

Stratford Climate Action Plan – 5, 10 and 20 year Waste-related GHG Reduction Measures

Long range goal: Zero waste by 2040

Included in this section of the report are recommended actions to reduce greenhouse gas (GHG) emissions in the City of Stratford’s waste sector with the objective of achieving “zero waste” by 2040. A summary of these recommendations along with the targeted timeframe is below.

To achieve by 2025:

- 1) Undertake a “Love Food Hate Waste” campaign city-wide;
- 2) Implement single-use bans on selected plastics (and other materials) including through community events^{*1};
- 3) Expand and enforce existing landfill bans for greater diversion^{**2};
- 4) Stratford Blue Box transition to 100% Producer Responsibility (EPR) for Packaging and Paper Products (PPP)^{**}; and
- 5) Expand green bin roll out and paper recycling bins/programs to all city buildings and selected institutional sources (hospitals, schools and interested large companies)^{**}.

To achieve by 2030:

- 1) Advocate with the Association of Municipalities of Ontario (AMO) for the expansion of the new province-wide 100% Individual Producer Responsibility (IPR) blue box program*;
- 2) Advocate with AMO and the municipally led National Zero Waste Council (NZWC) for the expansion of EPR Programs for the Canadian Council of Ministers of the Environment (CCME) Phase 2 materials*;
- 3) Conduct annual audits of the city’s landfill and expand landfill bans (and enforcement)^{**};
- 4) Continue city efforts to both enhance local waste reduction and reuse efforts making all events waste-free*; and
- 5) Achieve waste target of 300 kg/person/year including residential and ICI waste.

To achieve by 2040:

- 1) “Zero Waste” and Net Zero overall carbon emissions for the City of Stratford;
- 2) Targeted diversion programs for remaining landfill materials through collaborative and new (i.e.: renewable natural gas) projects*.

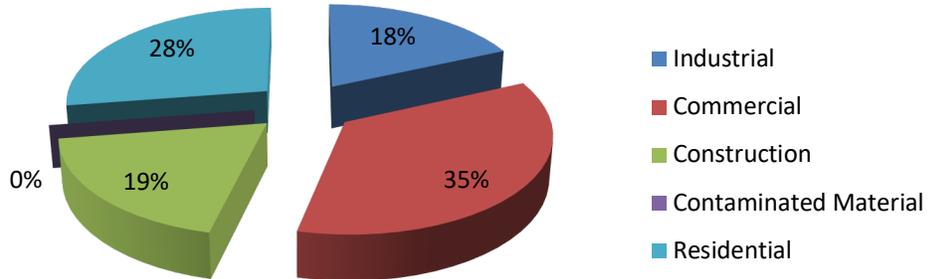
1) City of Stratford Current State of Waste Generation and Diversion

In 2019 the total amount of waste accepted at the landfill for ultimate disposal was 22,015.12 metric tonnes. Municipal solid waste (MSW) is defined as the residential, commercial and non-hazardous solid industrial waste disposed of using standard operating procedures at the landfill. The categories and relative proportions of materials landfilled at the site are shown in the following two charts.

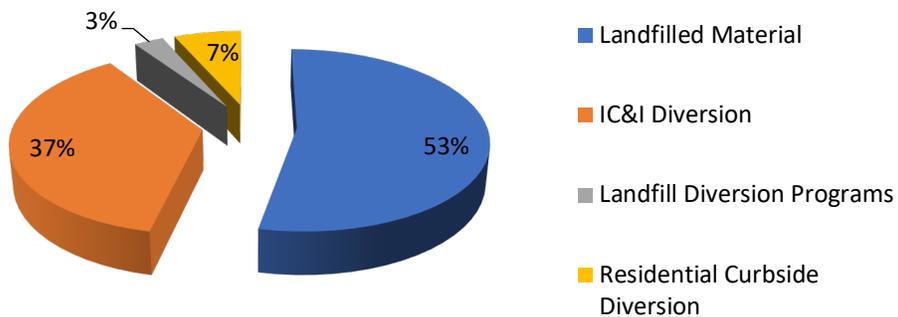
¹*Indicates anticipated need for increased staff resources.

² **Indicates new and/or expanded responsibility for existing staff.

Summary of Waste Landfilled in 2019



2019 Landfilled Material vs. Diverted Material

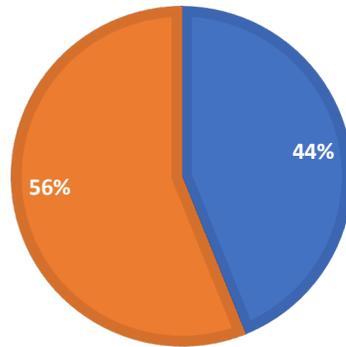


Below is tonnage per household for residential waste disposed per cap in 2018. 2019 numbers are expected to be very similar.

