

Supporting Document #2

Residual Waste Projections and Landfill Capacity Assessment



Environmental Assessment of the Proposed W12A Landfill Expansion

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Residual Waste Projections & Landfill Capacity Assessment

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Executive Summary

Background

To plan for the future, the City of London has started the development of a long-term Resource Recovery Strategy and a Residual Waste Disposal Strategy. The Resource Recovery Strategy involves the development of a plan to maximize waste reduction, reuse, recycling, resource recovery, energy recovery and/or waste conversion in an economically viable and environmentally responsible manner. The Residual Waste Disposal Strategy involves the development of a long-term plan to manage the remaining Residual Waste.

Key to developing a long-term Resource Recovery Strategy and a Residual Waste Disposal Strategy is understanding the types, quantities and composition of future resources and waste to be managed. This document, which is Supporting Document #2 to the Terms of Reference, provides this information in the context of the current provincial Strategy for a Waste-Free Ontario, diversion targets and current and projected provincial and regional disposal capacity deficit. This document also develops Residual Waste quantity projections for the City's 25 year waste management planning period.

It is proposed the Strategies will:

- find solutions that will manage Residual Waste until 2050 (25 years beyond the current approved capacity of the W12A Landfill);
- look at the possibility of allowing neighbouring municipalities, if they desire, to use any new/expanded waste disposal facilities developed by the City under conditions approved by Municipal Council;
- place limits on the amount of Residual Waste that will be accepted at any new waste disposal facility; and,
- commit to increasing the current London household waste diversion rate to 60% by 2022 from the current rate of 45% and take into account recently announced interim provincial waste diversion targets of 30% by 2022, 50% by 2030 and 80% by 2050. (This will not prevent an increase in London's household waste diversion rate above 60% between 2022 and 2050.)

Existing Service Area of W12A Landfill

The report looks at the different types of waste from the existing service area of the W12A Landfill. This includes waste that the City is responsible for as well as waste not controlled by the City but accepted at its landfill for disposal.

The waste has been broken into nine types based on their characteristics. The nine waste types are residential; industrial, commercial & institutional (IC&I); construction, renovation & demolition (CR&D); sewage

Service Area

The service area is the area from which a landfill is legally allowed to accept waste. The existing service area for the City's W12A Landfill is the City of London, Municipality of Thames Centre, TRY Recycling's Facilities on Clarke Road, Lake Huron Primary Water Treatment Plant and Elgin Area Water Treatment Plant.

sludge ash; biosolids; street sweepings & road work waste; other municipal operations waste; water treatment plant process residuals and contaminated soil.

Current and future generation, diversion and disposal rates were developed for each waste type.

Residual waste quantity (by weight) projections were developed for the existing service area taking into account the City's population projections coupled with the projected generation and diversion rates for each of the waste types.

For the 25 year planning period, it is estimated that the expansion of the W12A Landfill may need to accommodate an average of approximately 368,000 tonnes per year of Residual Waste from the existing service area or 9,200,000 tonnes total.

Regional Service Area

The City approached nearby lower and upper tier municipalities to determine their interest in being included in the service area of the expanded W12A Landfill. Based on their responses, a service area consisting of the City of London plus Elgin County, Middlesex County, Huron County, Lambton County and Perth County is proposed. The population of Elgin, Middlesex, Huron, Lambton and Perth Counties (including separated cities) is approximately 420,000. Only a portion of the waste from this area is expected to be disposed of at the W12A Landfill.

It is estimated that the expansion of the W12A Landfill may need to accommodate approximately 600,000 tonnes of Residual Waste from the regional service area over the 25 year planning period.

Required Additional Landfill Capacity for Expansion of the W12A Landfill

The volume of landfill airspace required to accommodate waste is typically calculated by multiplying the number of tonnes of waste to be disposed by the landfill utilization rate.

The landfill utilization rate is the amount of space (cubic metres, m³) needed to manage an average tonne of waste including daily and intermediate cover material. A landfill utilization rate of 0.72

tonnes/m³ was determined to be appropriate for the proposed W12A Landfill expansion.

Cover Material

Cover material is the material placed on garbage at the end of the day to reduce odours and litter from a landfill. Cover material is typically soil but other materials can be used such as wood chips. Cover material typically consumes 15% to 20% of the disposal volume at a landfill.

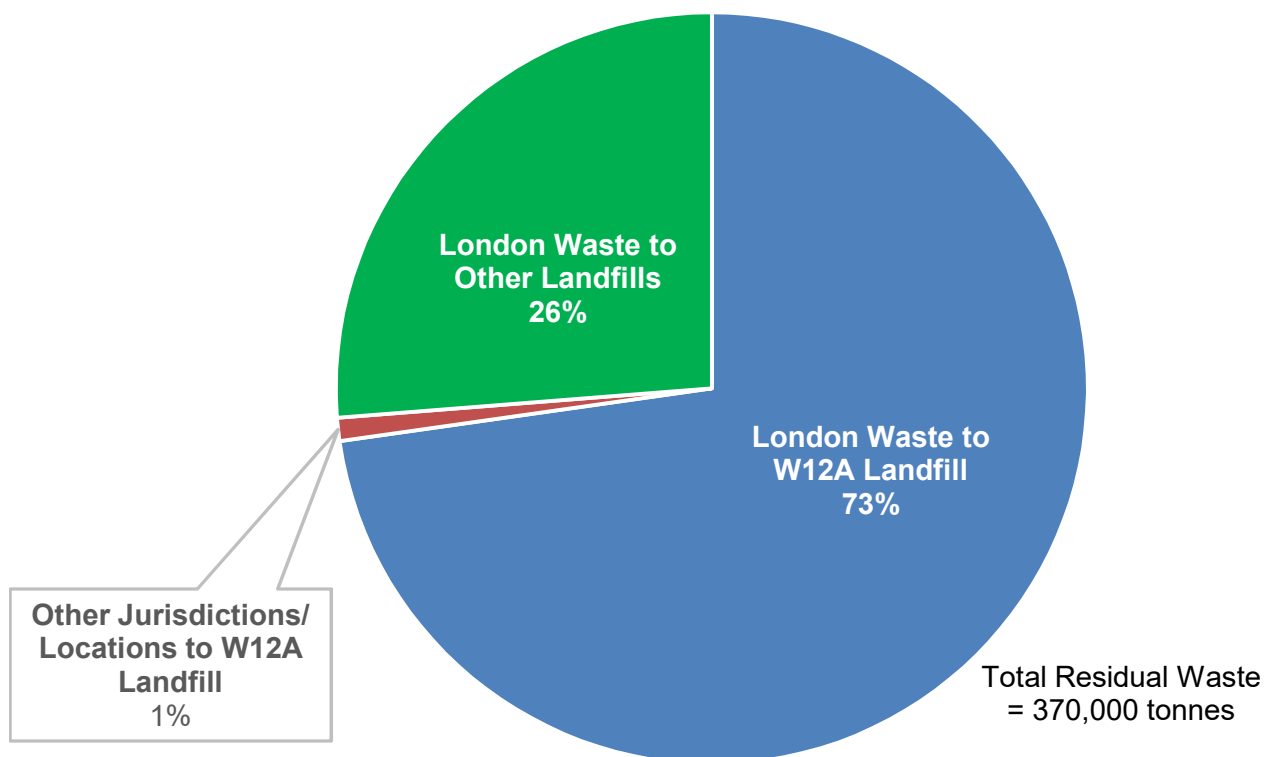
There is a need for an additional disposal volume of 13,600,000 m³ at the W12A Landfill site for the 25 year planning period.

1.0 Introduction

In the city of London, more than one tonne of waste is produced per person each year. This includes waste generated at home as well as waste generated by businesses. Much of this waste is diverted through numerous reduction, reuse, recycling and composting programs. The waste that remains is considered garbage or "Residual Waste".

All of the Residual Waste generated from households and some of the Residual Waste generated by businesses is disposed of at the City's W12A Landfill Site. There is also a small amount of waste from outside of London that is delivered to London's landfill, while some of London's business waste is taken to landfills located outside of the city for disposal.

Figure 1 - 2017 Residual Waste



London's landfill site is located in the south end of the city, at 3502 Manning Drive. The landfill opened in 1977 and is expected to reach capacity early in 2025, based on the current amount of waste being received.

To plan for the future, the City has started the development of a long-term Resource Recovery Strategy and a Residual Waste Disposal Strategy. The Resource Recovery Strategy involves the development of a plan to maximize waste reduction, reuse, recycling, resource recovery, energy recovery and/or waste conversion in an economically viable and environmentally responsible manner. The Residual Waste Disposal Strategy involves the development of a long-term plan to manage the remaining Residual Waste.

It is proposed the Strategies will:

- find solutions that will manage Residual Waste until 2050 (25 years beyond the current approved capacity of the W12A Landfill);
- look at the possibility of allowing neighbouring municipalities (municipalities in County of Huron, County of Perth, County of Elgin, County of Lambton, and County of Middlesex), if they desire, to use any new/expanded waste disposal facilities developed by the City under conditions approved by Municipal Council;
- place limits on the amount of Residual Waste that will be accepted at any new waste disposal facility; and,
- commit to increasing the current London household waste diversion rate to 60% by 2022 from the current rate of 45% and take into account recently announced interim provincial waste diversion targets of 30% by 2022, 50% by 2030 and 80% by 2050. (This will not prevent an increase in London's household waste diversion rate above 60% between 2022 and 2050.)

Key to developing a long-term Resource Recovery Strategy and a Residual Waste Disposal Strategy is understanding the types, quantities and composition of future resources and waste to be managed. This document provides this information by developing Residual Waste quantity projections for the planning period that take into account:

- population growth;
- existing and proposed provincial waste diversion targets;
- recently approved provincial legislation (*Waste-Free Ontario Act*) that is expected to result in significant changes to how recyclables, organics and garbage would be managed in Ontario;
- recently approved provincial *Strategy for a Waste-Free Ontario Building a Circular Economy* (2017) ;
- availability of waste disposal facilities in neighbouring municipalities;
- waste audit data; and,
- changing waste technologies.

Technical Jargon

Our commitment to you is to do our best to provide information in easy-to-understand words. We will try to minimize the use of technical words but some will be necessary to address the requirements of the provincial government and other approval agencies to ensure legislation, regulation and policies are being met.

"Technical jargon" used in this report has the first letter capitalized and a definition can be found in the Glossary (Appendix A).

2.0 Background

2.1 W12A Landfill Service Area

The W12A Landfill is approved by the Ministry of the Environment, Conservation and Parks (MECP) to accept:

- solid, non-hazardous waste for disposal from London, Thames Centre and three service points (Lake Huron Primary Water Treatment Plant, Elgin Area Water Treatment Plant and Try Recycling Facilities on Clarke Road just north of the City); and,
- Municipal Hazardous and Special Waste (MHSW) from London, Middlesex County and Elgin County at the HSW Depot located at the W12A Landfill for transfer to appropriate recycling/processing sites.

The location of the W12A Landfill and its approved service area (area from which it can accept materials) is shown on Figure 2.

The City is proposing to establish a regional service area for the Residual Waste disposal strategy. The benefits of a regional service area include: consistency with the *Strategy for Waste-Free Ontario* (see discussion in Section 2.2); addressing a portion of the provincial shortfall in disposal capacity, providing a public disposal option for nearby organizations and municipalities, ensuring that competitive waste disposal pricing is available for municipalities and providing a financial benefit to the City.

The City approached nearby lower and upper tier municipalities to determine their interest in being included in the service area of the W12A Landfill. Based on their responses, a service area consisting of the City of London plus Elgin County, Middlesex County, Huron County, Lambton County, Perth County is proposed. The population of Elgin, Middlesex, Huron, Lambton and Perth Counties (including separated cities) is approximately 420,000. The proposed service area is shown in Figure 3.

It must be noted that having available Residual Waste disposal capacity for municipalities outside of London does not mean that London is obligated to accept waste from these municipalities in the future. City Council will have the authority to determine which, if any, municipalities or businesses outside of London to use any City facilities and under what conditions they are allowed to do so. For example, the City may require municipalities and businesses to demonstrate that their diversion rate matches or exceeds the City of London's diversion rate.

It is proposed that the Residual Waste quantities the City will need to manage through expansion of the W12A Landfill will be estimated by including all Residual Waste generated within the City plus a portion of the waste in the regional service area based on expected need.

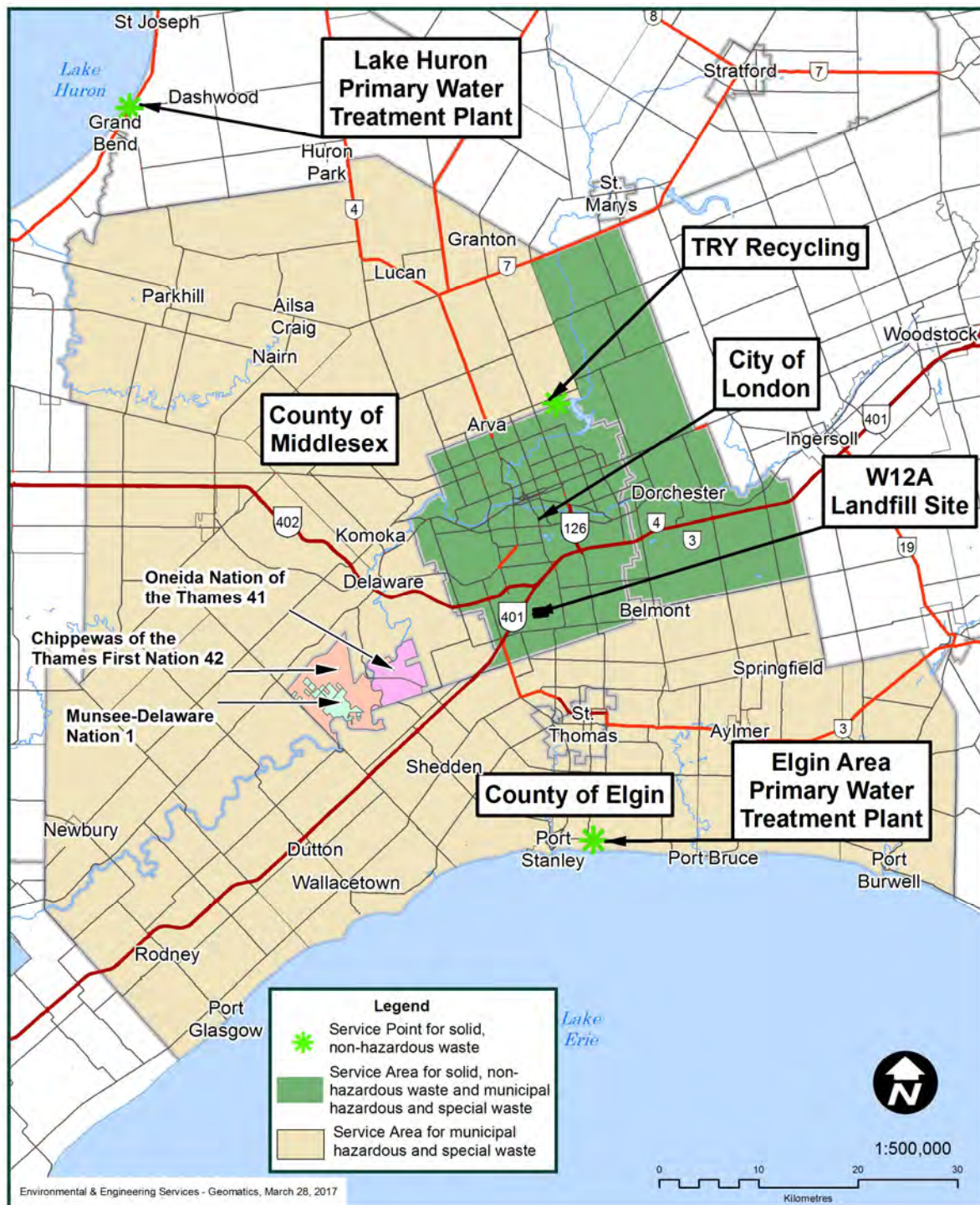
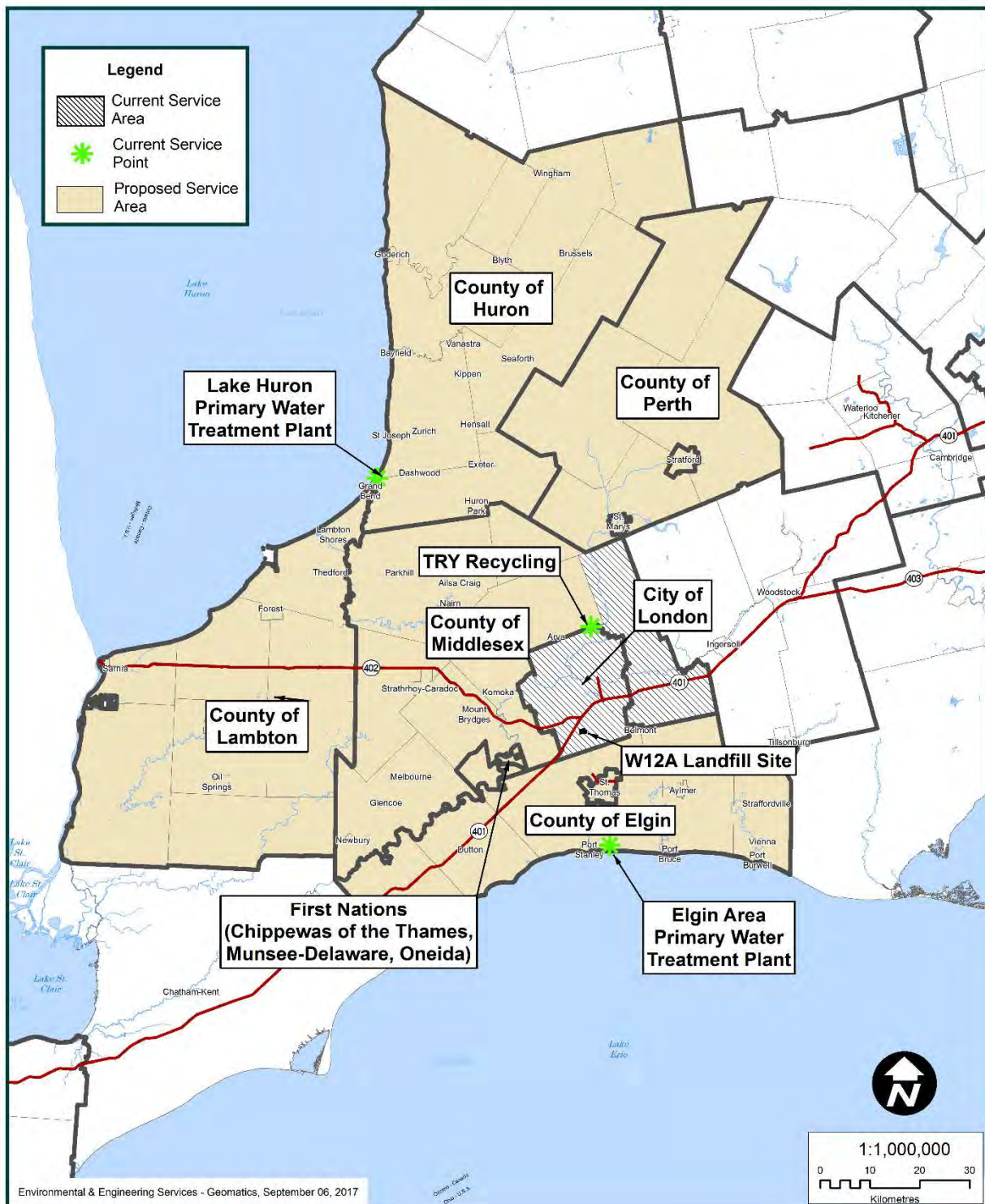
Figure 2 – Existing Service Area

Figure 3 – Proposed Service Area for Solid Non-Hazardous Waste



2.2 Strategy for a Waste-Free Ontario

The proposed expansion of the service area for the W12A Landfill aligns with the Ontario government's policy goals under the *Strategy for a Waste-Free Ontario* by:

- **Minimizing the need for the development of landfills** - There are over twenty operating landfills in the proposed W12A Landfill regional service area. The majority of these are small landfills. Providing a local, cost effective, well maintained and environmentally sound disposal alternative will encourage municipalities with small landfills not to expand their landfill after it reaches capacity. This will reduce the number of landfills in the service area in the long term. It is also noted that municipalities wishing to use the W12A Landfill will be encouraged to achieve similar diversion objectives as the City of London.
- **Ensuring existing landfills are well maintained** – As noted above, the majority of the over twenty landfills in the proposed regional service area are smaller landfills. Only four landfills, including the W12A Landfill, have landfill gas collection and flaring systems. Most of the landfills do not have engineered controls for leachate management and some do not have regular groundwater or surface water monitoring programs. The W12A Landfill has a landfill gas collection and flaring system, is located in a favourable hydrogeological setting (e.g., thick deposit of clayey till soils), has a leachate collection system and has landfill gas, surface water and groundwater monitoring programs. In general, waste coming to the W12A Landfill from other locations within the proposed regional service area will come to a landfill that is well maintained and offers a high level of environmental protection.
- **Reducing Greenhouse Gas (GHG) Emissions** - As noted above, only four landfills in the proposed regional service area have landfill gas and collection systems. Having more waste go the W12A Landfill, which has a landfill gas collection and flaring system, will reduce GHG emissions.

Expanding the service area has the potential to reduce GHG emissions by approximately 80,000 tonnes carbon dioxide equivalents (CO_{2e}) over the 25 year planning period based on the following:

- The average tonne of garbage produces approximately 0.46 tonnes CO_{2e}. (EPA WARM Model), which is released to the atmosphere at landfills that do not have gas collection and flaring systems;
- It is estimated that the W12A Landfill has a landfill gas capture rate of over 60% (more than 0.28 tonnes CO_{2e} of GHG per tonne of garbage buried);
- The GHG emissions to transport a tonne of waste to the W12A Landfill from within the proposed regional service area is less than 0.01 tonnes CO_{2e};
- The net GHG reduction for waste that comes to the W12A Landfill instead of a landfill without a landfill gas collection flaring system is 0.27 tonnes CO_{2e} per tonne of garbage (0.28 CO_{2e} - 0.01 tonnes CO_{2e}); and,
- It is estimated that approximately 300,000 tonnes of waste could come to the W12A Landfill from landfills without gas collection systems from within the proposed regional service area over the next 25 years.

2.3 Waste Diversion

Provincial Diversion Goals

The Province recently established two “visionary goals” for solid waste that are to achieve zero waste and zero greenhouse gas emissions. The Province also established interim goals for total solid waste diversion (consisting of residential; institutional, commercial and industrial (IC&I); and construction, renovation and demolition (CR&D) waste streams) of 30% by 2020, 50% by 2030 and 80% by 2050. The Provincial waste diversion goals are aggressive (aspirational) targets. There are many unknowns associated with implementation of these goals, which will require major changes to how business is done in Ontario including moving to a Circular Economy.

The existing goals as well as the previous waste diversion goals set by the Province are presented in Table 1.

Table 1 - Provincial Waste Diversion Goals and Actual Rate

Year	Diversion Goal/Rate	Comment
1989 ¹	<ul style="list-style-type: none"> 25% by 1992 50% by 2000 	goal applied to all waste
2004 ²	<ul style="list-style-type: none"> 60% by 2009 	goal applied to residential, IC&I and CR&D sectors individually
2015 ³	<ul style="list-style-type: none"> 25% (actual) 	Overall rate achieved
2017 ⁴	<ul style="list-style-type: none"> 30% by 2022 50% by 2030 80% by 2050 	goal applied to all sectors combined Energy from waste and alternative fuels are permitted but these methods do not count towards diversion

Notes

1. *A Brief History of Waste Diversion in Ontario* (Canadian Institute for Environmental Law and Policy, 2008)
2. *Ontario's 60% Waste Diversion Goal - A Discussion Paper* (MOE, 2004)
3. *Draft Strategy for a Waste Free Ontario: Building the Circular Economy* (MOECC, 2015)
4. *Strategy for a Waste Free Ontario Building a Circular Economy* (MOECC, 2017)

Data from the Province indicates that the current diversion rate is approximately 45% to 50% for residential waste and about 25% for all waste (residential, IC&I and CR&D combined). According to *Draft Strategy for a Waste Free Ontario: Building the Circular Economy* (MOECC, 2015) “Ontario’s waste diversion rate has stalled at 25 percent over the last decade”. This means the province has not been able to meet any of the previous targets except for the 25% waste diversion (by 1989), but meeting this target took over two decades longer than proposed.

Considering the above, long term Residual Waste quantity projections should take into consideration the Provincial interim solid waste diversion goals but there should be an allowance to accommodate some additional Residual Waste if the interim waste diversion goals are not met.

Residential Waste Diversion

The City has progressively carried out assessments of waste diversion and developed implementation programs and schedules for specific activities to continue to increase its rate of diversion. The current residential diversion rate is 45% with the latest assessment of diversion programs provided in *The Road to Increased Resource Recovery and Zero Waste (Road Map 2.0, 2013)*.

Programs identified in Road Map 2.0 have the potential to divert 60% of residential waste. The only remaining major diversion component that remains undecided from Road Map 2.0 is how residential organics will be managed. It is estimated that it would take between two and five years to fully implement an organics management program depending on the method and technology chosen to manage organics.

A review of the larger municipalities/recycling boards in Ontario (excluding London) indicates that 60% residential diversion is a practical upper limit for large municipalities with a Green Bin program (see Appendix B). Nine of the ten largest municipalities (i.e., Essex-Windsor does not have a Green Bin program) had Green Bin programs and their diversion rates for 2015 and 2016 are presented in Table 2.

Table 2 - Waste Diversion in Municipalities with Green Bin Programs

Municipality	Waste Diversion ¹	
	2015	2016
Ottawa	43%	44%
Peel	44%	50%
Hamilton	46%	45%
Toronto	52%	51%
Durham	54%	55%
Niagara	54%	56%
Waterloo	54%	52%
Halton	57%	57%
Guelph	61%	59%
York	63%	66%
Average	53%	54%%

The City of Guelph is also included in the table as a comparator city as they have a University (as does London) and a Green Bin program.

Diversion rates varied from 44% to 66% with an average diversion rate of 54% in 2016. Only four jurisdictions (Guelph, Halton, Niagara and York) achieved a diversion rate greater than 55%. Without a Green Bin program, the practical upper limit for residential diversion for a large municipality is approximately 50%.

As shown in Table 2 there was a minor increase in waste diversion from 2015 to 2016. In general, increases in composting and other programs are being offset by decreases in recycling (e.g. fewer newspapers, cans, etc.).

Some municipalities have set aggressive (aspirational) waste diversion targets higher than 60% based on a general strategy but without specific plans on how they will reach these targets. It is likely residential diversion rates will increase beyond 60% in the future but will require the use of technologies that are currently not practical or economically justified.

Notes

1. From www.RPRA.ca/Library/WDO-Historical/Municipal-Information.

It should be noted that multi-residential units have much lower diversion rates compared to single family homes. In London the average diversion rate for single family homes is 50% compared to 20% for multi-residential units. London has a higher percentage of multi-residential units (i.e., apartments buildings) compared to many other large municipalities. Approximately one in three housing units in London is multi-residential. The percentage of multi-residential units is expected to increase in the future due to intensification (as per The London Plan), which will make it more difficult to increase diversion.

The City has established a residential waste diversion goal to increase the current London household waste diversion rate to 60% by 2022 from the current rate of 45%.

It is proposed Residual Waste quantities that the City will need to manage will be estimated by assuming that the current London household waste diversion rate of 45% will increase to 60% by 2022. It is possible that further increases in residential waste diversion may occur after 2022, but for planning purposes it is not appropriate to rely on higher diversion rates at this time.

IC&I Waste Diversion

As previously noted, the Province has established aggressive (aspirational) targets; achieving them will require major changes to how business is done in Ontario. These targets along with estimated existing IC&I diversion rates are presented in Table 3.

It was also previously noted that the province has not come close to meeting any of the previous targets for IC&I, including the province's first target of 25% waste diversion by 1989.

Table 3 - IC&I Waste Diversion Rates

Year		Diversion Goal/Rate	Comment
Existing IC&I diversion rate	London ¹	20%	-
	Provincial ²	10 to 15%	-
Provincial Diversion Targets ³		<ul style="list-style-type: none"> • 30% by 2022 • 50% by 2030 • 80% by 2050 	Goal applied to all sectors combined

- Notes
1. Estimated from data provided by local waste management companies
 2. *Draft Strategy for a Waste Free Ontario: Building the Circular Economy* (MOECC, 2015)
 3. *Strategy for a Waste Free Ontario Building a Circular Economy* (MOECC, 2017)

In selecting an IC&I waste diversion rate for planning purposes, a balance must be achieved between not picking a rate that is too low and therefore having excess capacity and conversely not picking an IC&I waste diversion rate that is too high and therefore not having enough Residual Waste disposal capacity to accommodate all the waste that is generated in the future.

It is proposed that the Residual Waste quantities the City will need to manage will be estimated by assuming an IC&I waste diversion rate of 25% by 2025 and 50% by 2050.

CR&D Diversion

CR&D waste is banned from the W12A Landfill because there are local recycling options available. CR&D recycling process residuals from these facilities are accepted for disposal at the W12A Landfill. Approximately 45% to 50% of the material going to CR&D waste recycling facilities is diverted to beneficial uses while the remaining 50% to 55% becomes process Residual Waste that is sent for disposal.

It is proposed that the Residual Waste quantities the City will need to manage be estimated by assuming a CR&D waste diversion rate of 50%. It is possible that further increases in CR&D waste diversion may occur but for planning purposes it is not appropriate that higher diversion rates be relied on.

2.4 Population Projections

For many types of waste the quantity generated is directly proportional to an area's population. As the population increases the quantity of waste increases and conversely the quantity of waste decreases if the population decreases. For this reason, population projections were developed for the 25 year planning period.

The most recent population projections for the City of London are contained in the report *Employment, Population, Housing and Non-Residential Construction Projections, City of London, Ontario, 2011 Update* prepared by the Altus Group in 2012 for the City of London. The update report provides population estimates for the years 2016, 2021, 2026, 2031, 2036 and 2041.

These population estimates were used to develop permanent population projections for the planning period 2016 to 2050. For the period 2016 to 2041, the report's estimates were used for the years that a population estimate existed. For other years between 2016 and 2041, the population was estimated by linear interpolation (equally sized increases). For the period 2042 to 2050, it was assumed the rate of population growth would be the same as the period 2036 to 2041.

Seasonal population projections were developed to account for the large number of out of town students living off campus and attending the Western University and Fanshawe College. It was assumed that each student living off campus would generate two thirds of the garbage of a permanent resident since they typically attend school for 8 months of the year. The growth in the number of students was assumed to match the growth in permanent population.

The population projections for the city of London for the period 2016 to 2050 are summarized in Table 4. More detailed tables and information on the population projections are presented in Appendix C.

Table 4 - Population Projections

Year	Permanent Population	Equivalent Seasonal Population	Total	Average Growth
2016	372,700	21,300	394,000	
2021	385,400	22,000	407,400	0.68%
2026	405,700	23,200	428,900	1.05%
2031	421,900	24,100	446,000	0.80%
2036	439,800	25,100	464,900	0.85%
2041	457,600	26,100	483,700	0.81%
2050	492,100	28,100	520,200	0.81%

3.0 Residual Waste from Existing Service Area

3.1 General

This section of the report looks at the different types of waste from the existing service area of the W12A Landfill. This includes waste that the City is responsible for as well as waste not controlled by the City but accepts at its landfill for disposal. Current and future generation, diversion and disposal rates were developed for each waste type.

The waste has been broken into nine types based on their characteristics as outlined in Table 5 below. Each waste type is further described and quantified in its own subsection in this section.

Table 5 - Waste Types

Type	Characteristic		
	Composition ¹	Putrescible ²	City Control ³
Residential	Mixture	Yes	Yes
IC&I	Mixture	Yes	No
CR&D	Mixture	Yes ⁶	No
Sewage Sludge Ash ⁴	Uniform	No	Yes
Biosolids ⁴	Uniform	Yes	Yes
Street Sweepings/Road Works ⁴	Uniform	No	Yes
Other Municipal Operations ⁴	Mixture	Yes	Yes
Water Treatment Plant Process Residuals ⁴	Uniform	No	Yes
Contaminated Soil ⁵	Uniform	No	No

- Notes
1. Mixture refers to waste that is heterogeneous (contains a variety of different materials). Uniform refers to waste that is homogeneous (contains similar material).
 2. Putrescible refers to solid waste that contains organic matter that generates odours as it decomposes.
 3. City controls directly or indirectly where the waste will be disposed.
 4. Waste from Street Sweepings/ Road Works and Other Municipal Operations is institutional waste but not included in IC&I projections because it has different characteristics compared to typical IC&I waste.
 5. Contaminated soil is industrial waste but not included in IC&I projections because it has different characteristics compared to typical IC&I waste.
 6. CR&D waste contains drywall which has sulphur compounds that can create hydrogen sulphide (H₂S) gas when decomposing in landfills.

The split in waste based on waste type, putrescible and City control for 2016 is presented in Figures 4, 5 and 6, respectively. The percentages shown on these figures are on a tonnage basis.

Historical data on the waste generation, disposal and diversion rates for these materials is presented in Appendix D.

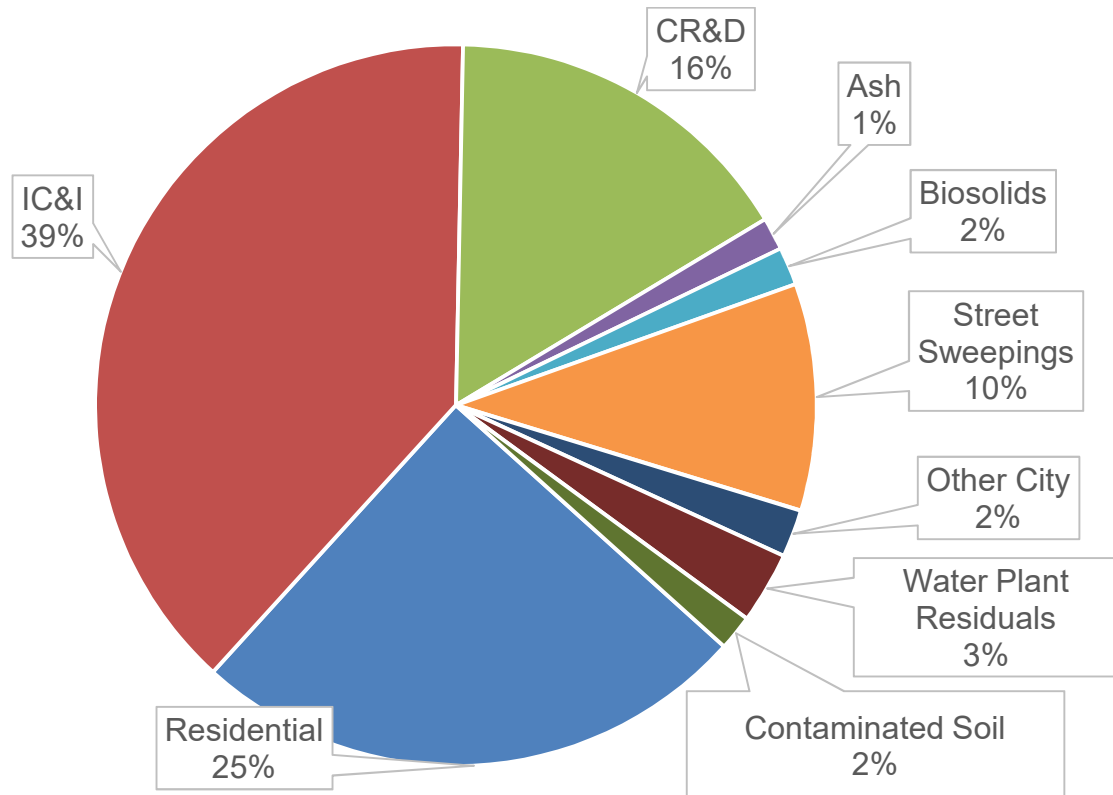
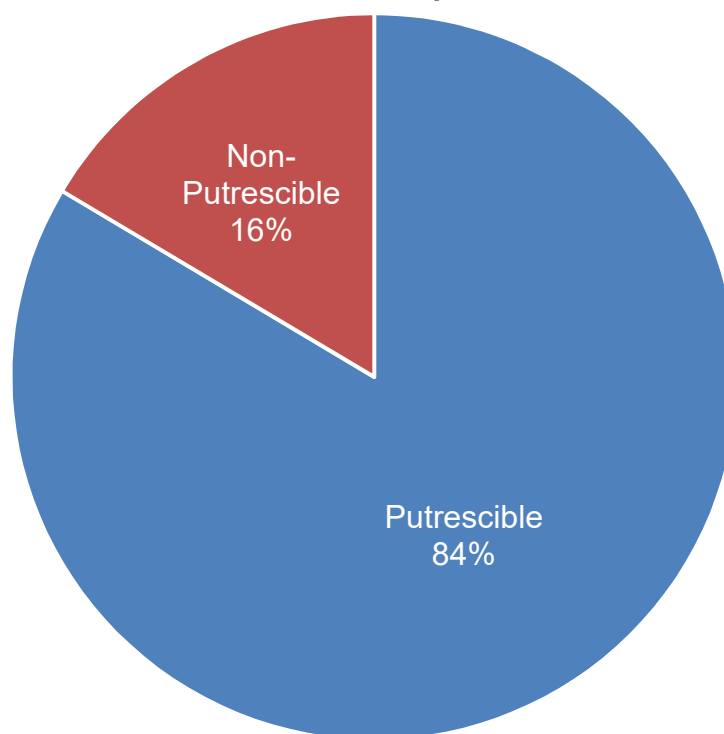
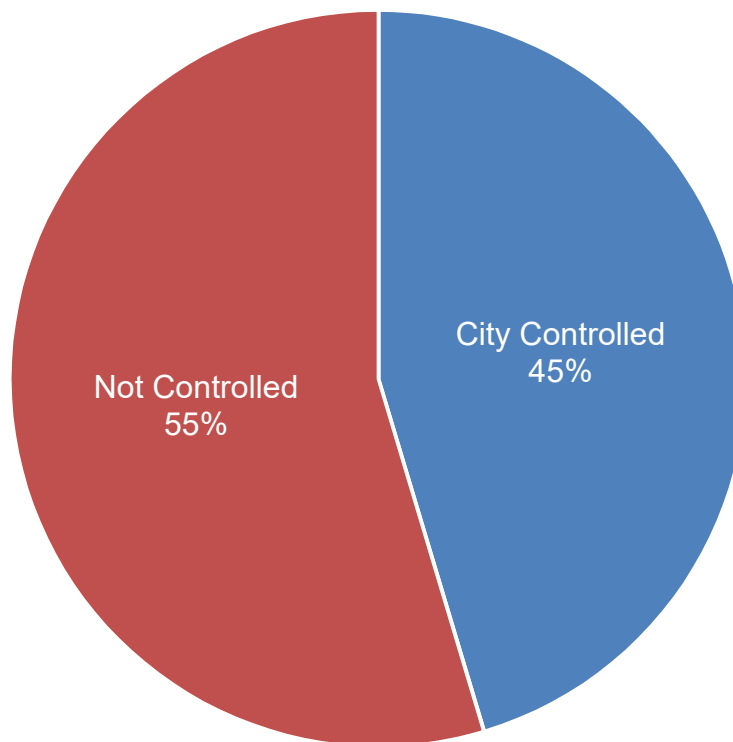
Figure 4 – Current Composition of Residual Waste by Waste Type**Figure 5 – Putrescible versus Non-putrescible Residual Waste**

Figure 6 – City Controlled Residual Waste

3.2 Residential

General

Residential waste refers to waste generated from all single family, multi-family, high-rise and low-rise buildings. This category also includes small amounts of commercial and institutional waste collected on residential garbage routes. It does not include residuals generated from recycling or composting residentially collected materials. The W12A Landfill receives residential waste from the city of London and from the Municipality of Thames Centre.

