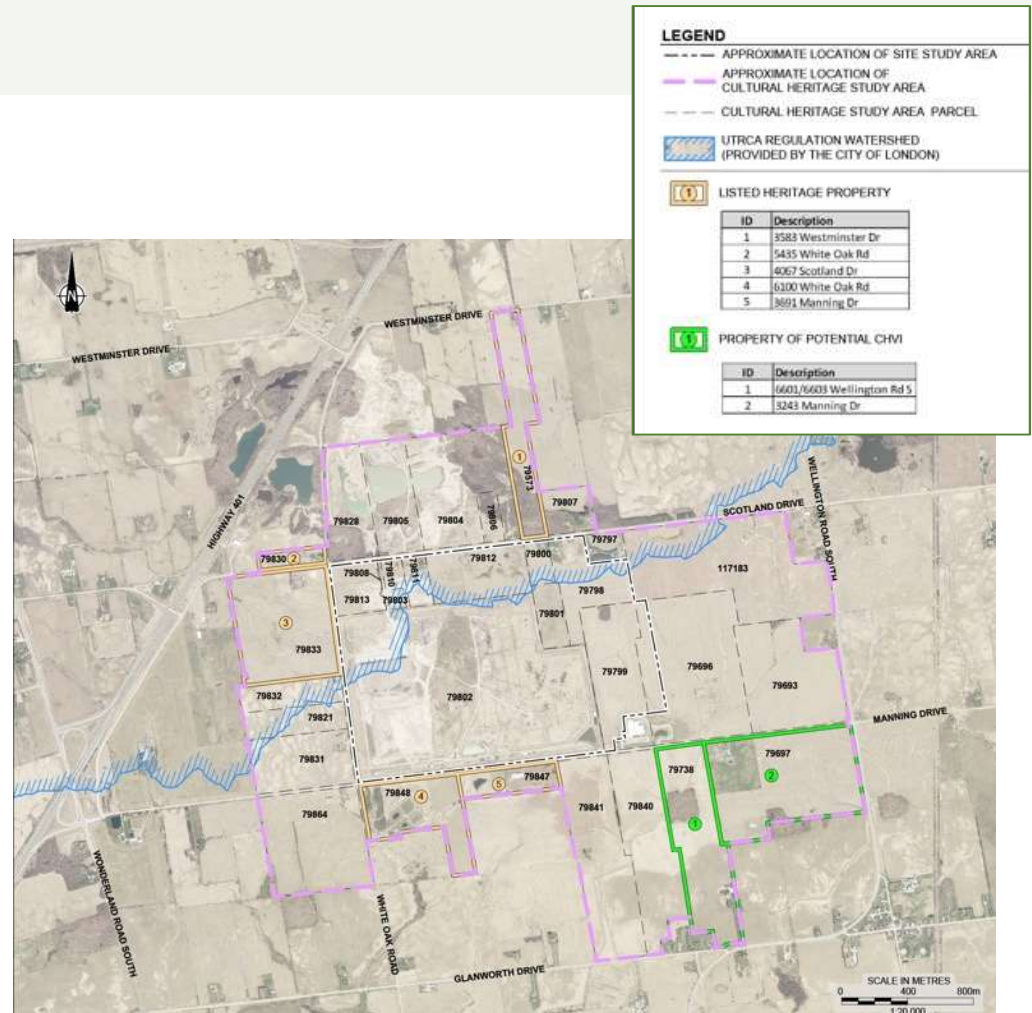
- Cultural heritage resources were evaluated using methods prescribed by the Province

Addressing Predicted Impacts of the Proposed Expansion

- No predicted impact on potential or built heritage resources, or cultural heritage landscapes

Mitigation and Monitoring

- No further cultural heritage studies or monitoring is recommended





Socio-economic Impact Assessment

Existing Conditions

- Demographic Profile for the City of London (StatsCan 2016)
- Population: 383,822
- Average Household Income: \$43,976
- Labour Force Participation Rate: 63.2%
- Unemployment Rate: 7.9%
- Site-vicinity study area around landfill: agriculture production; 2 aggregate pits; 8 rural residential dwellings; the City of London Material Recovery Facility; the Islamic Cemetery of London

