Long-term Waste Management Strategy Update

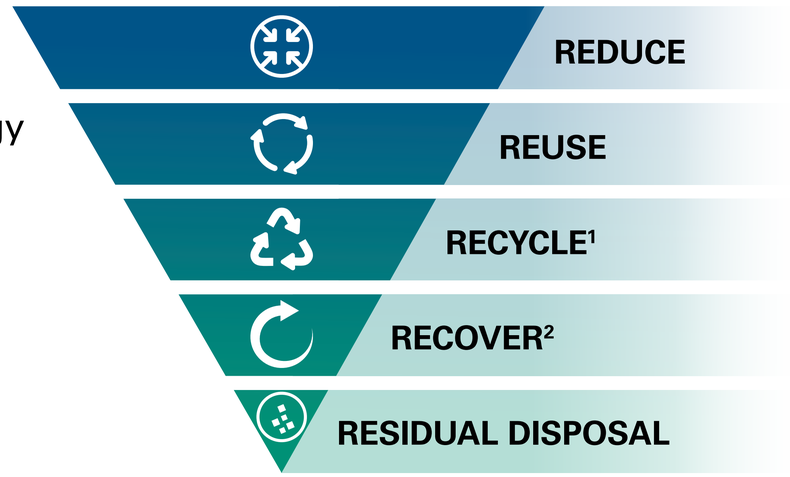
Public Drop-in Event

December 3, 2024

1 Long-term Waste Management Strategy

The Waste Strategy was approved by City Council in 2016 and guides the development and implementation of environmentally sustainable, socially acceptable and cost-effective waste management policies and programs.

The Waste Strategy adopts the waste hierarchy.



[1] Recycle refers to turning waste into a new substance or product (e.g., compost).

[2] Recover refers to getting additional resources from waste.

The Waste Strategy is a roadmap that guides the City's actions to reduce the amount of waste requiring management and includes recommendations for:

- Reducing single-use items and promoting reuse
- Enhancing educational tools, such as a mobile app
- Exploring policies to encourage participation in waste diversion programs
- Undertaking technology feasibility studies
- Implementing short- and medium-term actions to reduce the amount of garbage disposed of at Green Lane Landfill

2 Waste Strategy Vision

Through extensive public consultation, a vision was developed in 2016 for the Waste Strategy that describes what it will strive to achieve:

Together we will reduce the amount of waste we generate, reuse what we can, and recycle and recover the remaining resources to reinvest back into the economy.

We will embrace a waste management system that is user-friendly, with programs and facilities that balance the needs of the community and the environment with long-term financial sustainability.

Together we will ensure a safe, clean, beautiful and healthy city for the future.

3 Waste Strategy Guiding Principles

Guiding principles were also identified as part of the development of the Waste Strategy in 2016 to support decision-making:

- Mitigate Climate Change Impacts
- Prioritize our Community's Health and Environment
- Lead the Change
- Make the Future System Transparent
- Treat Waste as a Resource
- Embrace Social Equity
- Ensure Financial Sustainability
- Support Development of Community Partnerships

Do you feel a long-term strategy for waste management is important? Why or why not? Share your thoughts in our survey or at a discussion table.

4 Our Waste Strategy Journey

The City has made significant progress implementing the recommendations in the 2016 Long-term Waste Management Strategy.

2016

- Long-term Waste Management Strategy approved by City Council

2017

- City partners with Love Food Hate Waste Campaign

2018

- TOwaste App launched
- Waste Reduction Community Grant Program launched
- Single-Use and Takeaway Items Reduction Strategy launched
- Community Reduce and Reuse Program launched

2020

- Baseline for Circular Economy Study launched

2021

- Dufferin Organics Processing Facility expanded to increase organics processing capacity
- Toronto joined the Canadian Circular Cities and Regions Initiative and the Canada's Plastic Pact

2022

- Voluntary Reducing Single-Use Program launched

2023

- Long-term Residual Waste Management Plan approved by City Council
- Circular Economy Roadmap launched

2024

- Long-term Waste Management Strategy Update initiated
- Single-Use and Takeaway Items Bylaw enacted

5 Our Successes

Urban Harvest Program

- More than 20,000 kg of surplus fruit and vegetables redistributed since 2018

Sewing Repair Hubs

- More than 18,000 kg of clothing repaired since 2018

Bicycle Repair Hubs

- More than 23,000 bikes repaired or refurbished since 2018

Community Composting Program

- 323 composting workshops held since 2018
- More than 632,000 kg of carbon dioxide avoided annually since 2018

Sharing and Reuse Spaces

- More than 5,000 items repaired or repurposed since 2018

Accelerated Projects

- Accelerated work to study, develop and operationalize short-, medium- and long-term options to manage residual waste
- Accelerated the planning for additional organics processing capacity; planning and design for expansion estimated to be complete in 2028 instead of 2036

Waste Reduction Community Grants

- 18 community-based waste reduction projects funded through grants of up to $25,000 each

Single-Use and Takeaway Items Reduction Strategy

- Enrolled more than 75 retail businesses and service providers in the Reducing Single-Use program
- Held three rounds of consultations and had more than 63,000 interactions
- Enacted the Single-Use and Takeaway Items Bylaw in March 2024

3Rs Ambassador Program

- 230 3Rs Ambassador volunteers engaged residents in more than 140 multi-residential buildings

Education and Outreach

- More than 3 million web page visits to the Waste Wizard since 2018
- More than 250,000 downloads of the TOwaste App since its launch in 2018
- Interacted with more than 5,000 people at more than 80 events since 2016

6 Why Update the Waste Strategy?

Waste management planning is a continuous process which involves reviewing and revising the Waste Strategy to ensure we continue progressing towards our long-term waste management goals.