Residential Waste	Kilograms per Capita	Kilograms per Household	Total Tonnes
Generated	358.22	745.02	11,271.38
Diverted	157.36	327.27	4,951.20
Disposed	200.86	417.75	6,320.18

**KILOGRAMS PER CAPITA RESIDENTIAL WASTE
358.22 KG TOTAL**

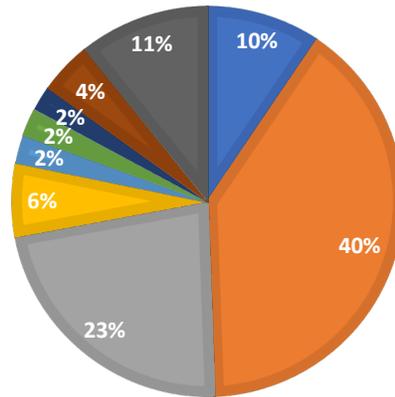
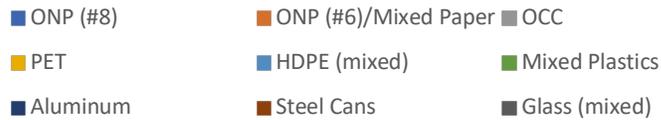
■ Diverted ■ Landfilled



In total, the landfill diverted 19,250.41 metric tonnes in 2019. A monthly break down of all the recyclable materials received by Bluewater Recycling is below. Stratford’s materials make up an estimated 13.25%.

Materials	Tonnes	%
ONP (#8)	1250	9.43
ONP (#6)/Mixed Paper	5304	40
OCC	3010	22.7
PET	798	6.02
HDPE (mixed)	309	2.33
Mixed Plastics	305	2.3
Aluminum	273	2.06
Steel Cans	583	4.4
Glass (mixed)	1427	10.76
Total	13259	100

RECYCLING BREAKDOWN BY PRODUCT TYPE



Additionally, during this reporting period, a total of 7,832.51 metric tonnes of material identified as acceptable for use as cover material was accepted at the landfill. An estimated 70.16 tonnes of electronic waste and 52.88 tonnes of hazardous waste was diverted.

A key takeaway is that Industrial, Commercial and Institutional (IC&I) waste comprises a large majority of landfilled material (estimated 487 kg/per cap) highlighting the need to increase diversion programs. Suggestions along with potential diversion impacts are included below. It is estimated that IC&I diversion projects (with full ban and enforcement) including a full wood waste, drywall, porcelain diversion program (outlined below) could divert an estimated additional 4,000 additional tonnes per year.

2) 2025 - Five target waste diversion short term actions by 2025

Adopt and support the National Zero Waste Council's *Love Food, Hate Waste* campaign as part of the city's green program roll out in 2020 to help reduce food waste from residential and restaurant sources in Stratford. Effective food waste reduction is much more than residents just using their green bin. It also means encouraging food waste reduction at the source from the start of the program. The Local Community Food Centre would be an ideal partner with the city. We will also work in collaboration with the local Habitat Re-store, Goodwill and other local non-profits to explore ways to expand residents' participation in other innovative and effective waste reduction at source and re-use efforts (ex: reducing packaging).

Action required – City endorsed public education and outreach in support of a local “Love food Hate waste” campaign. City staff also to develop a plan during 2020 to collaborate with and actively support other local waste reduction and reuse measures (for implementation in 2021 and on-going to 2030).

2) **Plastic Bag Ban** (as per Stratford Rotary Plan) starting in Jan 1, 2021. For 2022 & 2023, it is recommended (at zero cost to the city other than enforcement) that:

- Plastic/alternate material straws are available in Stratford restaurants by request only (e.g. hospitals and seniors residences exempt). Partner with Stratford City Centre to coordinate and promote this (2021)
- Put a 25 cent fee on all single use cups and implement/help fund a common city-wide reusable cup program (in 2024)
- Ban single use plastic plates, bowls and utensils (including at all public events requiring city approval, starting with Rotary sponsored events in 2021)
- Ban all polystyrene foam food containers (2022)
- Ban the sale of single use plastic water bottles (as is already done in Bayfield) (2024)

Action required – Council to direct staff to draft the appropriate bylaws and enforcement plans for 2021, 22 & 23. Staff should also be directed to implement the *Guide to Hosting a Greener Event* (This resource was prepared by the Canadian Federation of University Women Stratford Advocacy Committee with the support of the Energy & Environment Committee of the City of Stratford) to make city-approved public events “waste free”. The Rotary club has committed to continuously improve waste reduction measures at its sponsored events, starting with its annual Dragon Boat Race.

3) **Enforce and expand existing landfill bans** to further improve diversion rates. Measures need to be in place to ensure compliance on existing bans and achieve waste diversion targets.

