

Why Waste?

Background and Status on:

1. Environmental Assessment Process
2. 60% Waste Diversion Action Plan
3. Resource Recovery Strategy

Waste Management Working Group
April 18, 2019



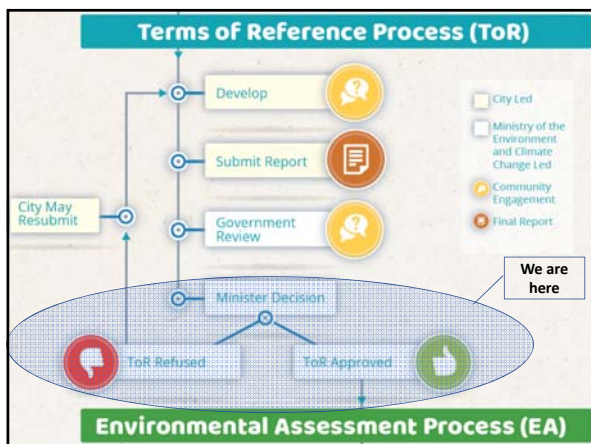
Why Waste?

Section 1

Environmental Assessment Process for the Proposed Expansion of the W12A Landfill



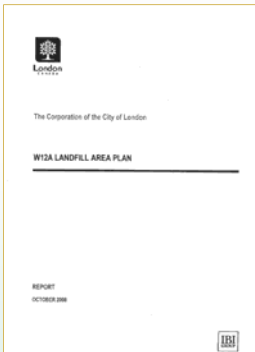
Two Phases:
1. Develop ToR
2. EA Technical Studies & Report



Why Waste?

ToR - Disposal Method

Expansion of the W12A Landfill is the most appropriate disposal option based on previous waste plan studies (2008)



Why Waste? ToR Overview-Planning Period

**Plan for additional 25 years
(2025 – 2050)**

- Maximum supported by MECP staff
- The London Plan in effect until 2035
- Waste disposal security for at least 6 terms of Municipal Council
- Consistent with *Waste-Free Ontario Act*



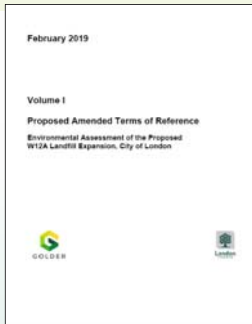
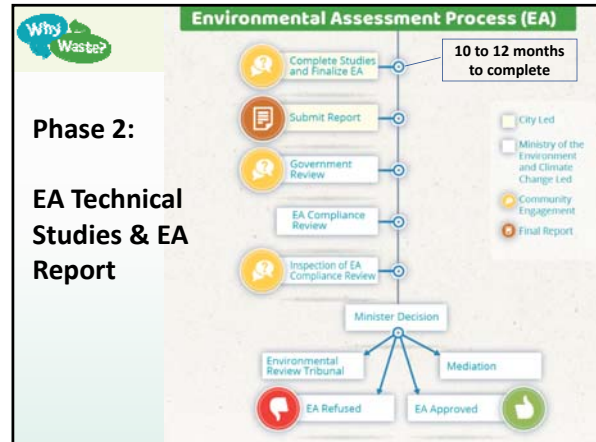

Why Waste? ToR Overview - Limit on Annual Tonnage

- Current limit = 650,000 tonne/year
- **Proposed limit = 500,000 tonne/year**

Consideration	Average (Tonnes)	Peak (Tonnes)
Existing Service Area	370,000	380,000
Expanded Service Area	24,000	40,000
Contingency	-	80,000
Total	-	500,000

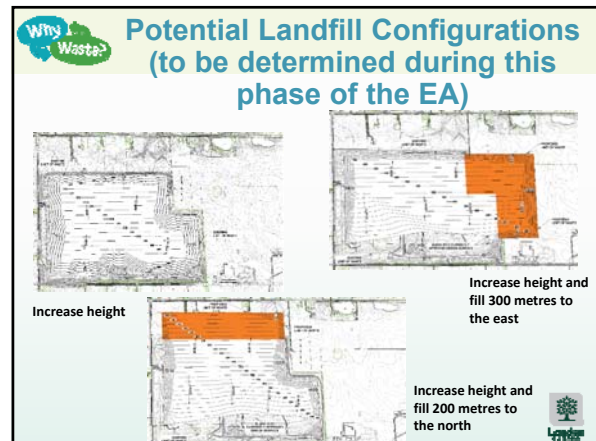
Why Waste? **Proposed Amended ToR**

- City submitted Proposed ToR on October 12, 2018
- MECP 30 day review period for stakeholders
- Submitted Proposed Amended ToR Feb 7, 2019
- Expecting decision...soon**