A review of the Waste Strategy has observed changes in customers' needs, waste trends and technologies, and the legislative and regulatory landscape, which in turn informed actions taken by the City to pursue or accelerate initiatives. Examples include:

- Acceleration on the expansion of organics processing capacity
- Acceleration on work to study, develop and operationalize short-, medium- and long-term options to manage residual waste
- Production of renewable natural gas at the Dufferin and Disco Road Solid Waste Management Facility
- Exploration of potential renewable natural gas from landfill gas

These changes have influenced the implementation of the Waste Strategy and how we track our waste management goals and diversion target. An update to the Waste Strategy is required to reflect Toronto's current and future waste management needs more accurately and progress towards our aspirational goal of zero-waste.

Green Lane Landfill is expected to reach capacity by 2035.

Approximately 420,000 tonnes of residual waste was received by Green Lane Landfill in 2023.

7 Policies and Regulations

The provincial and federal governments have established new policies and regulations which have influenced the implementation of the Waste Strategy.

Extended Producer Responsibility*
(Provincial, 2016)

- Extended producer responsibility (EPR) is an approach that makes producers of products financially and operationally responsible for the management of items that they supply to consumers
- Waste diversion programs and material categories that have transitioned to an EPR model include:
  - Residential Blue Box Program
  - Used tires
  - Household hazardous waste
  - Batteries
  - Electrical and electronic equipment waste

Food and Organic Waste Policy Statement*
(Provincial, 2016)

- Provides direction to municipalities, industrial, commercial and institutional establishments, and the waste sector to increase waste reduction and recovery of food and organic waste
- Establishes food and organic waste reduction and recovery targets for single-family and multi-family dwellings, institutions, industrial and commercial facilities

Strategy for a Waste-Free Ontario*
(Provincial, 2016)

- Focuses on increasing resource recovery and moving toward a circular economy, including requiring producers to be responsible to divert more materials such as mattresses and textiles from landfills
- Sets aspirational goal of zero-waste in Ontario and zero greenhouse gas emissions from waste with interim target of 80 per cent diversion by 2050

Canada-Wide Action Plan on Zero Plastic Waste
(Federal, 2018)

- Voluntary international framework with a goal of 100 per cent reusable, recyclable, or recoverable plastics, by 2030
- Single-use Plastic Prohibition Regulations prohibit the manufacture, import and sale of single-use plastic checkout bags, cutlery, foodservice ware made from or containing problematic plastics, ring carriers, stir sticks, and straws
- Federal plastics registry established to support provincial and territorial EPR efforts, requiring producers to report on plastics in the Canadian economy
- Recycled Content and Labelling Rules for Plastics is a framework that includes recycled content requirements and labelling rules for recyclability and compostability of plastic packaging and certain single-use plastics

Amendment to the *Environmental Assessment Act*
(Provincial, 2020)

- The *Environmental Assessment Act* requires municipal support for any new landfills, from both host municipalities and certain neighbouring municipalities within 3.5 km of a new landfill

* Established under the *Resource Recovery and Circular Economy Act (RRCEA)*

8 Updating the Waste Strategy

This update will guide the next implementation period of 2026 to 2036 and will:

- Assess how well programs are working and where improvements may be needed
- Explore options for the continued reduction and diversion of waste to minimize the amount of garbage requiring management
- Review and identify new measures of success and ways to track progress
- Help inform the long-term disposal of residual waste (garbage)
- Continue to work towards the aspirational goal of zero-waste and a circular economy that aims to maximize resources by moving away from a linear take-make-and-disposal approach

9 Waste Strategy Update Process

PHASE 1 — Build the Foundation

WE'RE HERE.