Assessment Methods

- The potential direct and indirect effects on existing and future socio-economic conditions in the area were assessed
- Displacement of residents and interference with residential properties was also evaluated

getinvolved.london.ca/whywastedisposal





Socio-economic Impact Assessment

Addressing Predicted Impacts of the Proposed Expansion

- No 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
- Out-migration is not anticipated since residents are accustomed to living in an agricultural area and near the existing landfill where any noise, odour or dust associated with existing conditions are fairly commonplace
- Gradual reduction in residences may occur as City purchases neighbouring properties
- 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

Mitigation and Monitoring

- None specific for socio-economic, all suggested mitigation and monitoring are described by other components



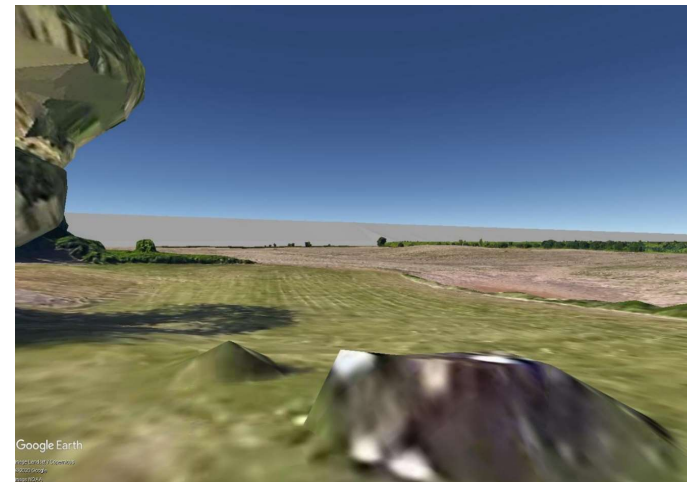
Visual Impact Assessment

Existing Conditions

- an anomaly rising approximately 9 to 12 m above an otherwise generally flat to gently sloping landscape
- can be seen from up to five kilometres from the south and east, three kilometres from the west and one kilometre from the north

Assessment Methods

- Outdoor private recreation areas were identified using aerial photography, and significant viewpoints from each were selected
- Determined how much of an observer's view is occupied by the proposed landfill, taking into account the intervening terrain's hilliness and tree cover



Simulated View of Expanded Landfill
from 3465 Scotland Drive

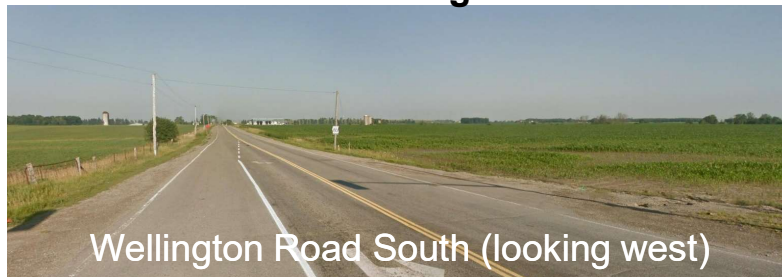


Visual Impact Assessment

Addressing Predicted Impacts of the Proposed Expansion

- Five properties (3 city owned) with high or moderate-high visual impact
- Approximately 70 other properties have increased visual impact
- Views from major roads

View of Existing Landfill

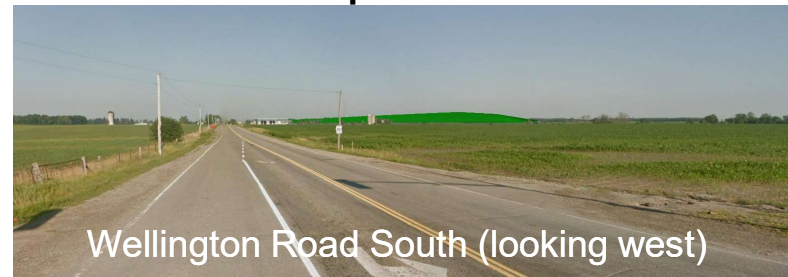


Wellington Road South (looking west)