Why Waste? **Proposed Studies**

Category	Proposed Environmental Components	
	Environmental Component	Environmental Sub-components
Environmental	Atmosphere	- Air quality (including dust, odour and greenhouse gases) - Noise
	Biology	- Aquatic ecosystems - Terrestrial ecosystems
	Geology & Hydrogeology	Groundwater quality
	Surface Water	- Surface water quality - Surface water quantity
	Agriculture	Agriculture
Social	Archaeology	Archaeology
	Culture	- Cultural heritage landscapes - Cultural heritage resources (including built heritage)
	Land Use	Current and planned future land uses
	Socio-economic	- Local economy - Residents and community
	Visual	Visual
Technical	Design and Operations	- Technical Considerations - Financial Considerations
	Transportation	Traffic



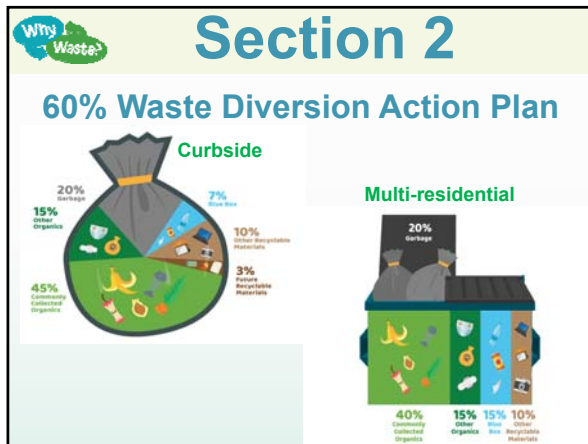
Why Waste? Proposed Community Engagement

- Two Open Houses
- Project Website
- Direct Mailings (e.g., residents with 2 km of Landfill, project mailing list, etc.)
- Community requests for meetings
- Waste Management CLC, W12A Landfill PLC, First Nations & GRT
- Traditional & Social Media
- PPM at CWC



Why Waste? Proposed Schedule

Time Frame	Task
Spring 2018 to Fall 2019	Ongoing Field Studies/Assessments
Summer 2019	Open House #3 - EA Overview
Fall 2019	Open House #4 – Preferred Expansion Alternative
Spring 2018 to Fall 2019	Other ongoing public engagement (e.g., First Nations, GRT, PLC, etc.)
Winter 2019/2020	Preparation of EA Reports
Spring 2020	Submit EA Reports to MECP



Why Waste? Council Direction(s)

On October 30, 2017 City Council passed the following resolution:

“The W12A Landfill expansion be sized assuming the residential waste diversion rate is 60% by 2022 noting this does not prevent increasing London’s residential waste diversion rate above 60% between 2022 and 2050.”

In October 2018, Council passed the following resolution:

“...the 60% Waste Diversion Action Plan (Action Plan) containing programs and initiatives to be phased in between 2019 and 2022 to achieve 60% waste diversion ... BE APPROVED...”



Why Waste? **Provincial Direction(s)**



Ontario's Food and Organic Waste Policy Statement



To mark our progress and keep on track, we have set three interim goals:

- 30% diversion rate by 2020
- 50% diversion rate by 2030
- 80% diversion rate by 2050

Many Targets ("must")

- 70% reduction/recovery of food and organic waste from single family homes by 2025
- 50% reduction/recovery of food and organic waste generated at the multi-residential building by 2025

Why Waste? **How much waste and resources in London?**



Residential
160,000 tonnes
45% diverted



IC&I
170,000 tonnes
~ 20% diverted



CR&D
~ 120,000 tonnes
~ 50% diverted

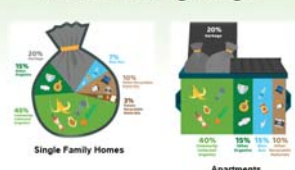
Between 425,000 and 450,000 tonnes per year

Why Waste?