- Update baseline information to reflect current waste management system
- Provide status update on implementation of 2016 Waste Strategy recommendations
- Undertake jurisdictional review of best practices in policies and programs
- Review of reduction and diversion targets, goals, and a vision to work towards an aspirational goal of zero-waste
- Share information on landfill capacity challenges and options for disposal

We want to hear from you on

- Waste Strategy vision and guiding principles
- Ideas to reduce and divert waste from landfill

PHASE 2 — Evaluate Possibilities

- Identify options to address waste management needs
- Develop an evaluation framework to evaluate and identify the most appropriate and feasible options
- Outline the potential policies and programs to manage Toronto's waste

We want to hear from you on

- Options the City should consider to achieve its long-term waste management goals
- Criteria for an evaluation framework
- Perceptions on energy-from-waste compared to landfilling

PHASE 3 — Create a Roadmap

- Prepare an updated 10-year Waste Strategy
- Present final Waste Strategy Update to Toronto City Council

We want to hear from you on

- Proposed 10-year Waste Strategy Update

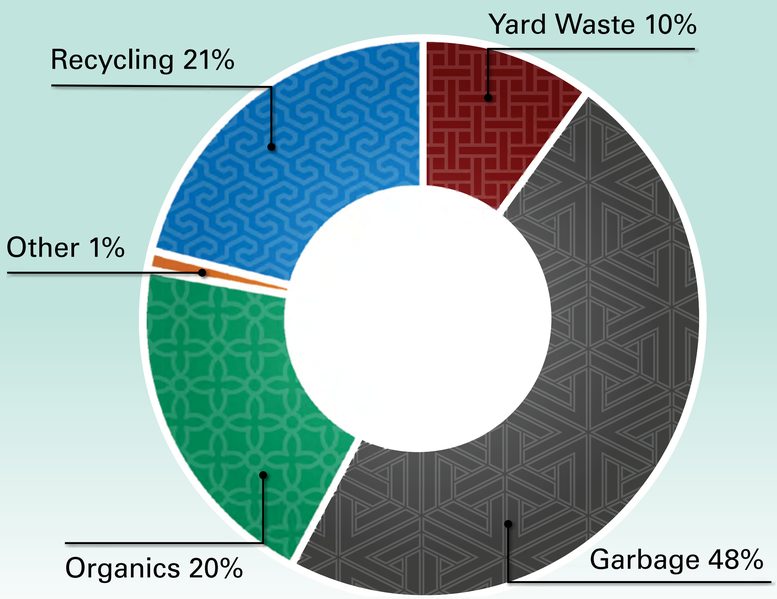
10 Toronto's Waste by the Numbers

Each year, the City manages close to 830,000 tonnes of waste.[1]
Waste includes garbage, recycling, organics, and other divertable materials.

[1] Includes waste collected through curbside collection and at drop-off depots. Does not include waste received directly at Green Lane Landfill.

TYPES OF WASTE MANAGED

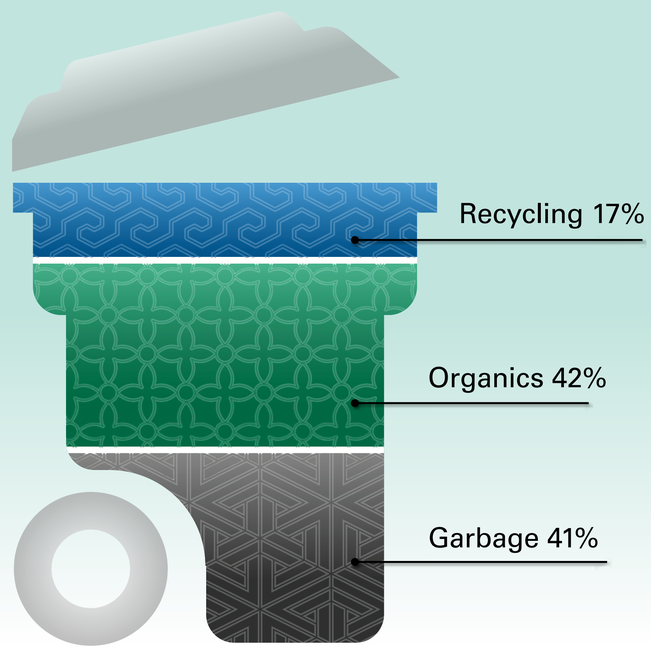
Garbage makes up the largest portion of waste.[2]



[2] The percentage is based on waste tonnage data from 2023.

SINGLE-FAMILY RESIDENTIAL GARBAGE COMPOSITION

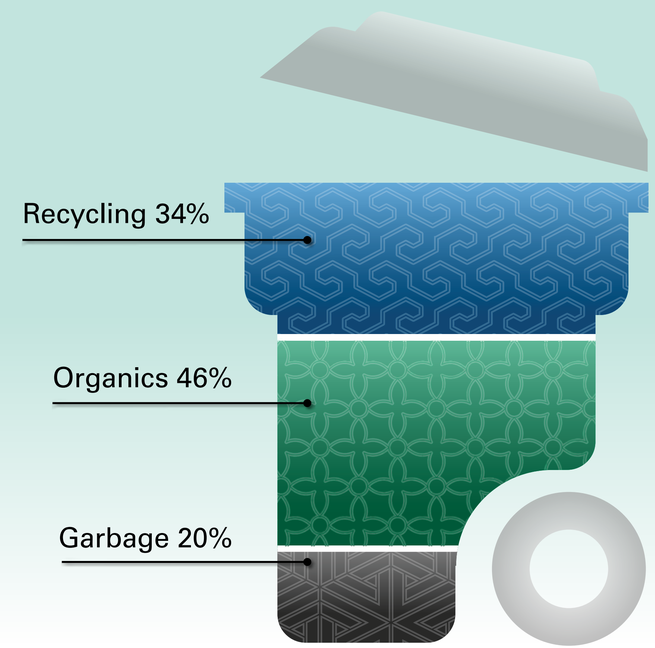
59 per cent of single-family residential garbage collected is composed of recycling and organics.[3]



[3] The percentage is based on waste tonnage data from four seasonal single-family audits (2023-24) garbage stream composition.