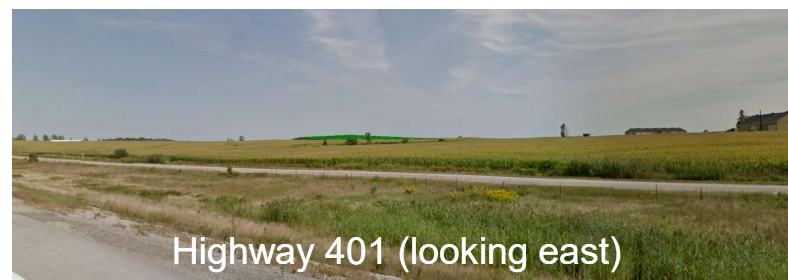


Highway 401 (looking east)

View of Proposed Alternative



Wellington Road South (looking west)



Highway 401 (looking east)



Visual Impact Assessment

Mitigation and Monitoring

New screening berm along Scotland Drive

Berm on top of landfill (south side) to screen view to south during operations

Consider including screening measures on private property in updated Community Enhancement and Mitigative Measures Program



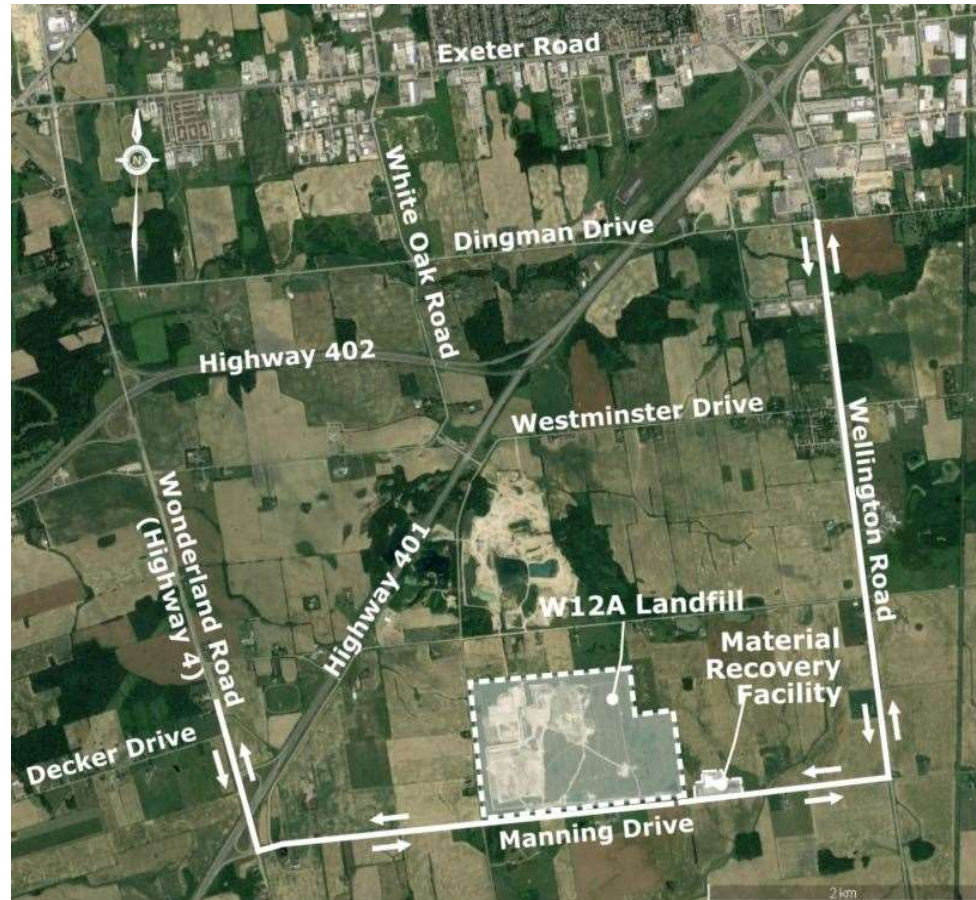
Screening Berm



Transportation Impact Assessment

Existing Conditions

- W12A Landfill access consists of two accesses to Manning Drive and two accesses to White Oak Road
- In 2018, a total of 71,220 vehicles accessed the W12A Landfill (approximately 51% were small vehicles and 49% were heavy vehicles)
- Less than 1% of traffic on Wellington or Wonderland Roads