- 21 actions
- split into 6 categories
- Operating \$6.5 million
- Capital \$15 million

60% Waste Diversion Action Plan

What's in the garbage?



Single Family Homes

Apartments

Waste Management Working Group: July 13, 2018
Civic Works Committee: July 11, 2018
Municipal Council: July 24, 2018
Community Engagement: July 25 - September 27, 2018

Why Waste? getinvolved.london.ca

Why Waste? **Status**

Action	Brief Status - Timing
Blue Box (Blue Cart) Programs	
1. Increase capture of recyclables	Provincial initiative
New (or Expanded) Recycling Programs & Initiatives	
2. Bulky Plastics	- Continuing pilot - Currently no stable long term market for expansion
3. Carpets	Provincial initiative
4. Ceramics	Ceramics drop-off at EnviroDepots starting Fall 2019; Ban Fall 2020
5. Clothing/Textiles	Begin developing awareness strategy Fall 2019

 Status (continued)	
Action	Brief Status - Timing
New (or Expanded) Recycling Programs & Initiatives (cont.)	
6. Small Metal	• Semi-annual collection Fall 2021 (coincide with other collection changes)
7. Furniture	• Wooden furniture drop-off at W12A EnviroDepot starting Fall 2019; semi-annual collection 2021
8. Mattresses	• Provincial initiative
Curbside Organics Management Program	
9. Curbside Green Bin	• Staff working on implementation/operational details
10. Implement bi-weekly garbage	

 Status (continued)	
Action	Brief Status - Timing
Multi-residential Organics Management Program	
11. Mixed Waste Processing Pilot	• Fall 2020 (depends on facility availability)
Other Organics Management Programs	
12. Food Waste Avoidance	• Development underway, 2020 roll-out
13. Home Composting	• Subsidize composters, event sales beginning 2020
14. Community Composting	• Provide financial support Winter/Spring 2020

 Status (continued)	
Action	Brief Status - Timing
Waste Reduction/Reuse	
15. New Coordinator Position	• Summer 2020
16. Financial Support	• Support for community initiatives beginning Fall 2020
17. Reduce Container Limit	• Further examination Fall 2019 (after operational details for Green Bin are finalized)
18. Clear Bags	
19. User Pay	
20. Resident Incentives	• Additional reporting (including waste reduction) Summer 2019
21. Additional Feedback	



Green Bin Implementation Decisions

- Materials to collect
- Size(s) available
- Choices for residents
- Delivery
- Monitoring
- Replacement



Size	Capacity	Depth	Width	Height
EXTRA LARGE	360 litres	34.5"	25"	44.5"
LARGE	240 litres	27.5"	24.5"	43"
MEDIUM	120 litres	21.5"	19"	37.5"
SMALL	80 litres	20"	16"	34.5"
COMPACT	46.5 litres	12"	11"	27"



Why Waste?

Green Bin Implementation Decisions



- Single or co-collection vehicles
- Level of automation



Why Waste?

Green Bin Implementation Decisions

What goes in the green bin?

Food Products <i>(all consumable food, raw or cooked)</i> • Butter, margarine, grease, lard (solid) • Cakes, cookies and candy • Coffee grounds, filters and tea bags • Dairy products, eggs and shells • Fruits and vegetables (raw or cooked) • Herbs, spices and seasonings • Meat, fish and shellfish (including bones) • Nuts and shells • Pasta, bread, cereals, rice and grains	Paper Products • Backboard and cardboard (food safety) • Faxed letters, napkins, paper towels • Floor and carpet bags • Kraft paper (e.g. meat wrap) • Non-recyclable program bags • Muffin paper • Newspaper (food safety) • Paper cups and paper plates (food safety) • Polystyrene containers (e.g. paper ice cream containers) • Shredded paper (small amounts)	Animal Waste • Bird seed • Cat litter • Featherbeds • Pet bedding • Pet food • Pet waste
Personal Hygiene Products • Diapers • Hair • Household products • Nail clippers • Sanitary products • Toothpicks	Other Acceptable Items Include: • Houseplants including soil and flowers • Shredded foam wood (not pressure treated, untreated, composite wood or particle board) • Wooden craft sticks (uncoated) • Wooden stir sticks Still don't know where it goes? Try the BinLocator - York Region's online, easy-to-use waste directory york.ca/binlocator	



Why Waste?