MULTI-RESIDENTIAL GARBAGE COMPOSITION

80 per cent of multi-residential building garbage collected is composed of recycling and organics.[4]



[4] The percentage is based on waste tonnage data from four seasonal multi-residential audits (2020-22) garbage stream composition.

The City does not manage or track waste collected by the private sector. This data only reflects the waste collected by the City.

11 Toronto's Waste by the Numbers

Each year, the City manages close to 830,000 tonnes of waste.[1]
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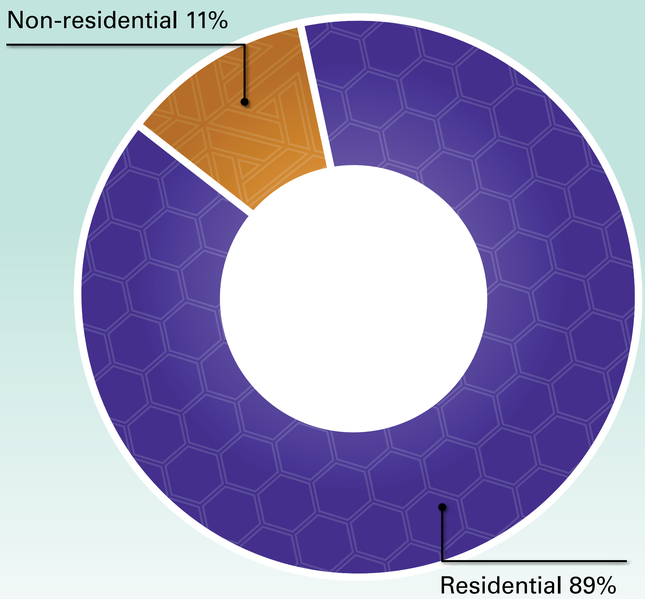
WASTE COLLECTED BY THE CITY

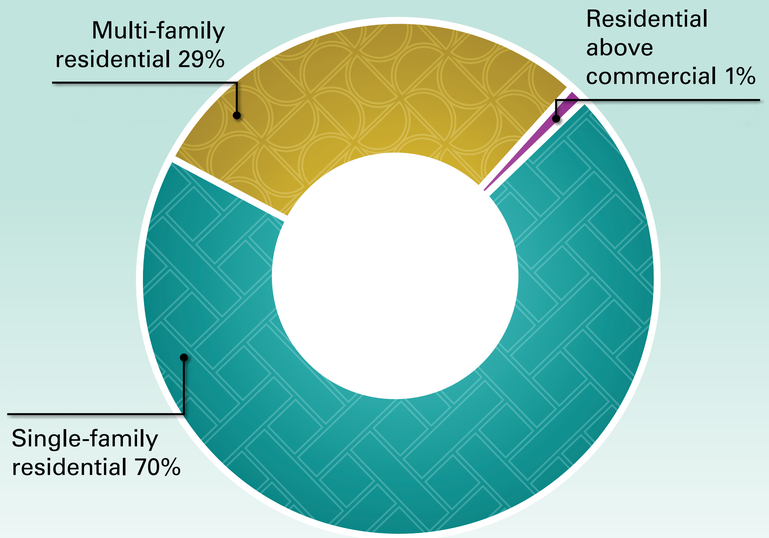
Residential waste accounts for 89 per cent of the total waste collected by the City, making it the largest portion.[2]



[2] The percentage is based on waste tonnage data from 2023.