London

In general, over the last 15 years there has been no change in residential waste generation, increasing waste diversion and decreasing waste disposal. Currently Londoners generate approximately 420 kilograms/year per person of residential waste (includes about 20 kilograms/year per person of light IC&I) with 45% of the residential waste being diverted through various programs. The breakdown of the 55% of residential waste that is disposed of in the W12A Landfill is presented in Figures 7 and 8. Further details on the composition of residential waste in London and how it is currently managed are presented in Appendix E.

The assumptions used to estimate the amount of Residual residential waste to be managed in the future are presented in Table 6.

Figure 7 – Composition of Residential Garbage (Single Family Homes)**Commonly Collected Organics**

Organics that are easily composted. They include food waste and non-recyclable paper (soiled paper, tissues, paper towels).

Other Organics

Pet waste and sanitary products (e.g., diapers) which typically require pre-processing to remove the plastic bag that contains the pet waste and plastic covering of the diaper.

Blue Box

Items that were placed in the garbage but should have gone in the Blue Box.

Other Recyclable Materials

Items that were placed in the garbage but should have been dropped off at a depot or returned to retailer for recycling such as textiles, scrap metal, electronics, renovation materials and plastic bags.

Future Recyclable Materials

Items that may have local recycling options in the future such as carpets, mattresses and furniture.

Figure 8 – Composition of Residential Garbage (Multi-Residential Homes)

Commonly Collected Organics

Organics that are easily composted. They include food waste and non-recyclable paper (soiled paper, tissues, paper towels).

Other Organics

Pet waste and sanitary products (e.g., diapers) which typically require pre-processing to remove the plastic bag that contains the pet waste and plastic covering of the diaper.

Blue Box

Items that were placed in the garbage but should have gone in the Blue Box.

Other Recyclable Materials

Items that were placed in the garbage but should have been dropped off at a depot or returned to retailer for recycling such as textiles, scrap metal, electronics, renovation materials and plastic bags.

Table 6 - Residential Waste Assumptions

Assumption	Rationale
Residential waste generation will be 420 kilograms/year per person in 2018.	Average generation rate for the last five years. Includes light commercial.
There will be no change in the generation rate ¹ in future years.	No change in generation rate for last 15 years.
The residential diversion rate will be 45% (or 180 kilograms) in 2018.	Using diversion rate as 2017.
The residential diversion rate would increase to 60% (or 240 kilograms/year per person) by 2022 and remain steady.	Proposed diversion goal for the London. It is possible that further increases in residential waste diversion may occur after 2022 but for planning purposes it is not appropriate to rely on higher diversion rates at this time.

Notes 1. The waste generation rate will not be decreased to show waste reduction initiatives. Instead future waste reduction initiatives will be shown as a separate amount (waste reduction rate) and included in the calculation of the overall diversion rate.

Thames Centre

The City has an agreement with Thames Centre to accept municipally collected residential garbage during winter months (so that the Thames Centre Landfill can close in the winter months and reduce operating costs) and the City has the option of disposing of an equivalent amount of residential garbage in the Thames Centre Landfill in the summer. Thames Centre disposes of approximately 800 tonnes of waste at the W12A Landfill during the winter months.

For the purposes of this study it is assumed that the W12A Landfill will receive 800 tonnes of garbage from Thames Centre. This amount will increase at the same rate as residential waste in London increases and London will not use the Thames Centre Landfill.

3.3 Industrial, Commercial and Institutional (IC&I) Waste

Industrial, Commercial and Institutional (IC&I) waste consists of:

- Industrial waste, which is generated by manufacturing and primary and secondary industries and is managed off-site from the manufacturing operation;
- Commercial waste generated by commercial operations such as shopping malls, offices, etc.; and,
- Institutional waste generated by institutional facilities such as schools, hospitals government facilities, universities, etc.

The majority of IC&I waste is handled by the private sector, although a small amount of commercial and institutional waste is managed by the City primarily limited to small businesses and offices on residential garbage routes and City facilities. IC&I waste generation, disposal and diversion rates are difficult to determine because there is no ongoing data collection or central warehouse for these data as it is privately held

information.

Items that should be considered when looking at future IC&I disposal and diversion rates include:

- Estimates of IC&I waste generation vary from 420 kilograms/year per person (estimated from available 2013 to 2015 local waste management facility data) to 530 kilograms/year per person (estimated provincial average in 2005);
- The majority of IC&I waste is currently exported from London while some is taken to the W12A Landfill for disposal;
- Information on IC&I diversion rates as presented in Section 2.2; and,
- Approximately 57,000 tonnes of IC&I waste was disposed of at the W12A Landfill in 2017 or 140 kilograms/year per person. This represents approximately 30% of the IC&I waste generated.

The IC&I disposal rate in the future will depend on a number of factors that are outside the control of the municipality and have the potential to result in dramatically different amounts of waste that will have to be managed by the City.

Currently some IC&I waste is exported to private landfills in southwestern Ontario or Michigan. Some or all of this waste could come to the W12A Landfill if private tipping fees rates are increased; access to landfills in Michigan is restricted or tipping fees for IC&I waste are reduced at the W12A Landfill.

Alternatively, regulations under the *Waste-Free Ontario Act* have the potential to reduce the amount of waste going to the W12A Landfill for disposal by increasing the amount of IC&I waste that is required to be diverted. Higher tipping fees at the landfill could also reduce the amount of IC&I waste received at the landfill.

Waste Export
<p>Some IC&I waste from London is exported to</p> <ul style="list-style-type: none"> • private landfills in southwestern Ontario (e.g., Twin Creeks Landfill in Warwick, Ridge Landfill in Chatham-Kent) • private landfills in Michigan (more than 2 million tonnes of IC&I waste was shipped in 2014 to Michigan from Ontario)

The assumptions used to estimate the amount of Residual IC&I waste to be managed in the future are presented in Table 7.

Table 7 - IC&I Waste Assumptions

Assumption	Rationale
IC&I waste generation will be 450 kilograms per person in 2018.	Reasonable rate based on existing range of estimated rates (slightly less than average of estimates).
There will be no change in the generation rate ¹ in future years.	Limited historical information but what exists suggests no change over last several years.

continued on next page

Table 7 - IC&I Waste Assumptions

Assumption	Rationale
All IC&I waste from London will come to the W12A Landfill by 2025.	Potential for future waste export depends on a number of factors that are outside the control of the municipality. City must be prepared to provide affordable waste disposal if export options become less viable.
The IC&I diversion rate will increase to 25% by 2025 and 50% by 2050.	Assumes significant increase in IC&I diversion rates but not high as the proposed interim goals in the <i>Strategy for a Waste Free Ontario Building a Circular Economy</i> .

Notes 1. The waste generation rate will not be decreased to show waste reduction initiatives. Instead future waste reduction initiatives will be shown as a separate amount (waste reduction rate) and included in the calculation of the overall diversion rate.

3.4 Construction, Renovation and Demolition (CR&D) Waste

CR&D waste refers to waste generated by construction, renovation and demolition activities and generally includes brick, wood, drywall, metal, asphalt singles, insulation, doors, windows, etc. For the purposes of this report it excludes materials like asphalt and concrete that can be diverted from landfill for reuse at no or minimal cost.

CR&D waste comes from a diverse range of sources and like IC&I waste is not under municipal control. This makes getting information about CR&D waste difficult and presents challenges for the calculation of waste generation, disposal and diversion rates.

CR&D waste is banned from the W12A Landfill because there are local recycling options available. CR&D recycling process residuals from these facilities are accepted for disposal at the W12A Landfill.

The majority of CR&D waste from London goes to one of the three local CR&D recycling facilities with a small amount exported for disposal. Approximately 45% to 50% of the material going to CR&D recycling facilities is diverted to beneficial uses while the remaining 50% to 55% becomes process Residual Waste that is sent for disposal.

The amount of Residual Waste generated from the three local CR&D recycling facilities is presented in Table 8. It is noted that these facilities process a small amount of material that originates from outside London. The residue from this material can be disposed at the W12A Landfill after being processed. This is estimated to be less than 10% of the total waste processed. CR&D Residual Waste generation was 330 kilograms/year per person in 2016, which is about 10% higher than a typical year (2014 and 2015 were closer to 300 kilograms/year per person).

Table 8 - 2016 Residual Waste CR&D Quantities

Facility	Residuals (tonnes)
Green Valley Recycling ¹	19,000
Try Recycling – Dingman ¹	13,000
Try Recycling – Clarke Road ¹	35,000
Total	67,000

Notes 1. From Annual Report to the MECP.

The CR&D processed Residual Waste is solid non-hazardous waste (see Figure 9) consisting of film plastic, insulation, flat roofing, and other materials that cannot be recycled for a variety of reasons (e.g., too dirty, not economical to clean up, etc.). The W12A Landfill could get up to 150 kilograms/year per person if all CR&D waste went to CR&D recycling facilities and all the resulting process residuals came to the W12A Landfill.



Figure 9 – CR&D Recycling Process Residuals

In 2016 the W12A Landfill received 33,000 tonnes of CR&D process residuals. This represents approximately 50% of all potential CR&D recycling process residuals from London.

It should be noted that limited CR&D residuals from Try Recycling – Clarke Road were disposed of at the W12A Landfill in 2016. This facility is located just outside London but was included in the service area of the landfill when the service area was expanded in 2016.

The amount of CR&D waste generated each year will vary based on the strength of the economy and the housing market. The assumptions used to estimate the amount of Residual CR&D waste to be managed in the future are presented in Table 9.

Table 9 - CR&D Waste Assumptions

Assumption	Rationale
CR&D waste generation will be 300 kilograms/year per person in 2018.	Based on data from annual reports submitted to MOECC by local CR&D recycling facilities for 2014, 2015 and 2016.
There will be no change in the generation rate ¹ in future years.	Limited historical information but what exists suggests no change over last several years.
All CR&D Residual Waste from London will come to the W12A Landfill by 2025.	Potential for future waste export depends on a number of factors that are outside the control of the municipality. City must be prepared to provide affordable waste disposal if export options become less viable.
The CR&D diversion rate will be 50% (or 150 kilograms/year per person) in 2018 and not change in future years.	Using same diversion rate as 2016.

Notes 1. The waste generation rate will not be decreased to show waste reduction initiatives. Instead future waste reduction initiatives will be shown as a separate amount (waste reduction rate) and included in the calculation of the overall diversion rate.

3.5 Sewage Sludge Ash

Sewage sludge is nutrient-rich organic material that is a by-product from waste water treatment plants. The City operates six wastewater treatment plants of which the Greenway Pollution Control Centre (Greenway) is the largest. Greenway receives all of the residual sewage sludge produced in the city, where it is dewatered.

Until 1988 all sewage sludge was landfilled. Beginning in 1988, sewage sludge was incinerated at Greenway and landfilled when the incinerator was down for repairs or maintenance.

Incineration of the sewage sludge destroys all organic matter resulting in an inorganic ash that is a non-hazardous solid waste. The ash is red in colour and consists of silt/clay size particles (see Figure 10).

The average amount of sewage sludge ash generated over the last decade is approximately 5,400 tonnes per year or 14 kilograms per person per year.

Until 2008, sewage sludge ash was taken to the W12A Landfill for disposal. Between 2008 and 2014, some or all of the ash each year was taken to St. Mary's Cement where the ash was incorporated into the cement making process. In 2015 St. Mary's Cement stopped taking the ash and has advised the City that it is *"very unlikely that we will resume use of this ash in the foreseeable future"* because the variation in ash makes it difficult to incorporate into the cement making process.

The report *Greenway PCP Solids Options Study* (R.V. Anderson, 2011) considered sewage sludge projections and the capacity of the incinerator. The report concluded that the incinerator would have capacity lasting beyond 2070 based on historical growth of approximately 0.2% per year.

Dewatered Sewage Sludge

- Approximately 25% solids and 75% water
- 60,000 to 65,000 tonnes generated per year
- 90 to 95% incinerated
- 90% to 95% weight reduction when incinerated



Figure 10 – Sewage Sludge Ash

The assumptions used to estimate the amount of sewage sludge ash to be managed in the future are presented in Table 10.

Table 10 - Sewage Sludge Ash Waste Assumptions

Assumption	Rationale
Sewage sludge ash generation will be 5,500 tonnes in 2025.	2018 projected population times 14 kilograms/year per person and increased 0.2% for nine years.
The quantity of sewage sludge ash will increase 0.2% per year.	Based on findings in the report <i>Greenway PCP Solids Options Study</i> (R.V. Anderson, 2011).
The Greenway incinerator will have sufficient capacity until at least 2070.	Based on the findings in the report <i>Greenway PCP Solids Options Study</i> (R.V. Anderson, 2011).
No sewage sludge ash would be managed by St. Mary's Cement.	Based on communications with St. Mary's Cement.

3.6 Biosolids

As noted in the previous section, approximately 90% to 95% of the City's sewage sludge is incinerated at Greenway. Up until 2006 raw sewage sludge was landfilled when the incinerator was down for maintenance or repairs (5% to 10% of the time). Beginning in 2007 the sewage sludge was treated by lime stabilization before being landfilled (treated sewage sludge is referred to as Biosolids).

The average amount of Biosolids generated over the last five years is approximately 6,400 tonnes per year or 16 kilograms per person per year. As noted in the previous section, sewage sludge is growing at about 0.2% per year, which is less than the growth in population.

Lime Stabilized Biosolids

- Approximately 37% solids and 63% water
- Produced by adding approximately 20% (by weight) lime to the sewage sludge
- Lime raises pH to 12 or higher, which kills bacteria or viruses
- Reduced odours

The City is currently looking at two options for managing Biosolids when the incinerator is down instead of landfilling.

In 2008 to 2010 the City looked at using the lime stabilized Biosolids as an agricultural amendment. The Biosolids contain beneficial levels of nitrogen, ammonia, potassium and calcium. Application of the Biosolids to agricultural land is restricted to certain times of the year when the material is required, while production of the Biosolids can occur at any time because of the need for unexpected repairs or maintenance of the incinerator. The inability to find a storage solution for the Biosolids when agricultural land was not available made this option impractical. This option will be explored again given the passage of time.

The Province introduced new Composting Guidelines in 2012, which allow for adding sewage sludge Biosolids as feedstock material in the production of Category A or B compost but not for Category AA (highest quality compost). Sewage Biosolids are limited to a maximum of 25% of the feedstock blend (on a dry weight basis). This option is currently being explored.

The assumptions used to estimate the amount of Biosolids to be managed in the future are presented in Table 11.

Table 11 - Biosolids Waste Assumptions

Assumption	Rationale
Biosolids generation will be 6,400 tonnes in 2025.	2017 projected population times 16 kilograms per person /year and increased 0.2% for nine years.
The quantity of Biosolids will increase 0.2% per year.	Based on the findings in the report <i>Greenway PCP Solids Options Study</i> (R.V. Anderson, 2011).
Biosolids will continue to be landfilled.	This assumption may change if the City is successful in finding another option for the management of Biosolids.

3.7 Street Sweepings/Road Works

Each year the City removes the sand, salt, leaves and debris left on roads from the winter season through its street sweeping program. London, like most municipalities in Ontario, landfills street sweepings because of the debris, salt and other potential contaminants.

Consideration of various management options for street sweepings suggests that using this material as landfill cover is the most practical use at this time. Sometimes this is not possible because of the time of the year (e.g., already excess cover material available), weather conditions (e.g., dry and windy resulting in dust from the stockpiles) or the amount of debris in the street sweepings. It is estimated that approximately 50% of the street sweepings is used as cover material and 50% is disposed of as waste.

The City also often has excess soil from road, sewer or water main maintenance and repairs. Like street sweepings, this material often needs to come to the landfill because of debris or potential contaminants such as road salt.

Consideration of Other Management Options for Street Sweepings

Screen and Reuse as Winter Sand

- Sand loses its sharp edges after being used
- Does not provide sufficient traction compared to new sand

Screen and Reuse as Fill

- Contamination from salt and other compounds generally prevents reuse
- Litter and other debris in street sweepings would have to be removed before reuse

Process for Commercial Uses

- Historically it has not been practical to re-process to use as foundry sand, in cement making or as sandblasting sand
- Currently exploring these options

The amount of street sweepings can vary wildly from year to year because the amount generated is directly linked to the length and severity of the winter. The amount of road work material depends on the number of projects and what is encountered.

Over the last decade the annual quantity of street sweepings/road works has varied from 22,000 tonnes to 52,000 tonnes with an average of 36,000 tonnes (95 kilograms per person per year).

The assumptions used to estimate the amount of street sweepings and road works waste to be managed in the future are presented in Table 12.

Table 12 - Street Sweepings/Road Works Waste Assumptions

Assumption	Rationale
Street sweepings/road works waste generation will be 95 kilograms per person in 2018.	Average generation rate for the last ten years.
The amount of street sweepings/road works waste generated per person is not expected to increase or decrease in the future.	The quantity generated per person is highly variable year to year but does not seem to be increasing or decreasing over the long term.
Street sweepings/road works waste generation would increase at the same rate as population growth.	Increasing roads (and therefore street sweepings/road works waste) will be proportional to increase in population.
Street sweepings/road works will continue to go to the landfill in the future with 50% being used as cover material.	Expected to continue existing practices for the foreseeable future.

3.8 Other Municipal Operations

Other Municipal Operations consist of waste generated by City operations excluding street sweepings, biosolids and sewage sludge ash. This includes non-recyclable waste from City parks, residuals from the City's material recovery facility and grit from pollution control plants.

Over the last five years the annual quantity of waste from Other Municipal Operations has varied from 5,600 tonnes to 9,600 tonnes with an average of 7,900 tonnes (20 kilograms per person per year). There is limited opportunities to divert this material from disposal.

The assumptions used to estimate the amount of waste from Other Municipal Operations to be managed in the future are presented in Table 13.

Table 13 - Other Municipal Operations Waste Assumptions

Assumption	Rationale
Other Municipal Operations waste generation will be 20 kilograms per person in 2018.	Average generation rate for the last five years.
The amount of Other Municipal Operations waste generated per person is not expected to increase or decrease in the future.	The quantity generated per person is highly variable year to year but does not seem to be increasing or decreasing over the long term.
Other Municipal Operations waste generation would increase at the same rate as population growth.	Increase in Other Municipal Operations will be proportional to increase in population.
Other Municipal Operations waste will continue to go to the landfill in the future.	Expected to continue existing practices for the foreseeable future.

3.9 Water Treatment Plant Process Residuals

This waste is generated when turbid water from the lakes is pumped into the water treatment plants and the suspended solids causing the turbidity are removed. The residuals are generated from filter backwash waste water and other intermittent plant process waste streams. This process residual is soil-like in nature (i.e., suspended sediment from turbid lake water).

A picture of the water treatment plant process residuals and the water treatment plant process residuals being loaded onto a truck for transport is shown below (Figure 11).

**Figure 11 – Water Treatment Plant Process Residuals**

The City received approval in May 2016 to accept water treatment plant process residuals from the Lake Huron and Elgin Area water treatment plants at the W12A Landfill for disposal. It is estimated that these facilities generate approximately 12,000 tonnes per year of process residuals. The Elgin Area residuals are disposed of at the W12A Landfill while the Lake Huron residuals are currently being managed at other locations. It is expected these other locations will no longer be able to accommodate the Lake Huron process residuals in the next couple of years.

The City will look at the potential for the process residuals to be used as cover material and thereby not consume any landfill space. The City can consider this because the material has few to no odours and chemical testing of the material shows that it generally meets soil quality standards for industrial land use. However, the high moisture content and fine uniform nature of the sediment may make it difficult to

spread over the waste and limit its effectiveness as cover material. It may also be more difficult to use in the winter because of freezing due to the high water content of the material. Blending the process residuals with other cover material may address these practical limitations. For the purpose of estimating future Residual Waste quantities, it will be assumed that the process residuals cannot be used as cover material.

Rules for Using Non-Soil Material as Landfill Cover

- No offensive odours
- Can be spread in 150 mm layers
- Chemical testing demonstrates it meets soil quality standards for industrial land use (does not have to meet residential or agricultural land use standards)

The assumptions used to estimate the amount of waste from water treatment plant operations to be managed in the future are presented in Table 14.

Table 14 - Water Treatment Plant Waste Assumptions

Assumption	Rationale
The W12A Landfill will begin accepting water treatment plant process residuals by 2025 (or earlier).	Elgin Area Treatment Plant residuals are disposed of at the W12A Landfill. Lake Huron Treatments Plant Residual to expected come to the W12A Landfill in the future.
Water treatment plant process residuals generation will be 12,000 tonnes (30 kilograms per person per year) in 2018;	Based on combination of design information and weighted quantities.
Water treatment plant process residuals will increase at the same rate as population growth.	Amount of water processed for use is assumed to be directly proportional to population.

3.10 Contaminated Soil

The W12A Landfill is licensed to accept contaminated soil. Depending on the level of contamination the soil is either buried as waste or used as cover material.

The quantity of material being received at the W12A Landfill has changed over time. Beginning in 2002 the landfill started to receive more contaminated soil when it lowered the tipping fee for this material. Prior to 2002 most contaminated soil was exported to other landfills in Southern Ontario or Michigan. More recently the amount of contaminated soil being accepted at the W12A Landfill has decreased with the opening of a nearby contaminated soil processing facility by Green for Life (GFL) in Thames Centre in 2013.

On average the landfill received 11,400 tonnes per year over the last four years and 25,000 tonnes per year in the seven years prior to that. It is believed that prior to the opening of the GFL facility the W12A landfill received the majority of contaminated soil generated in London, with an unknown amount exported to nearby landfills.

The assumptions used to estimate the amount of contaminated soil to be managed in the future are presented in Table 15.

Table 15 - Contaminated Soil Assumptions

Assumption	Rationale
The W12A Landfill will receive approximately 11,000 tonnes of contaminated soil (30 kg/person per year) in 2018.	Based on amount being received in the four years since the opening of the GFL contaminated soil processing facility.
The amount of contaminated soil generated per person is not expected to increase or decrease in the future.	The quantity generated is highly variable year to year but does not seem to be increasing or decreasing over the long term.
50% of the material will be used as cover material and 50% of the material will be buried as waste	Based on historical trends. Expect to continue existing practices for managing contaminated soil for the foreseeable future.

3.11 Residual Waste Quantity Projections from Existing Service Area

Residual waste quantity (by weight) projections were developed for the existing service area taking into account the City's population projections (Table 4) coupled with the projected generation and diversion rates (Table 16) for each of the waste type. These calculations are presented in Appendix F and summarized in Table 17.

Table 16 - Summary of Waste Generation and Diversion Rates

Waste Type	2017 Generation Rate (kg/person)	Diversion Rate				Comments
		2017	Landfill Expansion			
			2025	2030	2050	
Residential	420	45%	60%	60%	60%	Reach 60% by 2022
IC&I	450	20%	25%	30%	50%	No export by 2025
CR&D	300	50%	50%	50%	50%	
Sewage Sludge Ash	14	-	-	-	-	
Biosolids	16	-	-	-	-	
Street Sweepings	95	-	-	-	-	
Other Municipal	20	-	-	-	-	
WTP Residuals	30	-	-	-	-	
Contaminated Soil	30	50%	50%	50%	50%	50% used as cover
Total	1375					

Table 17 - Residual Waste Generation Projections (Weight)

Year		Quantity (tonnes)		
		Annual	Running Total	Running Total After 2025
2018	-	249,000	-	-
2025	0	359,000	2,000,000	0
2029	5	363,000	3,800,000	1,800,000
2034	10	367,000	5,600,000	3,600,000
2039	15	371,000	7,500,000	5,500,000
2044	20	375,000	9,300,000	7,300,000
2049	25	378,000	11,200,000	9,200,000

4.0 Residual Waste from Regional Service Area

As discussed in Section 2.0, the City is proposing to establish a regional service area for the Residual Waste Disposal Strategy. The regional service area would consist of the City of London plus Elgin County, Middlesex County, Huron County, Lambton County and Perth County

Regional Service Area

- Approximately 185,000 households
- Disposed of 89,000 tonnes of residual residential waste in 2016
- Diverted 51,000 tonnes of waste for an average diversion rate of 36%

4.1 Potential to Export

As noted in the *Strategy for a Waste-Free Ontario* (page 25) - “while Ontario strives for a waste-free future, there will still be a need for landfill space as we work towards this goal”. Currently Ontario has a lack of landfill capacity to meet its needs and there are limited options for municipalities within the proposed service area to manage their residual waste should their current disposal location not be available.

- **Ontario has a Landfill Capacity Deficit** - Ontario has a net deficit of landfill capacity for residual waste with over 2 million tonnes of solid non-hazardous waste from Ontario being exported to the U.S. annually. Waste projections suggest this deficit will continue for the foreseeable future.
- **Limited Disposal Options outside of the Proposed Regional Service Area** - As small landfills in the proposed regional service area close, the municipalities will need a place to take their residual waste. There are only three landfills in the Province outside of the proposed regional service area that are approved to accept their waste.

All these landfills are located some distance away (Eastern Ontario Waste Handling Facility (Lafleche landfill) in eastern Ontario, Niagara Waste Systems in Niagara Region and the Essex-Windsor Landfill in Essex County). Their distant location increases the cost and GHG emissions of managing waste from the area. In addition, the Niagara Waste Systems landfill already receives its maximum annual waste allowed and cannot take on new customers; Lafleche landfill receives close to its maximum annual waste allowed (within 10%) and has limited ability to take on new customers; and the Essex-Windsor landfill can only accept waste from a portion of the proposed regional service area (Lambton County and Elgin County).

- **Limited Disposal Options within the Proposed Regional Service Area** – There are two larger landfills located within the proposed regional service area (Green Lane Landfill owned by the City of Toronto and Twin Creeks Landfill owned by Waste Management) that accept waste from other municipalities. Toronto is discouraging waste from new locations to come to the Green Lane landfill. This leaves only one local operating landfill within the proposed regional service area that is likely to accept waste from municipalities who are seeking residual waste disposal capacity.

4.2 Residual Waste Quantities

Calculation of the amount of waste that could come to the W12A Landfill from the proposed regional service area is presented in Appendix G and summarized below:

- Residential residual waste quantities for each municipality in the proposed regional service area were obtained from the Resource Productivity and Resource Authority Datacall and presented in Table 18.
- IC&I waste quantities were assumed to be equal to residential waste quantities as there is limited public data on IC&I residual waste quantities within the proposed service area. It is noted that the Province as a whole generates more IC&I residual waste than residential residual waste.
- It was assumed that there is no increase in population or per capita waste generation rate in the future.
- The City contacted each of the municipalities within the proposed regional service area to determine their interest in using a regional waste disposal facility (see Table 18). Only municipalities or municipalities in a County that expressed an interest in using the W12A Landfill were included in residual waste calculations. The responses from the municipalities are provided in Appendix H.
- The remaining site life of the 24 operating landfills (see Table 19) within the proposed regional study area were obtained from public sources (e.g., MECP, annual report, website, etc.) or by contacting the owner of the landfill.
- It was assumed larger landfills within the expanded service area (Twin Creeks Landfill and City of Stratford Landfill) would be expanded when their current capacity is exhausted and therefore no waste would come to the W12A Landfill from municipalities using these landfills.
- It was assumed that the St. Marys Landfill which is currently going through an EA will be expanded and therefore no waste would come to the W12A Landfill from St. Marys.
- It is assumed that the Green Lane Landfill owned by the City of Toronto will continue to accept waste from local municipalities until the current capacity is exhausted..
- Four waste diversion scenarios were considered ranging from no increase in waste diversion to meeting the interim waste diversion goals in *Strategy for a Waste-Free Ontario* (see Table 20).

The results of the four scenarios are presented in Appendix G and summarized in Table 21. They show residual waste quantities ranging from 0.5 million to 1.1 million tonnes.

As noted in Section 2.3:

- The interim waste diversion goals in *Strategy for a Waste-Free Ontario* are aggressive (aspirational) targets.
- There are many unknowns associated with implementation of these goals, which will require major changes to how business is done in Ontario including moving to a Circular Economy.
- The province has not been able to meet any of the previous targets except for the 25% waste diversion (by 1989) but meeting this target took over two decades longer than proposed.

Considering the above, the residual waste quantity projections from the proposed regional service area should take into consideration the Provincial interim solid waste diversion goals, but there should be an allowance to accommodate some additional Residual Waste if the interim waste diversion goals are not met.

In selecting a waste diversion rate, a balance must be achieved between not picking a rate that is too low and therefore having excess licensed capacity and conversely not picking a waste diversion rate that is too high and therefore not having enough Residual Waste disposal capacity to accommodate all the waste that is generated in the future.

It is proposed that Residual Waste quantities from the proposed regional service area will be estimated by assuming diversion rates achieve 80% of the interim waste diversion goals in *Strategy for a Waste-Free Ontario* resulting in 0.6 million tonnes of residual waste received at the W12A Landfill over the 25 year planning period.

It is noted this estimate of residual waste quantities is for planning purposes and there are many uncertainties in addition to the assumptions used in the calculations. Some of these uncertainties include:

- Some smaller landfills may not be able to use all their disposal capacity due to environmental considerations. For example, the two landfills owned by the Township of Southwest Middlesex were recently closed because of environmental performance upgrades required by MECP. One has been permanently closed and the other may or may not reopen in the future.
- The City of Toronto is sending some of its waste to other landfills to extend the life of the Green Lane Landfill to 2040. Green Lane Landfill would close sooner if Toronto sends all of its waste to Green Lane Landfill. In addition, Toronto is discouraging waste from new locations from coming to the Green Lane landfill. There is the possibility Toronto could discourage existing local customers from using the landfill in the future.
- The on-going provincial waste disposal capacity deficit may allow private landfills accepting waste from within the proposed regional service area to seek out other waste for which they can charge higher tipping fees, especially if there is any disruption in the export option.

Table 18: Residential Residual Waste Quantities by Municipality

Municipality	Expressed Interest in Using W12A Landfill^a	Residential Residual Waste^b (2016, tonnes)	Residential Waste Diverted^b (2016, tonnes)	Total (tonnes)
City of St. Thomas	yes	8,784	7,192	15,976
Town of Aylmer	yes	1,665	812	2,477
Municipality of Bayham	yes	1,030	613	1,643
Municipality of Central Elgin	yes	2,715	1,738	4,453
Municipality of Dutton/Dunwich	yes	919	316	1,235
Municipality of West Elgin	yes	953	272	1,225
Township of Malahide	yes	1,514	547	2,061
Township of Southwold	No response	937	247	1,184
Municipality of Adelaide Metcalfe	yes	384	242	626
Municipality of Lucan Biddulph	yes	676	426	1,102
Municipality of Middlesex Centre	yes	2,258	1,423	3,681
Municipality of North Middlesex	yes	882	556	1,438
Municipality of Southwest Middlesex	yes	689	719	1,408
Municipality of Strathroy-Caradoc	yes	3,110	1,959	5,069
Municipality of Thames Centre	yes	2,293	2,201	4,494
Village of Newbury	yes	72	24	96
Township of Ashfield-Colborne-Wawanosh	yes	1,756	356	2,112
Municipality of Bluewater	yes	1,667	1,050	2,717
Municipality of Central Huron	yes	1,406	886	2,292
Town of Goderich	yes	1,353	852	2,205
Township of Howick	yes	561	246	807
Municipality of Huron East	yes	1,407	886	2,293

Table 18: Residential Residual Waste Quantities by Municipality

Municipality	Expressed Interest in Using W12A Landfill^a	Residential Residual Waste^b (2016, tonnes)	Residential Waste Diverted^b (2016, tonnes)	Total (tonnes)
Municipality of Morris-Turnberry	yes	463	292	755
Township of North Huron	yes	1,238	722	1,960
Township of South Huron	yes	1,708	1,076	2,784
City of Stratford	yes	7,991	4,835	12,826
Town of St. Marys	yes	1,138	717	1,855
Municipality of North Perth	yes	1,964	1,238	3,202
Township of Perth East	yes	1,501	946	2,447
Township of Perth South	yes	526	332	858
Municipality of West Perth	yes	1,287	811	2,098
Municipality of Brooke-Alvinston	yes	366	230	596
Township of Dawn-Euphemia	yes	310	195	505
Township of Enniskillen	yes	393	138	531
Municipality of Lambton Shores	yes	2,578	1,624	4,202
Village of Oil Springs	yes	105	66	171
Town of Petrolia	yes	1,303	738	2,041
Town of Plympton-Wyoming	yes	2,847	556	3,403
Village of Point Edward	yes	358	0	358
City of Sarnia	yes	20,581	10,933	31,514
Township of St. Clair	yes	4,626	1,373	5,999
Township of Warwick	yes	527	332	859
Total		88,841	50,717	139,558

Notes a) Responses from municipalities are provided in Appendix H.

b) From the Resource Productivity and Resource Authority Datacall.