- Shift to **clear bags** for waste collection (2023) to make contamination visible at the source; to be promoted by the city and enforced by the contractor at collection.
- Implement Phase 2 of the textile program to include a **textile landfill ban**. Estimates based on existing diversion rates indicate a textile landfill ban could result in 350 tonnes diverted each year.
- Implementing a **mattress ban** could divert an estimated 64 tonnes per year from Stratford’s landfill (calculated at its current population of 31,465). Currently, North Perth recycles mattresses and Stratford could partner with this municipality to process its mattresses. Charging a user fee would cover the costs.
- Identify further **large appliance (white goods) (ex: microwaves) bans** to current diversion.
- Extend the **electronic waste ban** to divert greater amount of hazardous, and valuable, materials (may be impacted by upcoming Producer Responsibility changes).
- **Ban wood and demolition waste from landfill** (via drop off containers at the work site and/or landfill) effective Jan 1, 2022 - material to be diverted from both residential and industrial/commercial/ institutional (ICI) sources - diverted material to be sent to Try Recycling (London) at zero net cost to the city - outreach efforts required during 2021 to general public/contractors-builders-renovators/ICI customers re: planned wood and demolition waste bans from Stratford’s landfill.
- Expand the availability of municipal and residential **Hazardous Waste** drop off (i.e.: move to every Saturday April to October) as per Environmental Compliance Agreement.
- **Ban batteries**. Currently these are collected through Hazardous Waste collection, however, a full ban could increase diversion rates.
- Include **bi-weekly waste and recycling collection** in the next waste management tender.

Action required – Council to direct staff to undertake public outreach and draft and implement the appropriate bylaws and enforcement plans for 2021, 22 & 23.

Stratford Blue Box transition to 100% Producer Responsibility (EPR) for Packaging and Paper Products (PPP) - Ontario is making **producers responsible** for managing the waste generated from their products and packaging to promote innovation, reduce waste and lower costs for taxpayers. This transition is to occur between start of 2023 and end of 2025 – Stratford will no longer be responsible for (nor pay) 50% of the cost of residential recycling - full range of new PPP materials will be added including: aseptic; polycoat; beverage cups; aluminum foil; aerosols; paint cans (about four new kg/hh/year) – also assume higher PPP targets and rates = 10% lift in other PPP materials (including better multi-family performance).

Action required – Council resolution (by August 2020) to Stewardship Ontario requesting that they transition the city’s blue box program to full EPR starting on Jan 1, 2023 (first eligible date).

Expand green bin roll out and paper recycling bins/programs to all city buildings and selected institutional sources (hospitals, schools and interested large companies) in coordination with opening of the city’s planned natural gas plant. The goal is to support and encourage diversion of (i.e. not yet regulate or ban) a “long list” of materials going to landfill (see 2025-2030 action recommendations).

Action required – Council to direct staff to prepare a green bin expansion implementation plan for 2024 (based on user pay) with diversion target of 1,500 tonnes diverted by 2025 including all property classes.

3) **2030 - Five target waste diversion short term actions by 2030**

- 1) Advocate with the Association of Municipalities of Ontario (AMO) for the **expansion of the new province-wide 100% Individual Producer Responsibility (IPR)** blue box program to also address:
 - Obligated blue box paper and packaging materials that end up in landfill
 - Obligated blue box paper materials (e.g. pizza boxes and paper towels) that end up in the city’s green bin program
 - Obligated blue box materials that are collected by the city as litter

Action required – City of Stratford to lobby with AMO to expand 100% producer responsibility for Ontario’s blue box system to also cover the city’s costs for managing these materials. At the same time these and other materials (see below) should be banned from landfill. Enforcement (and regular waste audits) will be needed to support these efforts.

- 2) Advocate with AMO and the municipally led National Zero Waste Council (NZWC) for the expansion of EPR Programs for the Canadian Council of Ministers of the Environment (CCME) **Phase 2 materials**, including:
 - a. Construction demolition materials
 - b. Furniture
 - c. Carpets and flooring
 - d. Appliances and ozone-depleting substances (e.g. thermostats, refrigerants, etc.)

Action required – City of Stratford to lobby with AMO and NZWC to support the province (and CCME) in the design and implementation of EPR programs for Phase 2 materials (originally scheduled for 2017).

Conduct annual audits of the city’s landfill and **expand landfill bans (and enforcement)** accordingly for waste materials that: are recyclable (especially those covered through regulated EPR programs); are hazardous and pose a risk to waste collection/ landfill workers, the public or the environment and/or other materials that have viable alternate end markets.

Action required – Council to report annually to the City’s Energy and Environment Committee and Infrastructure, Transportation Safety Committee on landfill ban measures and performance and plans for each year from 2025-2030.