RESIDENTIAL SECTOR WASTE SOURCES

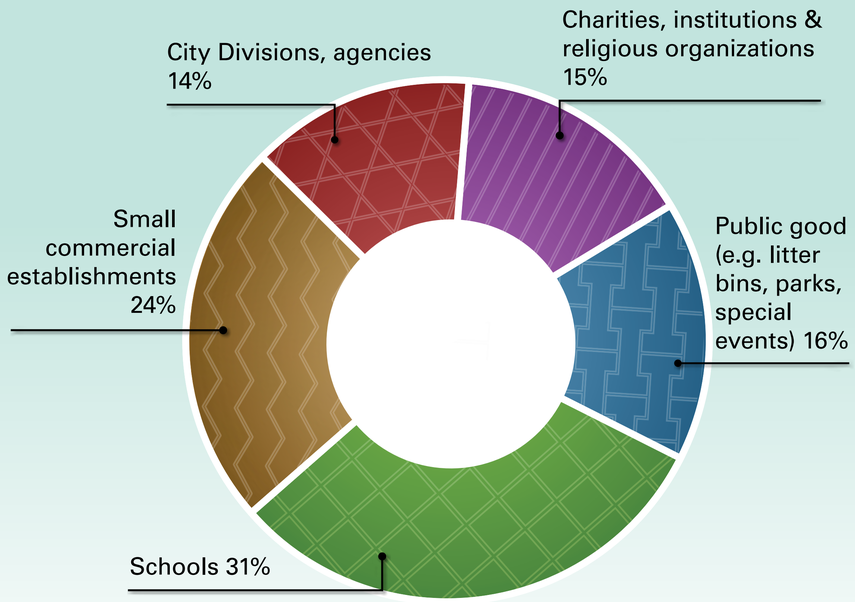
The majority of residential waste collected by the City comes from single-family homes.[3] Approximately 50 per cent of multi-residential buildings are serviced privately.



[3] The percentage is based on waste tonnage data from 2023 and represents the percentage of each residential sector that waste is collected from. Yard waste is only collected for single-family residential.

NON-RESIDENTIAL SECTOR WASTE SOURCES

Schools and small commercial establishments account for more than 55 per cent of the non-residential waste collected by the City.[4] The majority of industrial, commercial and institutional waste is managed privately.



[4] The percentage is based on waste tonnage data from 2023.

The City does not manage or track waste collected by the private sector. This data only reflects the waste collected by the City.

12 How Waste is Managed

All waste that is collected travels to one of our transfer stations located throughout the city. It is then sent to other facilities for further processing or disposal at a landfill.

WASTE COLLECTION

Waste collected through curbside collection and at drop-off depots.

Approximately 830,000 tonnes

TRANSFER STATION

Loads from waste collection vehicles are combined into larger trucks that are then sent to processing facilities or landfill.

RECYCLING, ORGANICS AND YARD WASTE

Approximately 430,000 tonnes collected[1]

Approximately 30 per cent of recycling and 15 to 25 per cent of organics ends up as garbage because of contamination or items that cannot be processed[2]

GARBAGE COLLECTED

Approximately 400,000 tonnes

Green Lane Landfill (owned by City of Toronto)
Approximately 420,000 tonnes (approximately 65,000 tonnes come from other sources)[3]

Other Landfills
Approximately 45,000 tonnes

[1] Estimates were used to calculate Blue Bin recycling tonnes diverted in 2023. As the City's residential blue box program transitioned to Extended Producer Responsibility (EPR) on July 1, 2023, whereby producers are responsible for the management of packaging, the City does not have data beyond this date.

[2] Most residues are managed by material processors.

[3] Other sources include waste originating from nearby First Nations and municipalities by Green Lane Landfill, other City divisions material and some residue.

13 Long-term Residual Waste (Garbage) Disposal

Despite our efforts to reduce and divert waste and move towards an aspirational goal of zero-waste, Toronto's waste is anticipated to grow with increasing population and economic growth.

- Landfill capacity across the province is estimated to run out in the next 10 years.
- The majority of the garbage that the City manages is sent to the City-owned Green Lane Landfill located just outside of London, Ontario.
- It is estimated that Green Lane Landfill will run out of capacity by approximately 2035. Work on finding a long-term disposal option to manage the City's garbage needs to begin now as it takes time to plan and implement.

DID YOU KNOW?

There has not been a new landfill built in Ontario in approximately 25 to 30 years.

