2023

Ontario Baseline Waste & Recycling Report

Association of Municipalities Ontario

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1.0 Introduction

Municipal governments play a pivotal role in Ontario and across the country in ensuring residential waste is properly managed to protect the health and safety of our communities and our environment. Significant progress has been made by municipal governments in Ontario to operate integrated waste management systems that are cost effective, efficient, accessible, and ultimately result in improved environmental outcomes.

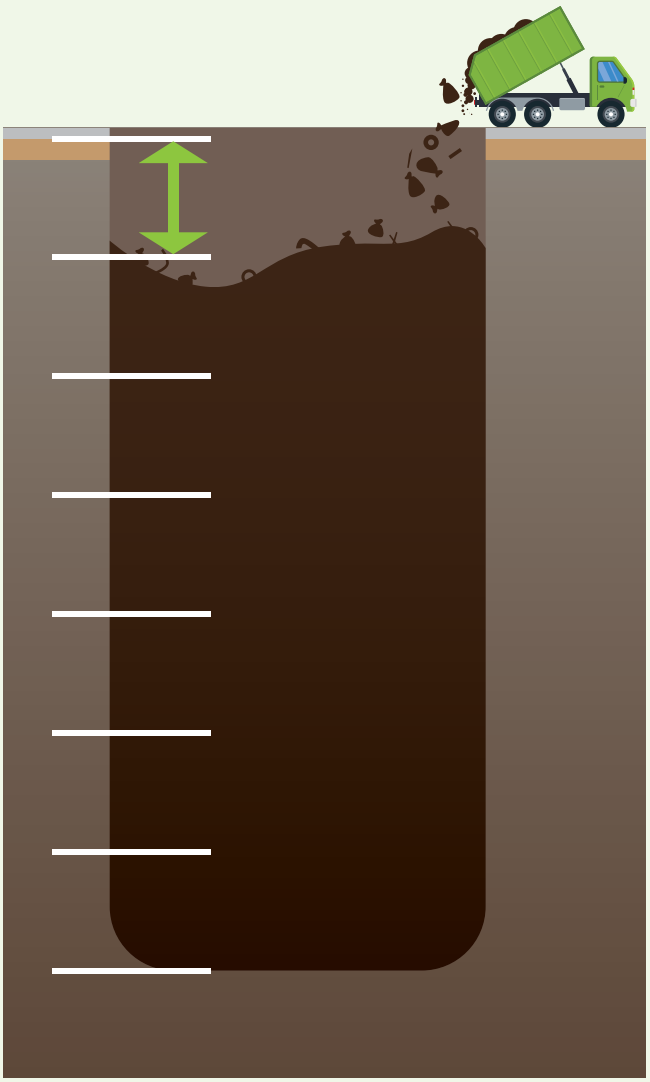
However, municipal governments only have a limited sphere of influence on waste generation and management. Costs and generation rates are steadily increasing, and more waste is ending up in our environment, including waterways, parks, and communities. There is a need to move to a more circular economy, whereby resources are recirculated within the economy to conserve resources, reduce greenhouse gas (GHG) emissions, and generate local jobs and investment. For the transition to occur, further provincial, and federal policies are required.

Over the past few decades, Ontario has stumbled from one waste crisis to another, from the failed Interim Waste Authority, which recommended the siting of new disposal sites, to the Hagersville tire fire that burned for 17 days, and international disputes over waste being exported to Michigan for disposal.

Pressure on limited waste disposal capacity will be exacerbated by the provincial government's goal of building 1.5 million new homes by 2031. Municipal governments support the goal of building new and affordable homes but ensuring sufficient waste disposal resources to accommodate this growth will be crucial. Some of the pressure on finding new disposal capacity can be alleviated by increasing waste reduction and diversion efforts and keeping resources in the economy

Did you know?

Waste to Resource Ontario estimates that given Ontario's current landfill capacity and current waste disposal rates it only has 10 years of remaining disposal capacity.

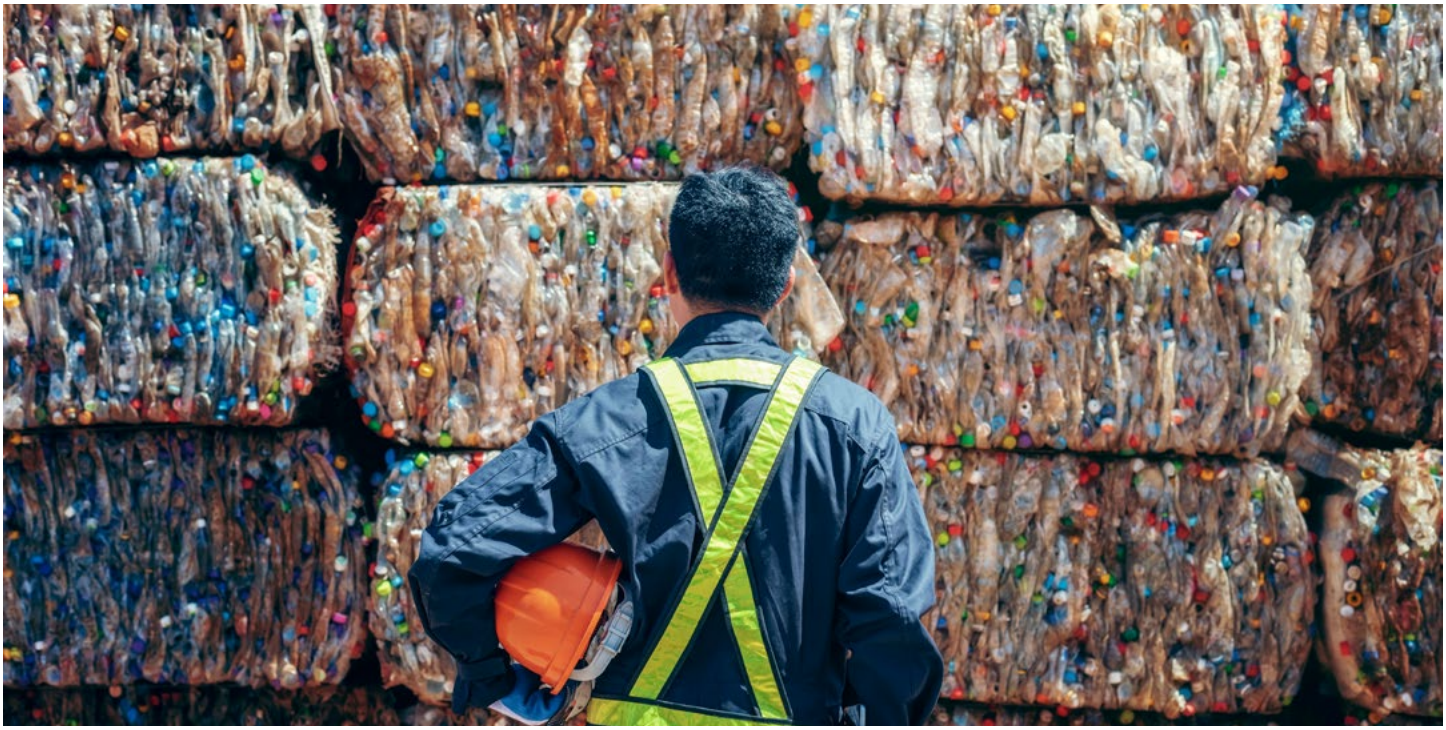


Successive provincial governments have pledged to address Ontario's growing waste issue, culminating in the *Waste-Free Ontario Act* passed in 2016 and the accompanying Waste-Free Ontario Strategy (the strategy) and the Made-In-Ontario Environment Plan. The Act and strategy were heralded by many as providing a pathway to finally address Ontario's waste crisis. In the past six years, a number of important actions from the strategy have been implemented that municipal governments supported:

- ✓ Establish the Resource Productivity and Recovery Authority to provide oversight and enforcement over waste diversion policies and provided tools such as Administrative Monetary Penalties
- ✓ Establish outcomes-based producer responsibility regulation for packaging and paper products, tires, hazardous special products, electrical and electronic equipment, batteries, and lighting
- ✓ Establish requirements to ensure better tracking and management of waste (e.g., Producer Responsibility Registry, Excess Soil Registry and the Hazardous Waste Program Digital Reporting Service)
- ✓ Initiating a process to modernize approvals and expedite ability to site and construct waste management infrastructure.

However, there remains a number of outstanding actions that the province has yet to undertake:

- ✗ Revise the recycling requirements for industrial, commercial, and institutional (ICI) entities to increase waste diversion
- ✗ Designate new materials in extended producer responsibility policies (EPR) in 2020 and 2023 (e.g., additional electronic and electrical equipment, mattresses, carpets, furniture)
- ✗ Implement disposal bans to direct materials away from disposal (e.g., food waste, materials under existing waste diversion programs)
- ✗ Implement an action plan to reduce the volume of food and organic wastes going to landfill
- ✗ Issue policy statements to provide clear direction on the provincial interest to support waste reduction and diversion efforts
- ✗ Implement coordinated green procurement practices to build market demand for recovered materials



The purpose of this report is to provide a better understanding of Ontario's efforts to tackle non-hazardous solid waste (past, present, and future) to assess its performance and identify actions that may be necessary to meet its goals. This includes providing an overview on:

- how Ontario currently manages resources and describing how this has changed over the past few decades;
- progress towards the performance goals established in the strategy (i.e., achieve 30% waste diversion rate by 2020; 50% by 2030; an 80% by 2050 as well as reducing total waste disposed per capita each year); and
- opportunities to improve outcomes.

Since 2017, when the province released its strategy, there has been an increase in the amount of materials diverted. While this is a positive trend, the amount of overall waste generated has also increased as has the amount of waste disposed.

Table 1: Waste data trends 2017- 2022 based on low generation scenario[1]

Indicator	2017	2022	Environmental Trend	
Total waste generation (tonnes)	11,884,804	12,686,610	↑	Increased by 7% or 801,806 tonnes
Per capita waste generation (kg/capita)	897.28	925.49	↑	Increased by 3% or 28.21 kg/capita
Total waste disposed (tonnes)	8,328,833	8,819,224	↑	Increased by 6% or 490,391 tonnes
Per capita waste disposed (kg/capita)	628.81	643.36	↑	Increased by 2% or 14.55 kg/capita
Total waste diverted[2] (tonnes)	3,555,972	3,867,386	↑	Increased by 9% or 311,414 tonnes
Per capita waste diverted (kg/capita)	268.47	282.13	↑	Increased by 5% or 13.66 kg/capita

1 Based on RPRA Residential Datacall disposed and diverted and Statistics Canada Waste Management Industry Survey disposed and diverted non-residential tonnes. Note data was modelled for 2022 based on a 10-year trend. It is considered a low generation calculation as data surveyed by Waste to Resource Ontario indicate disposal rates that are 20% - 30% higher,

2 Diverted refers to waste materials diverted from landfill, incineration, and energy from waste.

1.1 Methodology

The data included in this report is based on multiple sources to establish a comprehensive review of waste management in Ontario. Data was gathered from the following sources to provide a more complete picture:

- the Resource Productivity and Recovery Authority's (RPRA) Municipal Datacall
- Annual Reports from Producer Responsibility Organizations
- RPRA Resource Recovery Reports
- Statistics Canada Waste Management Industry Survey
- Reports by Waste to Resource Ontario
- Continuous Improvement Fund / Stewardship Ontario Waste Composition Audits

Although generated for different reasons, each of these sources is updated regularly and have quality control elements in place. **Appendix A** provides a comparison of each of the data sources. While every effort was taken to ensure the integrity of the data used, there are differences in methodologies, material classifications, and data collection and verification methodologies with potentially varying levels of rigour.