Continue city efforts to both enhance **local waste reduction and reuse efforts** (working in partnership with local community-based partners) and continue efforts to make all city-approved public events waste-free.

Action required – Council to direct staff to report annually to the City’s Energy and Environment Committee and Infrastructure, Transportation Safety Committee on local waste reduction, reuse and waste-free city events and plans for the next year.

Achieve waste **target of 300 kg/person/year** including residential and ICI waste. This target is in line with similar municipalities and achievable through the recommendations included in this report.

Action required – City Council adopt the target and review annual waste audits to measure progress.

Assuming the recommendations included in this report are adopted and the province implements the shift to producer responsibility as expected, there will be minimal landfill material remaining (estimated 10% of current levels).

2040 - Zero Waste/Net Zero Carbon 2040 Targets

We recommend that the city of Stratford set an “aspirational” Zero Waste goal for 2040 and a carbon neutral target (or net zero carbon emissions) by 2040 as part of the city’s climate emergency plans. City council originally set a target date of 2050, however, this report recommends advancing it by ten years based on initiatives and successes demonstrated by other municipalities.

The short- and medium-term goals included earlier in this report as well as provincial action are predicted to translate into minimal waste remaining (approximately 10%) which will enable the City of Stratford to achieve Zero Waste status by 2040.

The Zero Waste International Alliance (ZWIA) defines zero waste as “The conservation of all resources by means of responsible production, consumption, reuse and recovery of all products, packaging and materials, without burning them and without discharges to land, water or air that threaten the environment or human health.” Zero waste is often seen as an aspirational goal that supports the idea of always searching for “what’s next” to be diverted from landfill (the city of San Francisco – a US waste diversion leader – has very successfully “institutionalized” this approach). In Canada, Zero Waste is part of what’s commonly called building towards a circular economy. A circular economy is defined as “a

system in which products are never discarded, but reused, recycled and reintroduced into new products". This thinking is at the core of the province's recently passed Waste Free Ontario Act.

Operating within a circular economy lens prioritizes conserving and reusing resources, making it one of the most effective strategies to stop wasting resources. A circular economy has four key components as per the National Zero Waste Council:

1. Keeps products, components, and materials at their highest value, at all times;
2. Prevents waste through new and innovative business models or through improved design – either for disassembly or longevity;
3. Maximizes the continuation of a product's life through enhanced re-use, repair, or remanufacture; and
4. Improves end-of-life processing and resource recovery.

It is a key shift in perspective at the city and business level that will enable the City of Stratford to achieve Zero Waste status.

Canada's three largest municipalities, Vancouver, Toronto and Montreal, have each committed to and are implementing strategies to become "Net Carbon Zero" by 2050. Aggressive waste diversion plans and actions are part of each of these municipality's plans. For example, each city is addressing the issue of single use plastics, dramatically improving multi-family waste diversion efforts, adopting mixed waste processing plans, and more. As a result, in July 2019, the city of Toronto reported that – as a result of its TransformTO climate action strategy - it had reduced greenhouse gas emissions to 44% below 1990 levels, beating the targeted 30% reduction by 2020. The city is now working on a plan to be carbon neutral by 2040, a decade ahead of its original target.

Two neighbouring municipalities have set zero waste targets as part of their long-range waste planning processes. The City of Guelph adopted a "zero waste philosophy" in 2008 and set an interim target of 70% waste diversion by 2021 (and achieved 69% by 2015, though it has recently decreased marginally). It is currently in the midst of a waste management master planning process to update these targets that will include more of a "zero carbon neutral" focus.

In 2018, Oxford County set a Zero Waste target by 2050 as a companion to its 100% Renewable Energy target. Oxford County's current goal is 90% diversion of all residential and ICI materials by 2025 through advanced mechanical and biological treatment of all waste across the County (and, thus, extending the landfill capacity by over 60 years). In 2017 their residential diversion rate was approximately 59%. As part of its target the county built a new net-zero Oxford County Waste Management and Education Centre designed to handle up to 50,000 tonnes of waste per year. Based on staff research and public input the preferred waste processing technology is Enhanced Material Recovery and Biological Treatment, garbage would be sorted with organics separated for processing in a manner which could produce biogas, biosolids and compost materials.

Based on these examples and the actions currently underway by neighbouring municipalities, the City of Stratford can achieve Zero Waste by 2040 and undertake the initiatives below as means to meet this target. Given Stratford and Perth County's proximity and similarity to Oxford County, there are opportunities to partner on long range waste diversion collaborations. Partnering would take

advantage of economies of scale and possibly allow for more desirable technologies to be implemented.

The costs associated with achieving zero waste by 2040 largely depend on the partnership with Oxford County and the chosen technologies. We will be examining the GHG impact of these actions once the Report from the Perth County GHG Coordinator is made public.