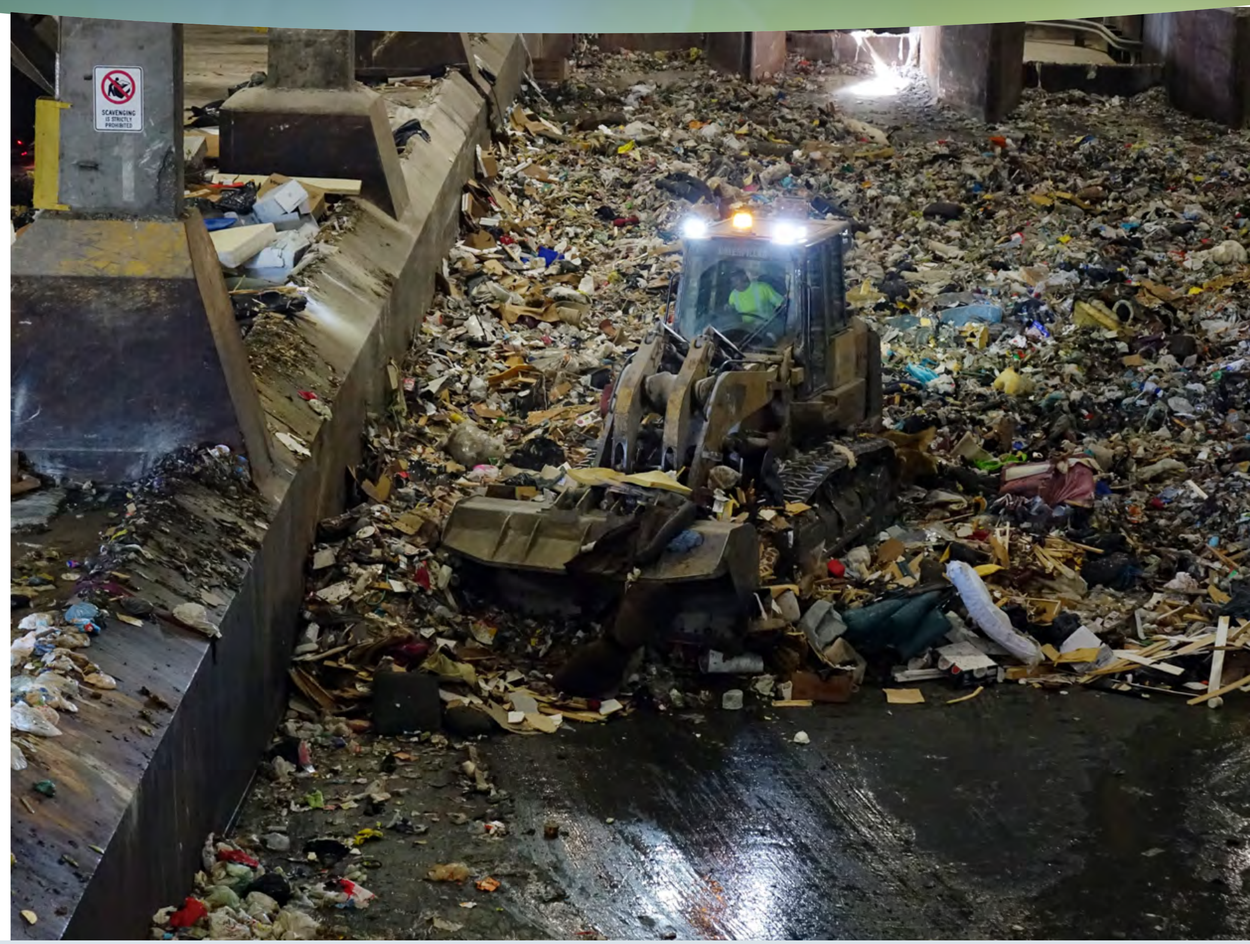
14 Options the City is Exploring

City Council approved the Long-term Residual Waste Management Work Plan that includes options to meet the needs of our growing population while reducing environmental, financial and social impacts.

Options the City is exploring include:

- **Disposing at a landfill**
- **Energy-from-waste technologies (e.g., incineration)**

No decisions have been made. City Council asked staff to consult the public before analyzing the use of energy-from-waste facilities. Consultation on the use of energy-from-waste compared to landfilling will begin in Phase 2.



DID YOU KNOW?

It is critical to start planning now as planning, regulatory approvals, and construction of new waste disposal infrastructure can take more than 10 years. Landfills and energy-from-waste facilities follow strict environmental regulations, including the *Environmental Protection Act* and *Environmental Assessment Act*, with frequent monitoring and reporting.

15 Options the City is Exploring

How Landfilling Works

Landfilling is a process where garbage is transported to a site to be compacted and buried.

While subject to strict regulations, landfilling also has environmental impacts, such as the release of methane, a potent greenhouse gas. The methane can be captured and turned into renewable natural gas.

Landfills also take up a large environmental footprint and can raise concerns for neighbouring communities. They must be managed well beyond when they are closed and no longer accepting garbage, often for generations.

Garbage left after reduction and diversion efforts

Collection and transportation

Landfill

- Renewable natural gas for heating or fueling vehicles
- Regulated air emissions (e.g., methane)
- Regulated treatment of leachate

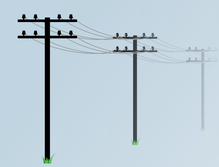
16 Options the City is Exploring

How Energy-from-Waste (e.g., Incineration) Works

Energy-from-waste is a process where garbage is burned at a high temperature or converted to gas, which can then be used to make electricity.

While energy-from-waste facilities operate under strict environmental regulations, requiring regular monitoring and compliance reporting, this process does come with some environmental impacts, such as the release of carbon dioxide and dioxins. Additionally, energy-from-waste facilities are generally more costly to construct and operate than landfills.

These facilities allow for waste to be managed within close proximity to where it is generated, help reduce landfill dependence and contribute to energy generation.



Electricity generation

Regulated air emissions (e.g., carbon dioxide, nitrogen dioxide, surphur dioxide)

Metal recovery and recycling

Ash disposed in a landfill

17 Global Use of Energy-from-Waste (e.g., Incineration)

CANADIAN EXAMPLES

Durham-York Energy Centre
(Clarington, Ontario)

Capacity: 140,000 tonnes per year
Operational since 2016
Publicly-owned facility that processes garbage from York Region and Durham Region to generate electricity.