Table 19: Remaining Site Life of Landfills in Study Area

Landfill	Projected Closing Date	Comment
Limerick Landfill	2018	Permanently closed by Council because of environmental upgrades required by MECP
Trillium Drive Landfill	2018	Temporarily closed by Council while it decides whether or not to make environmental upgrades required by MECP
Mid-Huron Landfill Site	2018	
Morris Ward Landfill	2023	
W12A Landfill	2025	
Howick Landfill	2026	
West Elgin Landfill	2030	
Kellam Road Landfill	2032	
School Road Landfill	2032	
Dawn Landfill	2034	
Twin Creeks	2034	Twins Creek landfill is seeking to increase its rate of fill from 750,000 tonnes/year to 1,400,000 tonnes/year, which will reduce site life from 2047 to 2034. Assume landfill is expanded at that time.
Stratford Landfill	2037	Assume landfill is expanded in the future.
Green Lane (Toronto)	2040	
Stanley Landfill	2044	
St. Marys Landfill	2058	Site life assuming proposed expansion is approved.
Ashefield Landfill	2062	
Thames Centre Landfill	2075	
Elam Landfill	2100	
South Easthope Landfill	2100	
Mitchell Landfill	2115	
Dutton/Dunwich Landfill	2133	
Wingham Landfill	>2090	
Perth South Landfill	>2100	
South Huron Landfill	>2100	

Table 20 - Waste Diversion Scenarios

Scenario	2018	2020	2030	2050
No increase in waste diversion rates	25%	25%	25%	25%
Increase in diversion rates half way towards MECP diversion targets ^a	25%	28%	38%	53%
Increase in diversion rates 75% of the way towards MECP diversion targets ^a	25%	29%	44%	66%
Increase in diversion rates 75% of the way towards MECP diversion targets ^a	25%	30%	52%	100%

Notes a) Interim waste diversion goals from *Strategy for a Waste-Free Ontario Building a Circular Economy* (MOECC, 2017) (2017)

Table 21 - Summary of Residual Waste for Various Waste Diversion Scenarios

Scenario	Residual Waste (millions)	Diversion Rate in 2050	Percentage of MECP goal
No increase in waste diversion rates	1.1	25%	30%
Increase in diversion rates half way towards MECP diversion targets	0.8	53%	66%
Increase in diversion rates 75% of the way towards MECP diversion targets	0.6	66%	80%
Achieve 100% of MECP diversion targets	0.5	80%	100%

5.0 Landfill Capacity Assessment

As previously noted, the landfill expansion will need to accommodate approximately 9.2 million tonnes from the existing service area and approximately 0.6 million tonnes from the proposed regional service area for a total of 9.8 million tonnes of disposal capacity between 2025 and 2050. The volume of landfill airspace required to accommodate waste is typically calculated by multiplying the number of tonnes of waste to be disposed by the landfill utilization rate. The landfill utilization rate is the amount of space (cubic metres, m^3) needed to manage an average tonne of waste including daily and intermediate cover material.

The W12A Landfill has received 8,240,000 tonnes since it opened and has used 9,640,000 m^3 of space (excluding final cover) for a historical landfill utilization rate of 0.8 tonnes/ m^3 . This is equivalent to approximately 80% of the landfill volume being consumed by waste with an average compacted waste density of 1 tonne/ m^3 and 20% of the landfill volume being consumed by cover material (approximately 4 to 1 waste to soil cover ratio).

There is a range of average waste density and waste to cover ratios used in converting tonnage to volume for the purpose of estimating the required airspace for new or expanding landfills. For expanding landfills, where data is available, it is considered appropriate to use information available from the existing site, assuming that in future the nature of the materials to be disposed and the method of placement and compaction will not change significantly from current operations. For example, average compacted densities can range from 0.80 to 1.1 tonnes/ m^3 and a 4 to 1 waste to cover ratio is often assumed, with corresponding utilization rates of about 0.64 to 0.9 tonnes/ m^3 .

The higher utilization rate achieved by the W12A Landfill is directly attributable to the significant quantity of ash, contaminated soils and other denser materials that the landfill has received in the past. It is anticipated the utilization rate will be lower in the future because the proportion of “denser” materials will decrease (e.g., less ash in the future as the historical ash quantities included EFW ash, less contaminated soil in the future because of the contaminated soil processing facility opened by GFL in Dorchester in 2013; more residential and IC&I waste because of the expanded regional service area).

For the purpose of estimating future disposal needs, a landfill utilization rate of 0.72 tonnes/ m^3 is used, which is the midway point between 0.80 tonnes/ m^3 and 0.64 tonnes/ m^3 .

For the 25 year planning period, the expansion of the W12A Landfill should consider the need for an additional disposal volume of 13,600,000 m^3 based on a landfill utilization rate of 0.72 tonnes/ m^3 .

Appendix A

Technical Jargon

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Acronym/Term	Definition
(the) Site	(the) W12A Landfill located at 3502 Manning Drive, London, Ontario.
(the) undertaking	The activities associated with the Environmental Assessment for the proposed expansion of the W12A Landfill.
CR&D	Construction Renovation and Demolition (waste)
Council	The municipal council for the City of London.
Diversion Rate	The total amount of waste diverted from disposal (by reduction, reuse, recycling and organics management programs) divided by the total amount of waste generated expressed as a percentage.
Environmental Assessment (EA)	Environmental assessment is a study, which assesses the potential environmental effects (positive or negative) or a proposal. Key components of an environmental assessment include consultation with government agencies and the public; consideration and evaluation of alternatives; and, the management of potential environmental effects. Conducting an environmental assessment promotes good environmental planning before decisions are made about proceeding with a proposal. This is also referred to as an “individual” environmental assessment.
Environmental Assessment Act (EAA)	The Environmental Assessment Act is a provincial statute that sets out a planning and decision making process to evaluate the potential environmental effects of a proposed undertaking. Proponents wishing to proceed with an undertaking must document their planning and decision making process and submit the results from their environmental assessment to the minister for approval.
Environmental Compliance Approval (ECA)	An approval issued by the Ministry of the Environment, Conservation and Parks for the establishment and operation of a waste management site/facility
Golder	Golder Associates Ltd. The consultant used for the project.
Green Bin Program	Collection of source separated organics from residential properties. Commonly collected organics include food waste and non-recyclable paper (e.g., paper towels). Some programs include sanitary products (e.g., diapers) and pet waste.
IC&I	Industrial, Commercial, and Institutional (waste)
Minister	Minister of the Environment, Conservation and Parks
MECP	Ministry of the Environment, Conservation and Parks

Acronym/Term	Definition
Municipal Hazardous and Special Waste (MHSW)	Municipal Hazardous and Special Waste consist of programs that are typically more toxic and require special handling and disposal. Many of these products can be recycled/reused (e.g., paint, oil, etc.)
Residual Waste	Waste that cannot be reduced, reused, recycled or composted is considered Residual Waste (waste that remains after all these activities).
Residual Waste Disposal Strategy	Strategy being developed by the City of London on how to manage Residual Waste until 2050 and involves completion of an Individual Environmental Assessment (EA) as prescribed by the Ministry of Environment, Conservation and Parks (MECP). The individual EA requires approval by the Minister of Environment Conservation and Parks and Cabinet.
Resource Recovery Strategy	Strategy being developed by the City of London on how to maximize waste reduction, reuse, recycling and resource recovery in an economical viable and environmentally responsible manner.
Site Life	The period of time during which the W12A landfill can continue to accept wastes.
Strategy for a Waste-Free Ontario	Document produced by the Ministry of Environment, Conservation and Parks in 2017 that sets the general direction (vision and goals) for managing waste in Ontario.
Terms of Reference	A document prepared by the proponent and submitted to the Ministry of the Environment, Conservation and Parks for approval. The Terms of Reference document sets out the framework for the planning and decision making process to be followed by the proponent during the preparation of an EA. In other words, it is the City of London's (the proponent's) work plan for what is going to be studied. If approved, the EA must be prepared according to this TOR. The TOR also provides the framework for evaluating the EA.
ToR	Terms of Reference

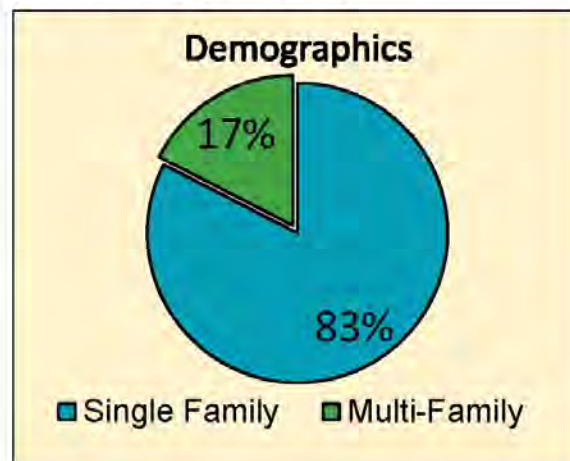
Appendix B
Diversion Rates in
Large Ontario Municipalities

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Essex-Windsor Solid Waste Authority (EWSWA)

Demographics (2015) ¹		
Household Type	Number	%
Single Family	135,660	83
Multi-Family	28,700	17
Total	164,360	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity ¹ (tonnes)	Per Household	
		Kg/hhld	%
<i>Diversion (\$137 per tonne²)</i>			
Blue Box Recycling	23,700	140	15
Other Recycling	3,900	20	3
Green Bin	0	0	0
Leaf/Yard Materials	22,700	140	15
On-site	5,200	30	3
Other Programs	2,800	20	2
Subtotal	58,300	350	38
<i>Disposal (\$70 per tonne²)</i>			
Landfill	96,900	590	62
EFW	0	0	0
Subtotal	96,900	590	62
Total	155,200	940	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

² Source: http://mbncanada.ca/app/uploads/2016/11/Waste_management_2015.pdf

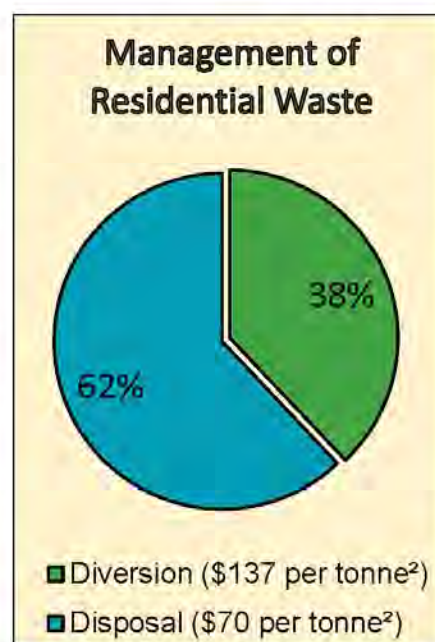
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

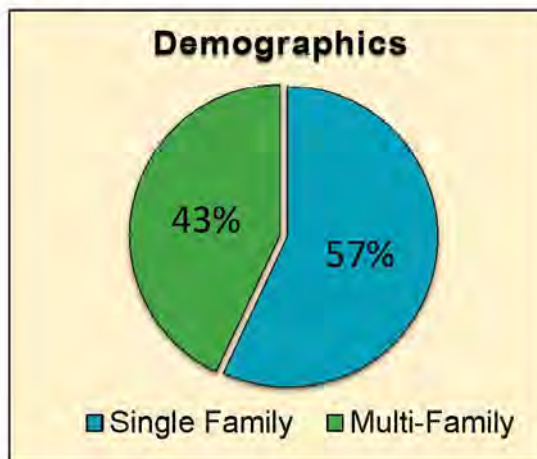


Long Term Waste Management Strategy/Plan
<u>Planning Process</u> <ul style="list-style-type: none">• Essex-Windsor Solid Waste Authority's (EWSWA) Solid Waste Management Master Plan was released in 2011 (http://www.ewswa.org/wp-content/uploads/2011/03/Essex-Windsor-SWMMP-Update-APR-11-corrections_DRAFT.pdf).
<u>Diversion</u> <ul style="list-style-type: none">• Goal is to reach a 60% diversion rate by 2019.• EWSWA intends to increase its current diversion rate of 38% through increasing outreach programs and looking at organic management options.• Undertook a study (Food and Kitchen Waste Diversion Feasibility Report) in 2013 which outlined potential strategies for organics management and concluded to "<i>not proceed with the collection and processing of residential food and kitchen waste since the program would not be ...economically sound at this time</i>"
<u>Disposal</u> <ul style="list-style-type: none">• Continue to dispose of waste at its regional landfill (owned and operated by the EWSWA).
<u>New, Emerging, and Next Generation Technologies</u> <ul style="list-style-type: none">• No recent investigations of new, emerging, and next generation technologies.

City of Guelph

Demographics (2015) ¹		
Household Type	Number	%
Single Family	29,640	57
Multi-Family	22,360	43
Total	52,000	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity ¹ (tonnes)	Per Household	
		Kg/hhld	%
Diversion			
Blue Box Recycling	7,200	140	13
Other Recycling	6,000	120	11
Green Bin	9,200	180	17
Leaf/Yard Materials	7,200	140	13
On-site	2,600	50	5
Other Programs	1,000	20	2
Subtotal	33,200	650	61
Disposal			
Landfill	21,384	410	39
EFW	0	0	0
Subtotal	21,384	410	39
Total	54,584	1,060	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

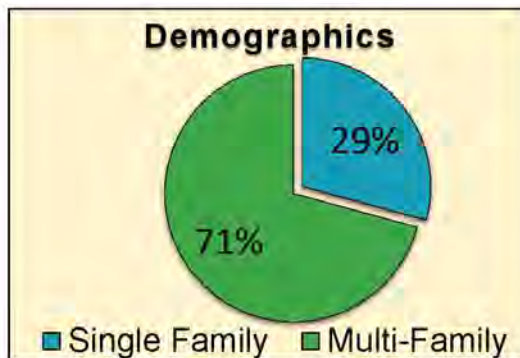


Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • The solid waste master plan, a 25-year strategy, was approved in 2008 (http://guelph.ca/plans-and-strategies/solid-waste-management-master-plan/2008-solid-waste-management-master-plan/). • A review/update of the plan was completed in 2014 to provide strategic direction for the next 20 years (http://guelph.ca/plans-and-strategies/solid-waste-management-master-plan/).
<p><u>Diversion</u></p> <ul style="list-style-type: none"> • Goal is to reach a diversion rate of 70% by 2021. • Guelph is looking to increase its diversion through waste minimization programming, multi-residential recycling, reuse centre programming, open space and special event recycling, and residential construction and demolition waste recycling.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Continue to export waste to landfill in the short term. Waste currently goes to Twin Creeks Landfill in Watford (signed a 10 year contract with Waste Management in 2013). • Waste disposal options including contractual arrangements and municipal partnerships will be explored in the long term.
<p><u>New, Emerging, and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • At appropriate times in agreements and waste disposal contract cycles, explore alternatives to landfill, including Energy-from-Waste (EFW) technologies.

Regional Municipality of Halton

Demographics (2015) ¹		
Household Type	Number	%
Single Family	16,100	29
Multi-Family	39,000	71
Total	55,100	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity¹ (tonnes)	Per Household	
		Kg/hhld	%
<i>Diversion (\$221 per tonne²)</i>			
Blue Box Recycling	43,100	780	21
Other Recycling	6,800	120	3
Green Bin	28,700	520	14
Leaf/Yard Materials	26,900	490	13
On-site	9,200	170	4
Other Programs	3,600	70	2
Subtotal	118,300	2,150	57
<i>Disposal (\$63 per tonne²)</i>			
Landfill	90,000	1630	43
EFW	0	0	0
Subtotal	90,000	1630	43
Total	208,300	3,780	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

² Source: http://mbncanada.ca/app/uploads/2015/11/Waste_management_2015.pdf

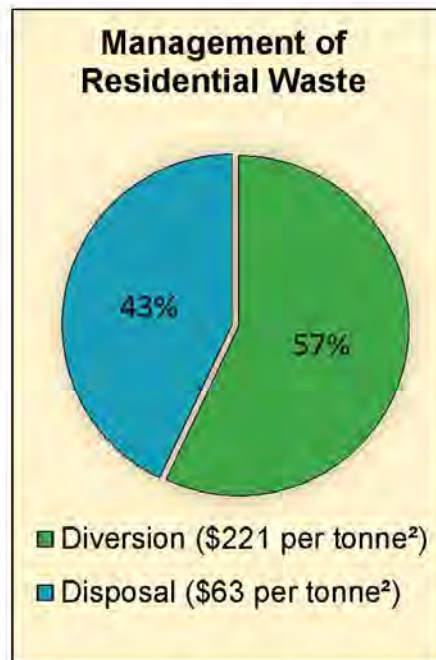
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

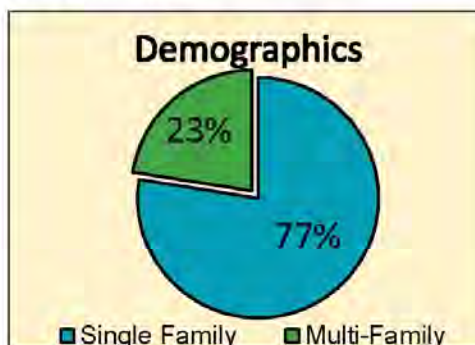


Long Term Waste Management Strategy/Plan	
<u>Planning Process</u>	<ul style="list-style-type: none">• The Regions "Rethinking our Waste" report was developed in 2011 and was created to manage solid waste from 2012-2016) http://www.halton.ca/cms/one.aspx?objectId=59887).
<u>Diversion</u>	<ul style="list-style-type: none">• Goal is to reach a diversion rate of 65% by 2016.• To increase diversion the Region plans to enhance promotion, education, and outreach.
<u>Disposal</u>	<ul style="list-style-type: none">• Continue to dispose of waste at the Halton Waste Management Site (owned and operated by the Region).
<u>New, Emerging, and Next Generation Technologies</u>	<ul style="list-style-type: none">• Study completed in 2007 looking at EFW and thermal waste conversion technologies (pyrolysis and gasification). Region decided not to pursue this option. (http://www.halton.ca/cms/One.aspx?portalId=8310&pageId=27829).

City of Hamilton

Demographics (2015) ¹		
Household Type	Number	%
Single Family	173,000	77
Multi-Family	50,350	23
Total	223,350	100

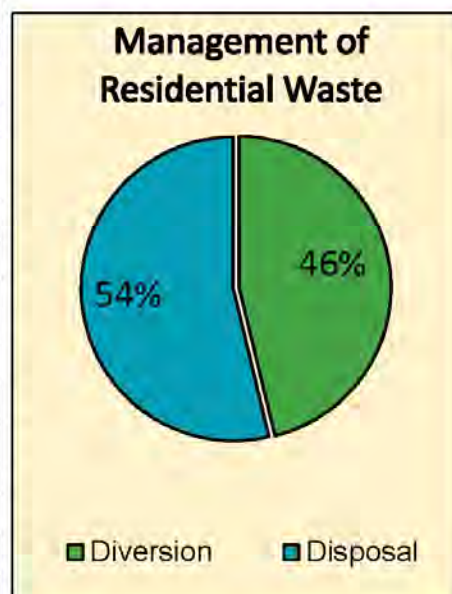
¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity ¹ (tonnes)	Per Household	
		Kg/hhld	%
Diversion			
Blue Box Recycling	38,100	170	17
Other Recycling	7,100	30	3
Green Bin	30,000	130	13
Leaf/Yard Materials	16,000	70	7
On-site	9,100	40	4
Other Programs	4,130	20	1
Subtotal	104,430	460	46
Disposal			
Landfill	118,500	530	54
EFW	0	0	0
Subtotal	118,500	530	54
Total	222,930	990	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

² Source: http://mbncanada.ca/app/uploads/2016/11/waste_management_2015.pdf



Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

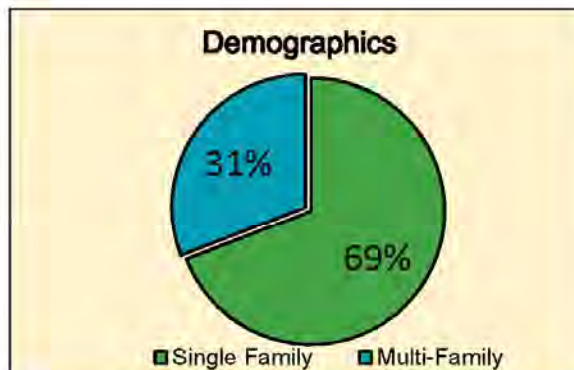
EFW: Energy-from-Waste

Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • Multi-year process resulted in approval of Solid Waste Management Master Plan in 2012. (https://www.hamilton.ca/city-planning/master-plans-class-eas/solid-waste-management-master-plan). • The original Solid Waste Management Master Plan was developed and approved in 2001.
<p><u>Diversification</u></p> <ul style="list-style-type: none"> • The status quo waste diversion programs should achieve a 55% waste diversion rate by 2021. • The City's goal is to achieve a 65% waste diversion target using enhanced waste diversion programs. The opportunities to improve the City's waste diversion programs include targeted education, multi-residential waste diversion, adding materials to the recycling program where feasible, and extended producer responsibility.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Continue landfilling in the short term (at least five years). • Partnered with the Niagara Region to complete a stabilized landfill review in 2007 (https://www.niagararegion.ca/government/works/wasteplan/Stabilized%20Landfill%20Report.pdf).
<p><u>New, Emerging and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Hamilton, in partnership with Niagara Region, looked at long term residual waste management alternatives from 2003 to 2008 (https://www.niagararegion.ca/government/works/wasteplan/); plan originally recommended thermal technology with the recovery of recyclables as a preferred option, however because of changing circumstances coupled with sufficient landfill capacity both Niagara Region and Hamilton continue to landfill residual waste. • Will examine alternative disposal technologies in the next Solid Waste Management Master Plan review scheduled for 2017.

City of London

Demographics (2015) ¹		
Household Type	Number	%
Single Family	122,000	69
Multi-Family	54,500	31
Total	176,500	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity (tonnes) ¹	Per Household	
		Kg/hhld	%
<i>Diversion (\$202 per tonne²)</i>			
Blue Box Recycling	23,300	130	14
Other Recycling	8,500	50	5
Green Bin	0	0	0
Leaf/Yard Materials	26,000	150	16
On-site	9,400	60	6
Other Programs	3,500	20	2
Subtotal	70,700	410	44
<i>Disposal (\$48 per tonne²)</i>			
Landfill	88,700	500	54
EFW	0	0	0
Subtotal	88,700	520	56
Total	159,400	930	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

² Source: http://mhncanada.ca/app/uploads/2016/11/waste_management_2015.pdf

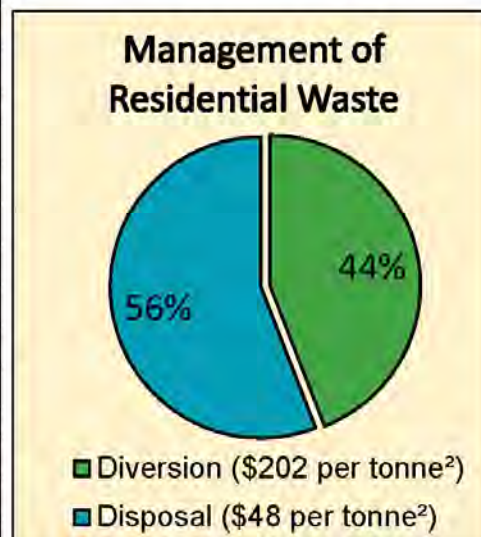
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

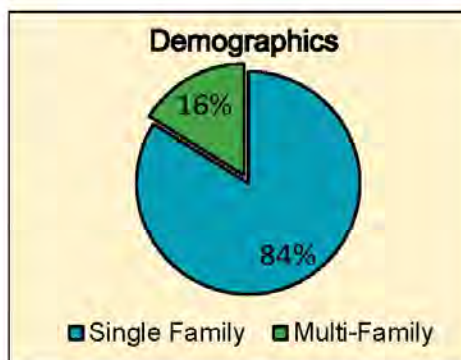


Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • The City's most recent diversion strategy (<i>Road Map 2.0 The Road to Increase Resource Recovery and Zero Waste</i>, December 2013) outlined a number of initiatives and programs that have the potential to increase residential waste diversion to 60%. (http://www.london.ca/residents/Garbage-Recycling/waste-management-planning/Pages/Road-Map-to-Waste-Diversion.aspx).
<p><u>Diversion</u></p> <ul style="list-style-type: none"> • The City's does not have a specific diversion target but uses the principle of continuous improvement to maximize waste diversion. Recent initiatives implemented from the City's waste diversion strategy include a reduction in the waste container limit, curbside collection of Christmas trees and new pilot programs (e.g., community composting, food waste avoidance).
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • The City disposes of garbage at the W12A Landfill site which is owned and operated by the City of London. The W12A Landfill will reach capacity in 2025 based on the current amount of waste being received.
<p><u>New, Emerging, and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Will be investigating new, emerging and next generation technologies during development of the new Resource Recovery Strategy.

Regional Municipality of Niagara

Demographics (2015) ¹		
Household Type	Number	%
Single Family	164,000	84
Multi-Family	31,500	16
Seasonal	0	0
Total	195,500	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity (tonnes) ¹	Per Household	
		Kg/hhld	%
<i>Diversion (\$196 per tonne)</i>			
Blue Box Recycling	37,400	190	19
Other Recycling	10,200	50	5
Green Bin	11,700	60	6
Leaf/Yard Materials	31,000	160	16
On-site	10,400	60	6
Other Programs	4,000	20	2
Subtotal	104,700	540	54
<i>Disposal (\$202 per tonne)</i>			
Landfill	90,600	460	46
EFW	0	0	0
Subtotal	90,600	460	46
Total	195,300	1,000	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

² Source: http://mbnccanada.ca/app/uploads/2016/11/waste_management_2015.pdf

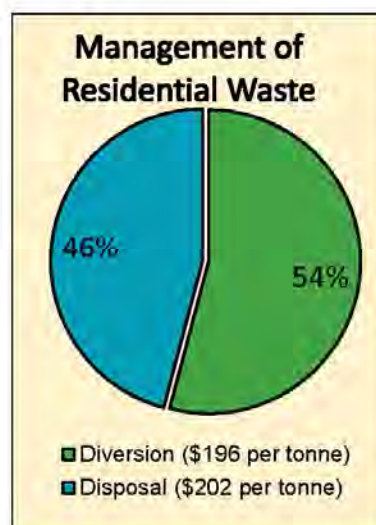
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

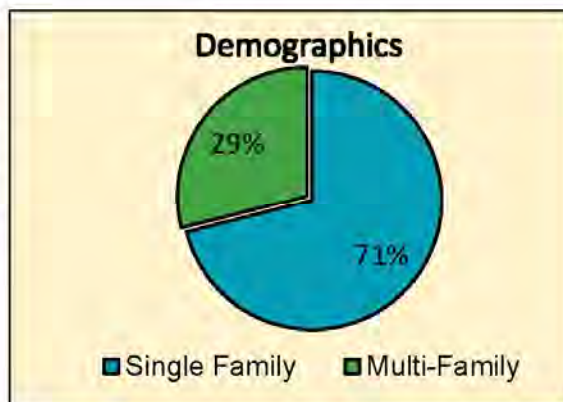


Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • Niagara Region does not currently have a Long Term Waste Management Strategy as they are currently waiting on Bill 151 implications. They are planning on starting work on their Long Term Waste Management Strategy in 2017. • Niagara Region currently have their Blue Box Recycling plan for 2011-2015, and are in the process of updating this document. (http://cif.wdo.ca/projects/documents/648.11-Niagara_Final_Report.pdf).
<p><u>Diversion</u></p> <ul style="list-style-type: none"> • Goal is to reach a diversion rate of 65% by 2021. • To increase diversion the Region plans to expand and improve existing programs and increase public education, awareness and outreach as well as enforcement activities.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Continue to dispose of garbage using its two landfills, Welland Humberstone and West Lincoln (both owned and operated by the Region) as well as a private landfill (Walker Industries). • Expansion of the Humberstone Landfill was approved in 2016. • Partnered with the City of Hamilton to complete a stabilized landfill review in 2007. (https://www.niagararegion.ca/government/works/wasteplan/Stabilized%20Landfill%20Report.pdf).
<p><u>New, Emerging, and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Niagara Region, in partnership with Hamilton, looked at long term residual waste management alternatives from 2003 to 2008 (https://www.niagararegion.ca/government/works/wasteplan/); plan originally recommended thermal technology with the recovery of recyclables as a preferred option, however because of changing circumstances coupled with sufficient landfill capacity both Niagara Region and Hamilton continue to landfill residual waste. • Quarterly staff report updates on alternative waste management technologies.

City of Ottawa

Demographics (2015) ¹		
Household Type	Number	%
Single Family	282,000	72
Multi-Family	115,000	29
Seasonal	26	<1
Total	392,903	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity ¹ (tonnes)	Per Household	
		Kg/hhld	%
<i>Diversion (\$214 per tonne²)</i>			
Blue Box Recycling	58,900	150	17
Other Recycling	8,200	20	2
Green Bin	60,900	160	18
Leaf/Yard Materials	6,000	20	2
On-site	8,000	20	2
Other Programs	5,700	10	1
Subtotal	147,700	380	43
<i>Disposal (\$107 per tonne²)</i>			
Landfill	200,134	510	57
EFW	0	0	0
Subtotal	200,134	510	57
Total	347,834	890	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

² Source: http://mbncanada.ca/app/uploads/2016/11/waste_management_2015.pdf

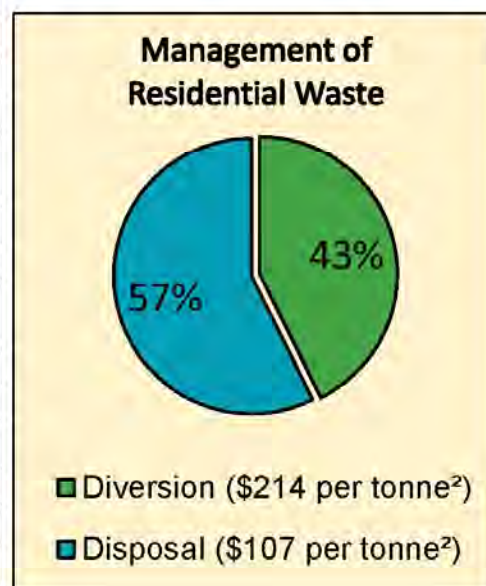
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

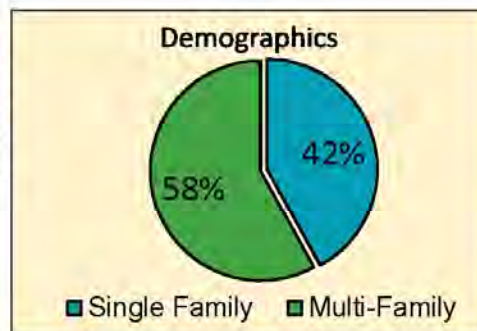


Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • Development of the Ottawa Waste Plan is ongoing. Planning and Policy elements of the plan was approved by Council in 2011 (http://ottawa.ca/en/residents/garbage-and-recycling/solid-waste-data-reports/waste-plan).
<p><u>Diversion</u></p> <ul style="list-style-type: none"> • No overall waste diversion goal but there are established target capture rates by material type. • Improve the cost effectiveness of the recycling program, maximize the use of the existing MRF, increase tipping fees and storage capacity for current and future material volumes.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Continue to landfill waste at the Trail Road Waste Landfill (City owned).
<p><u>New, Emerging and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Plasco Energy Group had an agreement with Ottawa allowing it to construct and operate a 75 tonne/day plasma gasification pilot project at the City's Trail Road Landfill. The facility began operation in 2008 but only ever processed a fraction of its rated throughput. In 2015 Plasco Environmental filed for creditor protection and the facility was decommissioned.

City of Toronto

Demographics (2015) ¹		
Household Type	Number	%
Single Family	460,000	42
Multi-Family	639,000	58
Total	1,099,000	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity¹ (tonnes)	Per Household	
		Kg/hhld	%
Diversion			
Blue Box Recycling	136,500	120	17
Other Recycling	24,500	20	3
Green Bin	105,800	100	13
Leaf/Yard Materials	91,200	80	12
On-site	37,800	30	4
Other Programs	17,200	20	3
Subtotal	413,000	370	52
Disposal			
Landfill	386,600	350	48
EFW	0	0	0
Subtotal	386,600	350	48
Total	799,600	720	100

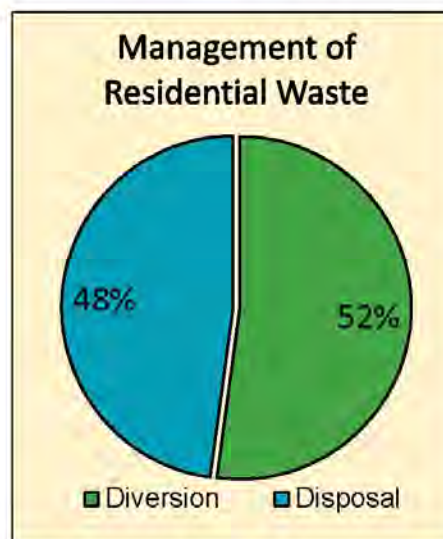
¹ from www.wdo.ca/Partners/municipalities/municipal-datacall

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

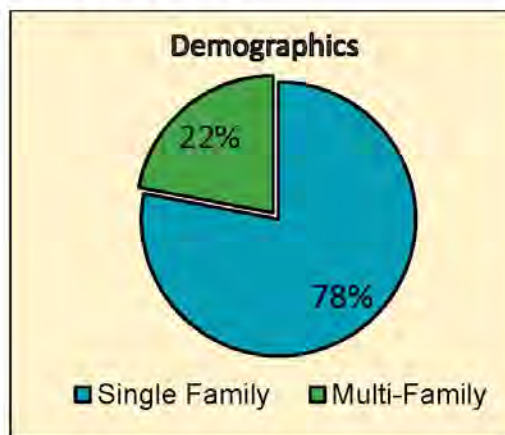


Long Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • Finalized <i>Long Term Waste Management Strategy</i> in summer 2016 (2 year process) (www1.toronto.ca/wps/portal/contentonly?vgnextoid=98fc8005b7ae7410VgnVCM10000071d60f89R CRD). • strategy will guide waste management in Toronto for the next 30-50 years
<p><u>Diversification</u></p> <ul style="list-style-type: none"> • Waste Diversion Target of 70% by 2026; to reach this a number of initiatives focused on improving existing and establishing new programs and outreach, Toronto's waste strategy identifies an aspirational goal of zero waste over the longer term.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Continue to landfill until approximately 2040 at Green Lane Landfill (owned by the City).
<p><u>New, Emerging and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • New, emerging and next generation technologies not at this time. • Will look at viability of mixed waste processing in 5 years.

Regional Municipality of Peel

Demographics (2015) ¹		
Household Type	Number	%
Single Family	337,000	78
Multi-Family	99,700	22
Total	436,700	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity ¹ (tonnes)	Per Household	
		Kg/hhld	%
Diversion			
Blue Box Recycling	85,000	190	17
Other Recycling	27,200	60	5
Green Bin	27,700	70	6
Leaf/Yard Materials	55,000	130	11
On-site	14,800	30	3
Other Programs	9,200	20	2
Subtotal	218,900	500	44
Disposal			
Landfill	279,300	640	56
EFW	0	0	0
Subtotal	279,300	640	56
Total	498,200	1,140	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall

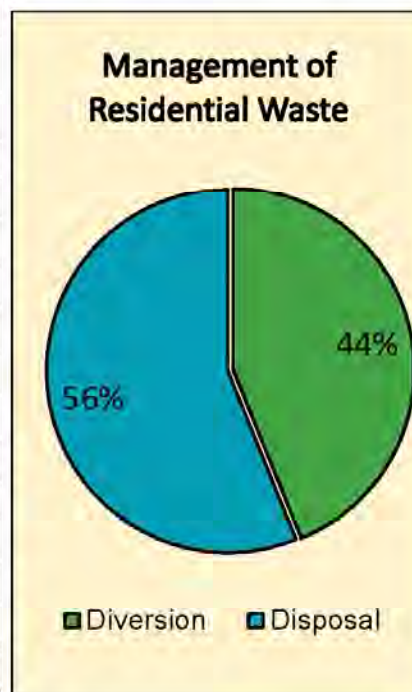
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy from Waste

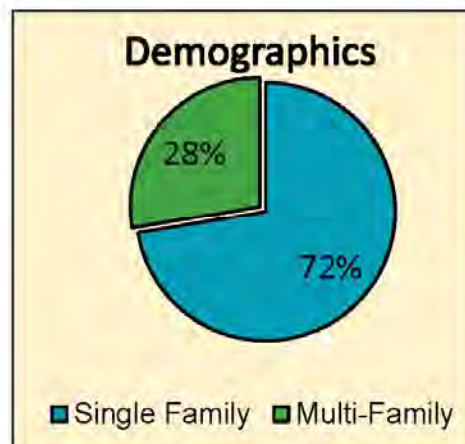


Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • Council adopted the Region of Peel Long Term Waste Management Plan in 2014. (https://www.peelregion.ca/planning/officialplan/pdfs/Discussion_Paper_-_Peel_Integrated_Waste_Management_Feb.2009.pdf).
<p><u>Diversion</u></p> <ul style="list-style-type: none"> • Waste Diversion Target of 60% diversion by changing curbside, CRC (Community Recycling Centre), and multi-residential policies, as well as developing communication and education plans. Peel plans to develop a reduction, reuse, and ABCDs (agencies, boards, committees, departments) plan which will help refine the Blue Box program and will see the organics program expand. • Diversion rate goal revised from 60% of 75% in 2015. Peel is currently updating their diversion plan to meet new target.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Waste will continue to be transported to the Twin Creeks Landfill (privately owned) until 2042 • Had started approvals and procurement process for 300,000 tonne per year EFW facility. Project was cancelled in 2015 because revised diversion targets resulted in insufficient garbage for the facility.
<p><u>New, Emerging, and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Currently undertaking research on mixed waste processing facilities.