There is no one data source in Ontario that allows for a proper assessment of the current context. As a result, the report has used these various sources. In some cases, it was necessary for modelling to be done:

- Statistics Canada Waste Management Industry Survey data is only available biennially. For the odd years data was modelled based on the proceeding and preceding years.
- 2022 data for generation, disposal, and diversion are modelled based on a 10-year trend.
- A high and low generation rate were developed given the disparity between reporting on the amount of waste disposed per year between survey work completed by Waste to Resource Ontario on Ontario landfills and Statistics Canada Waste Management Industry Survey.
  - The low generation rate is based on RPRA Residential Datacall disposed and diverted, and Statistics Canada Waste Management Industry Survey disposed and diverted ICI tonnes.
  - The high generation is based on RPRA Residential Datacall diverted, Statistics Canada Waste Management Industry Survey ICI diverted tonnes and Waste to Resource Ontario landfilled tonnes.
- Tonnes landfilled are based on Waste to Resource Ontario survey data were modelled for proceeding and preceding years based on the Statistics Canada Waste Management Industry Survey disposal trends.

The discrepancies in data particularly related to disposal underlines the need for standardized data capture in Ontario. The RPRA Residential Datacall will also no longer be available with the transition of the blue box, which will make it increasingly difficult to accurately measure progress.

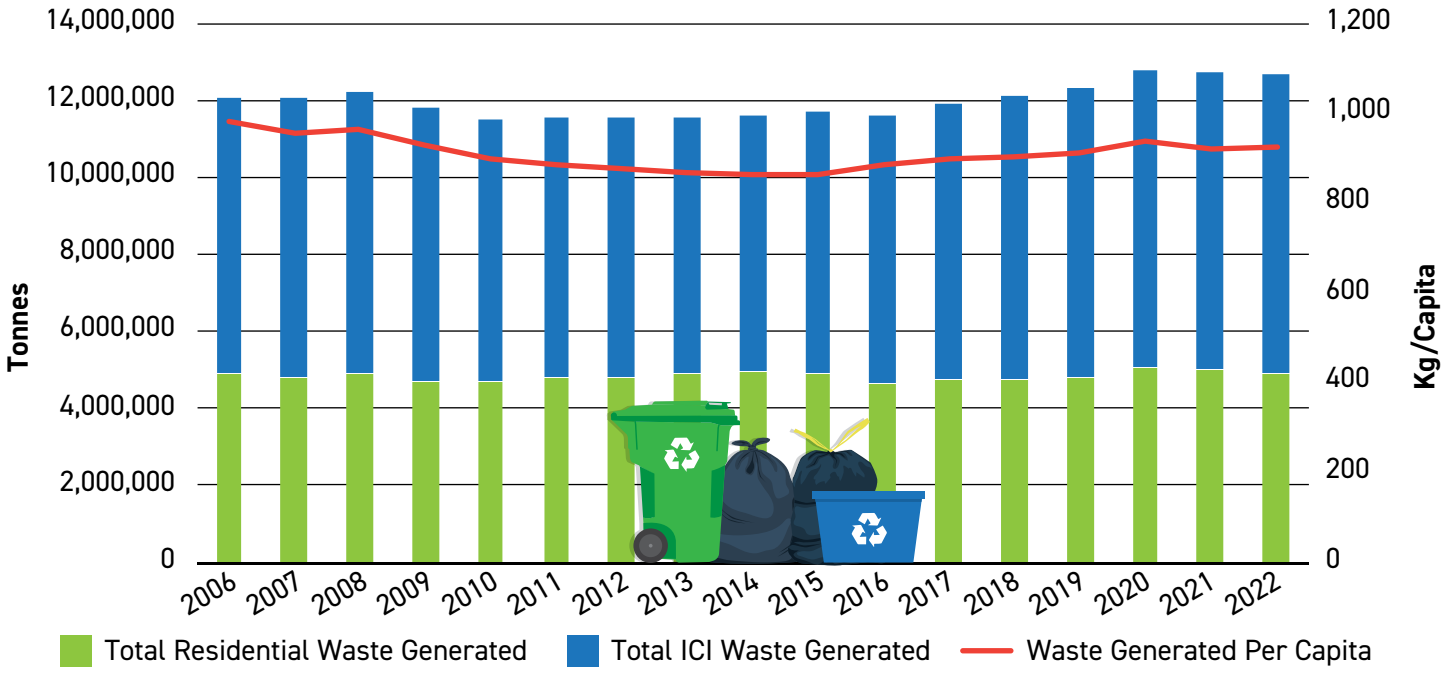
2.0 Sector Overview

2.1 Total Waste Generation

In 2022, Ontario generated between 12.7 million tonnes[3] and 15.5 million tonnes[4] of non-hazardous waste (equivalent to between 0.925 and 1.127 tonnes per person). The amount of waste generated has been gradually increasing over the last two decades with about 30-40% generated from residential sources and 60-70% generated from industrial, commercial and institutional (ICI) sources (e.g., schools, restaurants, office buildings, retail stores, factories, hotels).

As there is significant disparity between reporting on the amount of waste disposed per year between survey work completed by Waste to Resource Ontario and Statistics Canada through the Waste Management Industry Survey, two generation rates have been calculated. Figure 1 illustrates a low waste generation trend and Figure 2 illustrates a higher waste generation trend based on the higher disposal rates reported by Waste to Resource Ontario.

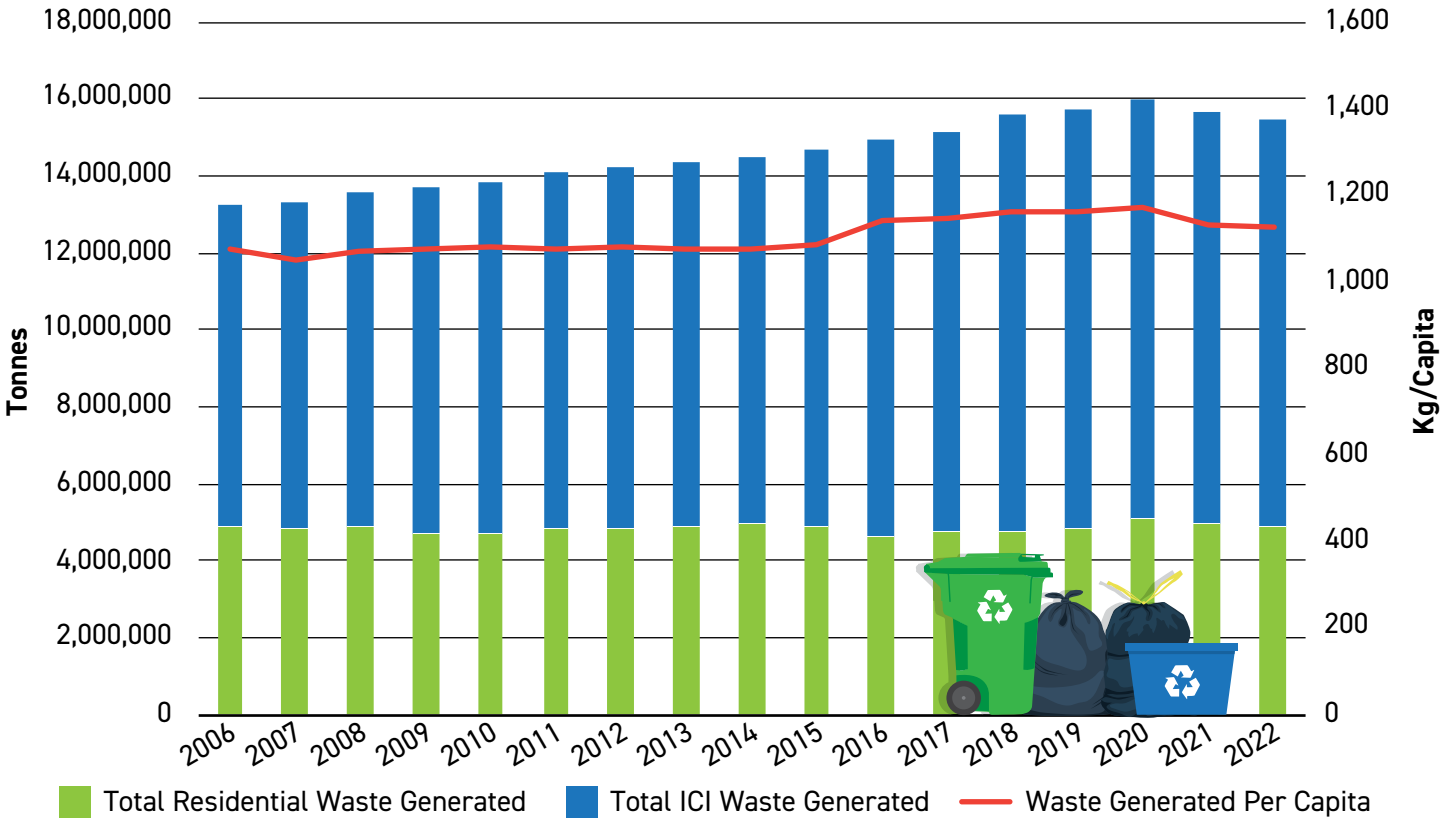
Figure 1: Low Waste Generation Scenario



3 Based on RPRA Residential Datacall disposed and diverted and Statistics Canada Waste Management Industry Survey disposed and diverted non-residential tonnes.

4 Based on RPRA Residential Datacall diverted, Statistics Canada Waste Management Industry Survey non-residential diverted tonnes, and Waste to Resource Ontario landfilled tonnes

Figure 2: High Waste Generation Scenario



The Ontario government typically uses the low generation calculation in their reporting but this may significantly underestimate the amount of waste being generated and disposed of.