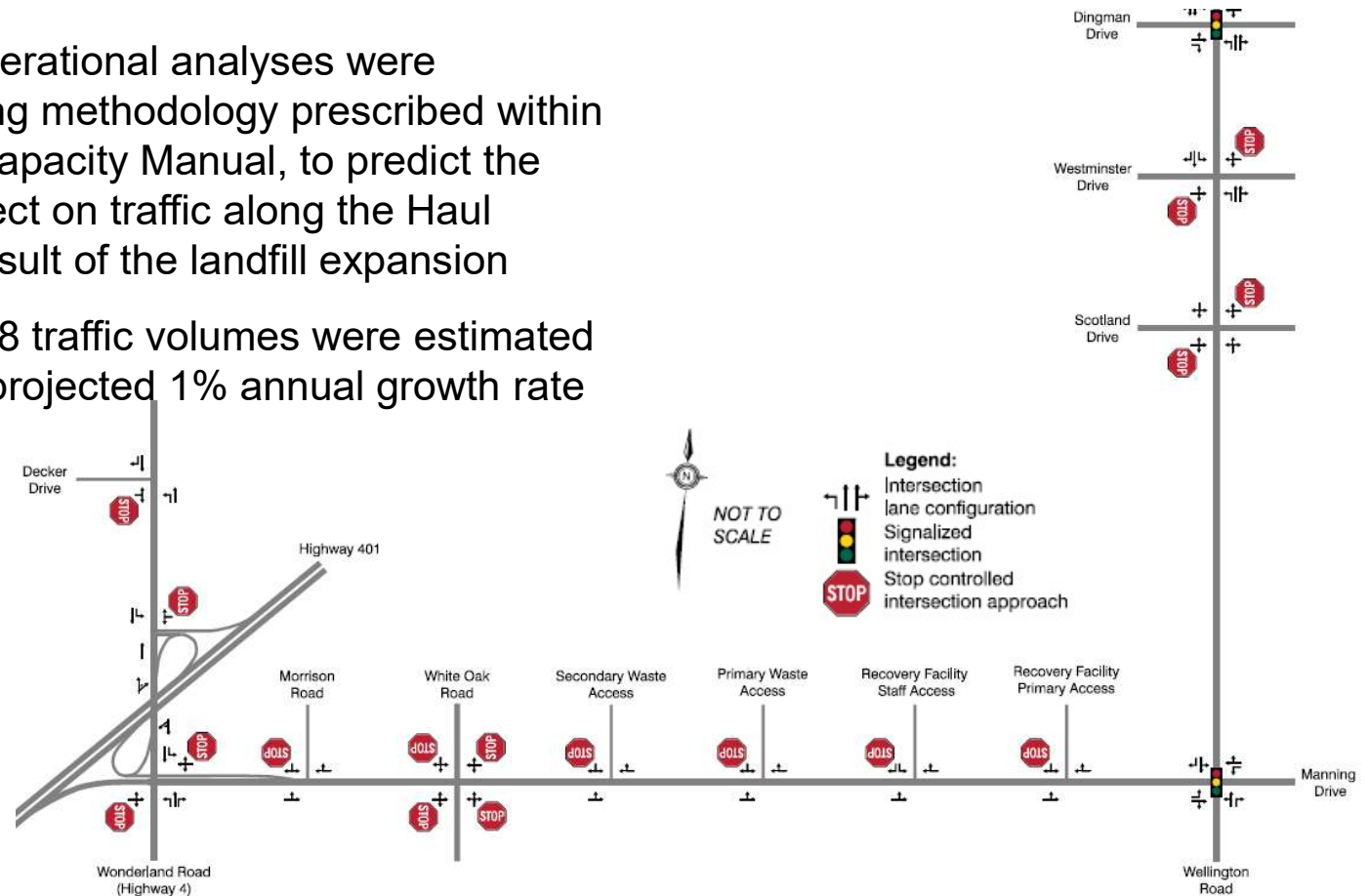




Transportation Impact Assessment

Assessment Methods

- Intersection operational analyses were completed using methodology prescribed within the Highway Capacity Manual, to predict the anticipated effect on traffic along the Haul Routes as a result of the landfill expansion
- The future 2048 traffic volumes were estimated considering a projected 1% annual growth rate





Transportation Impact Assessment

Addressing Predicted Impacts of the Proposed Expansion, Mitigation and Monitoring

- intersections with traffic lights (Wellington Road at Dingman Drive and Manning Drive intersections) - forecasted to remain at a good to reasonable level of service
- other intersections - no road improvements except possibly at Wonderland Road (Highway 4) and 401 after 2045;
 - Improvements maybe required due to increase in general traffic (not landfill traffic which is less than 1% of overall traffic)
 - Need to collect new traffic data in future to determine when (if) improvements required



Design & Operations Impact Assessment

Existing Conditions

- Existing features presented on “*W12A Landfill – Site Features*” board
- Ongoing environmental monitoring to demonstrate site compliance with regulatory requirements

Assessment Methods

- The overall design of the landfill expansion was compared to MECP regulations, policies and guidelines with a focus on:
 - engineered control systems for leachate and landfill gas management
 - leachate effects on groundwater and surface water
 - landfill gas migration in the subsurface



Design & Operations Impact Assessment

Addressing Predicted Impacts of the Proposed Expansion

- Phasing plan and development sequence designed to reduce potential visual impacts from off-Site vantage points to the south
- The management of leachate will continue to rely on the same strategies/systems that have proven effective in preventing impacts on groundwater and surface water quality