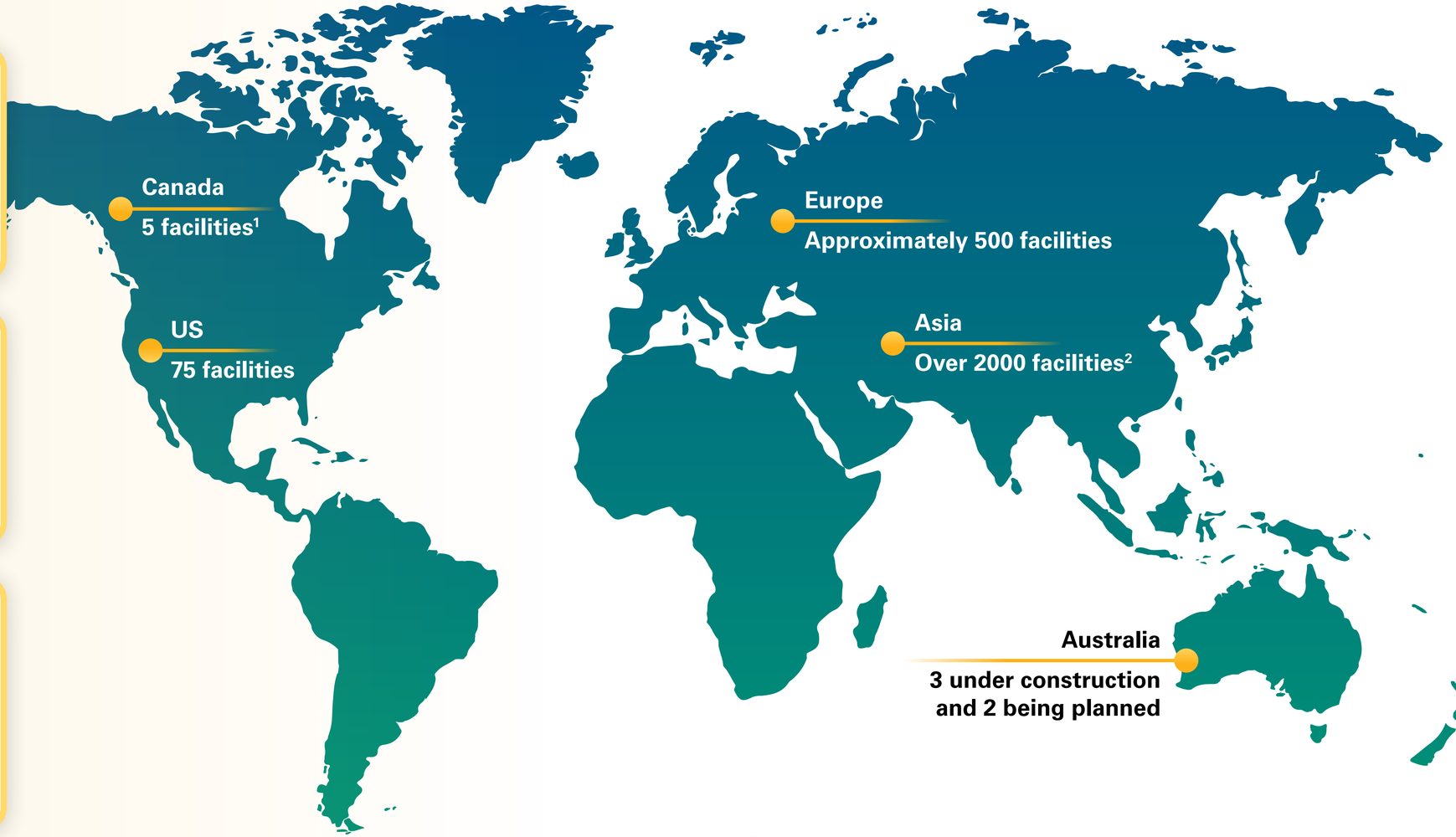
Metro Vancouver Waste to Energy (Vancouver, BC)

Capacity: 285,000 tonnes per year
Operational since 1988
Publicly-owned facility that processes garbage from Metro Vancouver to generate electricity.

Emerald Energy from Waste
(Brampton, Ontario)