Regional Municipality of Waterloo

Demographics (2015) ¹		
Household Type	Number	%
Single Family	149,800	72
Multi-Family	57,300	28
Seasonal	0	0
Total	207,100	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2014)			
Category	Quantity (tonnes) ¹	Per Household	
		Kg/hhld	%
<i>Diversion(\$179 per tonne)</i>			
Blue Box Recycling	33,000	160	16
Other Recycling	6,200	30	3
Green Bin	9,400	50	5
Leaf/Yard Materials	41,800	200	21
On-site	11,400	60	6
Other Programs	3,800	20	2
Subtotal	105,600	520	54
<i>Disposal(\$101 per tonne)</i>			
Landfill	93,600	450	46
EFW	0	0	0
Subtotal	93,600	450	46
Total	199,200	970	100

¹ Source www.wdo.ca/Partners/municipalities/municipal-datacall

² Source http://mbnccanada.ca/app/uploads/2016/11/waste_management_2015.pdf

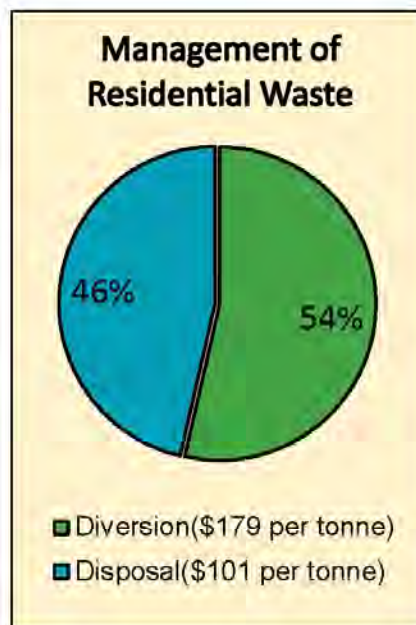
Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste

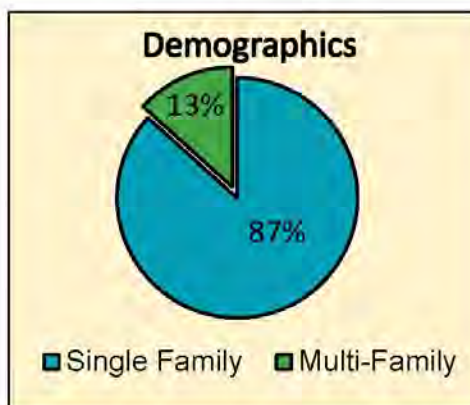


Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • Finalized Waste Management Master Plan in 2013, to establish a strategy to guide waste management services over the next 20 plus years (http://www.regionofwaterloo.ca/en/aboutTheEnvironment/resources/FinalWMMPreport.pdf).
<p><u>Diversification</u></p> <ul style="list-style-type: none"> • No specific waste diversion target yet determined. • Master Plan recommendations include implementing collection policy changes (e.g., bag limits, biweekly garbage collection, etc.) and adopting a waste hierarchy that includes "Recovery" as the 4th R and consider recovery of energy and resources above waste disposal. • The Region has established an inter-municipal working group to explore potential partnership opportunities.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • Continue to landfill at the Waterloo Waste Management Site (owned and operated by the Region) which has 15 to 20 years of capacity.
<p><u>New, Emerging, and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Master Plan recommended investigating thermal technology (EFW, gasification, etc.) options. • Study investigating thermal technology options completed in 2016 and recommended no further action related to pursuing thermal technology to manage residual waste at this time.

Regional Municipality of York

Demographics (2015) ¹		
Household Type	Number	%
Single Family	312,300	86
Multi-Family	48,000	13
Seasonal	1,600	< 1
Total	361,900	100

¹ Source: www.wdo.ca/Partners/municipalities/municipal-datacall



Management of Residential Waste (2015)			
Category	Quantity (tonnes) ¹	Per Household	
		Kg/hhld	%
<i>Diversion (\$126 per tonne)²</i>			
Blue Box Recycling	73,000	200	19
Other Recycling	15,800	40	4
Green Bin	81,500	230	21
Leaf/Yard Materials	44,400	120	12
On-site	16,600	50	4
Other Programs	7700	20	2
Subtotal	239,000	660	63
<i>Disposal (\$118 per tonne)²</i>			
Landfill	95,000	260	25
EFW	47,100	130	12
Subtotal	142,100	390	37
Total	381,100	1050	100

¹ Source www.wdo.ca/Partners/municipalities/municipal-datacall

² Source http://mbnccanada.ca/app/uploads/2016/11/waste_management_2015.pdf

Explanation of above terms:

Other Recycling: wood (from construction, renovation and demolition materials), scrap metal, tires, electronics, etc.

On-site: on the property such as backyard composting

Other Programs: bottle deposit program, reuse, Municipal Household Special Waste, etc.

EFW: Energy-from-Waste



Long Term Waste Management Strategy/Plan
<p><u>Planning Process</u></p> <ul style="list-style-type: none"> • The Smart Living Plan, approved in 2013, sets the course for waste management in the region for the next 25-40 years (https://www.york.ca/wps/wcm/connect/yorkpublic/10ba5c8d-5f7f-4e49-a06b-ab270c563fb0/SM4RT_Living_Plan_Nov_28_2014.pdf?MOD=AJPERES).
<p><u>Diversion</u></p> <ul style="list-style-type: none"> • York Region's Regional Official Plan target is 90 per cent diversion from landfill (including energy-from-waste tonnage) by 2016 . • The Smart Living Plan will be based on improving and increasing targets for already existing programs.
<p><u>Disposal</u></p> <ul style="list-style-type: none"> • York Region, in partnership with the Regional Municipality of Durham, constructed the Durham York Energy Centre (www.durhamyorkwaste.ca), an EFW facility that began operations in 2016. This EFW facility can process up to 140,000 tonnes of non-hazardous municipal solid waste per year. • The Region landfills bulky materials that are typically not suitable for energy recovery. • Landfill contracts are in place with the City of Toronto Green Lane Landfill in Southwold, Ontario, Walker South Landfill in Thorold, Ontario and Waste Management Incorporated Twin Creeks Landfill in Watford, Ontario.
<p><u>New, Emerging, and Next Generation Technologies</u></p> <ul style="list-style-type: none"> • Currently undertaking research on feasibility of different Source Separated Organics processing technologies.

Appendix C

Population Projections

Table C -1 Seasonal Student Population

Table C -2 Historical Population

Table C -3 Population Projections for the City of London

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Table C-1
Seasonal Student Population

Year	Enrollment ¹		Equivalent Population		Total Population ²
	Western	Fanshawe	Western	Fanshawe	
1977	18,000	5,400	8,320	1,600	9,920
1978	18,250	5,500	8,430	1,630	10,060
1979	18,500	5,800	8,550	1,720	10,270
1980	18,750	5,900	8,660	1,750	10,410
1981	19,000	5,900	8,780	1,750	10,530
1982	19,250	6,400	8,890	1,900	10,790
1983	19,500	6,700	9,010	1,990	11,000
1984	19,750	6,900	9,120	2,050	11,170
1985	20,000	6,700	9,240	1,990	11,230
1986	20,250	6,500	9,360	1,930	11,290
1987	20,500	6,700	9,470	1,990	11,460
1988	20,750	6,700	9,590	1,990	11,580
1989	21,000	6,900	9,700	2,050	11,750
1990	21,250	7,600	9,820	2,260	12,080
1991	21,500	8,300	9,930	2,470	12,400
1992	21,750	8,600	10,050	2,550	12,600
1993	22,000	8,600	10,160	2,550	12,710
1994	22,250	9,400	10,280	2,790	13,070
1995	22,500	9,600	10,400	2,850	13,250
1996	22,750	9,700	10,510	2,880	13,390
1997	23,000	9,800	10,630	2,910	13,540
1998	23,250	10,000	10,740	2,970	13,710
1999	23,500	10,500	10,860	3,120	13,980
2000	23,750	10,600	10,970	3,150	14,120
2001	24,000	10,900	11,090	3,240	14,330
2002	26,000	12,200	12,010	3,620	15,630
2003	28,000	12,800	12,940	3,800	16,740
2004	29,000	13,200	13,400	3,920	17,320
2005	29,300	13,800	13,540	4,100	17,640
2006	29,600	14,200	13,680	4,220	17,900
2007	29,900	14,800	13,810	4,400	18,210
2008	30,200	15,500	13,950	4,600	18,550
2009	30,700	16,000	14,180	4,750	18,930
2010	31,300	16,500	14,460	4,900	19,360
2011	31,900	17,000	14,740	5,050	19,790
2012	32,500	17,500	15,020	5,200	20,220
2013	33,100	18,000	15,290	5,350	20,640
2014	33,700	18,500	15,570	5,490	21,060
2015	34,300	19,300	15,850	5,730	21,580
2016	34,900	20,100	16,120	5,970	22,090
2017	35,400	21,000	16,350	6,240	22,590

Notes:

1. Enrollment from Western and Fanshawe registry up to 2008. Enrollment in 2017 from www.univcan.ca/universities/facts-and-stats/enrolment-by-university/.
2. The equivalent population was calculated using the following assumptions: a) 70% of Western students are from out of town and live off campus; b) 45% of Fanshawe students are from out of town and live off campus and d) they live in London for 8 months or 66% of the year. Estimates of percentage of students living off campus are based on information provided by the Western Housing Office.

Table C-2
Historical Population

Year	London ¹	Westminster ²	Seasonal ³	Total
1977	243,080	5,950	9,920	258,950
1978	245,820	5,950	10,060	261,830
1979	248,590	5,950	10,270	264,810
1980	251,390	5,950	10,410	267,750
1981	254,280	5,950	10,530	270,760
1982	257,250	5,950	10,790	273,990
1983	260,220	5,940	11,000	277,160
1984	263,190	5,940	11,170	280,300
1985	266,160	5,940	11,230	283,330
1986	269,150	5,930	11,290	286,370
1987	275,950	6,100	11,460	293,510
1988	282,750	6,270	11,580	300,600
1989	289,550	6,450	11,750	307,750
1990	296,350	6,640	12,080	315,070
1991	303,170	6,830	12,400	322,400
1992	306,200	7,030	12,600	325,830
1993	316,280	0	12,710	328,990
1994	319,370	0	13,070	332,440
1995	322,550	0	13,250	335,800
1996	325,650	0	13,390	339,040
1997	327,820	0	13,540	341,360
1998	329,990	0	13,710	343,700
1999	332,160	0	13,980	346,140
2000	334,330	0	14,120	348,450
2001	336,500	0	14,330	350,830
2002	339,700	0	15,630	355,330
2003	342,900	0	16,740	359,640
2004	346,100	0	17,320	363,420
2005	349,300	0	17,640	366,940
2006	352,400	0	17,900	370,300
2007	355,100	0	18,210	373,310
2008	357,800	0	18,550	376,350
2009	360,500	0	18,930	379,430
2010	363,200	0	19,360	382,560
2011	366,100	0	19,790	385,890
2012	367,400	0	20,220	387,620
2013	368,700	0	20,640	389,340
2014	370,000	0	21,060	391,060
2015	371,300	0	21,580	392,880
2016	372,700	0	22,090	394,790
2017	375,200	0	22,590	397,790

Notes:

1. From City of London Planning Department documents.
2. Population includes the Township of Westminster prior to 1993. In 1993 the Township of Westminster became part of the City of London.
3. Equivalent seasonal population (students) is calculated in Table C-1.

Table C-3
Population Projections for the City of London

Year	Permanent ^{1,2}	Equivalent Seasonal ^{3,4}	Total
2018	377,700	22,700	400,400
2019	380,200	22,900	403,100
2020	382,700	23,000	405,700
2021	385,400	23,200	408,600
2022	389,500	23,500	413,000
2023	393,600	23,700	417,300
2024	397,700	23,900	421,600
2025	401,800	24,200	426,000
2026	405,700	24,400	430,100
2027	408,900	24,600	433,500
2028	412,100	24,800	436,900
2029	415,300	25,000	440,300
2030	418,500	25,200	443,700
2031	421,900	25,400	447,300
2032	425,500	25,600	451,100
2033	429,100	25,800	454,900
2034	432,700	26,100	458,800
2035	436,300	26,300	462,600
2036	439,800	26,500	466,300
2037	443,400	26,700	470,100
2038	447,000	26,900	473,900
2039	450,600	27,100	477,700
2040	454,200	27,300	481,500
2041	457,600	27,600	485,200
2042	461,300	27,800	489,100
2043	465,000	28,000	493,000
2044	468,800	28,200	497,000
2045	472,600	28,500	501,100
2046	476,400	28,700	505,100
2047	480,300	28,900	509,200
2048	484,200	29,200	513,400
2049	488,100	29,400	517,500

Notes:

1. Population projections for the period 2006 to 2041 from *Employment, Population, Housing and Non-Residential Construction Projections, City of London, Ontario, 2011 Update* (Altus Group, 2012).
2. Population projections beyond 2031 were extrapolated by assuming the same rate of growth after 2041 as immediately prior to 2041.
3. Equivalent seasonal population (students) is calculated assuming 66% of students enrolled in post-secondary education are out of town students living off-campus for eight months of the year. Therefore each actual student represents 44% "equivalent" garbage of a permanent resident.
4. Growth in post-secondary enrollment is assumed to match population growth.

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Appendix D

Historical Data on Waste Generation, Disposal and Diversion Rates

Table D-1 City of London Historical Residential Waste Diversion Quantities

Table D-2 City of London Historical Residential Waste Quantities Disposed of at Private Facilities

Table D-3 City of London Historical Sewage Sludge Ash Quantities Disposed of at St. Marys Cement

Table D-4 City of London Waste Quantities Disposed of at W12A Landfill

Table D-5 Total Waste Quantities Managed by the City

Table D-6 Historical Unit Generation Rates

Table D-7 Estimated IC&I and CR&D Rates from Various Sources

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Table D-1
City of London
Historical Residential Waste Diversion Quantities

Year	Blue Box Recycling					Organics							Other											Total
	Curbside ¹	Multi ¹ - Residential	Depot ^{1,2}	Public Space ¹	Subtotal	Home Composting ³	Home Grasscycling ⁴	Yard Material ¹		Fall Leaf Collection ¹	Christmas Trees ⁶	Subtotal	WEEE			Tires ⁸	Renovation Materials		Textile/ Small Item Reuse (tonnes)	HSW Depot ¹⁰	Brewers Retail ¹¹	Subtotal	Residential Diversion (tonnes)	
								Collection (tonnes)	Depot ⁵ (tonnes)				Ban ⁷ (tonnes)	Electronics ¹ (tonnes)	Appliances ¹ (tonnes)		Scrap Metal ⁹ (tonnes)	Wood/ C&D ⁹ (tonnes)						
(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)		
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1981	4,900	0	0	0	4,900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4,900	
1982	5,000	0	0	0	5,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,000	
1983	5,100	0	0	0	5,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,100	
1984	5,200	0	0	0	5,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,200	
1985	5,300	0	0	0	5,300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,300	
1986	5,400	0	0	0	5,400	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,400	
1987	5,500	0	0	0	5,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,500	
1988	5,750	0	0	0	5,750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	5,760	
1989	5,500	0	0	0	5,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20	0	20	5,520	
1990	10,650	0	0	0	10,650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	40	10,690	
1991	11,800	0	190	0	11,990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	0	50	12,040	
1992	12,330	0	190	0	12,520	0	0	0	0	0	60	60	0	0	0	0	0	0	0	60	0	60	12,640	
1993	12,480	0	210	0	12,690	1,300	0	0	0	0	110	1,410	0	0	0	0	0	0	0	60	0	60	14,160	
1994	13,460	0	300	0	13,760	2,800	0	0	0	1,250	100	4,150	0	0	0	0	0	0	0	70	0	70	17,980	
1995	14,110	0	460	0	14,570	4,800	2,000	0	4,650	2,950	110	14,510	1,140	0	0	2,200	0	0	0	100	0	3,440	32,520	
1996	15,250	10	490	0	15,750	5,500	3,500	3,520	3,400	3,170	130	19,220	1,160	0	0	2,220	0	0	0	100	0	3,480	38,450	
1997	16,030	200	450	0	16,680	5,600	3,500	4,800	5,220	4,230	120	23,470	1,180	0	0	1,800	0	0	0	110	0	3,090	43,240	
1998	16,890	1,000	460	0	18,350	5,700	3,700	4,600	2,440	3,460	130	20,030	1,210	0	0	1,820	0	0	0	110	0	3,140	41,520	
1999	17,310	1,000	380	0	18,690	5,700	3,700	6,200	1,540	3,710	130	20,980	1,230	0	0	1,850	0	0	0	120	0	3,200	42,870	
2000	17,220	1,780	370	0	19,370	5,300	3,700	5,550	2,400	3,120	140	20,210	1,240	0	0	1,870	410	2,570	0	100	900	7,090	46,670	
2001	17,480	2,120	380	0	19,980	5,300	3,700	5,110	2,190	5,100	140	21,540	1,250	0	0	1,870	420	2,650	0	110	910	7,210	48,730	
2002	18,800	2,250	450	0	21,500	5,300	3,750	3,910	2,850	5,120	150	21,080	1,260	0	0	1,940	450	2,670	0	140	920	7,380	49,960	
2003	20,110	2,370	390	20	22,890	5,300	3,800	5,050	2,750	4,260	100	21,260	1,270	10	0	1,970	450	2,710	0	140	950	7,500	51,650	
2004	21,220	2,440	270	30	23,960	5,300	3,800	5,350	4,470	4,010	140	23,070	1,280	10	0	2,000	460	2,750	0	160	950	7,610	54,640	
2005	21,470	2,560	170	50	24,250	5,300	3,850	4,510	4,450	4,290	150	22,550	1,290	20	0	2,030	490	2,980	0	150	960	7,920	54,720	
2006	24,850	2,820	170	50	27,890	5,300	3,850	5,830	5,520	4,730	130	25,360	1,290	20	0	2,050	500	3,490	0	160	980	8,490	61,740	
2007	24,200	2,770	180	50	27,200	5,310	3,950	4,540	5,390	4,930	130	24,250	1,300	50	0	2,070	530	3,730	0	210	1,970	9,860	61,310	
2008	24,270	3,090	200	50	27,610	5,340	3,950	5,300	6,420	6,420	130	27,560	1,300	50	0	2,090	600	4,110	0	240	2,090	10,480	65,650	
2009	22,570	3,080	280	50	25,980	5,360	3,950	7,270	8,290	6,200	130	31,200	1,300	50	0	2,110	790	4,290	0	220	2,100	10,860	68,040	
2010	22,110	3,150	220	50	25,530	5,420	3,950	5,450	7,170	3,150	120	25,260	1,030	280	0	2,100	740	4,510	0	220	2,090	10,970	61,760	
2011	22,520	3,290	310	50	26,170	5,440	3,950	5,000	10,610	3,630	120	28,750	810	460	30	1,930	730	4,650	0	370	2,140	11,120	66,040	
2012	22,960	3,290	370	50	26,670	5,460	3,950	4,540	9,920	4,680	120	28,670	640	560	100	2,600	720	4,530	400	370	2,140	12,060	67,400	
2013	22,420	3,370	460	50	26,300	5,490	3,020	5,230	11,160	4,130	120	29,150	780	430	90	2,610	720	4,520	1,770	420	2,150	13,490	68,940	

Table D-1
City of London
Historical Residential Waste Diversion Quantities

Year	Blue Box Recycling					Organics							Other										Total
	Curbside ¹	Multi ¹ - Residential	Depot ^{1,2}	Public Space ¹	Subtotal	Home Composting ³	Home Grasscycling ⁴	Yard Material ¹		Fall Leaf Collection ¹	Christmas Trees ⁶	Subtotal	WEEE			Tires ⁸	Renovation Materials		Textile/ Small Item Reuse (tonnes)	HSW Depot ¹⁰	Brewers Retail ¹¹	Subtotal	Residential Diversion (tonnes)
								Collection (tonnes)	Depot ⁵ (tonnes)				Ban ⁷ (tonnes)	Electronics ¹ (tonnes)	Appliances ¹ (tonnes)		Scrap Metal ⁹ (tonnes)	Wood/ C&D ⁹ (tonnes)					
(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	
2014	21,500	3,350	500	50	25,400	5,510	3,880	6,150	15,200	4,820	120	35,680	0	340	60	2,770	710	4,410	1,830	450	2,150	12,720	73,800
2015	19,780	2,940	650	50	23,420	5,540	3,330	6,620	15,650	4,150	120	35,410	0	300	60	2,770	700	4,420	1,340	470	2,150	12,210	71,040
2016	20,110	3,330	560	50	24,050	5,600	3,330	5,490	15,500	4,620	120	34,660	0	270	70	2,810	750	4,160	1,510	510	2,180	12,260	70,970
2017	18,670	3,270	840	50	22,830	5,680	3,590	5,200	16,240	4,800	100	35,610	0	210	60	2,880	760	5,680	1,710	540	2,190	14,030	72,470
Totals	570,220	53,480	9,900	700	634,300	128,650	83,700	115,220	163,430	100,930	3,170	595,100	21,960	3,060	470	50,360	10,930	68,830	8,560	5,830	29,920	199,920	1,429,320

Notes and Assumptions

1. Weighed quantities.
2. Current City EnviroDepot locations area Clarke Road, Oxford Street, TRY Recycling-Clarke Road (contracted location) and the W12A Landfill.
3. Estimate based on number of units sold through City program. From 1993 to 1999, it is assumed that 80% of the units are being used and these units divert 135 kg per unit. Beginning in 2000 it is assumed each composter diverts 100 kg/year (GAP guidelines).
4. Estimate assumes curbside grass ban introduced in 1995 reduces grass generation by 50%. Beginning in 2013, grass diverted by ban estimated using WDO “GAP” guidelines.
5. Includes materials, fall leaves, fall pumpkins and pay per bag grass clippings.
6. Estimate based on the actual number of trees to fill a truck x # of trucks filled x 8 kg per tree.
7. Estimate based on generation rate of 12 kg per household per year. Curbside collection ban of white goods/large metal items in effect as of 1995. Starting in 2010, amount diverted by Ban reduced by quantities collected at Depots. Starting 2014, as per WDO “GAP” guidelines.
8. Estimate based on one tire/person/year and 110 tires per tonne. It was assumed the recovery rate was 75% from 1995 to 1996 and 60% after 1997 (local tire recycler closed in 1997). Beginning in 2012, as WDO Datacall “GAP” guidelines (7.1 kg diverted/person).
9. Estimate based on 80% of weighted materials to City depots (assume 20% process residuals) plus 50% of available material not taken to City depots. Generation rate of scrap metal is estimated to be 2.4 kg/person/yr. Generation rate of wood/C&D waste is estimate to be 15.
10. Estimates up to 1999 based on 1.5 kg/litre collected, 3 kg/compressed cylinder collected at the HSW Depot. Estimates from 2000 to 2010 use various conversion factors (GAP guidelines). Estimates from 2011 onwards from Steward Ontario Datacall for MHSW.
11. Brewers Retail deposit return reported effective 2001 as per WDO “GAP” process.

Table D-2
City of London
Historical Residential Waste Quantities Disposed of at Private Facilities

Year	EFW ¹ (tonnes)	Export via Transfer Station ² (tonnes)	Export direct to Landfill ^{3,4} (tonnes)	Total (tonnes)
1977	0	0	0	0
1978	0	0	0	0
1979	0	0	0	0
1980	0	0	0	0
1981	0	0	0	0
1982	0	0	0	0
1983	0	0	0	0
1984	0	0	0	0
1985	0	0	0	0
1986	0	0	0	0
1987	10,534	0	0	10,534
1988	61,670	0	0	61,670
1989	59,250	0	0	59,250
1990	65,197	0	0	65,197
1991	27,573	0	0	27,573
1992	29,508	0	0	29,508
1993	31,473	0	0	31,473
1994	36,717	0	0	36,717
1995	38,554	0	0	38,554
1996	49,702	0	0	49,702
1997	49,002	0	0	49,002
1998	54,162	0	0	54,162
1999	47,229	1,895	0	49,124
2000	0	5,777	0	5,777
2001	0	0	4,626	4,626
2002	0	0	0	0
2003	0	0	0	0
2004	0	0	0	0
2005	0	0	0	0
2006	0	0	0	0
2007	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0

Table D-2
City of London
Historical Residential Waste Quantities Disposed of at Private Facilities

Year	EFW ¹ (tonnes)	Export via Transfer Station ² (tonnes)	Export direct to Landfill ^{3,4} (tonnes)	Total (tonnes)
2012	0	0	0	0
2013	0	0	0	0
2014	0	0	0	0
2015	0	0	1,608	1,608
2016	0	0	0	0
2017	0	0	0	0
Total	560,570	7,672	6,234	574,476

Notes and Assumptions

1. EFW refers to the London Health Sciences Centre Energy from Waste facility. This facility closed in October 1999.
2. From 1999 to 2001, following closure of the EFW, waste collected at night was taken to the Waste Management Transfer Station on Exeter Road and shipped to private landfills for disposal. Night garbage collection was discontinued in 2001.
3. A work stoppage by City of London outside workers in July/August 2001 resulted in the City collecting 3,726 tonnes of garbage at numerous drop-off locations. This waste was taken to several different disposal facilities. In addition, some multi-residential building owners contracted garbage collection to private firms during the work stoppage (estimated to be 900 tonnes).
4. A work stoppage by City of London inside workers in May-June 2015 resulted in London shipping some waste to the Thames Centre landfill and the Waste Management Twin Creeks landfill for disposal.

Table D-3
City of London
Historical Sewage Sludge Ash Quantities
Disposed of at St. Mary's Cement

Year	St. Mary's Cement (tonnes)
1977	0
1978	0
1979	0
1980	0
1981	0
1982	0
1983	0
1984	0
1985	0
1986	0
1987	0
1988	0
1989	0
1990	0
1991	0
1992	0
1993	0
1994	0
1995	0
1996	0
1997	0
1998	0
1999	0
2000	0
2001	0
2002	0
2003	0
2004	0
2005	0
2006	0
2007	0
2008	3,527
2009	3,521
2010	0

Table D-3
City of London
Historical Sewage Sludge Ash Quantities
Disposed of at St. Mary's Cement

Year	St. Mary's Cement (tonnes)
2011	4,474
2012	3,105
2013	5,378
2014	1,874
2015	0
2016	0
2017	0
Total	21,879

Table D-4
City of London
Waste Quantities Disposed of at W12A Landfill

Year	Residential ¹ (tonnes)	IC&I ² (tonnes)	C,R&D ³ Recycling Residuals (tonnes)	Ash ⁴ (tonnes)	Biosolids (tonnes)	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ⁵ (tonnes)	WTP ⁶ Process Residuals (tonnes)	Contaminated Soil		Total Waste Landfilled (tonnes)
									Waste (tonnes)	Cover (tonnes)	
1977	20,123	32,093	0	0	3,806	0	0	0	0	0	56,022
1978	58,722	81,687	0	0	26,516	0	0	0	0	0	166,925
1979	71,955	69,874	0	0	30,861	0	0	0	0	0	172,690
1980	89,995	70,721	0	0	52,083	0	0	0	0	0	212,799
1981	100,810	71,451	0	0	47,888	0	0	0	0	0	220,150
1982	110,249	71,267	0	0	44,273	0	0	0	0	0	225,788
1983	113,247	72,616	0	0	36,745	0	1,096	0	0	0	223,705
1984	122,438	80,522	0	0	51,445	0	5,247	0	0	0	259,653
1985	125,460	90,263	0	0	43,000	0	2,935	0	0	0	261,657
1986	134,801	101,816	0	0	49,386	0	2,275	0	0	0	288,278
1987	123,205	114,928	0	0	67,046	0	1,465	0	0	0	306,644
1988	75,674	126,943	0	33,349	16,886	0	2,711	0	0	0	255,564
1989	81,410	141,954	0	33,752	15,272	0	3,677	0	0	0	276,065
1990	73,790	125,027	0	30,142	7,366	0	8,161	0	0	0	244,485
1991	97,133	109,099	0	14,180	8,745	0	27,110	0	0	0	256,266
1992	97,708	58,516	0	15,386	8,643	0	32,318	0	0	0	212,571
1993	93,397	37,191	0	14,404	11,389	0	33,923	0	0	0	190,303
1994	86,300	32,007	0	15,875	14,359	0	34,015	0	0	0	182,556
1995	70,041	13,154	0	16,422	12,840	0	63,243	0	0	0	175,700
1996	51,096	6,118	0	22,194	11,190	0	44,756	0	0	0	135,354
1997	49,063	4,294	0	21,677	12,973	0	42,404	0	0	0	130,410

Table D-4
City of London
Waste Quantities Disposed of at W12A Landfill

Year	Residential ¹ (tonnes)	IC&I ² (tonnes)	C,R&D ³ Recycling Residuals (tonnes)	Ash ⁴ (tonnes)	Biosolids (tonnes)	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ⁵ (tonnes)	WTP ⁶ Process Residuals (tonnes)	Contaminated Soil		Total Waste Landfilled (tonnes)
									Waste (tonnes)	Cover (tonnes)	
1998	44,034	3,588	0	21,548	16,042	0	39,367	0	0	0	124,579
1999	49,622	2,192	0	19,373	7,861	0	57,925	0	0	0	136,973
2000	91,306	2,355	0	5,394	29,402	0	107,177	0	0	0	235,635
2001	92,856	2,436	0	4,093	6,620	0	38,716	0	0	0	144,721
2002	97,771	3,732	0	5,746	15,993	35,529	19,736	0	5,556	851	184,914
2003	102,194	4,120	0	5,176	5,861	42,491	28,374	0	263	0	188,479
2004	98,477	21,378	0	3,867	6,601	34,073	9,912	0	468	3,019	177,795
2005	102,559	36,947	0	5,351	2,913	30,674	8,727	0	10,054	12,355	209,580
2006	100,206	47,921	0	6,069	6	37,034	8,808	0	5,423	23	205,490
2007	100,404	47,346	0	6,001	0	37,769	23,984	0	9,925	5,004	230,433
2008	101,437	64,178	0	2,956	23,851	43,040	26,941	0	4,689	17,300	284,392
2009	97,720	69,742	0	0	0	43,000	26,907	0	17,626	18,883	273,878
2010	93,898	72,436	0	6,067	4,121	29,697	11,551	0	6,185	42,410	266,365
2011	94,435	75,008	10,236	0	10,317	22,371	9,595	0	15,800	13,187	250,949
2012	91,638	54,445	23,403	0	4,747	26,554	5,623	0	18,528	4,511	229,449
2013	93,172	45,954	18,991	1,904	4,633	23,062	8,946	0	3,590	1,269	201,521
2014	93,569	40,314	24,155	4,163	5,994	42,748	8,511	0	2,473	1,073	223,000
2015	91,339	13,614	33,936	12,953	2,577	47,181	8,594	0	4,757	3,656	218,606
2016	93,151	24,245	35,332	4,166	14,268	51,512	7,762	0	6,954	21,137	258,528
2017	94,438	56,992	44,317	6,551	3,639	49,273	10,600	2,109	5,756	3,742	277,417

Table D-4
City of London
Waste Quantities Disposed of at W12A Landfill

Year	Residential ¹ (tonnes)	IC&I ² (tonnes)	C,R&D ³ Recycling Residuals (tonnes)	Ash ⁴ (tonnes)	Biosolids (tonnes)	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ⁵ (tonnes)	WTP ⁶ Process Residuals (tonnes)	Contaminated Soil		Total Waste Landfilled (tonnes)
									Waste (tonnes)	Cover (tonnes)	
Total Percent ⁷	3,671,000 42%	2,200,000 25%	190,000 2%	339,000 4%	738,000 8%	596,000 6%	773,000 9%	2,000 0%	118,000 1.3%	148,000 1.7%	8,776,000

Notes:

1. "Residential" waste includes curbside, bulk bin and depot garbage collected by the City from residential and light commercial sources.
2. "IC&I" is an abbreviation for Industrial, Commercial & Institutional waste collected by the private sector.
3. "CR&D recycling residuals" is an abbreviation for Construction, Renovation & Demolition recycling residuals. Prior to 2011, CR&D recycling residuals were included with IC&I.
4. "Ash" includes sewage sludge ash (since 1998) and residential waste ash (1988 to 1999).
5. "Other Municipal" includes material recovery facility residuals, waste from City parks and grit from water pollution control plants.
6. "WTP process residuals" is an abbreviation for water treatment plant process residuals.
7. May not added to 100 due to rounding.

Table D-5
Total Waste Quantities Managed by the City

Year	Residential/ Light Commercial ¹			IC&I ² Disposal (tonnes)	CR&D ³ Recycling Residuals (tonnes)	Ash ⁴ (tonnes)	Biosolids Disposal (tonnes)	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ⁵ Disposal (tonnes)	WTP ⁶ Process Residuals (tonnes)	Cont. Soil ⁷ Disposal (tonnes)	Total (tonnes)
	Disposal (tonnes)	Diversion (tonnes)	Total (tonnes)									
1977	113,200	0	113,200	32,100	0	0	18,500	0	0	0	0	163,800
1978	117,700	0	117,700	81,700	0	0	45,700	0	0	0	0	245,100
1979	125,800	0	125,800	69,900	0	0	55,000	0	0	0	0	250,700
1980	122,900	0	122,900	70,700	0	0	54,400	0	0	0	0	248,000
1981	115,600	4,900	120,500	71,500	0	0	47,900	0	0	0	0	239,900
1982	110,200	5,000	115,200	71,300	0	0	44,300	0	0	0	0	230,800
1983	113,200	5,100	118,300	72,600	0	0	36,700	1,100	0	0	0	228,700
1984	122,400	5,200	127,600	80,500	0	0	51,400	5,200	0	0	0	264,700
1985	125,500	5,300	130,800	90,300	0	0	43,000	2,900	0	0	0	267,000
1986	134,800	5,400	140,200	101,800	0	0	49,400	2,300	0	0	0	293,700
1987	133,700	5,500	139,200	114,900	0	0	67,000	1,500	0	0	0	322,600
1988	137,300	5,800	143,100	126,900	0	33,300	16,900	2,700	0	0	0	322,900
1989	140,700	5,500	146,200	142,000	0	33,800	15,300	3,700	0	0	0	341,000
1990	139,000	10,700	149,700	125,000	0	30,100	7,400	8,200	0	0	0	320,400
1991	124,700	12,000	136,700	109,100	0	14,200	8,700	27,100	0	0	0	295,800
1992	127,200	12,600	139,800	58,500	0	15,400	8,600	32,300	0	0	0	254,600
1993	124,900	14,200	139,100	37,200	0	14,400	11,400	33,900	0	0	0	236,000
1994	123,000	18,000	141,000	32,000	0	15,900	14,400	34,000	0	0	0	237,300
1995	108,600	32,500	141,100	13,200	0	16,400	12,800	63,200	0	0	0	246,700
1996	100,800	38,500	139,300	6,100	0	22,200	11,200	44,800	0	0	0	223,600
1997	98,100	43,200	141,300	4,300	0	21,700	13,000	42,400	0	0	0	222,700
1998	98,200	41,500	139,700	3,600	0	21,500	16,000	39,400	0	0	0	220,200

Table D-5
Total Waste Quantities Managed by the City

Year	Residential/ Light Commercial ¹			IC&I ² Disposal (tonnes)	CR&D ³ Recycling Residuals (tonnes)	Ash ⁴ (tonnes)	Biosolids Disposal (tonnes)	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ⁵ Disposal (tonnes)	WTP ⁶ Process Residuals (tonnes)	Cont. Soil ⁷ Disposal (tonnes)	Total (tonnes)
	Disposal (tonnes)	Diversion (tonnes)	Total (tonnes)									
1999	98,700	42,900	141,600	2,200	0	19,400	7,900	57,900	0	0	0	229,000
2000	97,100	46,700	143,800	2,400	0	5,400	29,400	107,200	0	0	0	288,200
2001	97,500	48,700	146,200	2,400	0	4,100	6,600	38,700	0	0	0	198,000
2002	97,800	50,000	147,800	3,700	0	5,700	16,000	55,300	5,600	0	6,400	234,900
2003	102,200	51,700	153,900	4,100	0	5,200	5,900	70,900	300	0	300	240,300
2004	98,500	54,600	153,100	21,400	0	3,900	6,600	44,000	500	0	3,500	232,500
2005	102,600	54,700	157,300	36,900	0	5,400	2,900	39,400	10,100	0	22,400	264,300
2006	100,200	61,700	161,900	47,900	0	6,100	0	45,800	5,400	0	5,400	267,100
2007	100,400	61,300	161,700	47,300	0	6,000	0	61,800	9,900	0	14,900	291,700
2008	101,400	65,700	167,100	64,200	0	6,500	23,900	70,000	4,700	0	22,000	353,700
2009	97,700	68,000	165,700	69,700	0	3,500	0	69,900	17,600	0	36,500	345,300
2010	93,900	61,800	155,700	72,400	0	6,100	4,100	41,200	11,800	0	48,600	328,100
2011	94,400	66,000	160,400	75,000	10,200	4,500	10,300	32,000	17,100	0	29,000	321,400
2012	91,600	67,400	159,000	54,400	23,400	3,100	4,700	32,200	20,000	0	23,000	299,800
2013	93,200	68,900	162,100	46,000	19,000	7,300	4,600	32,000	5,600	0	4,900	275,900
2014	93,600	73,800	167,400	40,300	24,200	6,000	6,000	51,300	5,900	0	3,500	298,700
2015	92,900	71,000	163,900	13,600	33,900	13,000	2,600	55,800	14,700	0	8,400	291,200
2016	93,200	71,000	164,200	24,200	35,300	4,200	14,300	51,500	7,800	0	28,100	329,600
2017	94,400	72,500	166,900	57,000	44,300	6,600	3,600	49,300	10,600	2,100	9,500	349,900

Notes:

1. "Residential" waste includes curbside, bulk bin and depot garbage collected by the City from residential and light commercial sources.
2. "IC&I" is an abbreviation for Industrial, Commercial & Institutional waste collected by the private sector.
3. "CR&D recycling residuals" is an abbreviation for Construction, Renovation & Demolition recycling residuals. Prior to 2011, CR&D recycling residuals were included with IC&I.
4. "Ash" includes sewage sludge ash (since 1998) and residential waste ash (1988 to 1999).
5. "Other Municipal" includes material recovery facility residuals, waste from City parks and grit from water pollution control plants.
6. "WTP process residuals" is an abbreviation for water treatment plant process residuals.
7. Includes Contaminated Soil that is buried as waste and used as cover material at the landfill.