2.2 Performance

As part of Ontario's strategy, the province has established two sets of targets:

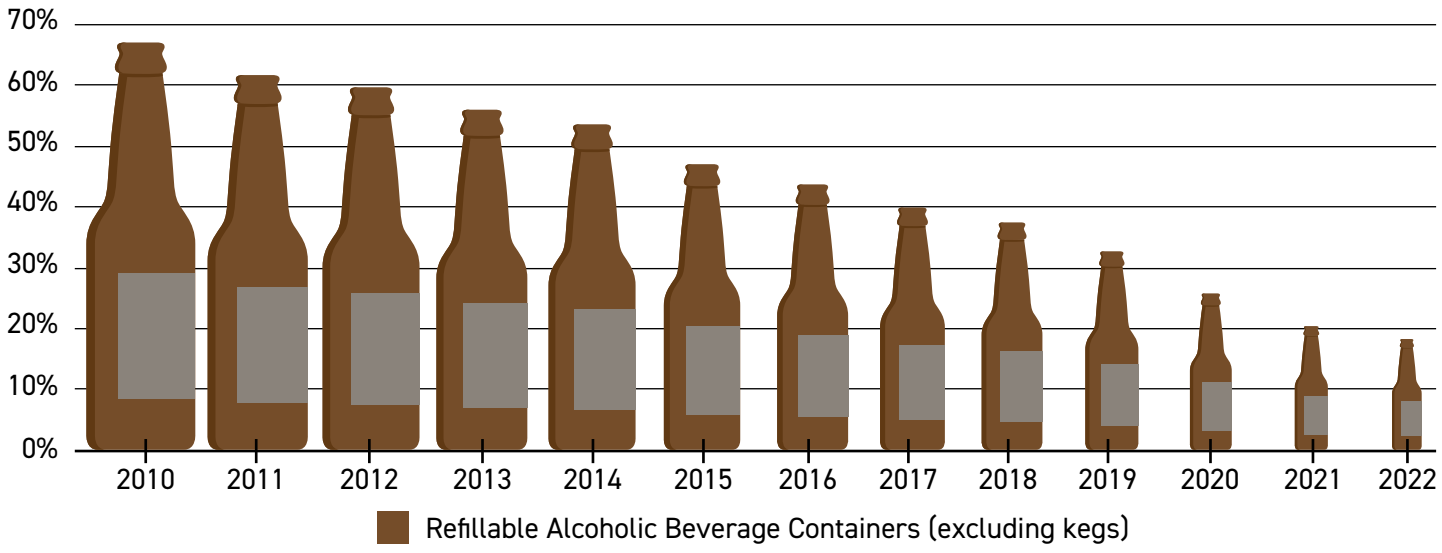
- Waste generation - progressive reductions in the amount of non-hazardous waste disposed per capita per year; and
- Waste diversion targets - increase the amount of waste diverted
  - 30% of total waste generated diverted by 2020;
  - 50% of total waste generated diverted by 2030; and
  - 80% of total waste generated diverted by 2050.

This section provides an overview of provincial efforts that contribute to both sets of targets, offer insights on where gains have been made and suggests areas where further actions are required.

2.2.1 Reduction and Reuse

While more attention has focused on improving reuse and preventing waste in the last few years, data on the state of reuse and prevention have not been well tracked. Reuse systems are visible across the economy, including from business-to-business (B2B) materials often reused (e.g., pallets, beverage and bakery trays, milk crates) and business-to-consumer (B2C) materials (e.g., BBQ tanks, carbon dioxide cylinders, shopping bags, beverage cups, beer bottles and growlers). There are also new types of reuse systems emerging in the sharing economy in form of new types of libraries (e.g., tool libraries), rental platforms (e.g., car and scooter rentals), and community 'Buy Nothing' social media sites. While momentum is growing to pilot and expand reuse/refill models; these systems still are in the minority. In some cases, reuse markets are shrinking. For example, Figure 3 shows since 2010 the percentage of refillable alcohol bottles sold (e.g., beer bottles) in Ontario has steadily decreased from almost 70% in 2010 to under 20% in 2022.

Figure 3: Share of refillable alcoholic beverage containers (excluding kegs) in Ontario



2.2.2 Waste Diversion from Landfill

Ontario currently diverts almost 4 million tonnes of materials from disposal annually, which is a result of a steady increase in the total amount of materials recycled over the last two decades (Figure 4). This growth has mainly been driven by the municipal government investments in organic waste diversion programs, with a 124% increase in the amount of residential organic waste composted over this period. The amount of other residential materials recycled by weight has decreased by 19%. This decrease can partially be explained by the changes in the composition of the packaging materials residents consume with a shift from heavier materials such as paper, glass and metal to lightweight plastics that can be more difficult to recycle.[5] There has also been a 20% growth in ICI waste diverted. While the available data for ICI diversion is less detailed, it does appear based on 2018 and 2020 data that increases in organic waste collection are also helping to drive diversion increases in this sector.

Figure 4: Materials diverted in Ontario between 2002-2022[6]

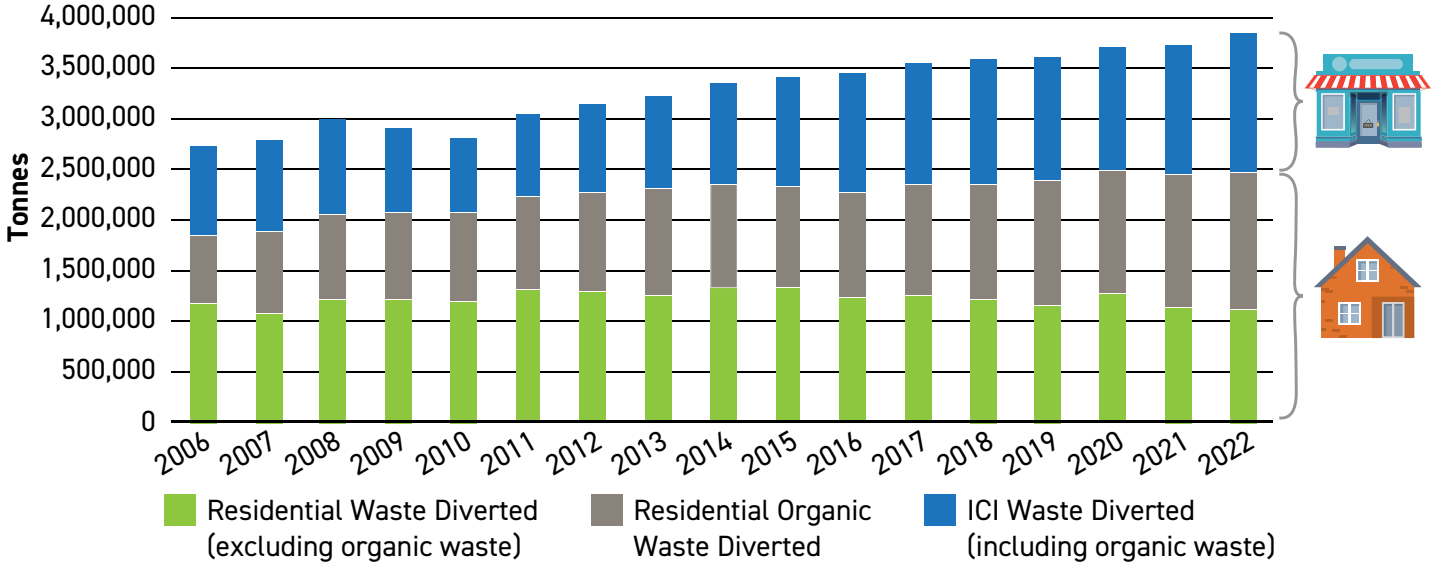
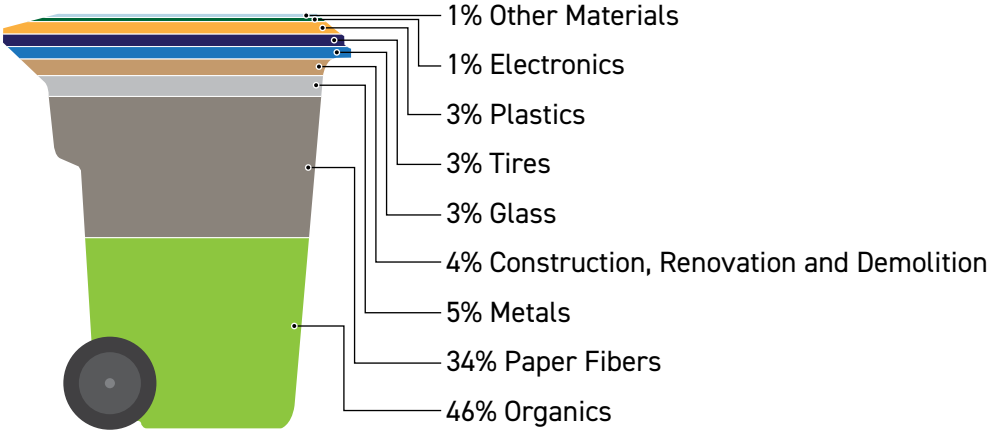


Figure 5 provides an overview of the proportion of materials diverted by type in Ontario in 2020. Organic waste and paper fibres are the most prominently diverted materials by weight.

Figure 5: Proportion of Materials diverted by type in Ontario[7]



5 Resource Recycling, The Evolving Ton Explained, May 2015. Available at https://www.cmconsultinginc.com/wp-content/uploads/2015/04/EvolvingTonMayRRFinal.pdf

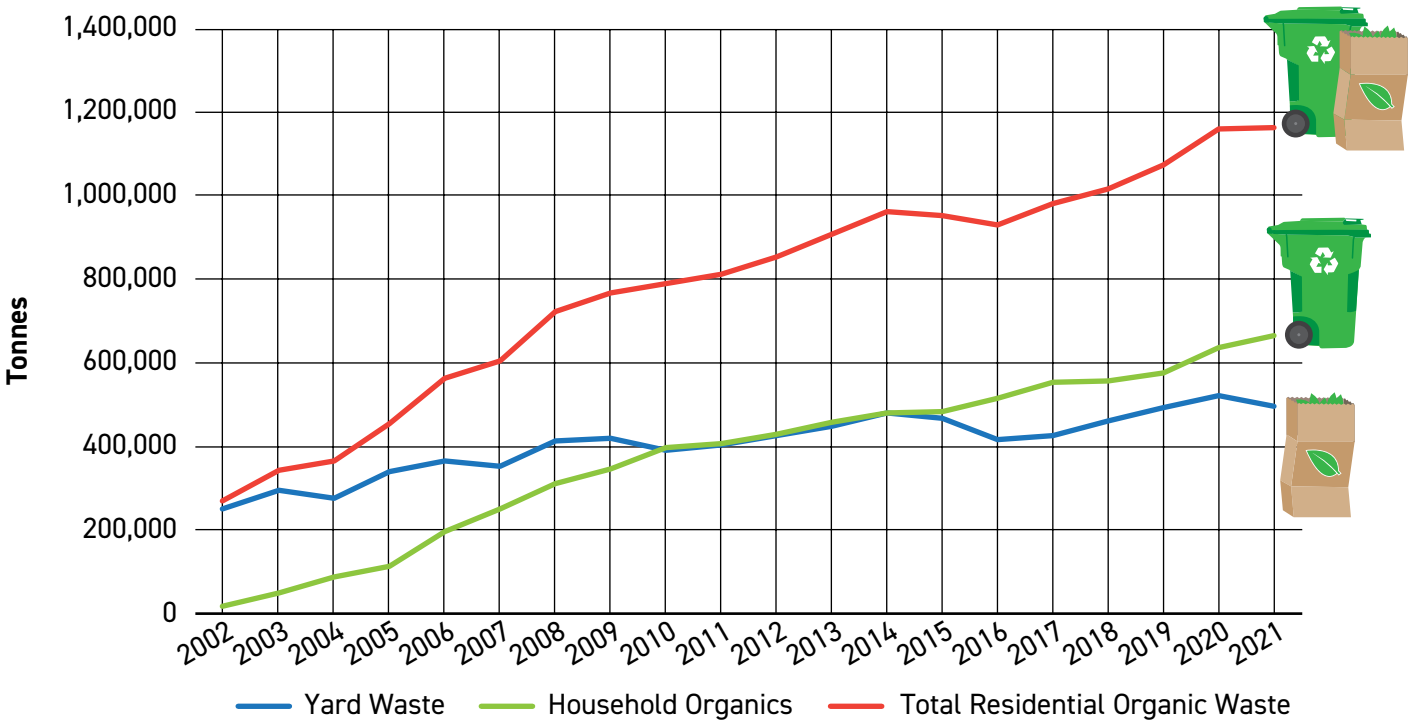
6 Based on RPRA Residential Datacall diverted and Statistics Canada Waste Management Industry Survey non-residential diverted tonnes.