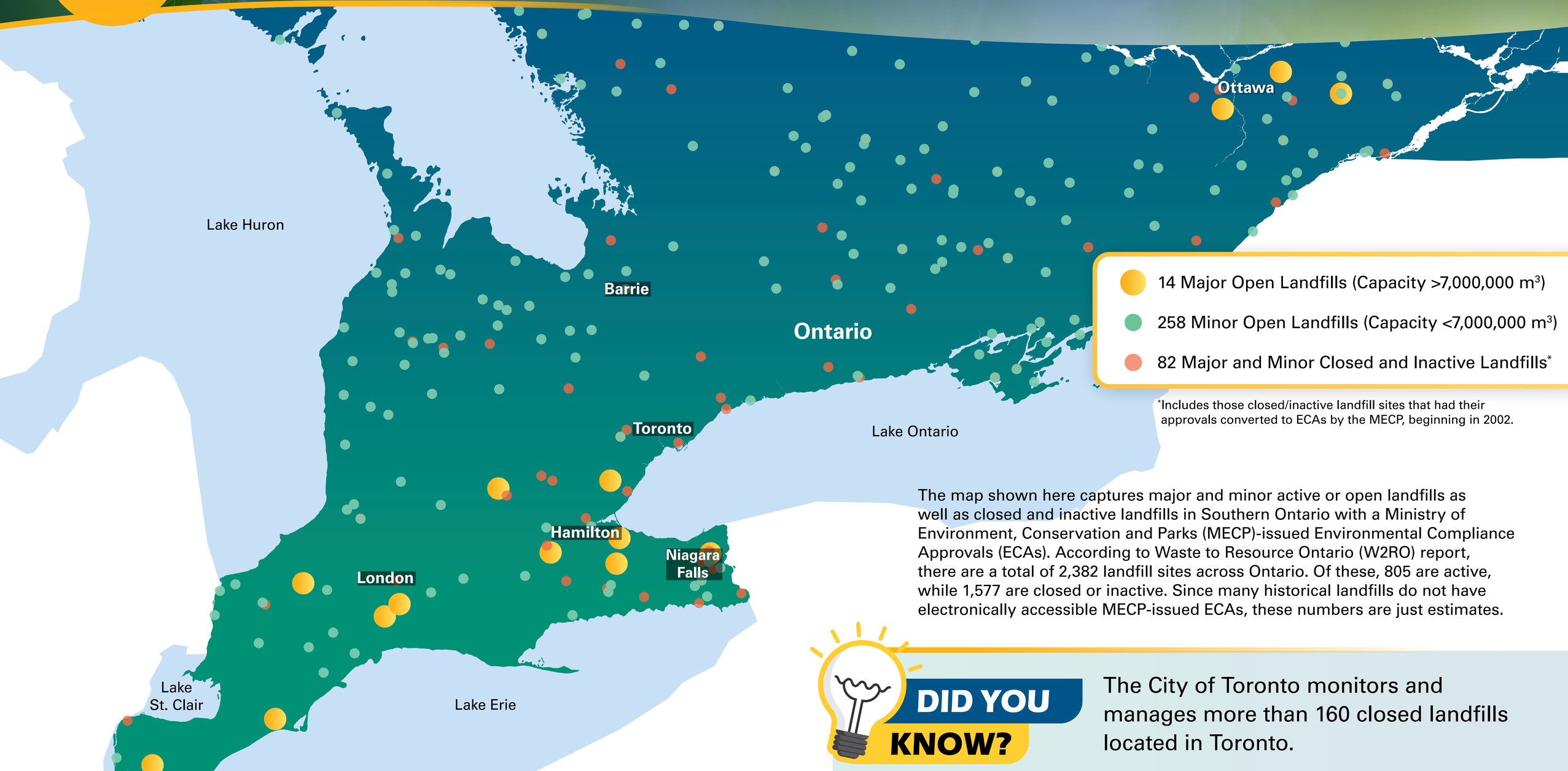
Capacity: 180,000 tonnes per year
Operational since 1992
Privately-owned facility that processes garbage from several municipalities and private sources to generate steam and electricity.

[1] The other two energy-from-waste facilities in Canada are located in Nova Scotia and Quebec.



[2] Facilities are typically smaller scale and with less strict environmental regulations compared to North America, Europe and Australia.

18 Use of Landfills in Southern Ontario



*Includes those closed/inactive landfill sites that had their approvals converted to ECAs by the MECP, beginning in 2002.

The map shown here captures major and minor active or open landfills as well as closed and inactive landfills in Southern Ontario with a Ministry of Environment, Conservation and Parks (MECP)-issued Environmental Compliance Approvals (ECAs). According to Waste to Resource Ontario (W2RO) report, there are a total of 2,382 landfill sites across Ontario. Of these, 805 are active, while 1,577 are closed or inactive. Since many historical landfills do not have electronically accessible MECP-issued ECAs, these numbers are just estimates.

DID YOU KNOW?

The City of Toronto monitors and manages more than 160 closed landfills located in Toronto.

19 Next Steps

PHASE 1 — Build the Foundation

WE'RE HERE.

- Public feedback will be used to identify options to address the waste management needs of the City and its residents
- Information will be shared to inform residents of landfill capacity challenges for the City and considerations related to disposal options, including both landfilling and energy-from-waste

PHASE 2 — Evaluate Possibilities

- Recommended options on programs, services and initiatives will be shared with the community for further refinement
- Feedback on evaluation criteria will be used to identify the most appropriate and feasible options
- Feedback regarding perceptions of energy-from-waste as a potential long-term option to manage garbage that remains after reduction and diversion will be presented to City Council

PHASE 3 — Create a Roadmap

- Feedback from the community will be used to finalize the Long-term Waste Management Strategy Update

20 Have Your Say

Provide feedback via online survey. **Comment Deadline: December 20, 2024**

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