Table D-6
Unit Disposal Rates

Year	Population ¹	Residential/Light Commercial			IC&I ³	C,R&D ⁴	Ash	Biosolids	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ²	WTP ⁵	Cont. Soil ⁵	Total
		Disposal tonne/ person/yr	Diversion tonne/ person/yr	Total tonne/ person/yr									
1977	258,950	0.44	0.00	0.44	0.12	0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.63
1978	261,830	0.45	0.00	0.45	0.31	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.94
1979	264,810	0.48	0.00	0.48	0.26	0.00	0.00	0.21	0.00	0.00	0.00	0.00	0.95
1980	267,750	0.46	0.00	0.46	0.26	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.93
1981	270,760	0.43	0.02	0.45	0.26	0.00	0.00	0.18	0.00	0.00	0.00	0.00	0.87
1982	273,990	0.40	0.02	0.42	0.26	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.82
1983	277,160	0.41	0.02	0.43	0.26	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.81
1984	280,300	0.44	0.02	0.46	0.29	0.00	0.00	0.18	0.02	0.00	0.00	0.00	0.93
1985	283,330	0.44	0.02	0.46	0.32	0.00	0.00	0.15	0.01	0.00	0.00	0.00	0.92
1986	286,370	0.47	0.02	0.49	0.36	0.00	0.00	0.17	0.01	0.00	0.00	0.00	1.01
1987	293,510	0.46	0.02	0.47	0.39	0.00	0.00	0.23	0.01	0.00	0.00	0.00	1.08
1988	300,600	0.46	0.02	0.48	0.42	0.00	0.11	0.06	0.01	0.00	0.00	0.00	1.05
1989	307,750	0.46	0.02	0.48	0.46	0.00	0.11	0.05	0.01	0.00	0.00	0.00	1.09
1990	315,070	0.44	0.03	0.48	0.40	0.00	0.10	0.02	0.03	0.00	0.00	0.00	0.98
1991	322,400	0.39	0.04	0.42	0.34	0.00	0.04	0.03	0.08	0.00	0.00	0.00	0.88
1992	325,830	0.39	0.04	0.43	0.18	0.00	0.05	0.03	0.10	0.00	0.00	0.00	0.74
1993	328,990	0.38	0.04	0.42	0.11	0.00	0.04	0.03	0.10	0.00	0.00	0.00	0.67
1994	332,440	0.37	0.05	0.42	0.10	0.00	0.05	0.04	0.10	0.00	0.00	0.00	0.66
1995	335,800	0.32	0.10	0.42	0.04	0.00	0.05	0.04	0.19	0.00	0.00	0.00	0.64
1996	339,040	0.30	0.11	0.41	0.02	0.00	0.07	0.03	0.13	0.00	0.00	0.00	0.55
1997	341,360	0.29	0.13	0.41	0.01	0.00	0.06	0.04	0.12	0.00	0.00	0.00	0.53
1998	343,700	0.29	0.12	0.41	0.01	0.00	0.06	0.05	0.11	0.00	0.00	0.00	0.52

Table D-6
Unit Disposal Rates

Year	Population ¹	Residential/Light Commercial			IC&I ³	C,R&D ⁴	Ash	Biosolids	Street Sweepings/ Road Work (tonnes)	"Other" Municipal ²	WTP ⁵	Cont. Soil ⁵	Total
		Disposal tonne/ person/yr	Diversion tonne/ person/yr	Total tonne/ person/yr									
1999	346,160	0.29	0.12	0.41	0.01	0.00	0.06	0.02	0.17	0.00	0.00	0.00	0.54
2000	348,430	0.28	0.13	0.41	0.01	0.00	0.02	0.08	0.31	0.00	0.00	0.00	0.69
2001	350,800	0.28	0.14	0.42	0.01	0.00	0.01	0.02	0.11	0.00	0.00	0.00	0.43
2002	355,300	0.28	0.14	0.42	0.01	0.00	0.02	0.05	0.16	0.02	0.00	0.02	0.54
2003	359,600	0.28	0.14	0.43	0.01	0.00	0.01	0.02	0.20	0.00	0.00	0.00	0.53
2004	363,400	0.27	0.15	0.42	0.06	0.00	0.01	0.02	0.12	0.00	0.00	0.01	0.49
2005	366,900	0.28	0.15	0.43	0.10	0.00	0.01	0.01	0.11	0.03	0.00	0.06	0.60
2006	370,300	0.27	0.17	0.44	0.13	0.00	0.02	0.00	0.12	0.01	0.00	0.01	0.57
2007	373,300	0.27	0.16	0.43	0.13	0.00	0.02	0.00	0.17	0.03	0.00	0.04	0.64
2008	376,400	0.27	0.17	0.44	0.17	0.00	0.02	0.06	0.19	0.01	0.00	0.06	0.78
2009	379,400	0.26	0.18	0.44	0.18	0.00	0.01	0.00	0.18	0.05	0.00	0.10	0.78
2010	382,600	0.25	0.16	0.41	0.19	0.00	0.02	0.01	0.11	0.03	0.00	0.13	0.73
2011	385,900	0.24	0.17	0.42	0.19	0.03	0.01	0.03	0.08	0.04	0.00	0.08	0.71
2012	387,600	0.24	0.17	0.41	0.14	0.06	0.01	0.01	0.08	0.05	0.00	0.06	0.65
2013	389,300	0.24	0.18	0.42	0.12	0.05	0.02	0.01	0.08	0.01	0.00	0.01	0.55
2014	391,100	0.24	0.19	0.43	0.10	0.06	0.02	0.02	0.13	0.02	0.00	0.01	0.59
2015	392,900	0.24	0.18	0.42	0.03	0.09	0.03	0.01	0.14	0.04	0.00	0.02	0.60
2016	394,800	0.24	0.18	0.41	0.06	0.09	0.01	0.04	0.13	0.02	0.00	0.07	0.66
2017	397,800	0.24	0.18	0.42	0.14	0.11	0.02	0.01	0.12	0.03	0.01	0.02	0.70
Avg. 13-16		0.24	0.18	0.42	0.09	0.08	0.02	0.02	0.12	0.02	0.00	0.03	0.61

Notes:

1. Population includes the allowance for Township of Westminster prior to 1993 and for out-of-town post-secondary students. In 1993 the Township of Westminster became part of the City of London.
2. "Other Municipal" includes material recovery facility residuals, waste from City parks and grit from water pollution control plants.
3. IC&I is an abbreviation for Industrial, Commercial & Institutional waste.
4. CR&D is an abbreviation for Construction & Demolition waste. From 1977 to 2011, C&D included with IC&I. average only includes 3 years.
5. "WTP process residuals" is an abbreviation for water treatment plant process residuals.
6. Includes Contaminated Soil and Contaminated Soil-Cover.

Table D-7
Estimated IC&I and C,R&D Rates from Various Sources

Description	Generation Rate Tonnes/ Person/Year	Comments
IC&I and CR,&D Waste Disposal Rate at the W12A Landfill, 1989	0.46	Calculated from Landfill Weigh Scale Records; 1989 represents a year in which the local economy was strong and there were no/limited waste export options.
IC&I Waste Generation Rate, London, 1994	0.48	<i>Final Task 1 Report The Problem or Opportunity</i> (London, 1997)
IC&I Waste Generation Rate, Ontario, 2002	0.53	<i>The Private Sector IC&I Waste Management System in Ontario</i> (RIS International, 2005)
IC&I Waste Diversion Rate, Ontario, 2002	0.11	<i>The Private Sector IC&I Waste Management System in Ontario</i> (RIS International, 2005)
IC&I Waste Disposal Rate, Ontario, 2002	0.42	<i>The Private Sector IC&I Waste Management System in Ontario</i> (RIS International, 2005)
IC&I Waste Diversion Rate, London 2004	0.07	<i>Estimate of "Blue Box" Recyclables Generated by the IC&I Sector in the City of London</i> (2cg, 2005)
IC&I Waste Generation Rate, London, 2013/14	0.45	<i>Data provided by local MRF and Transfer Stations</i>
IC&I Waste Diversion Rate, London, 2013/14	0.10	<i>Data provided by local MRF and Transfer Stations</i>
IC&I Waste Disposal Rate, London, 2013/14	0.35	<i>Data provided by local MRF and Transfer Stations</i>
CR&D Waste Generation Rate, London, 1994	0.18	<i>Final Task 1 Report The Problem or Opportunity</i> (London, 1997)

Table D-7
Estimated IC&I and C,R&D Rates from Various Sources

Description	Generation Rate Tonnes/ Person/Year	Comments
CR&D Waste Generation Rate, Ontario, 2002	0.10	<i>The Private Sector IC&I Waste Management System in Ontario (RIS International, 2005)</i>
CR&D Waste Diversion Rate, Ontario, 2002	0.01	<i>The Private Sector IC&I Waste Management System in Ontario (RIS International, 2005)</i>
CR&D Waste Disposal Rate, Ontario, 2002	0.09	<i>The Private Sector IC&I Waste Management System in Ontario (RIS International, 2005)</i>
CR&D Waste Generation Rate, London, 2013/14	0.32	<i>Data provided by local CR&D recycling facilities</i>
CR&D Waste Diversion Rate, London, 2013/14	0.15	<i>Data provided by local CR&D recycling facilities</i>
CR&D Waste Disposal Rate, London, 2013/14	0.17	<i>Data provided by local CR&D recycling facilities</i>

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Appendix E

How Residential Waste is Managed

Table E-1 2017 City of London Residential Waste Management Programs—
Estimated Tonnes Diverted

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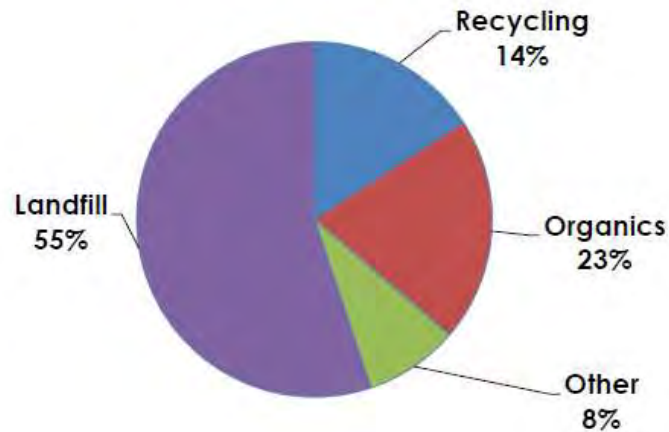
This appendix provides a description of the City's various waste diversion programs and the quantity of material diverted by each program in 2017.

This data is summarized in Table E-1 and Figure E-1.

Table E-1: 2017 CITY OF LONDON RESIDENTIAL WASTE MANAGEMENT PROGRAMS – ESTIMATED TONNES DIVERTED

PROGRAMS	Single Family Households	Multi-Residential Households	Total Tonnes
<i>Recycling</i>			
a) Curbside Recycling Program	18,670	0	18,670
b) Multi-Residential Recycling Program	0	3,220	3,220
c) City Depots (EnviroDepots, W12A)	620	260	880
d) Public Space Recycling (estimate)	30	20	50
Subtotal	19,320	3,550	22,820
<i>Organics Management</i>			
e) Home Composting Program (estimate)	5,680	0	5,680
f) Grasscycling (estimate)	3,580	0	3,580
g) Curbside Yard Waste Collection	5,250	0	5,250
h) Depot Yard Waste Collection	16,240	0	16,240
i) Fall Leaf Collection	4,760	0	4,760
j) Christmas Tree Recycling	100	0	100
Subtotal	35,610	0	35,610
<i>Other Programs</i>			
k) Waste Electronics & Electrical Equipment	200	70	270
l) Tire Recycling	2,310	570	2,880
m) Wood Waste/ Construction, Renovation & Demolition Waste	5,070	0	5,070
n) Scrap Metal	690	70	760
o) Textile/Small Household Item Reuse	1,390	350	1,740
p) Municipal Household Special Waste	430	110	540
q) Brewers Retail Container Recycling	1,750	440	2,190
Subtotal	11,840	1,610	13,450
Total Waste Diverted	66,770	5,160	71,880
Total Waste Disposed¹	65,500	24, 230	89,730
Total Waste	129,900	29,400	161,610
Diversion Rate	50%	18%	45%

Notes 1. Includes process residuals from recycling and composting programs.

Figure E-1 - 2017 Waste Diversion

Blue Box Recycling Programs

Curbside Recycling – 18,670 tonnes

The City collects a wide range of recyclables from all curbside households as part of its Blue Box Recycling program. The materials collected in 2017 were newsprint & flyers; household paper; magazines, catalogues & books; paper egg cartons & boxes; cardboard boxes; glass bottles & jars; aluminum food & beverage cans; steel food & beverage cans; foil containers & foil; empty metal paint cans; empty aerosol cans; plastic bottles, jugs, plant pots/trays, large pails & tubs; milk & juice cartons; drink boxes and cardboard cans.

Materials collected were taken to the City's Manning Drive Regional Material Recovery Facility (MRF) for processing and subsequent shipping to various end markets. This facility also receives recyclables from other City programs and other municipalities. Material is weighed upon entering and leaving the MRF.

A portion of this material is allotted to each program (curbside, multi-residential, other municipalities) equal to the percentage of incoming recyclables from each source. In 2017, 20,340 tonnes of materials were collected curbside of which approximately 1,670 tonnes would become process residuals.

Multi-Residential Recycling – 3,220 tonnes

The City collects the same range of recyclables at the majority of multi-residential buildings. The property owner is responsible for purchasing and providing 360 litre carts for residents to sort their recyclables. As a result, a few multi-residential buildings do not have recycling because the property owner has not provided carts. In 2017, approximately 50,000 multi-residential units had access to on-site recycling and 3,000 units did not. Residents from buildings without on-site recycling must take their

recyclables to one of four City EnviroDepots. City staff have made numerous attempts to further reduce the number of units without on-site access to recycling.

The materials collected, how they are processed and calculation of the quantity recycled is the same as the curbside Blue Box program. In 2017, 3,560 tonnes of materials were collected from multi-residential buildings of which approximately 290 tonnes would become process residuals.

Depot Recycling – 880 tonnes

As noted above, the City operates four EnviroDepots (Oxford Street, Clarke Road, Try – Clarke Road and W12A Landfill) that accept a range of materials including Blue Box recyclables. The Blue Box materials collected, how they are processed and calculation of the quantity recycled is the same as the curbside Blue Box program.

The Blue Box materials accepted is the same as the curbside Blue Box program.

In 2017, 960 tonnes of materials were collected from multi-residential buildings of which approximately 80 tonnes would become process residuals.

Public Space Recycling – 50 tonnes

The City has over 40 EnviroBins located throughout the Downtown, Old East Village, Richmond Row and Wortley Village, for use by the residents when they are out shopping or going to restaurants and/or for the residents that live above some commercial establishments. Each EnviroBin has three compartments: containers, paper and garbage.

The Blue Box materials accepted is the same as the curbside Blue Box program.

Organic Programs

Home Composting – 5,680 tonnes

The City sells composters at cost at its Oxford Street and Clarke Road EnviroDepots. In the 1990's the City also sold composters at "truck load sale events". Over the years the City has sold 55,900 composters including approximately 800 in 2017. The *Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste System Flow* recommends that municipalities assume each composter sold diverts 100 kilograms per year. This estimate is based on many factors, assumption and measured programs generally between the years 2000 and 2010. It remains a reasonable number and used by Ontario municipalities.

Grasscycling – 3,580 tonnes

The City stopped collecting grass clippings in 1995 and started promoting grasscycling. Grasscycling refers to leaving grass clippings on the lawn when mowing.

Because grass consists largely of water (80% or more), contains little lignin, and has high nitrogen content, grass clippings easily break down and return to the soil within one to two weeks, acting primarily as a fertilizer supplement and, to a much smaller degree, a mulch. Grasscycling can provide 15-20% or more of a lawn's yearly nitrogen requirements.

The amount of grass diverted in 2017 was estimated to be approximately 30 kilograms per curbside household or 3,580 tonnes in total.

Curbside Yard Waste Collection – 5,250 tonnes

The City provides curbside collection of yard materials. This includes plant trimmings, brush and branches up to 10 cm in diameter. In 2017 yard materials were collected on a six week cycle and each home received five collections.

The collected yard materials are transported to TRY Recycling's composting facility for processing. The incoming material is weighted. On average about five percent of the incoming material becomes process residuals and 95% is either consumed during the composting process or is made into compost and sold. In 2017, 5,510 tonnes of yard materials were collected curbside of which approximately 260 tonnes would become process residuals.

Curbside Fall Leaf Collection – 4,760 tonnes

The City provides curbside collection of fall leaves beginning in mid-October. Yard materials are also collected with the fall leaves. In 2017 fall leaves were collected on a three week cycle and each home received three collections.

The collected yard materials are transported to TRY Recycling's composting facility for processing. Approximately 4,760 tonnes were collected. On average about 5% of incoming material becomes residue (or about 240 tonnes). How they are processed and the calculation of the quantity composted is the same as for yard materials.

Depot Yard Material Collection – 16,240 tonnes

Residents can drop off yard materials at the City EnviroDepots year round. The collected yard materials are transported to TRY Recycling's composting facility for processing. Approximately 13,880 tonnes were collected. How they are processed and the calculation of the quantity composted is the same as for yard materials. There was assumed to be 5% residue from processing or about 690 tonnes.

Christmas Tree Collection – 100 tonnes

In 2017, the City offered Christmas tree curbside collection during the first week in January. All four EnviroDepots were also accepting Christmas trees for composting. The trees are chipped on-site at the Depot locations and trees collected curbside were taken to TRY Recycling where they are chipped and composted.

Other Programs

Waste Electronics and Electrical Equipment Recycling – 270 tonnes

Waste Electronics and Electrical Equipment (WEEE) recycling is made up of two components. The first component is electronics collected at the EnviroDepots and shipped for recycling. In 2017 the EnviroDepots collected 210 tonnes of material electronics were shipped through the Ontario Electronic Stewardship (OES) program. The second component is appliances collected at the EnviroDepots and recycled. In 2017, 60 tonnes of appliances were collected and recycled. This does not include WEEE that is delivered by Londoners to other drop-off locations in the city.

Tire Recycling – 2,880 tonnes

The annual Municipal Datacall administered by Resource Productivity & Recovery Authority (RPRA) compiles information on materials diverted and disposed by Ontario municipalities. Most of the information used by the RPRA is provided by the local municipality but some of information comes from programs administered by provincial organizations. In the case of tires, information on the quantity of tires recycled in a community is provided by the Ontario Tire Stewardship. This organization looks after the Used Tires Program in Ontario and ensures tires are reused or recycled.

The 2017 Datacall estimate is 2,880 tonnes of tires were recycled/reused in the City of London. Included in this total is 70 tonnes of tires collected at the three City EnviroDepots as part of the Used Tire Program.

Construction, Renovation and Demolition Material Recycling – 5,070 tonnes

The City banned the collection of construction renovation and demolition waste in the 1980's. At the time the average household produced about 15 kilograms of wood waste and renovation material waste each year. At the time of the ban it was assumed about half of this material would be recycled and about half would likely continue to be landfilled as residents would hide small amounts wood waste and renovation materials in their garbage bags for collection.

Beginning in 2004, the City's EnviroDepots began to accept wood waste and renovation materials (including shingles) for recycling. The material is taken to TRY Recycling for processing where approximately 50% to 60% is made into useable products and 40% to 50% becomes residual and is landfilled. The City also accepts of wood at the W12A Landfill which is made into wood chips for on-site use.

In 2017, the EnviroDepots received 2,470 tonnes of wood waste and renovation materials. Approximately 2,225 tonnes of this material was recycled and 245 tonnes became Residual Waste and was landfilled. A further 1,975 tonnes of wood waste was recycled at the W12A Landfill.

It was assumed that approximately half of the residential renovation materials not taken to an EnviroDepots (870 tonnes) was taken to private construction, renovation and demolition waste recycling companies (TRY Recycling and Green Valley Recycling) and recycled while the other 50% (870 tonnes) was residue from recycling, hidden in the residential garbage or disposed of privately.

Scrap Metal Recycling – 760 tonnes

The City stopped the collection of scrap metal (e.g., barbeques, bicycles, etc.) and appliances in the 1990's. At the time the average person produced about 2.5 kilograms of scrap metal each year. At the time of the ban it was assumed about half of this material would be recycled and about half would likely continue to be landfilled as residents would hide small amounts of metal in their garbage bags for collection.

Beginning in 2004, the City's EnviroDepots began to accept scrap metal for recycling. The material is taken to Zubick's for processing. It is assumed 100% of the metal is recycled. In 2017, the EnviroDepots received 520 tonnes of scrap metal.

It was assumed that approximately half the residential scrap metal not taken to an EnviroDepots (240 tonnes) was taken to other scrap metal dealers and recycled while the other 50% (240 tonnes) was placed in the garbage.

Textile/Small Household Item Reuse/Recycling – 1,740 tonnes

In 2017, residents could take textiles, books and small household items to a Goodwill drop off located at the Oxford Street and Clarke Road EnviroDepots. Goodwill has estimated that they received 540 tonnes of material at these locations.

The City offers free disposal of materials to not-for-profit reuse organizations (e.g., Goodwill) to encourage and support these programs. The RPRA Datacall estimates that reuse/recycling organizations given free disposal increase their diversion efforts by 10% and this incremental increase is part of a municipalities diversion estimate.

Approximately 12,000 tonnes of materials were diverted from landfill in 2017 through reuse/recycling organizations receiving free disposal which translates into an additional 1,200 tonnes toward municipal diversion.

MHSW Recycling – 540 tonnes

The City collects all forms of Municipal Hazardous and Special Waste (MHSW) at the HSW depot at the W12A landfill including paints, solvents, pesticides, oil filters, used oil, antifreeze, batteries, florescent bulbs, compressed cylinders and oil & antifreeze containers. Some of these materials (batteries, florescent bulbs, compressed cylinders and oil & antifreeze container) are also collected at the Oxford Street and Clarke Road EnviroDepots.

The materials are shipped to various processing facilities across Ontario licensed to accept this material. The majority of the material is recycled including paint, antifreeze and oil.

The estimate of the weight of material diverted is based on a combination of actual weights for some materials and estimated weights based on the volume shipped for other materials.

Brewer's Retail /LCBO Bottle Recycling/Reuse – 2,180 tonnes

The 2017 RPRA Datacall shows 2,180 tonnes of Brewer's Retail and Liquor Control Board of Ontario (LCBO) containers being recycled/reused in the City of London.

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Appendix F

Waste Generation Projections

Table F-1 Waste Quantity Projections

Table F-2 Waste Diversion Projections

Table F-3 Residual Waste Projections

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Table F-1
Waste Quantity Projections¹

Year	Residential		IC&I ²	CR&D ³	Sewage Sludge	Biosolids	Street Sweep.	"Other" Municipal ⁴	WTP ⁵ Residuals	Cont. Soil ⁶	Total	Running Total
	London (tonnes)	Thames (tonnes)										
2018	169,000	800	180,200	120,100	5,400	6,400	38,000	8,000	12,000	12,000	551,900	551,900
2019	170,100	800	181,400	120,900	5,400	6,400	38,300	8,100	12,100	12,100	555,600	1,107,500
2020	171,200	800	182,600	121,700	5,400	6,400	38,500	8,100	12,200	12,200	559,100	1,666,600
2021	172,400	800	183,900	122,600	5,400	6,500	38,800	8,200	12,300	12,300	563,200	2,229,800
2022	174,300	800	185,900	123,900	5,500	6,500	39,200	8,300	12,400	12,400	569,200	2,799,000
2023	176,100	800	187,800	125,200	5,500	6,500	39,600	8,300	12,500	12,500	574,800	3,373,800
2024	178,000	900	189,700	126,500	5,500	6,500	40,100	8,400	12,600	12,600	580,800	3,954,600
2025	179,800	900	191,700	127,800	5,500	6,500	40,500	8,500	12,800	12,800	586,800	4,541,400
2026	181,500	900	193,500	129,000	5,500	6,500	40,900	8,600	12,900	12,900	592,200	5,133,600
2027	183,000	900	195,100	130,100	5,500	6,500	41,200	8,700	13,000	13,000	597,000	5,730,600
2028	184,400	900	196,600	131,100	5,500	6,500	41,500	8,700	13,100	13,100	601,400	6,332,000
2029	185,800	900	198,100	132,100	5,500	6,600	41,800	8,800	13,200	13,200	606,000	6,938,000
2030	187,300	900	199,700	133,100	5,500	6,600	42,200	8,900	13,300	13,300	610,800	7,548,800
2031	188,800	900	201,300	134,200	5,600	6,600	42,500	8,900	13,400	13,400	615,600	8,164,400
2032	190,400	900	203,000	135,300	5,600	6,600	42,900	9,000	13,500	13,500	620,700	8,785,100
2033	192,000	900	204,700	136,500	5,600	6,600	43,200	9,100	13,600	13,600	625,800	9,410,900
2034	193,600	900	206,500	137,600	5,600	6,600	43,600	9,200	13,800	13,800	631,200	10,042,10
2035	195,200	900	208,200	138,800	5,600	6,600	43,900	9,300	13,900	13,900	636,300	10,678,40
2036	196,700	900	209,800	139,900	5,600	6,600	44,300	9,300	14,000	14,000	641,100	11,319,50
2037	198,400	1,000	211,500	141,000	5,600	6,700	44,700	9,400	14,100	14,100	646,500	11,966,00
2038	200,000	1,000	213,300	142,200	5,600	6,700	45,000	9,500	14,200	14,200	651,700	12,617,70
2039	201,600	1,000	215,000	143,300	5,600	6,700	45,400	9,600	14,300	14,300	656,800	13,274,50
2040	203,200	1,000	216,700	144,500	5,700	6,700	45,700	9,600	14,400	14,400	661,900	13,936,40
2041	204,800	1,000	218,300	145,600	5,700	6,700	46,100	9,700	14,600	14,600	667,100	14,603,50
2042	206,400	1,000	220,100	146,700	5,700	6,700	46,500	9,800	14,700	14,700	672,300	15,275,80

2043	208,100	1,000	221,900	147,900	5,700	6,700	46,800	9,900	14,800	14,800	677,600	15,953,40
2044	209,700	1,000	223,700	149,100	5,700	6,800	47,200	9,900	14,900	14,900	682,900	16,636,30
2045	211,500	1,000	225,500	150,300	5,700	6,800	47,600	10,000	15,000	15,000	688,400	17,324,70
2046	213,100	1,000	227,300	151,500	5,700	6,800	48,000	10,100	15,200	15,200	693,900	18,018,60
2047	214,900	1,000	229,100	152,800	5,700	6,800	48,400	10,200	15,300	15,300	699,500	18,718,10
2048	216,600	1,000	231,000	154,000	5,700	6,800	48,800	10,300	15,400	15,400	705,000	19,423,10
2049	218,400	1,000	232,900	155,300	5,800	6,800	49,200	10,400	15,500	15,500	710,800	20,133,90
2018-2024	1,211,100	5,700	1,291,500	860,900	38,100	45,200	272,500	57,400	86,100	86,100	3,954,600	
2025-2049	4,965,200	23,800	5,294,500	3,529,700	140,500	166,500	1,117,900	235,400	352,900	352,900	16,179,300	

Notes

1. Waste quantity projections were estimated by multiplying population projections by the appropriate waste generation rate except for Biosolids and sewage sludge ash which were assumed to increase by 0.2% per year.
2. IC&I is an abbreviation for Industrial, Commercial & Institutional waste.
3. CR&D is an abbreviation for Construction, Renovation and Demolition waste.
4. Other Municipal includes recycling residuals from the City's Material Recovery Facility,
5. "WTP process residuals" is an abbreviation for water treatment plant process residuals.
6. Includes Contaminated Soil buried as waste and Contaminated Soil used as cover Assumes 50% used as cover.
7. Waste generation rates used to calculate projected waste quantities are summarized in table beside footnotes.
8. It was assumed that the unit generation rate will not change during the study period.

Category	Generation Rate ^{7,8}	
Residential Waste	0.420	tonne/person/yr
IC&I Waste	0.450	tonne/person/yr
CR&D Residual	0.300	tonne/person/yr
Sewage Sludge	0.014	tonne/person/yr
Biosolids Disposal	0.016	tonne/person/yr
Street Sweeping	0.095	tonne/person/yr
"Other" Municipal	0.020	tonne/person/yr
WTP Residual	0.030	tonne/person/yr
Contaminated Soil	0.030	tonne/person/yr

Table F-2
Waste Diversion Projections

Year	Residential Diverted ³		IC&I ¹				CR&D ^{2,6}		Contaminated Soil ⁷		Total	Running Total
			Exported ⁴		Diverted ⁵							
	%	(tonnes)	%	(tonnes)	%	(tonnes)	1%	(tonnes)	% ⁵	(tonnes)	(tonnes)	(tonnes)
2018	48%	81,100	65%	117,100	21%	37,100	50%	60,100	50%	6,000	295,400	295,400
2019	51%	86,800	56%	101,600	21%	38,500	50%	60,500	50%	6,100	287,400	582,800
2020	54%	92,400	47%	85,800	22%	39,800	50%	60,900	50%	6,100	278,900	861,700
2021	57%	98,300	38%	69,900	22%	41,200	50%	61,300	50%	6,200	270,700	1,132,400
2022	60%	104,600	29%	53,900	23%	42,800	50%	62,000	50%	6,200	263,300	1,395,700
2023	60%	105,700	20%	37,600	24%	44,300	50%	62,600	50%	6,300	250,200	1,645,900
2024	60%	106,800	11%	20,900	24%	45,900	50%	63,300	50%	6,300	236,900	1,882,800
2025	60%	107,900	0%	0	25%	47,900	50%	63,900	50%	6,400	219,700	2,102,500
2026	60%	108,900	0%	0	26%	50,300	50%	64,500	50%	6,500	223,700	2,326,200
2027	60%	109,800	0%	0	27%	52,700	50%	65,100	50%	6,500	227,600	2,553,800
2028	60%	110,600	0%	0	28%	55,000	50%	65,600	50%	6,600	231,200	2,785,000
2029	60%	111,500	0%	0	29%	57,400	50%	66,100	50%	6,600	235,000	3,020,000
2030	60%	112,400	0%	0	30%	59,900	50%	66,600	50%	6,700	238,900	3,258,900
2031	60%	113,300	0%	0	31%	62,400	50%	67,100	50%	6,700	242,800	3,501,700
2032	60%	114,200	0%	0	32%	65,000	50%	67,700	50%	6,800	246,900	3,748,600
2033	60%	115,200	0%	0	33%	67,600	50%	68,300	50%	6,800	251,100	3,999,700
2034	60%	116,200	0%	0	34%	70,200	50%	68,800	50%	6,900	255,200	4,254,900
2035	60%	117,100	0%	0	35%	72,900	50%	69,400	50%	7,000	259,400	4,514,300
2036	60%	118,000	0%	0	36%	75,500	50%	70,000	50%	7,000	263,500	4,777,800
2037	60%	119,000	0%	0	37%	78,300	50%	70,500	50%	7,100	267,800	5,045,600
2038	60%	120,000	0%	0	38%	81,100	50%	71,100	50%	7,100	272,200	5,317,800
2039	60%	121,000	0%	0	39%	83,900	50%	71,700	50%	7,200	276,600	5,594,400
2040	60%	121,900	0%	0	40%	86,700	50%	72,300	50%	7,200	280,900	5,875,300
2041	60%	122,900	0%	0	41%	89,500	50%	72,800	50%	7,300	285,200	6,160,500
2042	60%	123,800	0%	0	42%	92,400	50%	73,400	50%	7,400	289,600	6,450,100

Table F-2
Waste Diversion Projections

Year	Residential Diverted ³		IC&I ¹				CR&D ^{2,6}		Contaminated Soil ⁷		Total	Running Total
			Exported ⁴		Diverted ⁵							
	%	(tonnes)	%	(tonnes)	%	(tonnes)	1%	(tonnes)	% ⁵	(tonnes)	(tonnes)	(tonnes)
2043	60%	124,900	0%	0	43%	95,400	50%	74,000	50%	7,400	294,300	6,744,400
2044	60%	125,800	0%	0	44%	98,400	50%	74,600	50%	7,500	298,800	7,043,200
2045	60%	126,900	0%	0	45%	101,500	50%	75,200	50%	7,500	303,600	7,346,800
2046	60%	127,900	0%	0	46%	104,600	50%	75,800	50%	7,600	308,300	7,655,100
2047	60%	128,900	0%	0	47%	107,700	50%	76,400	50%	7,700	313,000	7,968,100
2048	60%	130,000	0%	0	48%	110,900	50%	77,000	50%	7,700	317,900	8,286,000
2049	60%	131,000	0%	0	49%	114,100	50%	77,700	50%	7,800	322,800	8,608,800

Notes

1. IC&I is an abbreviation for Industrial, Commercial & Institutional waste
2. CR&D is an abbreviation for Construction, Renovation and Demolition residuals
3. Residential waste diversion is assumed to increase from 45% (current rate) to 60% by 2022.
4. To be able to accommodate all residual waste generated in London, it is assumed that IC&I waste export stops by 2025.
5. IC&I waste diversion is assumed to increase from 20% (current rate) to 25% by 2025 and 50% by 2050.
6. CR&D waste diversion is assumed to stay at 50% (current rate) until 2050.
7. 50% of contaminated soil is used as cover material and does not consume any landfill capacity.