7 Based on 2020 Statistics Canada Waste Management Industry Data with organic waste adjusted based on The Environmental Research & Education Foundation of Canada (2021). State of the Practice of Organic Waste Management and Collection in Canada. Retrieved from www.eref-canada.ca.

2.2.3 Organic Diversion

Municipal governments have championed efforts to reduce and divert organic material (e.g., food waste and leaf and yard waste) from disposal through operation of residential organic waste collection programs for nearly two decades. These programs have tripled the amount of residential organic waste diverted from under 300,000 tonnes in 2002 to over 1.2 million tonnes in 2021 (Figure 6).[8] This increase in the capture rate is primarily due to implementation of green bin programs that collect household organics (e.g., food waste). Organic waste is now the largest stream of waste by weight diverted by municipal governments based on data reported through RPRA's Residential Datacall.

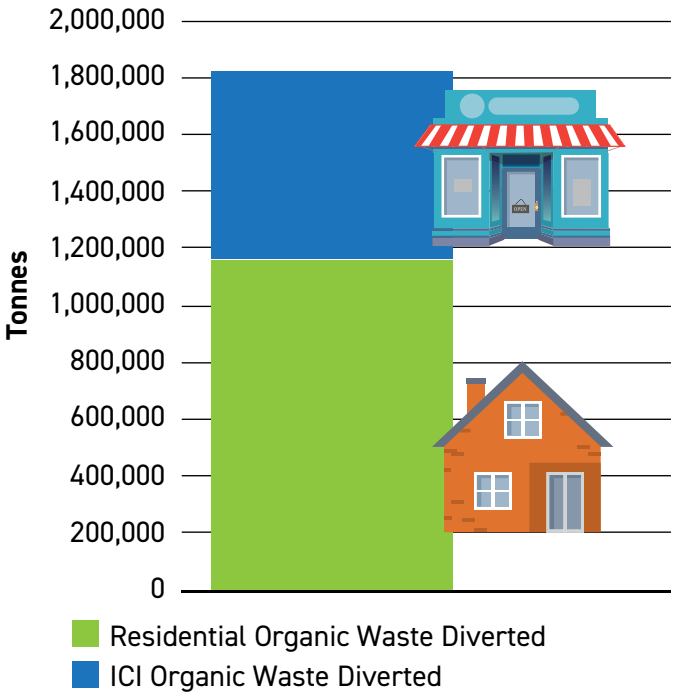
Figure 6: Total residential organic waste diverted in Ontario



8 Based on the RPRA Residential Datacall.

Ontario has established over 100 different facilities (e.g., compost and anaerobic digestion) that help to reduce the demand for landfill capacity, reduce greenhouse gas (GHG) emissions and transform organic waste into nutrient amendments. Organic waste being diverted from ICI sources significantly trails behind the performance of municipal government programs. Over 65% of all the organic waste processed in Ontario is diverted by municipal governments, despite the ICI sector generating a larger proportion of the overall waste disposed (Figure 7).

Figure 7: Organic waste diverted by sector in Ontario[9]

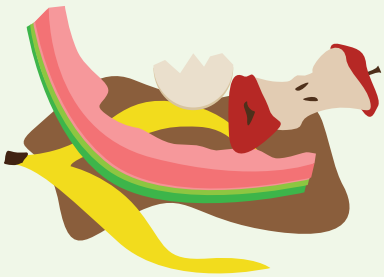


Despite increases in the amount of organic waste being diverted, it is estimated that over 2.3 million tonnes of organic waste generated in Ontario is still being sent to landfill and most of that is generated by ICI sources.[10] While the Food and Organic Waste Policy Statement includes targets for certain ICI entities to achieve by 2025, little action has been taken to increase diversion of organic waste from this sector. The provincial government has yet to provide any outreach or guidance to promote compliance with these targets.

9 Based on RPRA Residential Datacall and Environmental Research and Education Foundation of Canada, State of the Practice of Organic Waste Management and Collection in Canada, July 2021.

10 Ontario government. Food and Organic Waste Policy Statement, 2018. Available at https://www.ontario.ca/page/food-and-organic-waste-framework.

Did you know?



In 2021, AMO's Food and Organic Waste Discussion Paper recommended the following actions related to Ontario's organic waste:

1. **Develop and implement a coordinated provincial plan to address food loss and waste, including:**
   a. A public awareness/education campaign to drive sustained consumer behaviour change in all sectors to avoid and reduce food loss and waste.
   b. Working with retailers to develop and promote "smart shopping" offerings and merchandising in grocery/food stores to support consumer behaviour change (e.g., smaller size offerings, information on best before dates, uses for left over foods).
   c. Promoting and participating in reallocation of surplus food by supporting food rescue organizations through food donation provisions in government catering contracts including food waste reduction measures.
2. **Implement an organic waste disposal ban, including:**
   a. Establishing progressive source separation requirements for industrial, commercial, and institutional entities starting with the largest organizations.
   b. Establishing mechanisms to help maintain and expand current infrastructure, develop new infrastructure, and incent better environmental and economic outcomes.
   c. Ensuring enough time is provided to allow for proper planning and consultation.
   d. Phase-in of smaller generators and allow exemptions for unique environments.
   e. Establishing reporting requirements for all organic waste processing facilities.
   f. Ensuring proper oversight and enforcement mechanisms.
3. **Establish an escalating landfill levy for all waste disposed in Ontario or being exported for disposal outside Ontario to address climate change, GHG reduction and to create incentives for reduction or diversion activities.**
   a. Funds raised from this levy should be allocated to municipal governments through a joint fund established to reduce waste, increase waste diversion, offset costs related to municipal operations (e.g., diversion at municipally operated buildings, administrative costs associated with the ban and levy), and promote other activities that reduce GHG emissions.
4. **Address issues related to compostable products and packaging by:**
   a. Establish reporting, collection and management requirements for compostable materials in the Blue Box Regulation.
   b. Enforce labelling requirements to ensure only products and packaging that can be proven to compost at scale and in practice without contaminating end products are labelled as compostable.
   c. Researching the efficacy of compostable materials in existing organics processing facilities (e.g., compost and anaerobic digestion) and make recommendations on how producers of these materials should best manage them at end-of-life.

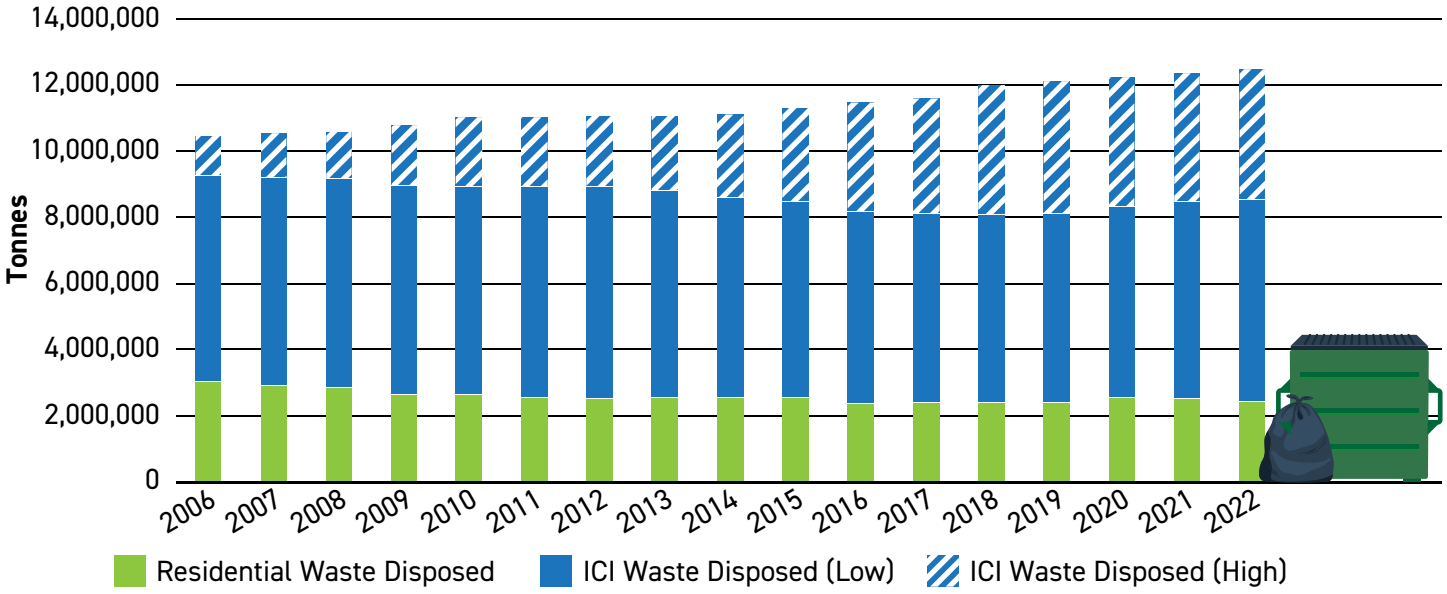
2.2.4 Disposal

Ontario disposes between 9 to 12 million tonnes of waste annually with the majority being generated from ICI entities (Figure 8). The range in the estimated tonnes disposed is a result of the significant discrepancies between the survey work undertaken by Statistics Canada and Waste to Resource Ontario. The provincial government currently does not track how much waste is disposed via waste exports, so verification is difficult.

Did you know?

Since 2010, Ontario has shipped over 40 million tonnes of garbage into the U.S., which is equivalent to over 2 million long-haul truck return trips.

Figure 8: Waste Disposed between 2006-2022 in Ontario[11]



Between 2006 and 2022, approximately one-third of Ontario's waste disposal needs were met by landfills in Michigan, New York and Ohio (Figure 9). The remaining non-hazardous waste was disposed of in Ontario landfills. While Ontario waste sent to energy-from-waste facilities is not well tracked, it is estimated that only a small portion of residential waste is treated at these facilities (e.g., Emerald EFW in Brampton, which has a capacity of 90-110 tonnes per day; Durham-York Energy Centre in Clarington, which has a capacity of 140,000 tonnes per year; and Covanta Niagara in New York State, which is likely only taking a small proportion of Ontario generated waste).

Did you know?