Green Bin Implementation Decisions

Choices: Aerobic Composting or Anaerobic Digestion (Biogas)




Why Waste?

Section 3

Resource Recovery Strategy




Achievable with Tomorrow's Technologies?

Residential Component PLUS other Sources	Diversion Rate Recovery Rate
Existing + Upcoming Diversion	45 - 60%
Mixed Waste Processing (MWP) and/or Mechanical/Biological Treatment (MBT) - material and energy recovery - anaerobic digestion Waste conversion technologies - gasification, pyrolysis, other	15% to 30%
Total	75% to 90%

SUMMARY

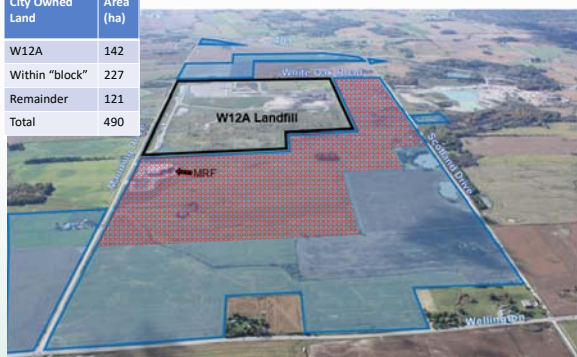
- 8 Mechanical-Biological Treatment (MBT)
5 Mixed Waste Processing (MWP) & Gasification
3 MWP & Anaerobic Digestion (AD)
2 MWP & Pyrolysis
1 MWP & Biorefinery
1 MWP & range of technologies

20 vendors (75%) in the “MWP category”

- 1 Receive, no processing & Waste Reactor
- 1 Receive, no processing & Hydrogen Reduction
- 1 Multi-bags & facility separated
- 3 Other Info

26 total responses + 5 to 7 “missing”

City Owned Land	Area (ha)
W12A	142
Within "block"	227
Remainder	121
Total	490



The London Plan (2016 - 2035)

1258_ The Waste Management Resource Recovery Area Place Type may permit the following, in conformity with the policies of this Plan:

1. Landfills.
2. Related uses necessary to the function operation and education of all aspects of waste reduction, re-use, recycling, management, resource recovery, treatment and waste disposal.
3. Eco-Industrial Parks where industries are involved in the processing, fabricating, or manufacturing of products using materials available from the Waste Management Resource Recovery Area, including alternative energy sources.



Why Waste? London Waste to Resources **INNOVATION CENTRE**

- 1. Research & Investigation** (including Industrial Research Chair in Thermochemical Conversion of Biomass and Waste to Bioindustrial Resources)
- 2. Training, Testing & Auditing**
- 3. Resource & Waste Management Knowledge Exchange (MoU – Part A)**
- 4. Technology Demonstrations (MoU – Part B)**
- 5. Outreach & Engagement**




Institute for Chemicals and Fuels from Alternative Resources
Western University

icfar

Department of Chemical and Biochemical Engineering (Faculty of Engineering)

- 25,000 square feet of laboratory
- Small and large scale pilot plants
- Advanced analytical facilities
- Prototypes



Why Waste? **Resource & Waste Management Knowledge Exchange (MoU - 1)**
Technology Demonstrations (MoU - 2)

Institute for Chemical and Fuels from Alternative Resources (ICFAR)/Western University	Feedstocks, waste conversion, Products (biochars, bio-oils, fuel)
Canadian Plastics Industry Association	Feedstocks, products, resource recovery, conversion tech.
Try Recycling	Pre-processing, mixed waste, organic mixes
Bio-Techfar (focus biomass)	Pyrolysis (demonstration)
Tucker Engineering (inactive)	Pyrolysis (demonstration)
RediCan Biofuels (inactive)	Gasification (full scale)
Green Shields Energy (expired; new submission)	Gas-phase Chemical (Hydrogen) Reduction





Industrial Research Chair in Thermochemical Conversion of Biomass and Waste to Bioindustrial Resources

- NSERC funded, 5 years, June 30, 2023
- Current value = +\$3 million

A&L Laboratories	Grain Farmers of Ontario
Canadian Plastics Industry Association	Ontario Federation of Agriculture
CHAR Technologies	Ontario Greenhouse Vegetable Growers
City of London	Titan Clean Energy Projects
Domtar Inc.	Try Recycling





Questions/Comments