Table F-3
Residual Waste Projections⁷ (tonnes)

Year	Residential	IC&I ¹	CR&D ² Residual	Sewage Sludge Ash	Biosolids	Street Sweepings	"Other" ³ Municipal	WTP ⁴ Residuals	Cont. Soil ⁵	Total	Running Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
2018	88,700	24,800	60,000	5,400	6,400	38,000	8,000	12,000	6,000	249,300	249,300
2019	84,100	40,100	60,400	5,400	6,400	38,300	8,100	12,100	6,000	260,900	510,200
2020	79,600	55,800	60,800	5,400	6,400	38,500	8,100	12,200	6,100	272,900	783,100
2021	74,900	71,500	61,300	5,400	6,500	38,800	8,200	12,300	6,100	285,000	1,068,100
2022	70,500	87,200	61,900	5,500	6,500	39,200	8,300	12,400	6,200	297,700	1,365,800
2023	71,200	104,000	62,600	5,500	6,500	39,600	8,300	12,500	6,200	316,400	1,682,200
2024	72,100	121,000	63,200	5,500	6,500	40,100	8,400	12,600	6,300	335,700	2,017,900⁶
2025	72,800	141,800	63,900	5,500	6,500	40,500	8,500	12,800	6,400	358,700	358,700
2026	73,500	141,400	64,500	5,500	6,500	40,900	8,600	12,900	6,400	360,200	718,900
2027	74,100	140,800	65,000	5,500	6,500	41,200	8,700	13,000	6,500	361,300	1,080,200
2028	74,700	140,100	65,500	5,500	6,500	41,500	8,700	13,100	6,500	362,100	1,442,300
2029	75,200	139,200	66,000	5,500	6,600	41,800	8,800	13,200	6,600	362,900	1,805,200
2030	75,800	138,200	66,500	5,500	6,600	42,200	8,900	13,300	6,600	363,600	2,168,800
2031	76,400	137,300	67,100	5,600	6,600	42,500	8,900	13,400	6,700	364,500	2,533,300
2032	77,100	136,300	67,600	5,600	6,600	42,900	9,000	13,500	6,700	365,300	2,898,600
2033	77,700	135,400	68,200	5,600	6,600	43,200	9,100	13,600	6,800	366,200	3,264,800
2034	78,300	134,500	68,800	5,600	6,600	43,600	9,200	13,800	6,900	367,300	3,632,100
2035	79,000	133,600	69,400	5,600	6,600	43,900	9,300	13,900	6,900	368,200	4,000,300
2036	79,600	132,700	69,900	5,600	6,600	44,300	9,300	14,000	7,000	369,000	4,369,300
2037	80,400	131,500	70,500	5,600	6,700	44,700	9,400	14,100	7,000	369,900	4,739,200
2038	81,000	130,400	71,100	5,600	6,700	45,000	9,500	14,200	7,100	370,600	5,109,800
2039	81,600	129,400	71,600	5,600	6,700	45,400	9,600	14,300	7,100	371,300	5,481,100
2040	82,300	128,300	72,200	5,700	6,700	45,700	9,600	14,400	7,200	372,100	5,853,200

Table F-3
Residual Waste Projections⁷ (tonnes)

Year	Residential	IC&I ¹	CR&D ² Residual	Sewage Sludge Ash	Biosolids	Street Sweepings	"Other" ³ Municipal	WTP ⁴ Residuals	Cont. Soil ⁵	Total	Running Total
	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)	(tonnes)
2041	82,900	127,200	72,800	5,700	6,700	46,100	9,700	14,600	7,300	373,000	6,226,200
2042	83,600	125,900	73,300	5,700	6,700	46,500	9,800	14,700	7,300	373,500	6,599,700
2043	84,200	124,700	73,900	5,700	6,700	46,800	9,900	14,800	7,400	374,100	6,973,800
2044	84,900	123,500	74,500	5,700	6,800	47,200	9,900	14,900	7,400	374,800	7,348,600
2045	85,600	122,200	75,100	5,700	6,800	47,600	10,000	15,000	7,500	375,500	7,724,100
2046	86,200	120,900	75,700	5,700	6,800	48,000	10,100	15,200	7,600	376,200	8,100,300
2047	87,000	119,600	76,400	5,700	6,800	48,400	10,200	15,300	7,600	377,000	8,477,300
2048	87,600	118,200	77,000	5,700	6,800	48,800	10,300	15,400	7,700	377,500	8,854,800
2049	88,400	116,900	77,600	5,800	6,800	49,200	10,400	15,500	7,700	378,300	9,233,100
2018- 2024	541,100	504,400	430,200	38,100	45,200	272,500	57,400	86,100	42,900	2,017,900	
2025- 2049	2,009,900	3,270,000	1,764,100	140,500	166,500	1,117,900	235,400	352,900	175,900	9,233,100	

Notes

1. IC&I is an abbreviation for Industrial, Commercial & Institutional waste
2. CR&D Residuals is an abbreviation for Construction, Renovation and Demolition recycling process residuals.
3. "Other" Municipal includes recycling residuals from the City's Material Recovery Facility, waste from City projects, waste from City parks and grit from wastewater treatment plants.
4. "WTP process residuals" is an abbreviation for water treatment plant process residuals.
5. Includes contaminated soil buried as waste and contaminated soil used as daily cover.
6. Total waste until end of 2024. This amount will consume the remaining approved capacity. Running total reset to zero to determine total waste for proposed expansion of the W12A Landfill.
7. Disposal quantity calculated by subtracting the amount diverted (Table F-2) from the total waste generated (Table F-1).

Appendix G

Calculation of Residual Waste from Proposed Regional Service Area

Table G-1: Data Sources

Table G-2: Residual Waste Diversion Rates

Table G-3: Summary of Municipal Responses

Table G-4 Residual Waste Quantities for Scenario 1

Table G-5 Residual Waste Quantities for Scenario 2

Table G-6 Residual Waste Quantities for Scenario 3

Table G-7 Residual Waste Quantities for Scenario 4

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Data sources used to developing the residual waste quantity projections are presented in Table G-1.

Diversion rates used in projecting the residual waste quantity projections for the four scenarios are presented in Table G-2.

Calculation of the amount of waste that could come to the W12A Landfill from the proposed regional service area for the four scenarios are presented in Tables G-4, G-5, G-6 and G-7.

Table G-1: Data Sources

Factor	Data Source
Projected Landfill Closure Date	<ul style="list-style-type: none"> Landfill closure dates came from public sources (e.g. annual report, MECP, website, etc.) or by contacting the owner of the landfill.
Waste Quantity Projections	<ul style="list-style-type: none"> Residential residual and diversion waste quantities for each municipality in the proposed regional service area were obtained from the Resource Productivity and Resource Authority Datacall. IC&I waste quantities for each municipality were assumed to equal to residential waste quantities as there is limited public data on IC&I waste quantities within the proposed service area. It is noted that the Province as a whole generates more IC&I waste than residential waste. It was assumed that the waste quantities in future years would not change (i.e. no increases in population or per capita waste generation rate).
Municipalities that would use the W12A Landfill	<ul style="list-style-type: none"> The City approached nearby lower and upper tier municipalities (Elgin County, Middlesex County, Huron County, Lambton County, Perth County and Oxford County) to determine their interest in being included in the service area of the W12A Landfill. Based on their responses, a service area consisting of the City of London plus Elgin County, Middlesex County, Huron County, Lambton County and Perth County is proposed. Responses are summarized in Table G-3 Oxford County was excluded from the proposed regional service area as they indicated they had no interest in using the W12A Landfill in the future The Township of Southwold did not response to the City. It was assumed no waste from Southwold would come to the W12A Landfill.

Table G-2: Residual Waste Diversion Rates

Scenario		2018	2020	2030	2050
1	No increase in waste diversion rates	25%	25%	25%	25%
2	Increase in diversion rates half way towards MECP diversion targets	25%	28%	38%	53%
3	Increase in diversion rates 75% of the way towards MECP diversion targets	25%	29%	44%	66%
4	Achieve 100% of MECP diversion targets	25%	30%	50%	80%

Table G-3 Summary of Municipal Responses

County			Local Municipality		
County	Role in Disposal	Response	Municipality	Response^c	Own Landfill
Elgin	Separated	Not applicable	City of St. Thomas	interested/may use	No
	Not directly responsible	Asked to be kept informed	Town of Aylmer	interested/may use	No
			Municipality of Bayham	interested/may use	No
			Municipality of Central Elgin	interested/may use	No
			Municipality of Dutton/Dunwich	interested/may use	Yes
			Municipality of West Elgin	interested/may use	Yes
			Township of Malahide	interested/may use	No
			Township of Southwold	no response	No
Middlesex	Responsible for waste management planning and Household Special Waste management.	No Response (Letter received for information)	Municipality of Adelaide Metcalfe ^a	directed to BRA	Yes
			Municipality of Lucan Biddulph ^a	directed to BRA	No
			Municipality of Middlesex Centre ^a	interested/may use	No
			Municipality of North Middlesex ^a	no response, part of BRA	No
			Municipality of Southwest Middlesex	interested/may use	Yes
			Municipality of Strathroy-Caradoc ^a	directed to BRA	No
			Municipality of Thames Centre	interested/may use	Yes
			Village of Newbury ^d	no response	No

County	Role in Disposal	Response	Municipality	Response ^c	Own Landfill
Huron	Responsible for waste management planning	Interested/ may use	Township of Ashfield-Colborne-Wawanosh	no response	Yes
			Municipality of Bluewater ^a	interested/may use	Yes
			Municipality of Central Huron ^{ab}	interested/may use	No
			Town of Goderich ^{ab}	interested/may use	Yes
			Township of Howick	no response	Yes
			Municipality of Huron East ^{ab}	interested/may use	Yes
			Municipality of Morris-Turnberry ^a	interested	Yes
			Township of North Huron	no response	Yes
			Township of South Huron ^a	no response	Yes
Perth	Separated	Not applicable	City of Stratford	interested/unlikely to use	Yes
	Separated	Not applicable	Town of St. Marys ^a	interested/unlikely to use	Yes
	Not directly responsible	No Response	Municipality of North Perth ^a	interested/may use	Yes
			Township of Perth East ^a	interested/may use	Yes
			Township of Perth South ^a	interested/may use	Yes
			Municipality of West Perth ^a	interested/unlikely to use	Yes

County	Role in Disposal	Response	Municipality	Response ^c	Own Landfill
Lambton)	Responsible for solid waste disposal.	Interested/ unlikely to use	Municipality of Brooke-Alvinston ^a	no response	No
			Township of Dawn-Euphemia ^a	directed to County	No
			Township of Enniskillen	no response	No
			Municipality of Lambton Shores ^a	no response	No
			Village of Oil Springs ^a	no response	No
			Town of Petrolia	no response	No
			Town of Plympton-Wyoming	no response	No
			Village of Point Edward	no response	No
			City of Sarnia	no response	No
			Township of St. Clair	interested/unlikely to use	No
			Township of Warwick ^a	no response	No

- Notes a) Member of Bluewater Recycling Association (BRA).
b) Member of Mid-Huron Site Board and have shared waste disposal facilities.
c) Interested / May Use – Municipality would consider using W12A Landfill subject to cost, etc.
Interested / Unlikely to Use – Municipality is unlikely to use W12A Landfill while current landfill is available.

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Appendix H

Municipal Responses to Using W12A Landfill

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Typical Letter that was Sent to all Municipalities in the Proposed Regional Service Area



March 30, 2017

Ralph Coe
Chief Administrative Officer
Municipality of Strathroy- Caradoc
52 Frank Street
Strathroy, ON
N7G 2R4

Dear Ralph Coe:

Overview

The City of London has initiated two major waste management projects:

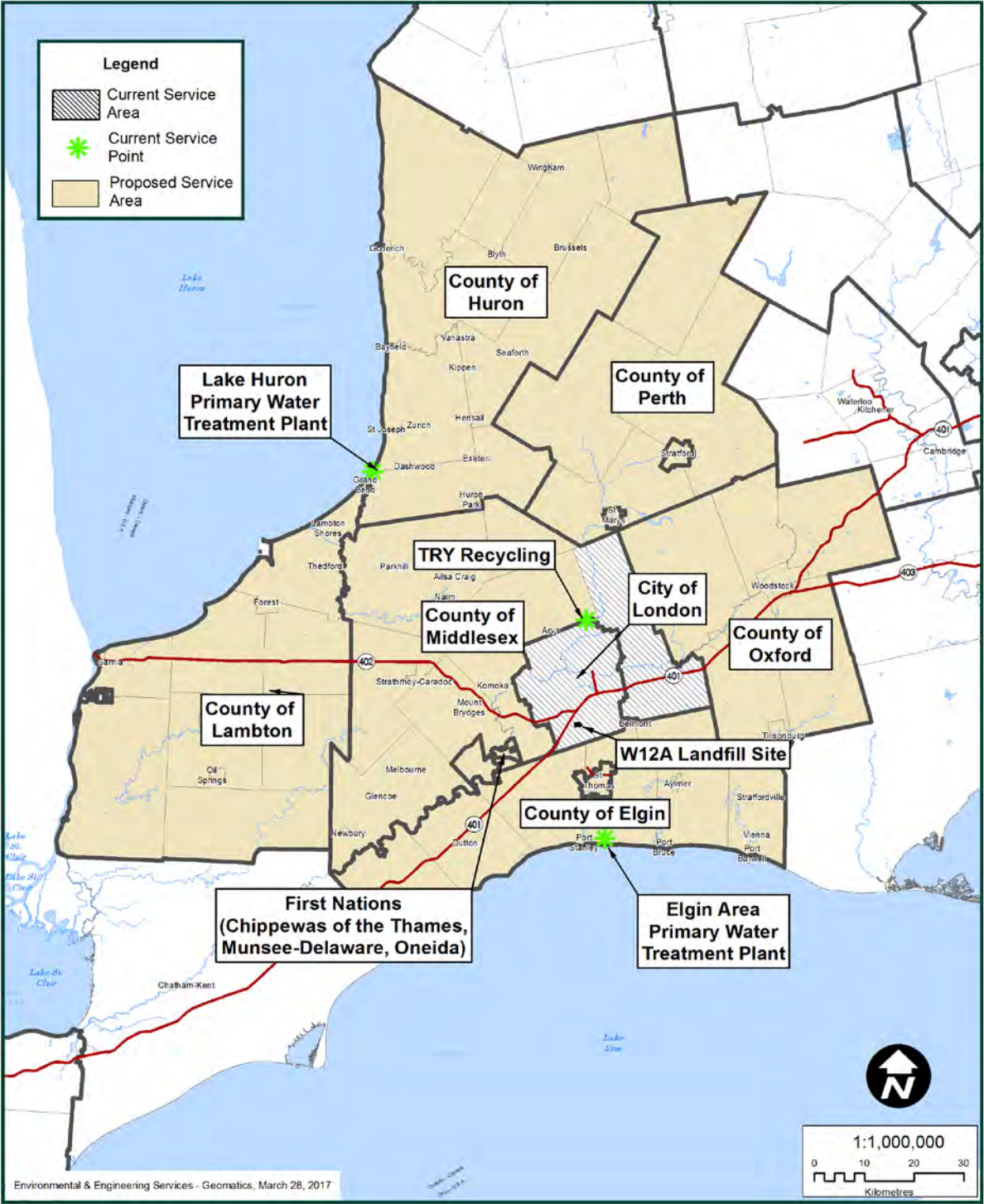
1. An Environmental Assessment (EA) as part of a long-term Residual Waste Disposal Strategy. This involves the completion of an Individual Environmental Assessment (EA) as prescribed by the Ministry of Environment & Climate Change (MOECC).
2. A long term resource recovery strategy that includes a focus on new, emerging and next generation energy recovery and/or waste conversion technologies that typically benefit from having a larger service area to attract materials for processing (i.e., beyond existing recycling and waste diversion programs). This project is designed to address the new *Strategy for a Waste-Free Ontario: Building a Circular Economy* (February 2017) report from the MOECC.

London Municipal Council has directed City staff to determine interest in regional opportunities for both these projects that would benefit taxpayers and create opportunities in southwestern Ontario:

the Civic Administration BE DIRECTED to canvass municipalities responsible for waste management within the proposed service area to determine interest in using any future waste disposal or future resource recovery facility;

In this regard, we are contacting municipalities with waste disposal and/or resource recovery responsibilities within a regional area to determine interest to be included in a regional service area. The proposed regional service area would include Elgin County, Middlesex County, Huron County, Lambton County, Oxford County, Perth County, and local First Nation Communities (see Figure 1, next page).

Figure 1 – Proposed Service Area



It is recognized that many municipalities within the proposed regional service area have their own landfills or existing long-term contracts with private landfills and/or are closer to private landfills and subsequently will have limited need in using residual waste disposal facilities in London. In these cases, being included in the service area would still provide a valuable contingency location in the event of an emergency; ensure that competitive alternatives are available in the marketplace; and benefit from potential economies of scale.

The purpose of this letter is to determine the level of interest of your municipality in having access to a new or expanded waste disposal facility that would be developed by the City of London and/or being included in a resource recovery strategy for new, emerging and next generation energy recovery and/or waste conversion technologies.

1. Need for Access to Future Residual Waste Disposal

Can you please provide a response and let me know if your municipality:

1. has no interest in being included in the service area of any new waste disposal facility; or,
2. would like to be included in the service area of any new waste disposal facility but are unlikely to use the facility; or,
3. would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost.

2. Need for Access to Future Resource Recovery Facilities

With respect to a long term resource recovery strategy that focuses on new, emerging and next generation energy recovery and/or waste conversion technologies, your municipality:

1. have no interest in being included in these discussions about future resource recovery facilities; or,
2. would like to be included in these discussions but are unlikely to use the facilities; or,
3. would like to be included in these discussions and may consider using the facilities depending on the cost.

Date for your Response

A response on behalf of your Municipal Council for both these projects by April 30, 2017 would be ideal. However, if that timeframe is not sufficient, a preliminary comment from your municipality by April 30, 2017 with a final Council Resolution no later than May 30, 2017 would be appropriate.

Background

The City of London owns and operates the W12A Landfill Site. This landfill accepts waste from London, the Municipality of Thames Centre, Try Recycling Operations Facility in the Municipality of Middlesex Centre, Lake Huron Water Treatment Plant in the Municipality of Bluewater and the Elgin Water Treatment Plan in the Municipality of Central Elgin. Based on current waste quantities being received, the W12A Landfill has between eight to ten years of capacity remaining.

Located at the W12A Landfill site is the Household Special Waste (HSW) Depot. The service area for HSW depot includes the residents and small quantity generators in London, the County of Middlesex and the County of Elgin.

Approvals, design and construction of new long term resource recovery and disposal capacity will take several years so the City has begun work on a Resource Recovery Strategy and Residual Waste Disposal Strategy to determine the most appropriate long term resource recovery and disposal methods. More details on how these strategies will be developed can be found at getinvolved.London.ca/WhyWasteDisposal.

City of London work to date, a review of other regional waste management projects in Ontario and discussions with officials at the MOECC, highlight that a regional service area and/or collaborating in a broader regional area has many advantages such as:

- being consistent with the *Strategy for a Waste-Free Ontario*;
- providing a competitive public disposal option and other resource recovery options for nearby organizations and municipalities; and,
- addressing a portion of the provincial shortfall in disposal capacity.

Further details on the rationale for the City of London to consider a regional service area for any new waste management facilities can be found at getinvolved.London.ca/WhyWasteDisposal.

If you have any questions, please do not hesitate to contact me (jstanfor@london.ca, 519.661.2500 ext. 5411) or Wesley Abbott, Project Manager (wabbott@london.ca; 519.661.2500 ext. 1812).

Regards,

Jay Stanford, M.A., M.P.A.
Director - Environment, Fleet and Solid Waste

cc: Trish Edmond, Golder Associates

y:\shared\solwaste\wm plan\ea\community engagement\notice of commencement tor\cover letter noc other municipalites.docx

Municipal Responses

From: Bokma, Nathan
To: [Stanford, Jay](#)
Cc: [Abbott, Wesley](#); [Shannon, Michelle](#); [Lawrence, Justin](#)
Subject: City of St. Thomas Interest in Future Waste Disposal at City of London Landfill Facility
Date: Friday, April 28, 2017 11:14:30 AM

Jay,

In response to your letter dated March 30, 2017, City staff have been directed by council to respond to your letter than canvassed neighbouring municipalities to gauge their interest in future use of the City of London's landfill facility.

In response to **Question 1** of your letter regarding the *need for access to future residual waste disposal*, the City of St. Thomas would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost ([Response #3](#) from your letter).

In response to **Question 2** of your letter regarding *the need for access to future resource recovery facilities*, the City of St. Thomas would like to be included in these discussions and may consider using the facilities depending on the cost ([Response #3](#) from your letter).

Thank you for the opportunity to provide input into the WM initiatives at this time.

Yours Truly,

Nathan Bokma, P.Eng.

Manager of Development and Compliance

City of St. Thomas

P.O. Box 520, 545 Talbot Street

St. Thomas, ON N5P 3V7

T: 519-631-1680 x4151

C: 519-521-1954

F: 519-631-2130

nbokma@stthomas.ca



Think about our Environment. Print only if necessary.



Town of Aylmer
46 Talbot Street West
Aylmer, ON N5H 1J7
(519) 773-3164

Report Title: City of London Waste Management Projects –
Municipal Interest

Date Submitted: May 08, 2017

Submitted for: Aylmer Town Council

Report Author: Rod Tapp – Director of Operations

Recommendations:

- 1.) Council receives the “Waste Management Projects” letter from the City of London and Report as presented.
- 2.) By “Resolution”, Council endorses and is very supportive of the City London’s “Waste Management Project Initiatives” as outlined in the letter received and furthermore provides the Town of Aylmer’s level of interest/responses concerning both projects as follows;

1. Need for Access to future Residual Waste Disposal

The Town of Aylmer would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on cost.

2. Need for Access to Future Resource Recovery Facilities

The Town of Aylmer would like to be included in these discussions and may consider using the facilities depending on cost.

- 3.) Council authorizes staff to forward a copy of the “Council Resolution” with supporting documentation to the City of London prior to the May 30, 2017 deadline.

Background and Analysis:

At the May 01, 2017 meeting, council directed staff to review the “Waste Management Projects” letter received by the City of London and provide a report with any recommendations at a future council meeting (see copy of letter attached).

As per the details of the letter, the City of London has initiated two major waste management projects as follows;

- 1.) An Environmental Assessment (EA) as part of the long-term Residual Waste Disposal Strategy. This involves the completion of an individual Environmental Assessment (EA) as prescribed by the Ministry of the Environment & Climate Change (MOECC).
- 2.) A long-term resource recovery strategy that includes a focus on new, emerging and next generation energy recovery and/or waste conversion technologies that typically benefit from having a larger service area to attract materials for processing (ie., beyond existing recycling & diversion programs). This project is designed to address the new *Strategy for a Waste-Free Ontario: Building a Circular Economy* (February 2017) report from the MOECC.

London has forwarded copies of the letter to all municipalities within the regional area to determine the level of interest in having possible future access to a new or expanded waste disposal facility that would be developed by the City of London and/or being included in a resource recovery strategy for new, emerging and next generation energy recovery and/or energy waste conversion technologies.

Analysis

The Town of Aylmer has been a huge proponent and very supportive of wider based regional joint waste/recycling initiative projects with the City of London in the past. The most recent project included partnering with London on the Regional Material Facility (MRF) in which Aylmer was the first municipality to enter an agreement with London which permits Aylmer to take all blue box materials collected to the facility for processing. That project has been a huge success not only for Aylmer but also for the many other area municipalities across the region that have since come on board, which provides for widespread operational and cost efficiencies for municipal recycling programs.

Any such possible future waste/recycling facilities/collaborations/regional participation etc. that may arise from the two projects being initiated by London offers many advantages such as but not limited to the following;

- being consistent with the *Strategy for a Waste Free Ontario*;
- providing a competitive public disposal option;
- providing other resource recovery options for nearby organizations and municipalities;
- addressing a portion of the provincial shortfall in disposal capacity;
- based on overall economy of scales, provides smaller municipalities such as Aylmer with much more affordable/cost effective programming and alternative solutions for the processing and reduction of waste.

After review of all information received, staff is recommending that council consider the following;

Council endorses and is very supportive of the City of London's "Waste Management Project Initiatives" as outlined in the letter received and furthermore provides the Town of Aylmer's level of interest/responses concerning both projects as follows;

Need for Access to future Residual Waste Disposal

The Town of Aylmer would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on cost.

Need for Access to Future Resource Recovery Facilities

The Town of Aylmer would like to be included in these discussions and may consider using the facilities depending on cost.

Respectfully submitted,

Rod Tapp
Director of Operations

Reviewed by,

Jennifer Reynaert
Administrator

Municipality of
BAYHAM

A: P.O. Box 160, 56169 Heritage Line
Stratfordville, ON N0J 1Y0

T: 519-866-5521

F: 519-866-3884

E: bayham@bayham.on.ca

W: www.bayham.on.ca



April 21, 2017

City of London
300 Dufferin Avenue
PO Box 5035
London, ON N6A 4L9

Attention Jay Stanford, Director – Environment, Fleet and Solid Waste

Via email: jstanfor@london.ca

Re: Waste Management Projects

Correspondence dated March 30, 2017 regarding two major waste management projects was received by the Council of the Municipality of Bayham at the regular meeting held April 20, 2017 and the following resolution was passed:

THAT correspondence from City of London re Waste Management Projects be received for information;

AND THAT regarding the City of London correspondence pertaining to the need for access to Future Residual Waste Disposal the Council of the Corporation of the Municipality of Bayham would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost.

AND THAT regarding the City of London correspondence pertaining to the need for access to Future Resource Recovery Facilities the Council of the Corporation of the Municipality of Bayham would like to be included in these discussions and may consider using the facilities depending on the cost.

If you have any questions or concerns, feel free to contact CAO/Clerk Paul Shipway
pshipway@bayham.on.ca or undersigned

Regards,

A handwritten signature in blue ink that reads 'Brenda Gibbons'. The signature is fluid and cursive, with the first name 'Brenda' being more prominent than the last name 'Gibbons'.

Brenda Gibbons
Clerk's Assistant
bgibbons@bayham.on.ca



May 15, 2017

Mr. Jay Stanford, M.A., M.P.A.
Director, Environment, Fleet and Solid Waste
City of London
300 Dufferin Avenue, P.O. Box 5035
London, ON N6A 4L9

Dear Mr. Stanford:

Please be advised that Elgin County Council, at its meeting held on May 9, 2017 voted to receive and file correspondence from the City of London and respectfully requested to be kept informed and circulated on information relating to future residual waste disposal and resource recovery facilities.

Council would like to thank the City of London for offering Elgin County the opportunity to provide feedback on this matter.

If you have any questions please contact Mark McDonald, Chief Administrative Officer (mmcdonald@elgin.ca).

Yours truly,

Katherine Thompson,
Marketing and Communication Coordinator

cc Elgin Municipalities

County of Elgin
Administrative Services
450 Sunset Drive
St. Thomas, ON N5R 5V1
Phone: 519-631-1460
www.elgincounty.ca



Municipality of
Dutton Dunwich

The Corporation of the Municipality of Dutton Dunwich

April 13, 2017

City of London
300 Dufferin Avenue
P.O. Box 5035
London, ON N6A 4L9

Attn: Jay Stanford, M.A., M.P.A.
Director – Environment, Fleet and Solid Waste

Dear Mr. Stanford

At their meeting on April 12, 2017, the Council of the Municipality of Dutton Dunwich reviewed your letter regarding the two major waste management projects being initiated by the City of London. On behalf of Dutton Dunwich Council, I would like to inform you that there is some level of interest and would like to be included in these discussions. As our current waste contract with the City of Toronto expires in early 2019, Council may also consider using the facilities depending on the cost.

If you require any further information, please contact me.

Yours truly,

Heather Bouw
Deputy Clerk

199 Currie Road, P.O. Box 329 Dutton, Ontario N0L 1J0

P 519.762.2204 F 519.762.2278

www.duttondunwich.on.ca [twitter @DuttonDunwich](https://twitter.com/DuttonDunwich)



The Municipality of West Elgin

April 21, 2017

RECEIVED

APR 26 2017

ENVIRONMENTAL & ECONOMIC
ADMINISTRATION

City of London
c/o Jay Stanford
Director – Environment, Fleet and Solid Waste
P.O. Box 5035
London, ON N6A 4L9

Dear Mr. Stanford,

RE: City of London – Waste Management Projects

Please be advised that the Council of the Municipality of West Elgin passed the following resolution at their meeting held on April 13, 2017:

DULY MOVED AND SECONDED

RESOLVED that the letter from the City of London dated March 30, 2017 has been received;

AND THAT the Council of the Municipality of West Elgin for the Need for Access to Future Residential Waste Disposal selects Option #3 "would like to be included in the service area of any new waste disposal facility and may consider using facility depending on cost";

AND THAT the Council of the Municipality of West Elgin for the Need for Access to Future Resource Recovery Facilities selects Option #3 "would like to be included in these discussions and may consider using the facilities depending on the cost".

DISPOSITION: Carried.

Should you have any questions please contact the undersigned.

Yours truly,

Spencer Pray, MBA, Dipl. M.A.
Deputy Clerk



April 21, 2017.

City of London
300 Dufferin Ave., Box 5035
LONDON, Ontario
N6A 4L9

RECEIVED

APR 26 2017

**ENVIRONMENTAL & ENGINEERING SERVICES
ADMINISTRATION**

Attention: Jay Stanford

RE: Interest in Regional Service Opportunities.

At its regular meeting held on April 20, 2017, the Council of The Corporation of the Township of Malahide passed the following Resolution:

THAT Report No. PS-17-22 entitled "City of London Notice of Regional Waste Management Opportunities" be received;

AND THAT the Municipal Staff be directed to advise the City of London that the Township of Malahide wishes to be considered in the study area and to be a part of the discussions regarding future residual waste disposal and future resource recovery facilities.

If you have any questions or further requirements, please do not hesitate to contact this office. We thank you for your assistance in this matter.

Yours very truly,
TOWNSHIP OF MALAHIDE

M. CASAVECCHIA-SOMERS, D.P.A., C.M.O., CMM III
Chief Administrative Officer/Clerk

Copy - Robert Johnson, Director of Physical Services

THE CORPORATION OF THE TOWNSHIP OF ADELAIDE METCALFE COUNCIL MINUTES – MAY 1, 2017

Present: Mayor Kurtis Smith, Deputy Mayor Nick Stokman, Councillor Betty Ann MacKinnon, Councillor Gerald Sanders and Councillor Mary Ann Hendrikx at 7:50 pm.

Also Present: Treasurer/Acting Administrator-Clerk Cathy Case, Road Supervisor Eldon Bryant, Acting Deputy Clerk Donna Elliott, Chief Building Official Jeff Denomy and Fire Chief Arend Noordhof.

Call to Order

At 7:02 pm Mayor Kurtis Smith called the meeting to order. A moment of silent reflection was observed. Mayor Smith requested that cell phones and other devices be set to mute or turned off.

Declaration of Pecuniary Interest and General Nature Thereof

The Municipal Conflict of Interest Act requires any member of Council declaring a pecuniary interest and the general nature thereof, where the interest of a member of Council has not been disclosed by reason of the member's absence from the meeting, to disclose the interest at the first open meeting attended by the member of Council and otherwise comply with the Act.

Minutes

MOVED by Councillor Sanders

SECONDED by Councillor MacKinnon

Resolved that the Minutes of the April 18, 2017 Regular Meeting be approved as printed and circulated. CARRIED.

Correspondence

- 1) AMO – Province Announces Details of Basic Income Pilot
- 2) AMO – All Eyes on Queen's Park for Budget
- 3) AMO – Policy Updates
- 4) Ausable Bayfield Conservation Authority
 - i. Agenda-Board of Directors Meeting April 20, 2017
 - ii. Minutes-Board of Directors Meeting March 23, 2017
 - iii. General Manager's Report April 20, 2017

5) Township of Warwick – Severance Application

MOVED by Councillor MacKinnon

SECONDED by Councillor Sanders

Resolved that Council has no concerns with Township of Warwick Severance Application B-03-17 as circulated. CARRIED.

6) Ontario Soil Regulation Task Force

7) City of London – Waste Management Project

8) Bluewater Recycling Association – London's Why Waste Initiatives

MOVED by Deputy Mayor Stokman

SECONDED by Councillor MacKinnon

Resolved that Council participate in the City of London Waste Management Project and that Bluewater Recycling Association be requested to represent the Township of Adelaide Metcalfe in the discussions. CARRIED.

9) Municipality of Strathroy-Caradoc – Invitation to Coffee

Delegations & Timed Events

7:05 PM Middlesex Federation of Agriculture

Steve Fonger and Jack Brown of the Middlesex Federation of Agriculture provided an update on MFA/OFA activities and discussed issues affecting rural communities.

7:30 PM Drain Consideration – Kemmerling-Centre Road Drain

MOVED by Councillor MacKinnon

SECONDED by Deputy Mayor Stokman

Resolved that the Engineer's report for the construction of the Kemmerling-Centre Road Drain be considered. CARRIED.

Armin Kruspel of Spriet Associates reviewed the Engineer's Report for the Kemmerling-Centre Road Drain. Scott Masse of MCI Design and Build was in attendance.

MOVED by Councillor Sanders

SECONDED by Deputy Mayor Stokman

Resolved that the Engineer's Report on the Kemmerling-Centre Road Drain dated April 18, 2017 be adopted. CARRIED.

MOVED by Councillor MacKinnon

SECONDED by Deputy Mayor Stokman

Resolved that the Court of Revision for the Kemmerling-Centre Road Drain be set for 8:00 pm on Monday, May 15, 2017. CARRIED.

Staff Reports

Chief Building Official Jeff Denomy presented his report to Council.

MOVED by Councillor Sanders

SECONDED by Deputy Mayor Stokman

Resolved that Council permit the existing dwelling at 2181 Katesville Drive to remain during construction of a new dwelling for a period of six (6) months from the date of issuance of the building permit subject to a deposit of \$1,500.00 which will be retained by the Township until the existing dwelling has been removed to the satisfaction of the Township. CARRIED.

MOVED by Councillor MacKinnon

SECONDED by Deputy Mayor Stokman

Resolved that Council accept the report of the Chief Building Official as presented. CARRIED.

Road Supervisor Eldon Bryant presented his report to Council.

MOVED by Councillor MacKinnon

SECONDED by Deputy Mayor Stokman

Resolved that Council approve the proposal submitted by Pollard Highway Products to extend the dust suppressant contract for the upcoming 2017 and 2018 dust control seasons at a price of \$49.00 per cubic metre plus HST for 2017 and \$50.00 per cubic metre plus HST for 2018. CARRIED.

MOVED by Deputy Mayor Stokman

SECONDED by Councillor MacKinnon

Resolved that Council accept the report of the Road Supervisor as presented. CARRIED.

Treasurer/Acting Administrator-Clerk Cathy Case presented her report to Council.

MOVED by Councillor Sanders

SECONDED by Councillor MacKinnon

Resolved that the accounts payable for period April 14 to April 27, 2017 in the amount of \$35,537.19 be approved. CARRIED.

MOVED by Deputy Mayor Stokman

SECONDED by Councillor MacKinnon

Resolved that Council permit the Providence United Reformed Church, as represented by Denise Clarke, to use the front ball diamond at the Kerwood Park on Tuesday evenings for the months of July 2017 and August 2017 at no charge with no lights or lining to be provided; that any night that the Township does obtain a rental, Providence United Reformed Church will forego use of the diamond on that night; that the Providence United Reformed Church will provide proof of insurance coverage or other documentation undertaking liability for their use of the facility; and that any garbage or debris be cleaned up after each use. CARRIED.

Treasurer/Acting Administrator-Clerk Cathy Case reviewed updates to the Draft 2017 Budget with Council.

MOVED by Councillor Sanders

SECONDED by Councillor MacKinnon

Resolved that Council accept the Draft 2017 Budget as discussed and that notice be provided as required for adoption. CARRIED.

Treasurer/Acting Administrator-Clerk Cathy Case advised Council of an Adelaide Area Neighbourhood Watch meeting on Tuesday, May 9, 2017 at 6:30 pm in the downstairs hall.

MOVED by Deputy Mayor Stokman

SECONDED by Councillor MacKinnon

Resolved that Council accept the report of the Treasurer/Acting Administrator-Clerk as presented. CARRIED.

Other Business

Treasurer/Acting Administrator-Clerk Cathy Case was requested to provide a report on the development process and investigate potential solar panel investment.

Mayor Smith, Councillor Sanders and Road Supervisor Eldon Bryant reported on the Joint Roads Meeting.

Closed Session

MOVED by Councillor MacKinnon

SECONDED by Councillor Hendrikx

Resolved that Council and the Treasurer/Acting Administrator-Clerk move to closed session pursuant to Section 239(2)(b) personal matters about an identifiable individual, including municipal or local board employees, Section 239(2)(c) a proposed or pending acquisition or disposition of land by the municipality or local board, Section 239(2)(d) labour relations or employee negotiations, and Section 239(2)(f) advice that is subject to solicitor-client privilege, including communications necessary for that purpose at 8:04 pm. CARRIED.

MOVED by Deputy Mayor Stokman

SECONDED by Councillor Hendrikx

Resolved that the closed session end at 8:19 pm and that Council reconvene in regular session. CARRIED.

There was no rise and report from the closed session.

By-Laws

MOVED by Councillor Sanders

SECONDED by Councillor MacKinnon

Resolved that first and second reading be given to By-law No. 15-2017, Kemmerling-Centre Road Drain and that the by-law be signed by the Mayor and Treasurer/Acting Administrator-Clerk and the corporate seal be attached. CARRIED.

MOVED by Councillor Hendrikx

SECONDED by Deputy Mayor Stokman

Resolved that three readings be given to By-law No. 16-2017, Confirm Council Proceedings and that the by-law be signed by the Mayor and Treasurer/Acting Administrator-Clerk and the corporate seal be attached. CARRIED.

Adjournment

MOVED by Councillor MacKinnon

SECONDED by Councillor Hendrikx

Resolved that the meeting be adjourned at 8:21 pm. CARRIED.



Kurtis Smith, Mayor

Cathy Case, Treasurer/Acting
Administrator-Clerk

From: [Stanford, Jay](#)
To: [Abbott, Wesley](#)
Subject: FW: Long Term Residual Waste Disposal Strategy/Resource Recovery Strategy - City of London
Date: Monday, April 24, 2017 3:17:28 PM

From: Ron Reymer [mailto:rreymer@lucanbiddulph.on.ca]
Sent: Monday, April 24, 2017 3:14 PM
To: Stanford, Jay <JSTANFOR@London.ca>
Cc: Francis Veilleux <Francis@bra.org>; Andy VanGeel <avangeel@lucanbiddulph.on.ca>
Subject: Long Term Residual Waste Disposal Strategy/Resource Recovery Strategy - City of London

Hello Mr. Stanford – thank you for your letter dated March 30, 2017.