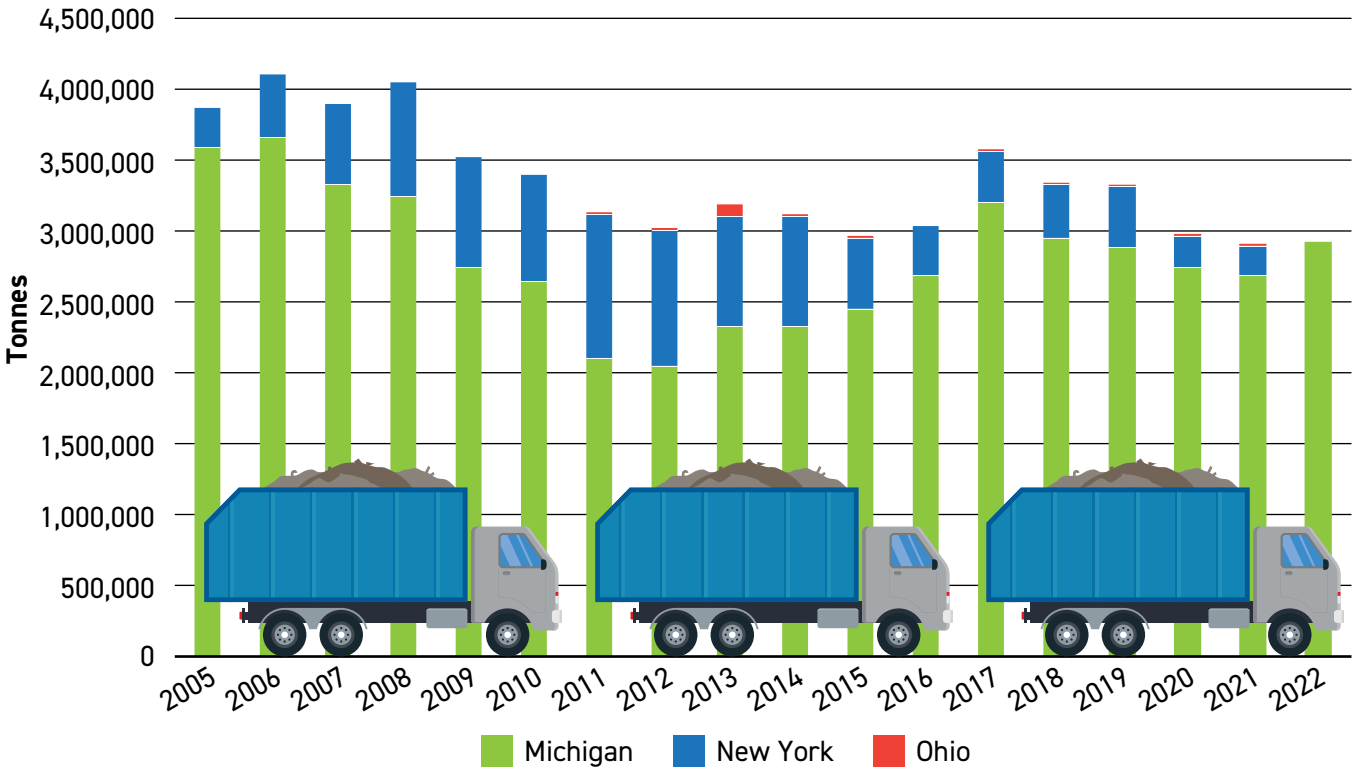
In 2021, Ontario's Auditor General stated:

"The lack of government action on reducing business and industrial waste means that Ontario will be faced with questions about where to put all this waste and how to pay for it in the very near future."

The accompanying report notes that the Ministry of the Environment, Conservation and Parks estimates that all existing landfill capacity in the province will be exhausted in the next 11 to 14 years.

11 Low disposal rate is based on RPRA Residential Datacall disposed, and Statistics Canada Waste Management Industry Survey disposed. The high rate is based Waste to Resource Ontario disposed tonnes.

Figure 9: Ontario waste disposal exports (data not available for New York and Ohio for 2022)



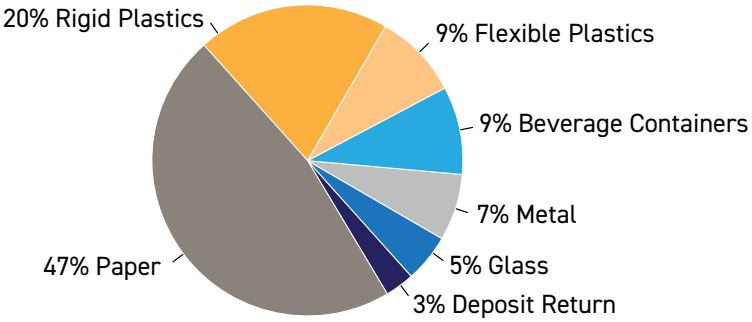
According to Waste to Resource Ontario, the province's landfill capacity was estimated at 144.5 million tonnes at the start of 2020 and is expected to be depleted in 2034. While several landfill facilities and two energy-from-waste facilities are currently seeking approval and/or amendment to increase capacity, the entire approval process of these facilities can take up to ten years before a final decision is issued by the Ministry. A number of Ontario municipal landfills are nearing capacity or have reached capacity in the last few years. Increasingly Ontario municipalities are becoming dependent on a handful of private disposal sites.

Waste composition studies from single-family residential waste stream over the last five years (Table 2), show that packaging, and paper products, and organic waste (including, both edible and non-edible organic waste) remain the majority of waste disposed. Figure 10 provides a more detailed breakdown of blue box materials found in the waste stream in 2022. Paper and plastics have been the most predominant materials disposed of over the last five years.

Table 2: Proportion of certain materials in the single-family residential waste stream

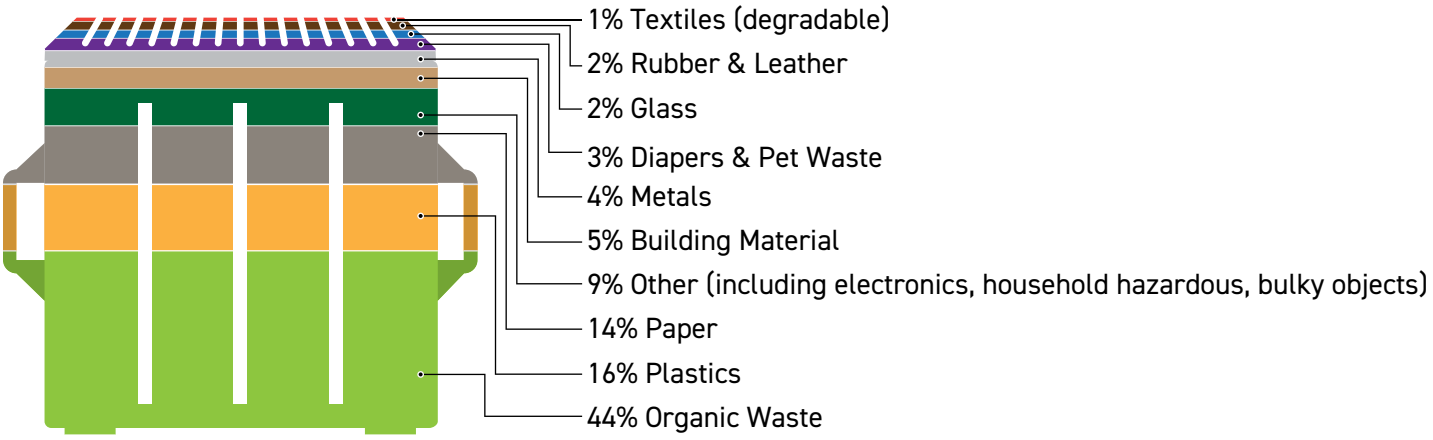
	2018	2019	2020	2021	2022
Blue Box & DRS materials	17.97%	21.63%	22.10%	24.14%	20.54%
Textiles	0.15%	1.44%	0.71%	1.01%	1.71%
Organic waste	38.65%	35.73%	30.13%	38.13%	42.12%
Construction and demolition	2.29%	5.29%	3.41%	1.56%	Not tracked
Electronics	1.06%	1.40%	1.42%	0.83%	Not tracked
Batteries	0.15%	0.09%	0.11%	0.08%	0.08%
Tires and other rubber	0.25%	0.20%	0.13%	2.30%	Not tracked

Figure 10: Average proportion of blue box materials in the single-family residential waste stream[12]



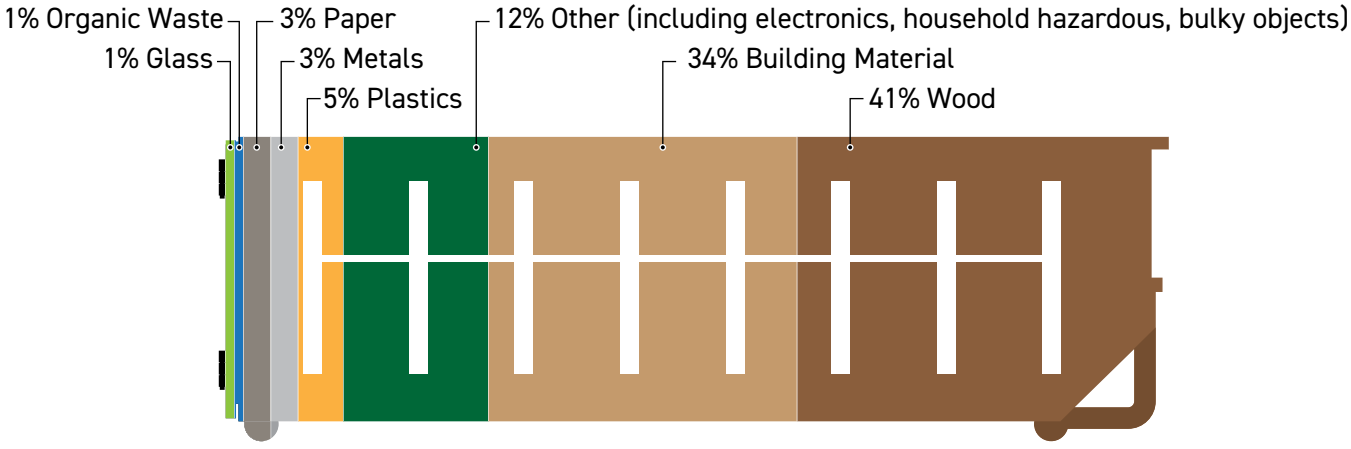
Data on material composition in the ICI sector are not as well tracked or publicized in Canada. There have been recent efforts by Environment and Climate Change Canada to better characterize the materials in the ICI waste stream. Figures 11 and 12 illustrate the waste compositions of the ICI solid waste stream and demolition and construction (C&D) solid waste stream respectively.[13]

Figure 11: Average proportion of material by type in Canada's ICI solid waste stream



Similar to the residential sector, the majority of waste generated by the ICI sector is organic waste and packaging and paper products. For the C&D sector, the majority of waste materials consists of wood and building materials (Figure 12).