- Additional temporary leachate storage provided which allows for on-site leachate storage if Dingman Pumping Station or Greenway Wastewater Treatment facility is in a by-pass situation
- Landfill gas collection will be enhanced by adding horizontal landfill gas collectors (in addition to vertical collection wells) to further control landfill gas (including odour)
- Second landfill gas flare installed within 5 years of expansion



Design & Operations Impact Assessment

Addressing Predicted Impacts of the Proposed Expansion

- Landfill will be geotechnically stable
- Overall soil surplus at the end of the expansion period
- Capital costs will be marginally less than projected costs
- Operating costs will be marginally higher than the current operating costs (about 10%)

Mitigation and Monitoring

- No additional mitigation measures associated with the design and operations of the W12A Landfill expansion
- Continued annual monitoring of landfill gas in on-Site buildings and several landfill gas monitoring wells



Next Steps in EA and How to Get Involved

Next Steps are as follows:

- Complete Steps 7 and 8 of the EA methodology:
 - **Step 7** – Consider potential effects of climate change on the preferred alternative
 - **Step 8** – Complete a cumulative impact assessment of the landfill expansion and other activities in the area
- The Draft EA will be circulated for stakeholder feedback prior to finalization and submission to the MECP for approval.
- MECP will provide a seven week period to provide feedback directly to them after final report submitted by the City
- MECP will provide a five week period to review and provide comments to Minister on proposed MECP staff recommendation



City staff and project consultants are available to answer your questions and discuss the information presented.

getinvolved.london.ca/whywastedisposal