At this time the Township of Lucan Biddulph is very satisfied with our current service provider, Bluewater Recycling. We have automated curbside pickup of roll out containers for both solid waste as well as recyclables. That said, we are always interested in economies of scale and welcome the opportunity to collaborate with the ultimate goal of better service at an economical price to the taxpayer.

As part of this Bluewater Group, the Executive Director, Mr. Francis Veilleux, will be acting on our behalf during this information gathering period.

Ron Reymer AMCT
Chief Administrative Officer/Clerk
Township of Lucan Biddulph
Ph. (519)227-4491
rreymer@lucanbiddulph.on.ca

"This communication is confidential and may contain information that is privileged, confidential and exempt from disclosure under Privacy legislation. Unauthorized use is strictly prohibited. If you have received this communication in error, please notify the sender immediately by telephone and delete the message without making a copy."



April 20, 2017

Brian Lima
Director, Public Works and Engineering

**Re: Resolution 2017-138
PWE-24-2017 - Why Waste - City of London Residual Waste Disposal Strategy**

I hereby certify that the Council of the Municipality of Middlesex Centre, at it's meeting on April 19, 2017, resolved:

THAT Middlesex Centre indicates interest in the City of London's resource recovery strategy initiative for access to future residual waste disposal and access to future resource recovery facilities; and

FURTHER THAT the City of London be informed that Middlesex Centre would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost; and

FURTHER THAT the City of London be informed that, with respect to a long term resource recovery strategy that focuses on new, emerging and next generation energy recover and/or waste conversion technologies, Middlesex Centre would like to be included in these discussion and may consider using the facilities depending on the cost.

Carried


Stephanie Troyer-Boyd, AMCT
Clerk

MAY 23, 2017 - MIDDLESEX COUNTY COUNCIL

Council Chambers, County Building

London, 1:00 pm, Tuesday, May 23, 2017

1. CALL TO ORDER AND WARDEN'S REMARKS

Council met with all members present except Councillor Meyer. Warden Shipway presided.

2. PROVISION FOR DISCLOSURE OF PECUNIARY INTEREST AND GENERAL NATURE THEREOF

None.

3. BUSINESS ARISING FROM THE MINUTES

None.

4. MINUTES

a) Minutes of the Middlesex County Council meeting held on April 25, 2017

Moved by Councillor Blackmore

Seconded by Councillor Edmondson

That the minutes of the Middlesex County Council meeting held on April 25, 2017 be approved as presented.

Carried.

b) Closed Session Minutes of the Middlesex County Council meeting held on April 25, 2017.

(paper copy handed out to members of council)

Moved by Councillor Maudsley

Seconded by Councillor DeViet

That the closed session minutes of the Middlesex County Council meeting held on April 25, 2017 be approved as presented.

Carried.

5. DEPUTATIONS

a) VON Middlesex-Elgin Update

- Presentation by Julie Simpson, Fund Development Coordinator

Sarah Bongers also spoke with respect to both being a volunteer and recipient of VON services.

June 13,

2017

Page 1 of 8

4 a - CC

6. ENQUIRIES OR NOTICES OF MOTION

Councillor Maudsley advised that he was providing Notice of Motion under Item #6 on the Middlesex County Council agenda as follows:

Notice of Motion is hereby given to reconsider the following motion made at the March 8, 2016 – County Council Session as follows:

“That no changes be made to Middlesex County governance”

at the 1:00 p.m, Tuesday, June 13, 2017 Middlesex County Council meeting.

Councillor Maudsley noted that he will be requesting the CAO to prepare a report for the June 27, 2017 meeting on governance options for Middlesex County that focusses on the implementation of directly elected representatives for the County of Middlesex. The report should provide a number of options for potential implementation, pros and cons of direct election, legislative requirements and implementation timing and a decision making schedule.

The County Clerk was provided with the Notice of Motion in writing.

7. REPORTS

a) Middlesex County Library Board Minutes held on April 25, 2017, Fourth Report

- Councillor Maudsley, presented the Fourth Report

Moved by Councillor Maudsley

Seconded by Councillor Richards

That the Fourth Report of the Middlesex County Library Board be received.

Carried.

8. NEW BUSINESS

a) Request for Proposals: New Four Corners Garage Facility - Contract Eng-2017-010

- Report from Chris Traini, County Engineer

Moved by Councillor Vanderheyden

Seconded by Councillor Edmondson

That the proposal by Strik Baldinelli Moniz Ltd for Contract ENG-2017-010 for the design and contract administration for the new Four Corners garage facility be approved.

Carried.

June 13, 2017

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4 a - CC

b) Information Technology Purchasing Under the Ministry of Ontario Government and Consumer Services Vendor of Record Program

- Report from Morgan Calvert, Director of Information Technology Systems

Moved by Councillor DeViet

Seconded by Councillor Wilkins

That given the equal opportunity, equal treatment, fair process, and the attach ability of the Ministry of Ontario Government and Consumer Services' procurement processes under its Vendor of Record Program and the cost savings which can be realized by the County of Middlesex under said program, participation in the Ministry of Ontario Government and Consumer Services' Vendor of Record co-operative purchase venture serves the best interest of the County of Middlesex;

That the County of Middlesex's participation in the Ministry of Ontario Government and Consumer Services' Vendor of Record Program is hereby authorized; and

That the Director of Information Technology Services is hereby authorized on behalf of the County of Middlesex in his or her discretion, to authorize, endorse and administer Information Technology purchase contracts on behalf of the County of Middlesex under the Ministry of Ontario Government and Consumer Services' Vendor of Record Program where such purchases are within the pre-authorized annual budgets approved by Council.

Carried.

c) Quotations for Concrete Curb and Gutter and Gutter Outlets – 2017

- Report from Jerry Rychlo, Engineering Supervisor

Moved by Councillor Maudsley Seconded by Councillor Smith

That the quotation submitted by Hav-All Concrete and Construction in the amount of \$104,430.00 before HST for concrete curb and gutter and gutter outlets be accepted.

Carried.

9. COUNCILLOR'S COMMENTS AND OTHER BUSINESS

10. BY-LAWS

Moved by Councillor Maudsley

Seconded by Councillor Ropp

That first and second reading of the By-laws be given:

Carried.

June 13, 2017

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4 a - CC

#6856 - A BY-LAW to enter into an agreement with LEADS Employment Services London Inc., with respect to participation in Middlesex County's Ontario Works program and to provide employment placement and/or the acquisition of life skills for Ontario Works recipients

#6857 - A By-Law to confirm proceedings of the Council of The Corporation of the County of Middlesex – May 23, 2017

Moved by Councillor Richards

Seconded by Councillor Wilkins

That third and final reading of the preceding By-laws be given.

Carried.

11. COMMITTEE OF THE WHOLE

A. DELEGATIONS / REPORTS OF COUNTY OFFICERS

1. Middlesex County Source Protection Plan Implementation

- Power point presentation by Meghan Lippert and Pierre Chauvin of MHBC Planning

2. Middlesex County Resident Life Survey – Middlesex County Report, May 2017

- Report from Cara Finn, Director of Economic Development

B. ACTION ITEMS

None.

C. CORRESPONDENCE AND INFORMATION ITEMS

1. General Payables to April 27, 2017 totalling \$435,043.24

2. Planning Payables to April 27, 2017 totalling \$1,771.63

3. Electronic Payments for the month of April 2017 totalling \$1,749,048.70

4. Social Services Payables to April 27, 2017 totalling \$243,760.80

5. Strathmere Lodge Payables to April 27, 2017 totalling \$155,146.08

6. Road Payables to April 27, 2017 totalling \$532,707.14

7. MLEMS Payables to April 27, 2017 totalling \$2,297,473.18

June 13, 2017

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8. IT Payables to April 27, 2017 totalling \$77,445.47
9. Economic Development Payables to April 27, 2017 totalling \$15,807.89
Moved by Councillor Richards
Seconded by Councillor Burghardt-Jesson
That Items C.1 – CW through C.9 – CW, (Payables) be received for information.
Carried.
10. Strathmere Lodge - Family, Friend and Responsible Party Newsletter – May 2017
11. Strathmere Lodge Medical Director's Annual Report for 2016 – 2017 from Dr. Philip Vandewalle
12. Road Closures 2017
 - Report from Jerry Rychlo, Engineering Supervisor
13. 2017 Annual Repayment Limited
 - Report from Cindy Howard, Treasurer
14. AMO Policy Update entitled "Province Announces Fair Housing Plan for Ontario" dated April 20, 2017
15. AMO Policy Update entitled "Waste Diversion – The Blue Box Today and Tomorrow" dated April 20, 2017
16. AMO Policy Update entitled "Federal Cannabis Legislation Tabled" dated April 20, 2017
17. AMO Update entitled "2017 Provincial Budget Delivered" dated April 27, 2017
18. AMO Update entitled "Province Announces Details of Basic Income Pilot" dated April 24, 2017
19. Middlesex-London Health Unit 2016 Annual Report
20. Letter from the City of London announcing the initiation of two major waste management projects and inquiring if there would be interest in a regional service area
21. Middlesex County Connect to Innovate Applications
 - Report from Morgan Calvert, Director of Information Technology Services

June 13, 2017

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22. Middlesex County Fire Inspection – April 2017

- Report from John Elston, Fire Prevention Officer

23. 2016 Joint Annual Memorandum of Understanding Statement between the Province of Ontario and AMO

24. Notice of Proposed Change to an Approved Renewal Energy Project, Jericho Wind Energy Centre to allow for the installation of acoustic bat deterrent devices on three different turbines

25. Invitation to the Middlesex Hospital Alliance, Four Counties Health Services Site 50th Anniversary Celebration on June 9th and 10th, 2017

26. OGRA Board Highlights – April 2017

27. Strathmere Lodge Occupancy and Activity Report – April 2017

- Report from Brent Kerwin, Strathmere Lodge Administrator

28. Social Services Report – April 2017

- Report from Cindy Howard, General Manager of Finance & Community Services

29. Final Approval of 1571145 Ontario Ltd., Bella Lago Estates Plan of Condominium; File 39T-MC-CDM1301, Middlesex Centre

- Report from Durk Vanderwerff, Director of Planning

30. Final Approval of Mill Road Reality Plan of Subdivision; File 39T-TC-1501, Thames Centre

- Report from Durk Vanderwerff, Director of Planning

31. Notice from the Ontario Energy Board advising that Union Gas Limited has applied to dispose of certain account balances and for the approval of the amount of its earnings that it must share with customers

32. Information from the South West LHIN providing information of the integration of the South West CCAC and the South West LHIN on May 24, 2017

33 Letter from the Municipal Property Assessment Corporation advising of changes to the Assessment Review Board – Rules of Practice and Procedure

34. Ministry of Health and Long Term Care Complaint Inspection

- Report from Brent Kerwin, Strathmere Lodge Administrator

June 13, 2017

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35. Letter from the Minister of Municipal Affairs advising they will not be moving forward with the requirements requiring regular inspections, pumping, and record keeping for septic tanks

36. Community Paramedicine Funding Update

- Report from Neal Roberts, Chief, MLEMS and Director of Emergency Services

Moved by Councillor Maudsley

Seconded by Councillor Burghardt-Jesson

That Items C.10 – CW through C.36 – CW be received for information.

Carried.

12. INQUIRIES

13. NEW BUSINESS

a) Next County Council Meetings:

1:00 p.m., Tuesday, June 13, 2017

1:00 p.m., Tuesday, June 27, 2017

1:00 p.m., Tuesday, July 25, 2017

1:00 p.m., Tuesday, August 22, 2017

1:00 p.m., Tuesday, September 12, 2017

1:00 p.m., Tuesday, September 26, 2016

1:00 p.m., Tuesday, October 10, 2017

1:00 p.m., Tuesday, October 24, 2017

1:00 p.m., Tuesday, November 14, 2017

1:00 p.m., Tuesday, November 28, 2017

4:00 p.m., Thursday, December 7, 2017 - Inaugural

1:00 p.m., Tuesday, December 19, 2017

CLOSED SESSION (2:40 p.m.)

Moved by Councillor Blackmore

Seconded by Councillor Richards

That the next portion of the meeting be closed to the public in order to consider a labour relations or employee negotiation, and a proposed or pending acquisition or disposition of land by the municipality or local board pursuant to subsection 239 (2) (c and d) of the Municipal Act with the MLEMS Chief, MLEMS Logistics Coordinator, County Solicitor, County Engineer and General Manager of Finance and Community Services, and County Clerk in attendance.

Carried.

June 13, 2017

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b) Community Emergency Management Co-ordinator Employment Contract (Report was handed out at the meeting)

- Report from Chris Traini, County Engineer

c) Ambulance Station Replacement Update (Report was handed out at the meeting)

- Report from Neal Roberts, Chief, MLEMS and Director of Emergency Services

The MLEMS Chief, MLEMS Logistics Coordinator, and County Engineer, have now left the meeting.

d) Personnel

- Verbal Report from Warden Shipway and Wayne Meagher, County Solicitor

Moved by Councillor Maudsley

Seconded by Councillor Wilkins

That County Council resume from its closed session (3:15 p.m.)

Carried.

14. ANNOUNCEMENTS

Wednesday, June 14, 2017 – Middlesex Wardens Charity Golf Tournament

Saturday, November, 25, 2017 – Middlesex County Wardens Banquet

15. ADJOURNMENT

Moved by Councillor Ropp

Seconded by Councillor Maudsley

That the meeting adjourn at 3:16 p.m.

Carried.

Kathleen Bunting, County Clerk Don Shipway, Warden

June 13, 2017

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May 23, 2017

Jay Stanford, M.A., M.P.A
Director – Environment, Fleet and Solid Waste
City of London
300 Dufferin Ave
London ON N6A 4L9

Dear Mr. Jay Standford:

RE: Regional Waste Initiative

In response to your letter of March 30, 2017 I would like to inform you that the Municipality of Southwest Middlesex would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost. Southwest Middlesex would also like to be included in the future resources recovery facilities discussions and may consider using the facilities depending on the cost.

Thank you for the opportunity to be included and we look forward to hearing more as the initiatives progress.

Regards,

Tara Clayton
Public Works Manager

Cc: Jill Bellchamber-Glazier, Southwest Middlesex, CAO



Memo

To: File

From: Wesley Abbott

Date: August 8, 2017

RE: Strathroy-Caradoc

Spoke to Matthew Stephenson, Director of Building/Waste Services, about the letter sent March 30, 2017 from Jay Stanford regarding potential use of future City resource recovery and/or disposal facilities.

Matthew advised that they were letting Bluewater Recycling Association decide on the appropriate steps in this matter.

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MUNICIPALITY OF THAMES CENTRE

ENVIRONMENTAL SERVICES

REPORT NO. ES-018-17

TO: Mayor and Members of Council
FROM: George Elliott P. Eng., Acting Director of Environmental Services
DATE: May 29, 2017
SUBJECT: Support Survey for London Waste Management Initiatives

RECOMMENDATION:

It is recommended:

1. That Report ES-018-17 from the Acting Director of Environmental Services regarding a survey by the City of London requesting support for future waste management initiatives be received, and
2. That Council confirm support for the City of London's regional approach to long term residential waste disposal and resource recovery strategies, provided that future involvement of the Municipality of Thames Centre with the regional service delivery is not mandatory but rather is optional at the Municipality of Thames Centre's sole discretion, and
3. That Council confirm that the Municipality of Thames Centre will consider using any new long term waste management facilities depending on the cost of service and if the services are in the best interest of the Municipality of Thames Centre, and
4. That the Clerk forward a copy of Council's decision regarding London's Waste Initiatives, Report ES-018-17 to the City of London.

PURPOSE:

The purpose of the report is to provide input to the City of London regarding their current long term regional waste management initiative projects.

BACKGROUND:

The City of London's W12A Landfill has approximately 8 to 10 years of service life remaining. The City has initiated two studies for regional initiatives regarding residential waste disposal and resource recovery facility opportunities. Through a letter dated March

30, 2017, the City has requested input to their studies regarding the regional nature of the proposed facilities, and if Thames Centre would consider using the facilities.

COMMENTS:

Through a long standing agreement with the City of London, the Municipality of Thames Centre currently utilizes the City's W12A Landfill Site for disposal of municipal waste annually through the winter season and as a contingency option in the event of an emergency year round. The agreement also has reciprocal provisions for equivalent tonnage of waste from the City at the Thames Centre municipal landfill as a similar contingency provision within the City of London's operations.

The cooperative nature of the current agreement for waste disposal is beneficial for both municipalities and we are currently engaging with the City of London staff to renew this agreement prior to its expiration date. Thames Centre is also currently using the regional Municipal Recycling Facility located in the City of London. The larger facility provides financial benefits to Thames Centre that we would not otherwise be able to achieve.

Supporting a regional initiative for residential waste disposal and resource recovery opportunities could provide locally available, beneficial options for Thames Centre.

The City's request recognizes that the other local municipalities have current operations and agreements that may or may not allow involvement in the future regional facilities if approved. Further, the City acknowledges that the other municipalities would have the option to be involved with the regional facility. It is prudent that Thames Centre maintain its autonomy and ability to participate in the future services at its sole discretion. Any support provided to the City of London's initiatives should assert this need.

FINANCIAL IMPLICATIONS:

The City of London's request is for political support of the regional waste management initiatives. There is no request for financial support or future commitment of financial support. Accordingly there are no financial implications to these initiatives at this time.

It is noted that in the future, there is expected to be options to deliver financial benefits to Thames Centre's waste management services. These options and any potential costs to Thames Centre would be brought to Council at a future date.

CONSULTATION:

The Superintendent of Environmental Services has consulted with a number of other local municipalities involved through the Municipal Recycling Facility operations in London. There is general support from the other local municipalities for this initiative as well.

This report was prepared in consultation with:

- Chief Administrative Officer
- Superintendent of Environmental Services

REFERENCES/ATTACHMENTS:

- City of London Letter March 30, 2017 requesting Thames Centre support

Prepared by: George Elliott P.Eng., Acting Director of Environmental Services

Reviewed by: Stewart Findlater, Chief Administrative Officer

CORPORATION OF THE COUNTY OF HURON

PUBLIC WORKS / HIGHWAYS DEPARTMENT

To: Committee of the Whole #2 Council Meeting
From: Steven Lund, P.Eng., County Engineer
Date: 24 June, 2017
Subject: **Regional Waste Management Projects**

RECOMMENDATION:

That:

Huron County Council receive the Regional Waste Management Projects Report from the County Engineer dated June 24th, 2017.

And Further that;

Huron County Council direct staff to issue correspondence supporting the following:

- 1) City of London Environmental Assessment - Need for Access to Future Residual Waste Disposal – 3) Huron County would like to be included in the Service area of any new waste disposal facility and may consider using the facility depending on cost.
- 2) City of London Resource Recovery Strategy -Need for Access to Future Resource Recovery Facilities – 3) Huron County would like to be included in these discussions and may consider using the facilities depending on cost.

BACKGROUND:

County Staff have received and reviewed a request from City of London staff regarding participating in two major Waste Management projects:

- 1) An Environmental Assessment (EA) as part of a long-term Residual Waste Disposal Strategy.
- 2) A long term resource recovery strategy that includes a focus on new, emerging and next generation energy recovery and/or waste conversion technologies.

Municipalities within a regional area (Includes Elgin County, Huron County, Lambton County, Oxford County, Perth County and local First Nations Communities) are being contacted to determine the level of interest in these two projects.

COMMENTS:

The County of Huron has responsibility for long term waste management planning for the County of Huron and local Municipalities as per Huron County Bylaw 14-201 (attached). This includes conducting any investigations, studies, reports, applications, public hearings or any other step necessary or advisable for the identification and approval of any new facility, or expansion of any existing facility, for the disposal of waste.

The City of London and County of Huron recognize many municipalities have their own landfills or existing disposal contracts, however, they suggest benefit from participating which includes a contingency location in the event of an emergency, competitive alternatives and potential economies of scale that would benefit all municipalities.

Usually alternative disposal technologies such as Energy from Waste for example require several Counties participating in order to establish a business case that includes required waste volumes to achieve economies of scale.

It is suggested we participate to investigate long term sustainable cost effective and environmentally friendly waste disposal options for the future of Huron County and South-West Ontario.

OTHERS CONSULTED:

None.

FINANCIAL COMMENTS:

No financial commitment for the residual waste disposal strategy is planned as these costs are to be covered by the City of London as part of their landfill expansion.

Initially there are no costs planned for the Resource Recovery Strategy, however, as the study evolves and details are requested by participating municipalities, costs should be expected (approximately 1 year from study commencement) to proceed further.

Steven Lund, P.Eng.,PWLF
County Engineer

Brenda Orchard
CAO

From: Kyle Pratt
To: [Stanford, Jay](#)
Cc: [Abbott, Wesley](#); [Andrew Bicknell](#); [Francis Veilleux](#)
Subject: Response to City of London Waste Management Projects
Date: Monday, April 24, 2017 11:20:59 AM
Attachments: [image001.png](#)
[20170330 - London Waste Management Initiatives.pdf](#)

Dear Jay Stanford.

In response to the attached letter regarding the two major City of London waste management projects, please be advised that the Council of the Municipality of Bluewater passed the following motion at their April 18, 2017 Council Meeting:

Moved by Councillor Gillespie, seconded by Councillor Becker that staff be requested to communicate with the City of London to advise that with respect to the study for the waste disposal facility the Municipality of Bluewater would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost; and

That with respect to a long term resource recovery strategy, the Municipality of Bluewater would like to be included in these discussions and may consider using the facilities depending on the cost.

Please let me know if you require anything further.

Regards,

Kyle Pratt, MPA, CMM III, CHRL, CMO
Chief Administrative Officer
(519) 236-4351 Ext. 226
cao@municipalityofbluewater.ca
www.municipalityofbluewater.ca



MUNICIPALITY OF MORRIS-TURNBERRY

P.O. Box 310, 41342 Morris Road, Brussels, Ontario N0G 1H0
Tel: 519-887-6137 ext. 21 Fax: 519-887-6424 Email: nmichie@morrishturnberry.ca



Nancy Michie
Administrator Clerk-Treasurer

May 2, 2017

London Canada,
300 Dufferin Avenue,
PO Box 5035,
LONDON, ON N6A 4L9

Re: Two Major Waste Management Projects

Please be advised that the Council of the Municipality of Morris-Turnberry, located in Huron County, has passed the following resolution, in regards to the letter from the City of London regarding two major waste management projects:

Motion No. 210 -2017 Moved by John Smuck Seconded by Jamie Heffer

"That the Council of the Municipality of Morris-Turnberry hereby authorize that the Municipality advise the City of London, that the Municipality of Morris-Turnberry wish to be included in the following strategies, for access to a new or expanded waste disposal facility, and for a regional opportunity with the City of London:

1. Need for Access to Future Residual Waste Disposal
 - Interest to be included in the service area of any new waste disposal facility; and
2. Need for Access to Future Resource Recovery Facilities
 - Interest in discussions about future resource recovery facilities."

Disposition Carried

Please advise the Municipality of any further action required and advise this office of any applicable updates.

Thank you for your cooperation.

Yours truly,

Nancy Michie

From: [Stanford, Jay](#)
To: [Francis Veilleux](#)
Cc: [Abbott, Wesley](#)
Subject: RE: City of London letter
Date: Thursday, March 30, 2017 2:31:22 PM

Hi Francis. . thanks for the quick comments and support. We'll be in touch very soon.

Cheers. . . Jay

From: Francis Veilleux [mailto:francis@bra.org]
Sent: Thursday, March 30, 2017 2:27 PM
To: Stanford, Jay <JSTANFOR@London.ca>
Cc: Abbott, Wesley <WAbbott@London.ca>
Subject: Re: City of London letter

Hi Jay:

The Association will encourage its member municipal to participate in your projects, whether directly with you or through us. We are supportive of such initiatives to be developed on a regional basis to maximize the possible technologies and options available for everyone. We look forward to participate and assist in anyway we can.

Francis Veilleux | President

Bluewater Recycling Association
P.O. Box 547
415 Canada Avenue
Huron Park, ON N0M 1Y0
p. 519.228.6678
f. 519.228.6656
e. francis@bra.org

www.bra.org

On Mar 30, 2017, at 2:12 PM, Stanford, Jay <JSTANFOR@London.ca> wrote:

Hi Francis

As we discussed at a recent OWMA meeting, we are sending a letter to numerous Clerks/CAOs within the BRA service area regarding a couple of City of London waste management projects and wanted to give you a heads up as you may be asked to review and/or provide comments on the letter.

The two waste management projects are:

1. An Environmental Assessment (EA) to develop a long-term Residual Waste Disposal Strategy. This involves the completion of an Individual Environmental Assessment (EA) as prescribed by the Ministry of Environment & Climate Change (MOECC) for a landfill expansion.

2. A long term resource recovery strategy that includes a focus on new, emerging and next generation energy recovery and/or waste conversion technologies that typically benefit from having a larger service area to attract materials for processing (i.e., beyond existing recycling and waste diversion programs).

The purpose of this letter to determine the level of interest of municipalities in using a new or expanded waste disposal facility that would be developed by the City of London and/or being included in a resource recovery strategy for new, emerging and next generation energy recovery and/or waste conversion technologies. Letters are also being sent to other municipalities in Elgin County, Middlesex County, Huron County, Lambton County, Oxford County, Perth County, and local First Nation Communities.

It is recognized that many municipalities within the proposed regional service area have their own landfills or existing long-term contracts with private landfills and/or are closer to private landfills and subsequently will have limited need in using residual waste disposal facilities in London. In these cases, being included in the service area would still provide a valuable contingency location in the event of an emergency; ensure that competitive alternatives are available in the marketplace; and benefit from potential economies of scale.

It is also noted that City is not referring to current or future Blue Box Material Recovery Facilities when discussing Resource Recovery Facilities. The landscape for Blue Box recycling will change under the new legislation (Waste-Free Ontario Act). We are including such items as source separated organics, mixed waste processing, waste conversion, etc.

Please contact me if you have any questions or comments regarding the above.

Regards,

<image001.png> Jay Stanford, M.A., M.P.A.
Director, Environment, Fleet & Solid Waste
Environmental & Engineering Services
City of London

300 Dufferin Ave, P.O. Box 5035 London, Ontario N6A 4L9
P: 519.661.2500 x 5411 | Cell: 519.851.5423
jstanfor@london.ca | www.london.ca

From: [Stanford, Jay](#)
To: [Abbott, Wesley](#)
Subject: FW: Council Decision - City of London Waste Management Projects
Date: Wednesday, June 21, 2017 6:57:53 AM
Attachments: [image001.jpg](#)
[image002.jpg](#)

From: Ed Dujlovic [mailto:EDujlovic@stratford.ca]
Sent: Tuesday, June 20, 2017 3:45 PM
To: Stanford, Jay <JSTANFOR@London.ca>
Subject: FW: Council Decision - City of London Waste Management Projects

Jay,

Please see the motion below that was approved by Council.

Regards,

Ed Dujlovic

From: Jodi Akins
Sent: Tuesday, June 20, 2017 3:28 PM
To: Ed Dujlovic; Karen Downey
Subject: Council Decision - City of London Waste Management Projects

At the June 12, 2017 Council Reconvene Meeting, City Council adopted the following recommendation of the Infrastructure, Transportation and Safety Committee:

THAT Council support the request of the City of London for inclusion of the City of Stratford in its study of longer term landfill needs and waste diversion opportunities, at no cost to the City of Stratford;

AND THAT staff continue to discuss this initiative with the City of London.



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MINUTES
Regular Council

May 23, 2017
6:00pm
Council Chambers, Town Hall

Council Present: Mayor Strathdee
Councillor Osborne
Councillor Van Galen
Councillor Winter
Councillor Pope
Councillor Craigmile

Council Regrets: Councillor Hainer

Staff Present: Brent Kittmer, CAO / Clerk
Trisha McKibbin, Director of Corporate Services / Deputy Clerk
Richard Anderson, Director of Emergency Services / Fire Chief
Jim Brown, Director of Finance / Treasurer
Stephanie Ische, Director of Community Services
Jed Kelly, Director of Public Works
Dave Blake, Environmental Services Supervisor
Jenna McCartney, Corporate Administrative Coordinator

1. CALL TO ORDER

Mayor Strathdee called the meeting to order at 6:00pm.

Mayor Strathdee requested a moment of silence to pay respect for the victims of the Manchester attack.

2. DECLARATIONS OF PECUNIARY INTEREST

None declared.

3. AMENDMENTS AND APPROVAL OF AGENDA

Resolution 2017-05-23-01

Moved By Councillor Pope

Seconded By Councillor Van Galen

THAT the May 23, 2017 regular Council meeting agenda be accepted as presented.

CARRIED

4. PUBLIC INPUT PERIOD

None presented.

5. DELEGATIONS, PRESENTATIONS, AND PUBLIC MEETINGS

None.

6. ACCEPTANCE OF MINUTES

6.1 Regular Council - May 9, 2017

Councillor Winter raised a point of clarification in respect to item 8.1.1 from the May 9, 2017 regular Council minutes. Councillor Winter inquired if all granting listed in staff report CAO 18-2017 were considered decided matters, or if only Option #1 (provide a grant of \$300,000) was considered a decided matter after being defeated in a recorded vote.

Mayor Strathdee made a procedural ruling that only Option #1 (provide a grant of \$300,000) as listed in CAO 18-2017 was considered a decided matter.

Resolution 2017-05-23-02

Moved By Councillor Craigmile

Seconded By Councillor Winter

THAT the May 9, 2017 regular Council meeting minutes be approved and signed and sealed by the Mayor and the Clerk.

CARRIED

6.2 Special Meeting of Council - May 15, 2017

Resolution 2017-05-23-03

Moved By Councillor Craigmile

Seconded By Councillor Winter

THAT the May 15, 2017 special meeting of Council minutes be approved and signed and sealed by the Mayor and the Clerk.

CARRIED

7. CORRESPONDENCE

7.1 Ontario Energy Board Notice re: Union Gas Limited Application to Dispose of Certain Accounts

Resolution 2017-05-23-04

Moved By Councillor Pope

Seconded By Councillor Craigmile

THAT the correspondence from Ontario Energy Board regarding Union Gas Limited's application to dispose of certain account balances be received.

CARRIED

7.2 Town of Lakeshore re: Ease Restrictions of Surplus Dwelling Severances in Areas Zoned Agriculture

Resolution 2017-05-23-05

Moved By Councillor Osborne

Seconded By Councillor Van Galen

THAT the correspondence from the Town of Lakeshore regarding the request to the Province of Ontario to ease restrictions of surplus dwelling severance be received.

CARRIED

8. STAFF REPORTS

8.1 Administration and Human Resources

8.1.1 CAO 19-2017 May Monthly Report (Administration and Human Resources)

Brent Kittmer spoke to CAO 19-2017 and responded to questions from Council.

Resolution 2017-05-23-06

Moved By Councillor Pope

Seconded By Councillor Craigmile

THAT CAO 19-2017 May Monthly Report (Administration and Human Resources) be received for information.

CARRIED

8.2 Corporate Services

8.2.1 COR 25-2017 May Monthly Report (Corporate Services)

Trisha McKibbin spoke to COR 25-2017 report and responded to questions from Council.

Resolution 2017-05-23-07

Moved By Councillor Craigmile

Seconded By Councillor Osborne

THAT COR 25-2017 May Monthly Report (Corporate Services) be received for information.

CARRIED

8.3 Finance

8.3.1 FIN 11-2017 May Monthly Report (Finance Department)

Jim Brown spoke to FIN 11-2017 report and responded to questions from Council.

Resolution 2017-05-23-08

Moved By Councillor Osborne

Seconded By Councillor Pope

THAT report FIN 11-2017 May Monthly Report (Finance Department) be received for information.

CARRIED

8.3.2 FIN 12-2017 Annual 2017 Insurance Renewal

Jim Brown spoke to FIN 12-2017 report and responded to questions from Council.

Resolution 2017-05-23-09

Moved By Councillor Osborne

Seconded By Councillor Pope

THAT the Town of St. Marys renews its 2017 insurance policy with Frank Cowan Company; and,

THAT Council authorize the CAO / Clerk to sign the policy renewal.

CARRIED

8.4 Fire and Emergency Services

8.4.1 FD 08-2017 May Monthly Report (Emergency Services / Fire Department)

Fire Chief Anderson spoke to FD 08-2017 report and responded to questions from Council.

Resolution 2017-05-23-10

Moved By Councillor Craigmile

Seconded By Councillor Winter

THAT FD 08-2017 May Monthly Report (Emergency Services / Fire Department) be received for information.

CARRIED

8.5 Building and Development Services

8.5.1 DEV 12-2017 May Monthly Report (Building and Development)

Brent Kittmer spoke on behalf of Grant Brouwer regarding DEV 12-2017 report and responded to questions from Council.

Resolution 2017-05-23-11

Moved By Councillor Pope

Seconded By Councillor Craigmile

That Report DEV 12-2017 May Monthly Report (Building and Development Department) be received for information.

CARRIED

8.6 Community Services

8.6.1 DCS 12-2017 May Monthly Report (Community Services)

Stephanie Ische spoke to DCS 12-2017 report and responded to questions from Council.

Resolution 2017-05-23-12

Moved By Councillor Winter

Seconded By Councillor Craigmile

THAT DCS 12-2017 May Monthly Report (Community Services) be received for information.

CARRIED

8.7 Public Works

8.7.1 PW 31-2017 May Monthly Report (Public Works)

Jed Kelly spoke to PW 31-2017 and responded to questions from Council.

Resolution 2017-05-23-13

Moved By Councillor Craigmile

Seconded By Councillor Osborne

THAT PW 31-2017 May Monthly Report (Public Works) be received for information.

CARRIED

8.7.2 PW 30-2017 Request for Standby Power for the James Street Booster Pumping Station

Jed Kelly spoke to PW 30-2017 report and responded to questions from Council.

Resolution 2017-05-23-14

Moved By Councillor Osborne

Seconded By Councillor Van Galen

THAT PW 30-2017 Request for Standby Power for the James Street Booster Pumping Station be received for information; and,

THAT Council approve By-Law 47 of 2017 authorizing the Mayor and Chief Administrative Officer / Clerk to negotiate and sign an agreement with INOAC Interior Systems for the purchase, installation and subsequent maintenance of a standby generator for the municipal booster station located at 317 James Street South to be fully funded by INOAC Interior Systems.

CARRIED

8.7.3 PW 29-2017 City of London Waste Management Investigation

Jed Kelly spoke to PW 29-2017 report and responded to questions from Council.

Resolution 2017-05-23-15

Moved By Councillor Pope

Seconded By Councillor Craigmile

THAT PW 29-2017 City of London Waste Management Investigation be received for information; and,

THAT Council provide a response to the City of London in the form of a resolution indicating that:

With regards to Item No. 1 – “Need for Access to Future Residual Waste Disposal”, the Town would like to be included in the service area of any new waste disposal facility, but are unlikely to use the facility; and,

Item No. 2 – “Need for Access to Future Resource Recovery Facilities”, the Town would like to be included in these discussions and may consider using the facilities depending on the cost.

CARRIED

8.7.4 PW 28-2017 Automotive Materials Stewardship Agreement

Jed Kelly spoke to PW 28-2017 report and responded to questions from Council.

Resolution 2017-05-23-16

Moved By Councillor Craigmile

Seconded By Councillor Osborne

THAT PW 28-2017 Automotive Materials Stewardship Agreement report be received; and,

THAT Council approve By-Law 46 of 2017 authorizing the Chief Administrative Officer / Clerk to sign the Agreement with Automotive Materials Stewardship, in substantially the same form as the draft presented.

CARRIED

8.7.5 PW 27-2017 Source Water Protection Services

Jed Kelly spoke to PW 27-2017 report and responded to questions from Council.

Resolution 2017-05-23-17

Moved By Councillor Craigmile

Seconded By Councillor Osborne

THAT report PW 27-2017 regarding Source Water Protection Services be received for information; and,

THAT Council approve By-Law 48-2017 authorizing the Mayor and Chief Administrative Officer / Clerk to sign a renewal Agreement with Upper Thames River Conservation Authority regarding Source Water Protection Services for the Town of St. Marys for a period of three years and four months ending on December 31, 2020.

CARRIED

9. EMERGENT OR UNFINISHED BUSINESS

Mayor Strathdee provided an updated to Council regarding the upcoming loss of beds at Hillside Manor Long Term Care facility. The Local Health Integrated Network (LHIN) is required to host a public consultation regarding the disbursement of the long term care beds. The meeting will take place on June 20, 2017, 12:30pm, at the Mitchell Community Centre.

10. NOTICES OF MOTION

Nothing raised.