Figure 12: Average proportion of material by type in Canada's C&D solid waste stream



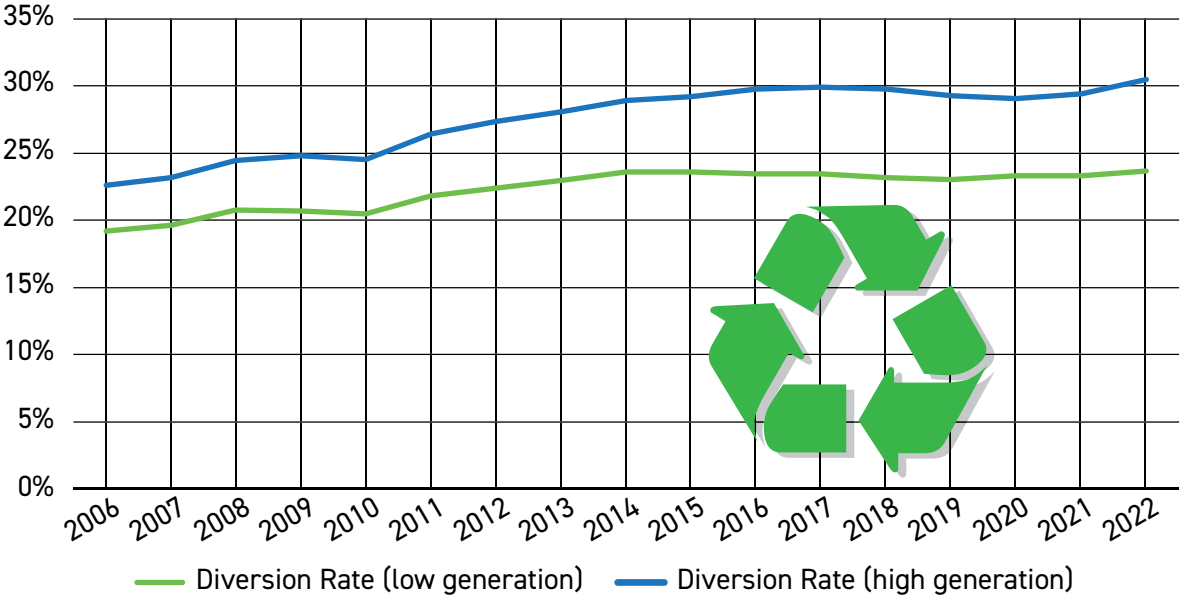
12 Based on 2022 CIF Waste Composition data. Available at https://thecif.ca/centre-of-excellence/policy/waste-composition-studies/

13 National Waste Characterization Report: The Composition of Canadian Residual Municipal Solid Waste, 2020. Available at https://publications.gc.ca/collections/collection_2020/eccc/en14/En14-405-2020-eng.pdf

3.0 Provincial Targets and Progress

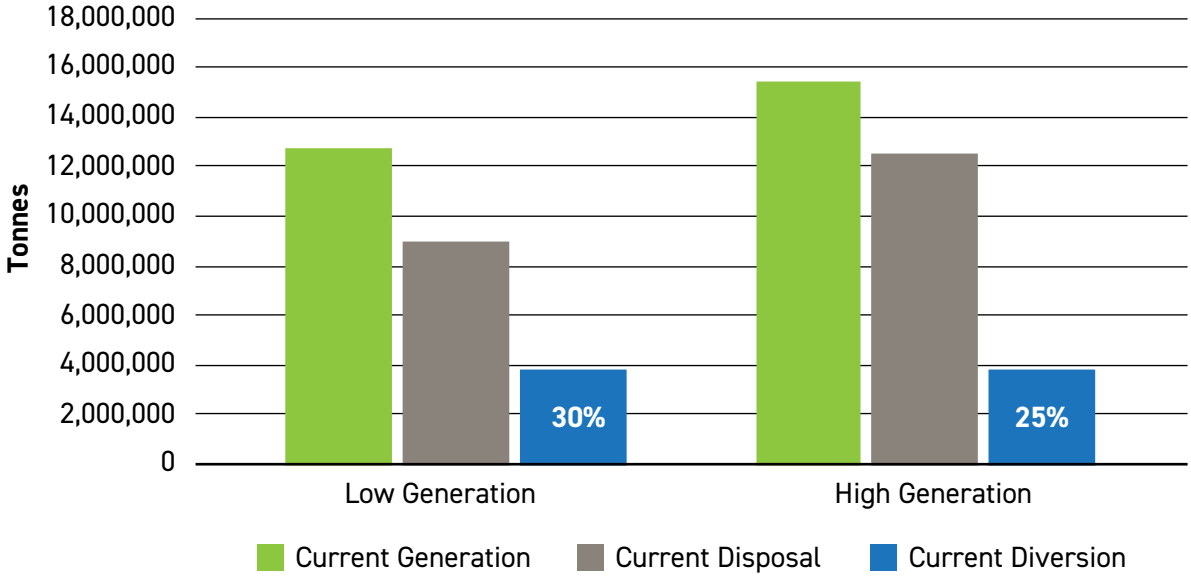
Figure 13 illustrates Ontario's current waste diversion performance based on a high generation rate (i.e., using Waste to Resource disposal data) and low generation rate (i.e., using the RPRA's Residential disposal data and Statistics Canada ICI disposal data).

Figure 13: Ontario Diversion Rate



Depending on the disposal data used, Ontario is diverting either 25% or 30% of all waste generated. Residential waste diversion accounts for 67% of all material diverted, despite being representing less than 30%-40% of all waste generated.

Figure 14: Ontario's 2022 waste diversion rate based on high and low generation rates



While the provincial government's efforts to transition existing diversion programs to full producer responsibility and expand diversion of food and organic waste from disposal have helped Ontario to achieve a 25% or 30% diversion rate, there is still significant work needed to meet future targets. As noted in section 2.2.3, the recent progress to achieve the 2020 target is due to the implementation of residential organic waste diversion programs. Table 3 provides estimates of the amount of tonnes Ontario would need to divert based on Ontario's high and low waste generation rates.

Table 3: Additional tonnes necessary to meet diversion targets

Performance Target	Low generation – Additional tonnes* necessary to meet diversion rate	High generation – Additional tonnes* necessary to meet diversion rate
2020 – 30% Diversion Rate	0	768,264
2030 – 50% Diversion Rate	2,475,921	3,858,698
2050 – 80% Diversion Rate	6,281,905	8,494,348

*Rounded to the nearest 10

To meet Ontario's 2030 diversion targets, the province would need to divert an additional 2.48 – 3.86 million tonnes of material, and for the 2050 diversion target, the province would need to divert an additional 6.28 – 8.49 million tonnes of material. For perspective, the total tonnes of materials supplied into Ontario under the existing producer responsibility programs equates to 1.31 million tonnes (Table 4). Substantial new efforts are needed for Ontario to meet future diversion goals.

Table 4: Total supplied into Ontario based on tonnes reported under producer responsibility designations

Designated Materials	Total Supplied Tonnes[14]
Batteries	9,800
Blue Box	917,740
Information Technology, Telecommunications, Audio-Visual Equipment	60,630
Lighting	3,360
Tires	183,260
Hazardous Special Products	131,880*
TOTAL	**1,306,670**

*Rounded to the nearest 10

Table 5 provides the potential additional diversion that could be achieved if Ontario were to designate additional target materials for producer responsibility requirements and add ICI diversion requirements for the ICI sector (based on conservative estimates). The government has discussed targeting these materials at numerous points. Action on these materials, as well as improvement of current producer responsibility policies, could help the government meet the targets they have set for 2030.

Table 5: Additional tonnes necessary to meet diversion targets

Additional Designated Materials	Potential Additional Tonnes Diverted
Additional Electronics	16,940
Textiles	155,500
Mattresses	12,300
Additional Hazardous Special Products	3,600
Furniture	76,160
Carpet	63,200
ICI Organics[15]	1,800,000
ICI Paper Products and Packaging[16]	1,239,000
TOTAL	**3,366,700**

*Rounded to the nearest 10

14 Based on RPRA 2022 Resource Recovery Reports. Available at https://rpra.ca/resource-recovery-reports/. Batteries, ITT/AV, and tires published December 22, 2022. Blue Box, hazardous special products and lighting published March 31, 2023.
15 Based on doubling current performance.
16 Based on capturing 60% of the current amount disposed (see section 4.2.2).

Did you know?

In 2018, the Ontario government committed to designate the following materials by 2020 and 2023:

- Small appliances;
- Electrical tools;
- Mattresses;
- Carpets
- Clothing and other textiles; and
- Furniture and other bulky items

And in 2020, committed to:

- Consult on a proposal to phase out food and organic waste from landfills by 2030.
- Consult on an ICI waste reform framework.
- Conduct waste audits to inform new producer responsibility designations.

To date, no progress has been made on any of the above items.

4.0 Producer Responsibility Regulations

Since the *Resource Recovery and Circular Economy Act* passed in late 2016, the province has been transitioning all of its recycling programs from government directed systems to a system based on producers being required to meet enforceable, outcomes-based targets. Municipal governments have been supportive of this approach so long as:

- there are the resources and ability to provide proper oversight and enforcement; and
- high performance targets are established to drive economic activity and innovation.

The following section provides an assessment of Ontario's current producer responsibility regulations. Understanding the performance of these regulations will be essential as the costs for the improper management of these materials often falls to municipal governments. Certain conclusions can already be drawn from the current regulations to improve outcomes.

Five main lessons to improve Ontario's EPR Regulations:

1. Performance targets need to be measurable, and drive meaningful and continual improvement;
2. Additional materials should be designated at a minimum to align with other Canadian provinces and terrotories;
3. Unnecessary exemptions, deductions and credits should be removed from regulations;
4. Annual third-party performance audits should be mandatory in all regulations to reduce enforcement costs and ensure a level playing field; and
5. A clear timeline should be established for new material designations to allow for proper planning.

4.1 Batteries Regulation (O.Reg.3 0/20)

The batteries regulation includes the following designated materials:

- Single-use (primary) batteries weighing 5 kg or less, and
- Rechargeable batteries weighing 5 kg or less.

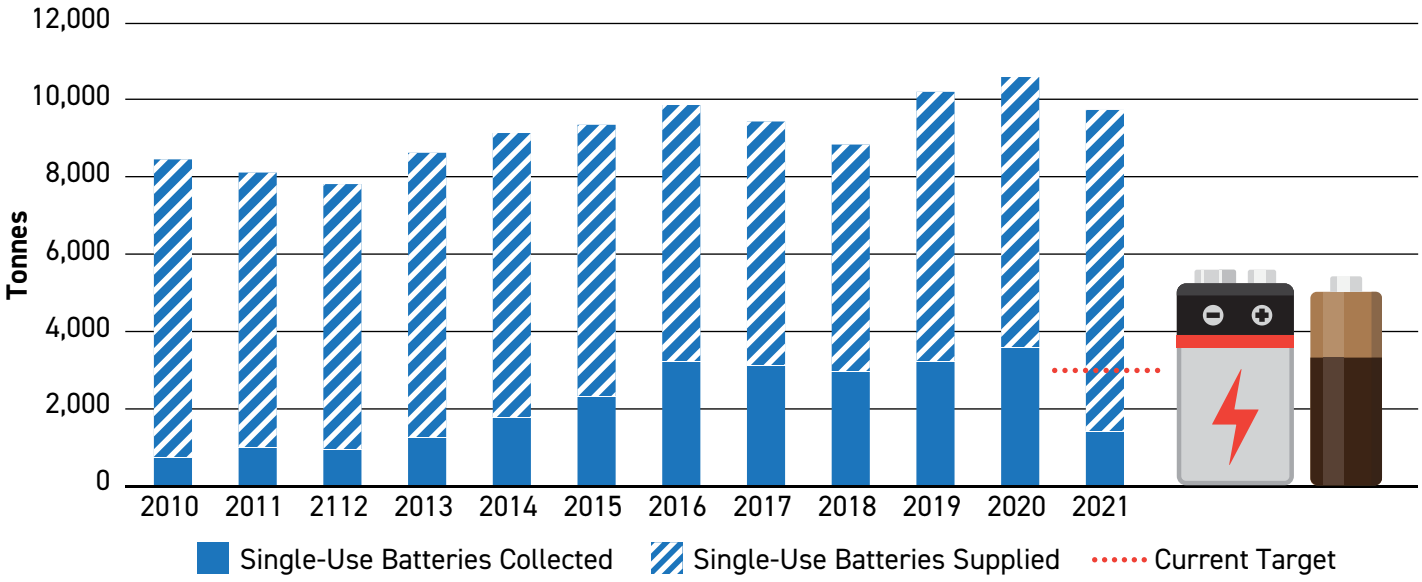
4.1.1 Performance

Overall, the amount of single-use batteries collected has steadily increased over the last decade (Figure 15), however, this significantly declined in 2021 and appears far short of existing targets. There are significant concerns about the performance of the program since the new regulation was passed and what steps might be taken to ensure producers are compliant with the requirements of the regulation. RPRA noted in Statement in August 2023 that producers, and PROs on their behalf, have reported in the aggregate managing 12% of the calculated supply for single-use batteries and 13% for rechargeable batteries (the target for 2022 was 40% for both single-use and rechargeable batteries).

Did you know?

There are increasing incidents of fires at recycling and waste management facilities as a result of improperly managed electronics and batteries. This underlines the importance of policies to drive better management.

Figure 15: Single use batteries supplied and collected in Ontario 2010-2021



4.1.2 Issues

The following key issues have been identified with the regulation:

1. Performance targets

a. The amount of single-use batteries necessary to meet the management requirement appears to be lower than previous years. This may be an indication that the targets were set too low as the amount of batteries supplied into the market does not appear to be declining based on previous years of data (e.g., the target for single-use batteries in 2022 is 2,945 tonnes; this target has been surpassed in all years between 2016 and 2019.).

b. The current management targets do not provide an incentive for continuous improvement beyond 2025 as they only increase to 2025 and then remain static at 50%.

2. Unnecessary exemptions, deductions and credits

a. The regulation provides an exemption for small producers (i.e., if a producers management requirement is less than 1.25 tonnes of rechargeable batteries or less than 2.5 tonnes of single-use batteries). While the overall impact of this exemption is unclear, any exemptions provided lower the targets. This is because materials are supplied by these small producers into the marketplace (i.e., are available for collection) but are not included in the denominator for which the targets are calculated. This creates an unlevel playing field for battery producers and may lead to less efforts to properly collect and recycle batteries. Ontario is the only province in Canada to include these exemptions.

b. The regulation allows producers to reduce their management targets if they use recycled content in the batteries they supply into the market. This approach is counterproductive to driving better environmental outcomes in Ontario as reductions in management targets decreases the need to ensure these batteries are properly collected and recycled. The ability to audit the use of recycled content is also extremely difficult for these products, which could lead to future compliance issues.

3. Annual third-party performance and supply audits

a. Third-party audits are only required every three years from producers, instead of annually. While on the surface this appears to reduce regulatory burden, producers are still required to provide audits for all three years. This delay in audit information adds costs to RPRA as it means they have to use alternative means to ensure producers are compliant.

4.1.3 Summary

Table 6 provides a broad assessment of the battery regulation as compared to the previous requirements and performance.

Table 6: Assessment of the Ontario Battery Regulation (O.Reg. 30/20)

Indicator	Status	Progress
Materials designated	The regulation designates the same materials that were designated under the *Waste Diversion Act* (i.e., single-use and rechargeable batteries).	Neutral
Exemptions	Unlike the previous *Waste Diversion Act* regulation, the new regulation exempts producers that only generate small amounts of batteries. The severity of the impact of this is unclear, but it would impact targets as these materials are not included in the denominator. This type of exemption is not used in other Canadian jurisdictions.	Worse
Performance		
Recycling Targets	Targets are lower than previously achieved. Producers can also discount recycling targets through the use of recycled content in their batteries. While not many producers are using this discount, it would be difficult for RPRA to properly audit.	Worse
Promotion and Education	No promotion and education requirements for producers post 2022 to inform to public on how to properly manage batteries despite increasing incidents of battery fires in the waste stream.	Worse
Performance Trend	Performance significantly declined in 2021 with producers, and PROs on their behalf, reporting in aggregate managing only 12% of the calculated supply for single-use batteries and 13% for rechargeable batteries.	Worse
Oversight and Enforcement	RPRA has the ability to conduct audits and take compliance actions if issues are identified.	Better

4.2 Blue Box (O.Reg. 391/21)

The blue box regulation includes the following designated materials:

- blue box product packaging (e.g., primary, transportation, and convenience packaging; service accessories; ancillary elements),
- paper products (e.g., magazines, greeting cards, office paper, calendars, notebooks), and
- product-like packaging (e.g., pie plates, boxes, beverage cups, envelopes).

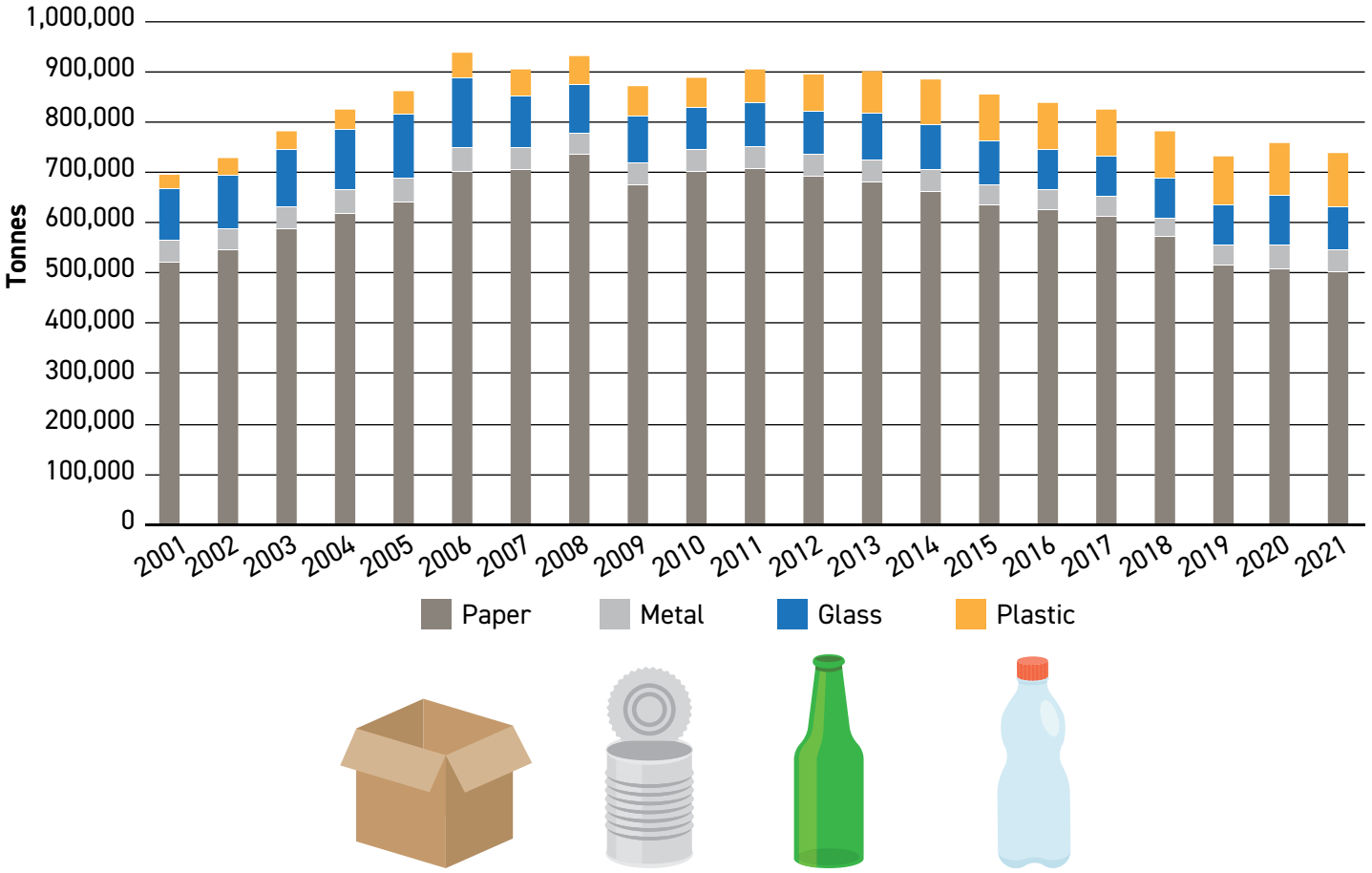
4.2.1 Performance

Overall, the amount of blue box materials collected and marketed to recyclers by weight has been steadily declining (Figure 16) from a high of 938,000 tonnes in 2006. This decline is in part due to the material composition changes to the types of paper products and packaging we consume with a significant shift away from heavier materials like paper and glass to lighter weight plastics. As noted in section 2.2.4, blue box materials still make up a significant portion (18-24%) of the residential waste stream.

Did you know?

A Conference Board of Canada report found that increasing Ontario's waste diversion to 60% could create more than 12,500 new jobs and generate an additional $1.5 billion to the provincial gross domestic product.

Figure 16: Blue box materials marketed to recyclers in Ontario 2001-2021



4.2.2 Issues

The following key issues have been identified with the regulation:

1. Performance targets

a. It is unclear yet whether the current targets set will be sufficient to drive improved outcomes, given recent changes to allow for more exemptions (e.g., newspapers) and deductions (e.g., allowing producers to deduct supplies tonnage that is collected from a business or institution that producers are not required to provide blue box collection services to under the blue box regulation). These changes decrease the amount of materials producers need to process to meet their management targets. Ontario municipalities have significant concerns that the latest deductions will be very difficult to audit and verify and could significantly reduce the supply numbers and reduce targets.

2. Additional materials

a. Overall, the new regulation should provide Ontarians with greater access to blue box collection. However, there remains a lack of focus on ICI sources of blue box materials. By extrapolating BC's IC waste composition data, Ontario could be disposing 1.68-2.45 million tonnes of packaging and paper products on an annual basis.[17] Even collecting 60% of these materials could provide over 1.2 million tonnes of diversion and significantly increase Ontario's diversion rate.

3. Unnecessary exemptions, deductions and credits

a. Packaging-like products made of flexible plastics, as well as packaging used for food protection, containment and handling, have been exempted despite being collected in both the recycling and waste streams and being included in most other jurisdictions. This exemption affects the amount reported as supplied into the market and this impacts management targets despite these materials still being managed in the blue box.

b. Compostable packaging has been exempted from collection and management targets despite the fact it is a growing packaging format. This exemption affects the amount reported as supplied into the market and this impacts management targets despite these materials still being managed by municipal governments. A 2022 study undertaken by the Ministry of Environment, Conservation, and Parks on compostable packaging recommended that "producers should be responsible for the full cost for collection and processing of their products".

c. Expanded deductions related to blue box materials managed outside the blue box system (e.g., materials collected from a business or institution that are not part of a blue box program for residents) will be difficult, if not impossible, to be able to properly oversee. The scale of these deductions could significantly reduce the materials needed for producers to meet their targets.