11. BY-LAWS

11.1 By-Law 46-2017 Authorize an Agreement with Automotive Materials Stewardship

Resolution 2017-05-23-18

Moved By Councillor Pope

Seconded By Councillor Craigmile

THAT By-Law 46-2017, being a by-law to authorize the Mayor and the Clerk to sign an agreement with Automotive Materials Stewardship be read a first, second, and third time; and be finally passed and signed and sealed by the Mayor and the Clerk.

CARRIED

11.2 By-Law 47-2017 Authorize an Agreement with INOAC Interior Systems

Resolution 2017-05-23-19

Moved By Councillor Pope

Seconded By Councillor Osborne

THAT By-Law 47-2017, being a by-law to authorize the Mayor and the Clerk to sign an agreement with INOAC Interior Systems be read a first,

second, and third time; and be finally passed and signed and sealed by the Mayor and the Clerk.

CARRIED

11.3 By-Law 48-2017 Authorize an Agreement with Upper Thames River Conservation Authority

Resolution 2017-05-23-20

Moved By Councillor Craigmile

Seconded By Councillor Winter

THAT By-Law 48-2017, being a by-law to authorize the Mayor and the Clerk to sign an agreement with Upper Thames River Conservation Authority be read a first, second, and third time; and be finally passed and signed and sealed by the Mayor and the Clerk.

CARRIED

12. UPCOMING MEETINGS

Mayor Strathdee reviewed the upcoming meetings as presented on the agenda.

13. CLOSED SESSION

None held.

14. CONFIRMATORY BY-LAW

Resolution 2017-05-23-21

Moved By Councillor Craigmile

Seconded By Councillor Pope

THAT By-Law 49-2017, being a by-law to confirm the proceedings of the May 23, 2017 regular Council meeting be read a first, second, and third time; and be finally passed and signed and sealed by the Mayor and the Clerk.

CARRIED

15. ADJOURNMENT

Resolution 2017-05-23-22

Moved By Councillor Osborne

Seconded By Councillor Craigmile

That this regular meeting of Council adjourn at 7:35pm.

CARRIED

Al Strathdee, Mayor

Brent Kittmer, CAO / Clerk

From: [Stanford, Jay](#)
To: [Abbott, Wesley](#)
Subject: FW: Municipality of North Perth Council Resolution
Date: Thursday, April 27, 2017 4:32:24 PM
Attachments: [image001.gif](#)

From: Mark Hackett [mailto:mhackett@northperth.ca]
Sent: Thursday, April 27, 2017 4:15 PM
To: Stanford, Jay <JSTANFOR@London.ca>
Subject: Municipality of North Perth Council Resolution

Hi Jay,

Please find below, the wording for the resolution from North Perth Council regarding the City of London waste management projects. I do not have the signed resolution at this time but will forward once the Mayor and Clerk have signed.

If you have any questions or need any additional information, please contact me.

Regards,

Mark Hackett
Manager of Environmental Services
Municipality of North Perth
330 Wallace Avenue North
Listowel, ON N4W1L3
Phone: 519-292-2069
Fax: 519-291-1804

mhackett@northperth.ca
www.northperth.ca



North Perth is a Community of Character
integrity, fairness, responsibility, perseverance, optimism, COURAGE, respect, compassion,
empathy, honesty, inclusion

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sender immediately.

Please consider the environment before printing this e-mail

From: Danette Beare
Sent: April-25-17 12:06 PM
To: Mark Hackett <mhackett@northperth.ca>
Subject: from council

THAT: The Council of the Municipality of North Perth authorize the Manager of Environmental Services to respond to the City of London request by indicating that the Municipality of North Perth would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost and that the Municipality of North Perth would like to be included in the discussions regarding the Future Resources Recovery Facilities and may consider using the facilities depending on the cost.

CARRIED

Yours truly,
Danette Beare CMO, Deputy Clerk
Municipality of North perth
330 Wallace Ave N
Listowel, ON N4W 1L3
519-292-2063



Township of Perth East

P.O. Box 455, 25 Mill Street
Milverton, Ontario N0K 1M0

Theresa Campbell, CMO
Municipal Clerk

Phone- (519) 595-2800

Fax- (519) 595-2801

email – tcampbell@pertheast.ca

May 17, 2017

Jay Standford, M.A, M.P.A
Director – Environment, Fleet and Solid Waste
300 Dufferin Avenue
PO Box 5035
London, ON
N6A 4L9

Re: City of London Waste Management Initiative

At their Regular Meeting of Council on May 2, 2017 Council endorsed the following resolution:

THAT the Council of the Township of Perth East receive the report entitled City of London Waste Management Initiative dated May 2, 2017, prepared by the Manager of Public Works and Parks for information;

AND THAT Council of the Township of Perth East direct staff to respond to the City of London that the Township of Perth East would like to be included in the service area of any new waste disposal facility and may consider using the facility depending on the cost;

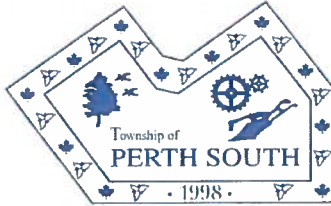
AND THAT Council of the Township of Perth East direct staff to respond to the City of London that the Township of Perth East would like to be included in the discussions regarding new, emerging and next generation energy recovery technologies and may consider using the facilities depending on the cost.

Attached for your reference is a copy of the report Council received.

Regards,

Theresa Campbell
Municipal Clerk

cc. W.Kuepfer, Public Works & Parks Manager



Corporation of the Township of Perth South

3191 Road 122
St. Pauls, ON N0K 1V0
Telephone 519-271-0619
Fax 519-271-0647
lscott@perthsouth.ca

April 21, 2017

City of London
300 Dufferin Avenue
PO Box 5035
London, ON
N6A 4L9

RECEIVED

APR 27 2017

**ENVIRONMENTAL & ENGINEERING SERVICES
ADMINISTRATION**

Attn: Jay Stanford, M.A., M.P.A.
Director – Environment, Fleet and Solid Waste

The council for the Township of Perth South reviewed your letter dated March 30, 2017 at their regular meeting on April 18, 2017. The following resolution was passed:

#136 Moved by Councillor Aitcheson
Seconded by Councillor Jeffrey

"That Council responds to the City of London that Perth South:

1. Related to the need for access to future residual waste disposal;
Would like to be included in the service area of any new waste disposal facility and may consider using the facility depending upon the cost and location;

And

2. Related to the need for access to future resource recovery facilities;
Would like to be included in these discussions and may consider using the facilities depending upon the cost and location." Carried

Please direct further correspondence on this review to our Director of Public Works, Ken Bettles. His email address is kbettles@perthsouth.ca and his phone number is 519-271-0619 x230.

Regards,


Lizet Scott
Clerk



Municipality of West Perth
West Perth Environmental Services Committee Meeting
April 12, 2017 1:00 p.m.
West Perth Council Chamber

Members Present: Councillors Cheryl Matheson, Dean Trentowsky, Steve Herold, Mayor Walter McKenzie, Member Don Jones

Staff Present: Environmental Services Coordinator Richard Wright, Operations Manager Mike Kraemer, Lead Operator Kevin Greenfield, Utility Billing Clerk Lori McLellan

1. Call to Order

Meeting called to order at 1:00pm.

2. Disclosure of Pecuniary Interest and the General Nature Thereof

None declared.

3. Adoption of the Minutes

Minutes of March 22nd, 2017 meeting reviewed.

Moved By: Councillor Steve Herold

Seconded By: Mayor Walter McKenzie

THAT the minutes from the March 22nd, 2017 meeting be adopted as presented.

CARRIED

4. Delegation - None

5. Business

1.) Presentation of the Mitchell Drinking Water System 2017 first quarter report by Kevin Greenfield.

- We have been in full compliance with the Drinking Water Act and Regulations for the first quarter of 2017.
- There have been No AWQI's during the first quarter of 2017.
- Microbiological test results; SCADA Operations summary; Inorganic parameters report; and organic parameters reports were all presented.

- Maintenance – all regularly scheduled maintenance was completed in a timely manner during the first quarter of 2017. Details are available in the Environmental Services Meeting package.
- Pocket colorimeter; turbidity; and pH metering equipment were calibrated on a monthly basis.
- On-line analyzers were calibrated as required for both treatment facilities.
- Unscheduled maintenance in the first quarter of 2017:
 - January 13, 2017 – Repaired water main break at the intersection of James St and St Andrew St.
 - March 08, 2017 – Switched Silicate pump at T#4 with spare.
- Consumer drinking water complaints in the first quarter of 2017:
 - None to report.
- Operating problems during the first quarter of 2017:
 - T#4 generator would not shut off. Replaced transfer switch controller.
 - Win911 was not calling out after power outages. Plugged server into UPS.
 - Water Tower Chlorine Analyzer won't hold its reading. We are in contact with the manufacturer to try to resolve the situation.
- Infrastructure Review for the first quarter of 2017:
 - Valves exercised and greased at all wells and treatment centers.
 - Analyzers were calibrated.
 - High Lift Pumps were inspected at T#123 and T#4.
 - Generators were run monthly for testing purposes.
 - Well depths and turbidities were taken at all wells.
 - PRV's at T#123 and T#4 were inspected and cleaned.
- There were no health & safety issues to report during the first quarter of 2017.

Moved By: Member Don Jones

Seconded By: Councillor Steve Herold

THAT the committee accepts the Mitchell Drinking Water System report.

CARRIED

2.) Presentation of the 2017 first quarter Wastewater report by Kevin Greenfield.

- Operating within compliance with the ECA.
- First quarter digested sludge samples were taken and sent to the lab as per MOE guidelines.

- Maintenance – all regularly scheduled maintenance was completed in a timely manner during the first quarter of 2017. Details are available in the Environmental Services Meeting package.
- Wastewater Treatment Plant Quarterly Operations Reports (2nd Quarter 2016 – 1st Quarter 2017) was presented.
- Bypass Events –
 - January 12, 2017 – Tertiary bypass. High flows caused a bypass of tertiary sand filters. This was reported to the MOECC.
 - February 23-24, 2017 – Partial treatment bypass. Blower failure caused aeration bypass. This was reported to the MOECC.
 - March 01, 2017 – Tertiary bypass. High flows caused a bypass of tertiary sand filters. This was reported to the MOECC.
- Alarm set points have been adjusted to allow us more time to react to bypass events.
- No sludge haulage was completed in the first quarter of 2017.
- There were no health & safety issues to report during the first quarter of 2017.
- The digesters will be emptied and cleaned in the 2nd quarter.
- The pump at Herbert St pumping station was found to have a plastic cap blocking the pump. This caused a pump failure. This is in need of replacement as it is unable to be fixed. The cost is approximated at \$19,000.
- An exhaust fan at Herbert St pumping stations that has been in service since 1982, has malfunctioned and is in need of replacement. The approximate cost of this is \$10,000.

Moved By: Councillor Dean Trentowsky

Seconded By: Mayor Walter McKenzie

THAT the committee accepts the Wastewater operations report.

CARRIED

3.) Presentation of the Environmental Services Report

Richard Wright reviewed the first quarter Drinking Water Operations.

- The Water Operations spare parts are currently being moved out of the property at 132 St George St. and into a designated bay at the old public works shop at 50 Arthur St.
- Communications infrastructure is being set up to transfer the water SCADA system to the new public works shop at 50 Arthur St.

Richard Wright reviewed first quarter Wastewater Operations.

- MOE inspection that covers the 2011-2016 operating period of the sewage works is delayed again. Requested documentation has been provided to the MOE inspector.
- Effluent regulatory reporting information for the first quarter of 2017 were submitted as per the schedule.

Richard Wright reviewed the first quarter landfill operations.

- Weekly and monthly landfill inspections have been completed up to the week of April 07, 2017.
- Household hazardous waste materials, plastic automotive containers and e-waste has been picked up by the service providers.
- Continued investigation into the elevated chloride events at the Industrial landfill will be reviewed in the results of the spring ground water monitoring events.
- We are still waiting to hear from the MOE regarding the request to lower the stormwater trigger concentrations for the stormwater management ponds at each of the active landfill sites.

Richard Wright reviewed the first quarter Environmental Services operations and administration.

- We will be sending operating staff to the water meter installer's course at the beginning of May 2017 to meet the demands of water meter repairs and replacements.

Richard Wright reviewed the DWQMS related information.

- The external on site surveillance audit was conducted by NSF accreditation body on March 6 & 7, 2017.
 - One minor non-conformance was issued and four opportunities for improvement were observed.
 - Non-conformance: WP-ADMIN-1300 Essential Supplies and Services Procedure. The Essential Supplies and Services procedure does not clearly address Operating Authority requirements relating to the quality of all essential supplies and services, examples provided were instrument calibration and

SCADA support. Additions were made to the procedure and the corrective action response was submitted to NSF.

- The Corrective action for this has been accepted by NSF and our letter of accreditation has been issued with a new expiration of March 22, 2020.
- The opportunities for improvement are being addressed and will be implemented.

Moved By: Member Don Jones

Seconded By: Councillor Steve Herold

THAT the committee accepts the Environmental Services report.

CARRIED

6. Other Business -

- 1) It has been brought to the attention of the Environmental Services Coordinator that Ontario Greenways Inc (OGI) mislead the Municipality on the type of wastewater that they have been importing into the Wastewater Treatment Plant since December 2016. It was reported to us as "Straight Water" when in fact it is "Orgaworld" wastewater from Ottawa.

In early 2016, Municipal staff had been approached by Orgaworld in regards to resuming the importing of their waste leachate. At the May 25, 2016 ESC Meeting, it was unanimous amongst the members that after previous negative experiences with the Orgaworld wastewater, we did not wish to partake in resuming the acceptance of their waste again.

It was determined that we need to add the Business Address and Generator number to the analysis sheet when receiving the initial sample results of the wastewater testing prior to accepting any loads at the wastewater treatment plant.

Any further shipments from Orgaworld will be post-poned, until Steve Gloor from OGI attends the next ESC Meeting to answer any questions from the committee in regards to possibly re-opening the acceptance of Orgaworld Ottawa waste leachate.

- 2) Review of a letter received from Jay Stanford – Director of Environment, Fleet and Solid Waste for the City of London inquiring if the Municipality of West Perth is interested in either of their two major waste management projects they are looking at implementing.

- The first being if the Municipality is in need of any future access to residual waste disposal at a new waste disposal facility that the City of London is looking into creating.
- The second being if the Municipality is in need of any future access to a resource recovery facility. This would involve energy recovery and/or waste conversion technologies.

Environmental Services Coordinator Richard Wright and Operations Manager Mike Kraemer will follow-up in regards to this letter and report back to the chair of the ESC.

7. Next meeting date – Wednesday, July 26, 2017 at 1:00pm.

8. Adjournment

Moved by: Councillor Steve Herold

Seconded by: Councillor Dean Trentowsky

THAT the meeting be now adjourned at 1:45pm.

CARRIED

Cheryl Matheson, Chair

Richard Wright, Environmental Services Coordinator

Board of Directors Meeting #3/17

March 15, 2017

DIRECTORS PRESENT:

Jim Campbell, Deb Shewfelt, Art Versteeg, Wilf Gamble, Alison Lobb, Matt Duncan, Roger Watt, Paul Gowing, Bob Burtenshaw, David Turton, David Blaney

STAFF PRESENT:

Phil Beard, General Manager/Secretary-Treasurer
Erica Magee, Administrative Assistant
Stewart Lockie, Conservation Areas Coordinator
Geoff King, Stewardship Services Coordinator
Erin Dolmage, Community Education Technician
Jeffrey King, GIS/IT Technician
Dave Nuhn, Field Services Technician

COMMUNITY ATTENDEES:

Paul Seebach, Auditor of Vodden Bender & Seebach

1. Call to Order

Jim Campbell called the meeting to order at 7:00 pm and welcomed everyone.

2. Declaration of Pecuniary Interest

There were no pecuniary interests at this time

3. Staff Service Awards

Jim Campbell, Chair congratulated and thanked the following staff for their years of dedication and employment by presenting them with service awards and outlining the history of their individual roles with the Maitland Valley Conservation Authority.

Erin Dolmage, Community Education Technician: 10 years

Dave Nuhn, Field Services Technician: years

Jeffrey King, GIS/IT Technician: 10 years

Geoff King, Stewardship Services Coordinator: 30 years



4. Minutes

The minutes from the last Board of Director's meeting as well as the Annual Meeting have been circulated to the Director's for their information and approval. The Director's agreed with the minutes and the following motion was made.

Motion FA #21/17

Moved by: Wilf Gamble

Seconded by: David Turton

THAT the minutes from the Board of Director's meeting #1/17 held on January 25, 2017 and the Annual Meeting #2/17 held on February 15, 2017 be approved.

(carried)

5. Business Out of the Minutes

i) Alternative Land Use Services: North Perth/County of Huron: Report #12/17

At the January meeting, the Board made this motion.

THAT staff attend the presentation that ALUS is making to the County of Huron; **AND THAT** MVCA express their concerns regarding the design of the current program by providing feedback to ALUS in writing and at the meeting being held at the Municipality of North Perth on February 1, 2017; **AND FURTHER THAT** staff provide a report to the Board on the outcomes of both meetings at the March 15th Board meeting.

Report #12/17 provides an update to the Directors on the outcomes from meetings attended and asks for further direction on the ALUS Canada program from the Board.

This motion followed.

Motion FA #22/17

Moved by: David Blaney

Seconded by: Roger Watt

THAT a follow up letter be written to ALUS expressing MVCA's concerns; **AND THAT** Mr. Gilvesy, Chair of ALUS be invited to attend a MVCA Board of Directors meeting to address the concerns.

(carried)

6. Requiring Decision/Direction

i) 2016 Auditors Report: Report #13/17

Paul Seebach of Vodden Bender & Seebach presented the 2016 Financial Statement to the Director's and invited questions and feedback from the Board.

The Director's agreed with the report and the following motion was made.

Motion FA #23/17**Moved by: Roger Watt****Seconded by: Alison Lobb****THAT** the Auditor's report be accepted as presented.**(carried)****ii) 2017 Work Plan and Budget: Report #14A/17 & #14B/17**

Presented by Phil Beard, this report outlined the major items of business to cover in 2017 to help finalize the work plan for the Board of Directors.

The Directors agreed with the report and made this motion.

Motion FA #24/17**Moved by: Alison Lobb****Seconded by: Wilf Gamble****THAT** the work plan for 2017 be adopted as outlined in report #14A/17.**(carried)**

Report 14B/17 was presented by Phil Beard to inform the Directors of the changes made to the draft budget that was reviewed at the December meeting and to finalize the 2017 budget and gain levy approval.

a) 2017 Levy Approval

Municipality	Director	% Assessment Value	In Favour	Not In Favour	Absent
ACW	Roger Watt	12.45	✓		
Central Huron	Alison Lobb	10.37	✓		
Goderich	Deb Shewfelt	12.40	✓		
Howick	Art Versteeg	3.99	✓		
Huron East	David Blaney	9.82	✓		
Huron Kinloss	Wilf Gamble	6.88	✓		
Mapleton	Dave Turton	.83	✓		
Minto	Dave Turton	6.96	✓		
Morris-Turnberry	Paul Gowing	4.62		✓	
North Huron	Jim Campbell	6.25	✓		
North Perth	Matt Duncan	20.51	✓		
Perth East	Bob Burtenshaw	1.69	✓		
South Bruce	Wilf Gamble	.07	✓		
Wellington North	Dave Turton	2.74	✓		
West Perth	Bob Burtenshaw	.44	✓		

The results of the recorded vote were 95.4% in favour of Motion #25/17 with 4.62% not in favour and % absent. Therefore the motion carried.

Motion FA #25/17

Moved by: Deb Shewfelt

Seconded by: Art Versteeg

THAT the matching and non-matching levy be approved at \$1,358,049 for 2017;
AND THAT the levy be apportioned to each municipality in accordance with the 2017 levy schedule.

(carried)

b) 2017 Budget

Motion FA #26/17

Moved by: Bob Burtenshaw

Seconded by: Art Versteeg

THAT the 2017 budget be approved as outlined in Report #14B/17.

(carried)

iii) Carbon Footprint Strategy for 2017: **Report #15/17**

This report from Conservation Areas Coordinator Stewart Lockie outlines the progress made in 2016 and measures planned for 2017 to reduce and compensate for our carbon footprint.

Following discussion and comments, the following motion was made.

Motion FA #27/17

Moved by: Deb Shewfelt

Seconded by: David Turton

THAT MVCA's progress report and 2017 strategic actions as outlined in Report 15/17 be approved.

(carried)

iv) Wawanosh Nature Centre Building: **Report #16/17**

This report identifies the terms of reference for the Wawanosh Nature Centre facility review and was presented by Steward Lockie and Geoff King to obtain direction from the Board on the use of the Wawanosh Nature Centre facility in 2017 and the proposed services and facility review as outlined in Report #16/17.

The Board concurred with the terms of reference for the review and passed the following motion.

Motion FA #28/17**Moved by: Matt Duncan****Seconded by: Alison Lobb**

THAT the WNC facility not be used for programming due to the structural condition of the building;
AND THAT staff make alternate arrangements for programming and storage as outlined in Report #16/17;

AND FURTHER THAT the terms of reference identified in Report #16/17 be used for the review of the Wawanosh Nature Centre facility and uses.

(carried)v) **Appointments to Committees: Report #17/17**

This report establishes appointments to projects, committees and organizations within the Maitland Valley Conservation Authority for 2017. These include:

- Conservation Ontario
- Maitland Conservation Foundation
- John Hindmarsh Environmental Trust Fund
- MVCA Personnel Committee.
- Huron County Water Protection Committee
- Carbon Footprint Initiative Leadership Team

Following discussion, this motion was made.

Motion FA #29/17**Moved by: Matt Duncan****Seconded by: Wilf Gamble**

THAT Jim Campbell be appointed as the MVCA's delegate to Conservation Ontario;
AND THAT Dave Turton and Deb Shewfelt be appointed as alternates.

FURTHER THAT Deb Shewfelt be appointed to the Board of Directors of the Maitland Conservation Foundation for 2017;

AND FURTHER THAT Alison Lobb be appointed to the John Hindmarsh Environmental Trust Fund Board for 2017;

AND FURTHER THAT Roger Watt be appointed to the Personnel Committee for 2017;

AND FURTHER THAT Deb Shewfelt be appointed as the MVCA's representative to the Huron County Water Protection Steering Committee for 2017;

AND FURTHER THAT Deb Shewfelt be appointed to the Carbon Footprint Initiative Leadership Team for 2017.

(carried)

vi) Appointment of Bank/Solicitors: **Report #18/17**

Following review of this report to obtain approval from the Board to appoint organizations for financial and legal business in 2017, this motion was made.

Motion FA #30/17

Moved by: Alison Lobb

Seconded by: Bob Burtenshaw

THAT the authority's banking transactions be handled by the Wingham and Goderich branches of the Canadian Imperial Bank of Commerce;

AND THAT investments be made at the financial institutions offering the most favourable rate of interest to the maximum of the guaranteed limits set by the Canadian Depository Act;

AND THAT the authority approve a bank borrowing by-law of \$200,000 for 2017 on revolving credit at the Canadian Imperial Bank of Commerce, Wingham Branch;

AND FURTHER THAT the following solicitors be appointed to handle legal transactions of the Conservation Authority for 2017: Darrell N. Hawreliak Professional Corporation, Kitchener and and Greg Stewart, Donnelly & Murphy, Goderich.

(carried)

vii) In Camera Session: Legal matter

Motion FA #31/17

Moved by: Paul Gowing

Seconded by: Deb Shewfelt

THAT the Board of Directors move in camera for a legal matter.

(carried)

Motion FA #32/17 to resume regular session was made in-camera

(carried)

7. Reports: Chair/Directors

i) Chair Reports

Jim Campbell will be attending the ABCA's awards night on Thursday, March 16, 2017 with Phil Beard.

ii) Director Reports

Alison Lobb mentioned that the JHETF will be holding their annual plant sale on Sunday, May 7, 2017 in Goderich at the Knights of Columbus Hall parking lot.

iii) Deb reminded the Directors that the Maitland Conservation Foundation will be holding their annual dinner and auction on Friday, April 28, 2017 at the Brussels Morris and Grey

West Perth Voice Mail Message

From: Postmaster@callpilot.col
Sent: Friday, July 07, 2017 9:46 AM
To: Abbott, Wesley
Subject: CallPilot Notification

You have a voice message from WEST PERTH SHOP (95193488631).

MESSAGE

Voice mail from Richard Wright and advised that West Perth would be interested but unlikely to use any new City of London waste management facility.



AGENDA

LAMBTON COUNTY COUNCIL

Wednesday, June 7, 2017 - 9:30 a.m.
Council Chambers, Wyoming

Page

1. Roll Call - COMMITTEE ROOM #3

2. Motion - Appointment

- a) That a motion be made to appoint John Innes, Deputy CAO as Acting Clerk for the Open and Closed Session of Lambton County Council for the June 7, 2017 meeting.

3. IN-CAMERA SESSION - 9:00 A.M. - COMMITTEE ROOM #3

Recommendation

That the Warden declare that County Council go in-camera to discuss the following:

- a) a matter concerning the receipt of information and potentially providing instructions and directions to officers and employees of the County or County-owned corporations. Such matter(s) pertain to commercial / financial/technical/scientific information supplied in confidence by a Third Party. The disclosure of such commercial/financial/technical/scientific information would reasonably be expected to significantly prejudice the contractual or negotiating position of a person, group or persons, or organization, and would reasonably be expected to result in similar information no longer being supplied to the County, where it is in the public interest that said information continue to be provided in the future, pursuant to section 239(2)(g) of the *Municipal Act, 2001* and sections 10(1) and 11 of the *Municipal Freedom of Information and Protection of Privacy Act*.
- b) a matter to be considered for the purpose of receiving advice and providing instructions and directions to officers and employees, pertaining to labour relations involving a potential collective agreement with CUPE Local 2557, including any communications necessary for these purposes, pursuant to section 239(2)(d) of the

Municipal Act, 2001.

- c) a matter to be considered for the purpose of receiving advice and providing instructions and directions to officers and employees, pertaining to labour relations involving a potential collective agreement with UNIFOR 2003E, including any communications necessary for these purposes, pursuant to section 239(2)(d) of the *Municipal Act, 2001*.

4. OPEN SESSION - COUNCIL CHAMBERS

Regular Meeting called to order at 9:30 a.m.

5. Silent Reflection.

6. Disclosures of Pecuniary Interest

If any.

7. Rise and Report Motions of the In-Camera Session

If any.

8. DELEGATIONS

- a) George Mallay, General Manager, Sarnia-Lambton Economic Partnership (SLEP) will attend in response to his update to County Council regarding SLEP's investment projects.
- b) Elizabeth Davis-Dagg will speak to County Council regarding the establishing of a "Property Rights Council" in Lambton County.

9. Presentations

- a) The Ontario Works-Habitat Build Project in 2016 has received considerable recognition recently. At the Habitat Sarnia-Lambton Annual General Meeting, the County was presented with a Habitat Build Champion Plaque in recognition of its financial contribution towards the project. Kevin Graham, Ontario Works Caseworker received the Habitat Local Champion Award which is presented periodically and recognizes an individual who embodies the Habitat spirit. The County received a Municipal Champion Award at the Ontario Municipal Social Services Association Leadership Conference and Habitat Sarnia-Lambton received the Housing Innovation Award at the HFH Canada National Conference last month. Habitat Sarnia-Lambton, Ontario Works and Social Planning staff responsible for the innovative project will be in attendance.

A five minute video which was prepared by Habitat, outlines the

project, the unique partnership, interviews participants and their thoughts on the project and highlights some of the outcomes that were achieved.

10. Minutes of Council (Open Session) and (Closed Session)

- 10 - 15 a) Reading and Adoption of the Minutes of Council (Open Session) and (Closed Session) dated May 3, 2017.

11. CORRESPONDENCE

A) Correspondence to Receive and File
Recommendation

That the following correspondence items be received and filed:

- 16 - 18 a) CC 06-18-17 A resolution from Scott McFadden, Mayor, Township of Cavan Monaghan dated May 4, 2017 regarding resolution distribution. It was discovered that resolutions forwarded to Association of Municipalities of Ontario (AMO) are no longer distributed directly to individuals but rather embedded in an AMO Watch File email which may not be seen by most Councils causing a less than desirable effect and little response. Council of the Township of Cavan Monaghan requests that AMO reinstate direct email distribution or develop a cost effective alternative to achieve the intended result of awareness by Councils of future correspondence for action.
- 19 - 21 b) CC 06-19-17 A letter from Kevin McClure, Planner, Ministry of Municipal Affairs Ministry of Housing dated May 29, 2017 regarding the Lakeshore Road policy in the County's Official Plan. Motion #7 of the April 5, 2017 County Council open session meeting requested that staff refer the 1998 designation of the Lakeshore Road policy as well as the proposed 2017 designation of that same area to the Ministry of Municipal Affairs and Housing to request a written response.
- 22 - 25 c) CC 06-21-17 A letter from Jordy Speake, Government Relations Liason, Ontario West Coast Landowners Association (OWCLA) dated May 30, 2017 regarding follow up questions and concerns of D. Posliff, Manager, Planning & Development Services to the OWCLA letter of January 24, 2017. The members felt compelled to follow up with additional questions to the response in order to have an understanding of the County's position on the proposed Official Plan.
- 26 - 31 d) CC 06-22-17 An email from Raheem Hirji, VP, Finance, Seasons Retirement Community dated May 9, 2017 to provide

background information regarding Seasons Retirement Communities, the purchaser of the Bayside Mall. It is Seasons' intention to improve the Bayside Mall location, transforming it into the premier downtown destination for the citizens of Sarnia and Lambton County.

B) Correspondence from Member Municipalities

- 32 - 34 a) CC 06-17-17 An email from Councillor Bruziewicz dated April 23, 2017 regarding the annual Advocacy Day at Queen's Park. On September 13, 2017 Councillor Bruziewicz will attend meetings with the Ontario Good Roads Association (OGRA) to discuss topics of importance to OGRA members with MPPs and has requested that elected officials, staff and general public forward any concerns to him via email for consideration.
- 35 - 50 b) CC 06-20-17 A report from Alan Shaw, Director of Planning and Building dated May 29, 2017 which was prepared for the City of Sarnia Council regarding the County of Lambton Draft Official Plan residential land supply in the Town of Plympton-Wyoming. Council requested that a copy of the report be forwarded to the County of Lambton.

12. Items Not Requiring a Motion

- 51 - 52 a) The Corporation of Lambton Community Development Committee (CLCDC) minutes dated February 17, 2017.
- 53 - 57 b) Sarnia-Lambton Economic Partnership Board minutes dated February 28 and March 28, 2017.

13. Reports Requiring a Motion

A) CAO

- 58 - 59 a) Report dated June 7, 2017 Regarding Appointment of County Clerk.

14. Committee Minutes

- 60 - 67 a) Committee A.M. minutes dated May 17, 2017.
- 68 - 72 b) Committee P.M. minutes dated May 17, 2017.

15. Items Deferred from Previous Meetings

- 73 - 74 a) At the April 7, 2017 LCC (OS) meeting consideration of the report titled "County Official Plan Final Draft" was deferred until the June 7, 2017 Council meeting. Within the report is a recommendation to prepare a By-Law and a final version of the Official Plan suitable for adoption.
The motion is as follows:

Report dated April 5, 2017 Regarding County Official Plan Final Draft

#6: Broad/Bruziewicz: That Council defer the recommendation to prepare the final draft Official Plan until the Lambton County Council meeting of June 7, 2017 to allow the report regarding Residential Land Supply and Draft Official Plan Settlement Boundary in Plympton-Wyomingto be sent to all municipalities in Lambton County with a request for comments to be communicated immediately.

Carried.

*Paper copies of the Draft Official Plan will be available on the day of Council.

16. Notice of Motion

17. Other Business

18. Notice of By-Laws

- a) #20 of 2017 A By-Law to Appoint a County Clerk.
- b) #21 of 2017 A By-Law of The Corporation of the County of Lambton to confirm the resolutions and motions of Lambton County Council which were adopted up to and including June 7th, 2017.

19. First and Second Reading of By-Laws

- a) #20 - 21 of 2017.

20. Third and Final Reading of By-Laws

- a) #20 - 21 of 2017.

21. ADJOURNMENT

Recommendation

That the Warden declare the meeting adjourned and that the next regular meeting of County Council be held on Wednesday, July 5, 2017 with the In-Camera Session to commence at 9:00 a.m. in Committee Room #3.

22. O Canada!

23. NOTE

- a) A host is needed for the Annual Council Steak Fry Barbecue in September.

Committee A.M. – May 17, 2017 (page 3)

- d) Information Report dated May 17, 2017 Regarding Upcoming 2017 Public Works Conferences.

Carried.

Reports Requiring a Motion

Report dated May 17, 2017 Regarding Woodlands Mill Rate Exemption Request (PD 06-08-17)

#3: Case/Marriott: That the Finance, Facilities and Court Services Division staff prepare a report regarding the financial and administrative impacts from adjusting tax ratios for woodland properties.

Carried.

Report dated May 17, 2017 Regarding City of London Waste Initiatives - PW 06-07-17

#4: Arnold/Cook:

- a) That the County of Lambton inform the City of London that it "would like to be included in the service area of any new waste disposal facility but are unlikely to use the facility".
- b) That the County of Lambton inform the City of London that it "would like to be included in these discussions regarding the future resource recovery but are unlikely to use the facilities".

Carried.

Report dated May 17, 2017 Regarding Land Purchases - County Road Widenings

#5: Case/weber: That the existing policy for land purchases for road widenings and associated facilities on the County Road System be amended as follows:

- \$6,000/Ac. - for bush or swamp land in agricultural areas
- \$8,000/Ac. - for untilled agricultural land
- \$12,000/Ac. - for improved and tiled land
- \$20,000/Ac. - for individual severed agricultural land and for farm residence areas (<150 foot frontage)
- No cost - road widening as a condition of severance/zoning approval
- Current Market Value - in built-up areas
- Farm fencing
 - Replace existing "adequate" fence with new fence or
 - \$60/rod for "adequate" fence that is removed but not replaced or



CORPORATION OF THE
TOWNSHIP OF DAWN-EUPHEMIA

4591 Lambton Line R.R.#4, Dresden, Ontario N0P 1M0
Tel: (519) 692-5148 Fax: (519) 692-5511 Public Works Dept: (519) 692-5018

RECEIVED

APR 26 2017

ENVIRONMENTAL & ENGINEERING SERVICES
ADMINISTRATION

April 21, 2017

City of London
300 Dufferin Avenue
PO Box 5035
London, ON
N6A 4L9

Attention: Jay Stanford, Director – Environment, Fleet & Solid Waste

Re: Residual Waste Disposal Strategy

Dear Mr. Standford,

Thank you for your letter dated March 30, 2017 with regards to the City of London's waste management projects and determination of interest from neighbouring regions.

At our Regular Council meeting held Tuesday, April 18th the following resolution was passed:

2017-097 Councillor LeBoeuf – Councillor Meyer

Future Residual Waste Disposal

That with respect to the letter dated March 30, 2017 from the City of London regarding the Need for Access to Future Residual Waste Disposal, Council hereby agrees to refer the request to the County of Lambton as they handle waste disposal for the Township of Dawn-Euphemia. *Carried.*

Sincerely,

Lynda Thornton,
Deputy Clerk

cc: Glen Millar, Manager of Public Works, County of Lambton
Office of the Clerk, County of Lambton
Francis Veilleux, President Bluewater Recycling Association



Township of St. Clair

Chief Administrative Officer	519-867-2021
Administration / Clerks Dept.	519-867-2021
Finance & Treasury Dept.	519-867-2024
Water Dept.	519-867-2128
Engineering Dept.	519-867-2125
Public Works Dept.	519-867-2993
Fire Dept. Administration	519-481-0111

RECEIVED

APR 27 2017

ENVIRONMENTAL & ENGINEERING SERVICES
ADMINISTRATION

April 19, 2017

City of London
300 Dufferin Ave
PO Box 5035
London, ON
N6A 4L9
c/o Jay Stanford, Director – Environment, Fleet and Solid Waste

Re: City of London Two Major Waste Management Projects

Please be advised that in response to your letter dated March 30, 2017 related to two major waste management projects, Council for the Township of St. Clair passed the following motion:

***"Motion #8** That in response to the City of London Waste Project Initiatives the Township of St. Clair select Option 2 for Need for Access to Future Residual Waste Disposal being that we be included in the service area of any new waste disposal facility but be considered unlikely to use the facility; and, option 3 for Need for Access to Future Resource Recovery Facilities being that the Township would like to be included in these discussions and may consider using the facilities depending on the cost.*

CARRIED"

Should you require clarification or additional information please contact the undersigned. Thank you for the opportunity to provide a response and I look forward to the outcome of this exercise.

Kind Regards,

A handwritten signature in blue ink, appearing to read "JB", is written over a horizontal line.

Jeff Baranek, RPP
Clerk