4. Annual third-party performance and supply audits

a. Third-party audits are only required every three years from producers, instead of annually. While on the surface this appears to reduce regulatory burden, producers are still required to provide audits for all three years. This delay in audit information adds costs to RPRA as it means they have to use alternative means to ensure producers are compliant.

17 Canada Plastics Pact. British Columbia Industrial, Commercial and Institutional Packaging and Paper Products Baseline Report: Waste Flows Study, April 2023. Available at https://plasticspact.ca/wp-content/uploads/2023/04/CPP_BC-ICI-Baseline-Report.pdf

4.2.3 Summary

Table 7 provides a broad assessment of the blue box regulation as compared to the previous requirements and performance.

Table 7: Assessment of the Ontario Blue Box Regulation (O.Reg. 391/21)

Indicator	Status	Progress
Materials designated	New regulation creates a consistent list of designated materials and expands to packaging-like products, as compared to previous regulation under the *Waste Diverison Act*.	Better
Exemptions	The regulation allows for exemptions for the following materials, which affects the amount reported as supplied into the market and this impacts management targets: • newspapers • packaging-like products made of flexible plastics and used for food protection, containment, handling. • compostable packaging[18] A recent amendment also enables producers to deduct materials (excluding beverage containers) collected from a business or institution that producers are not required to provide blue box collection services to under the blue box regulation. The ability for RPRA to properly audit these deductions will be extremely difficult and the impact on targets could be significant.	Worse
Performance		
Collection	Common collection system is required in every community in Ontario except in the Far North, which will expand current servicing. Blue box material must be, at a minimum, collected in the same manner that garbage is collected. This is generally consistent with current blue box servicing.	Better
Recycling	While targets appear higher, it is unclear what the impact of exemptions and deductions will have. Targets should be added for compostable packaging to align requirements with all other packaging. Targets may need to be re-visited to ensure they are driving improved environmental and economic outcomes.	Neutral
Promotion and Education	Similar requirements for producers to provide promotion and education as to what municipal governments are currently providing.	Neutral
Performance Trend	The weight of materials collected and recycled from the blue box programs have been gradually decreasing over the last number of years. This decrease is largely due to the change in material composition (i.e., the light weighting of packaging from glass and metal to plastics). However, the recycling rate has also declined by over 8% in the last five years. The new regulation expected to increase quantities of material captured as new communities will be added and, in many cases, new materials will be included in curbside collection (i.e., flexible packaging, single use items).	Worse (but new regulation expected to improve)
Oversight and Enforcement	RPRA has the ability to conduct audits and take compliance actions if issues are identified.	Better

18 Note compostable packaging is still required to report so there is an ability to understand the impact of the exemption.

4.3 Electrical and Electronic Equipment Regulation (O.Reg. 522/20)

The EEE regulation includes the following designated materials:

- computers
- printers
- printer cartridges
- video gaming systems
- headphones
- display devices
- radios and stereos
- headphones
- speakers
- cameras, including security cameras
- video recorders
- audio recording equipment
- musical instruments
- Parts of information technology, telecommunications and audio-visual equipment sold separately, such as hard drives
- Handheld point-of-sale terminals or devices
- Peripherals and cables used to support the function of information technology, telecommunications and audio-visual equipment, including drones with audio or visual equipment

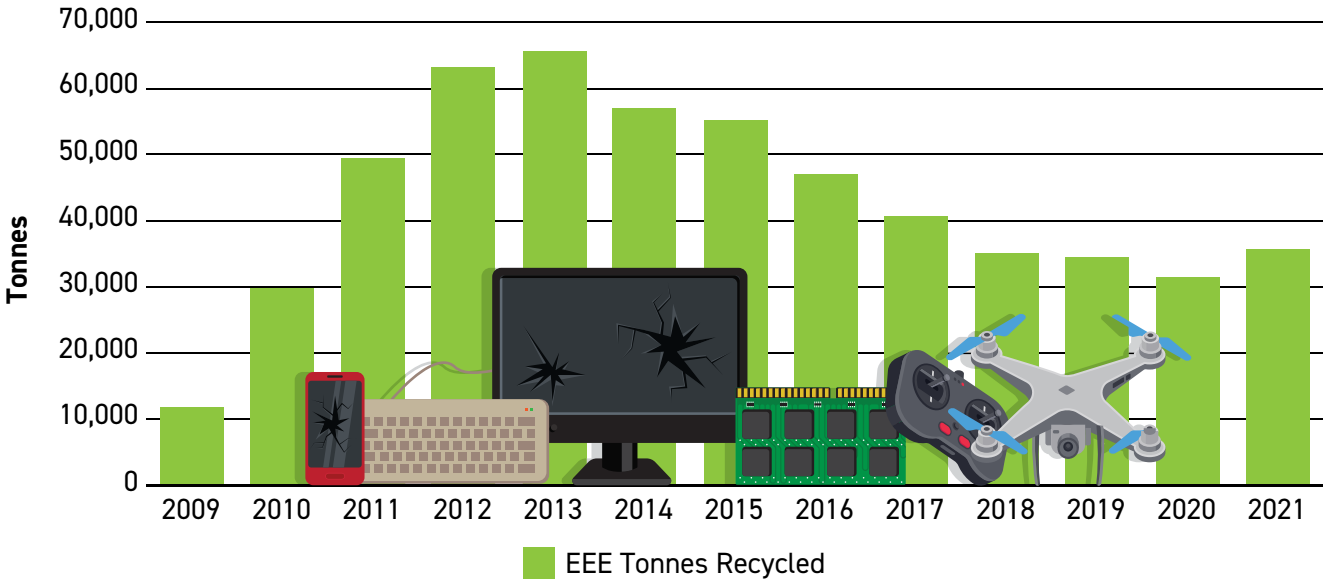
4.3.1 Performance

The amount of EEE recycled has dropped precipitously since 2013 (Figure 17). This is not the trend one would hope to see given that the amount of these products in our daily lives are becoming increasingly ubiquitous. A recent University of Waterloo study found that e-waste has tripled in the last two decades.[19]

Did you know?

British Columbia, Saskatchewan, Manitoba, Quebec, PEI and the Yukon Territory designate more types of electrical and electronic equipment than Ontario, including items like microwaves, power tools, large and small appliances, electronic toys and outdoor power equipment.

Figure 17: Electrical and Electronic Equipment (EEE) collected in Ontario 2009-2020



19 Journal of Hazardous Materials, A first comprehensive estimate of electronic waste in Canada. Komal Habib, Elham Mohammadi, Sohani Vihanga Withanage. April 15, 2023. Can be found at: https://www.sciencedirect.com/science/article/abs/pii/S0304389423001474

Based on an assessment of units sold and applying standards weights, it appears that the weight of materials was generally increasing up to 2019 (Table 9). However, producer data supplied based on the requirements in the new EEE regulation shows supplied tonnage for the last three years of between 55,000 to 60,000 tonnes is substantially lower. This drop of potentially 50,000 tonnes may indicate an issue with compliance or with exemptions included in the regulation.

Table 9: Designated EEE Supplied

	2014	2015	2016	2017	2018	2019	2020	2021	2022
EEE Supplied (Tonnes)	90,386	83,228	84,410	95,927	100,045	105,561	57,666	55,321	60,632

*Note: Black #s – based on reported;
Red #s – modelled based on units supplied;
Blue #s – based on Supplied Tonnes reported to RPRA

4.3.2 Issues

The following key issues have been identified with the regulation:

1. **Performance targets**
   a. The amount of EEE necessary to meet the management requirement appears to be lower than previous years. This may be an indication that the targets were set too low as the market does not appear to be declining based on previous years of data (e.g., the management target for EEE in 2022 is 33,124 tonnes; this performance has been surpassed in all years between 2011 and 2019).
   b. The reported supplied numbers in the last three years have dropped significantly and might indicate an issue with compliance or with exemptions included in the regulation.
   c. The current management targets do not provide for continuous improvement as they only increase to 2025 and then remain static at 70%.
2. **Unnecessary exemptions, deductions and credits**
   a. The regulation provides an exemption for small producers (three and a half tonnes with respect to ITT/AV or not more than 350 kilograms with respect to lighting). While the overall impact of this exemption is unclear, any exemptions provided lower the targets. This is because materials are supplied by these small producers into the marketplace (i.e., are available for collection) but are not included in the denominator for which the targets are calculated. This creates an unlevel playing field for EEE producers and may lead to less efforts to properly collect and recycle EEE and lighting. Ontario is the only province in Canada to include these exemptions.
   b. The regulation allows producers to reduce their management targets if they use recycled content, or if they allow for repair or extended warranties. While incentives to encourage these activities support the broader circular economy goals, this mechanism appears to be counterproductive to driving better environmental outcomes in Ontario as reductions in management targets decreases the need to ensure these EEE are properly collected and recycled. EEE producers were able to reduce their management requirements by 18% in 2023. In order to offset this, targets would need to be raised to ensure these reductions do not offset the need to collect and recycle these materials.
3. **Annual third-party performance and supply audits**
   a. Third-party audits are only required every three years from producers, instead of annually. While on the surface this appears to reduce regulatory burden, producers are still required to provide audits for all three years. This delay in audit information adds costs to RPRA as it means they have to use alternative means to ensure producers are compliant.
4. **Additional materials**
   a. Ontario lags behind other provinces of designating new types of materials (e.g., small appliances, power tools, personal care appliances, sports equipment, toys, outdoor power equipment, large appliances).

4.3.3 Summary

Table 8 provides a broad assessment of the electrical and electronic equipment (EEE) regulation as compared to the previous requirements and performance.

Table 8: Assessment of the Ontario Electrical and Electronic Equipment Regulation (O.Reg. 522/20)

Indicator	Status	Progress
Materials designated	The regulation covers slightly more designated materials (e.g., lighting and electronic musical instruments and audio recording equipment) than the previous regulation under the *Waste Diversion Act*, but less materials than most other provinces in Canada (e.g., small appliances, power tools).	Neutral
Exemptions	Unlike the previous *Waste Diversion Act* program, the new regulation exempts producers that only generate small amounts of EEE and lighting. It is unclear of the scale of the impact of this exemption, but it would impact targets as these materials are not included in the denominator. This type of exemption is not used in other Canadian jurisdictions.	Worse
Performance		
Recycling	Targets are lower than previous performance levels and producers can discount management targets through recycled content, warranties and repair, which is difficult to audit and can create perverse outcomes.	Worse
Promotion and Education	No promotion and education requirements for producers post 2022 to inform to public on how to properly manage electronics despite increasing incidents of electronics related fires in the waste stream.	Worse
Performance Trend	Performance significantly declining.	Worse
Oversight and Enforcement	RPRA has the ability to conduct audits and take compliance actions if issues are identified.	Better

4.4 Deposit Return (O.Reg. 293/15)

The deposit return regulation includes all alcoholic beverage containers.

4.4.1 Performance

The composition of the materials managed under deposit return has changed significantly over the last decade with the move away from glass to aluminum containers (Figure 18). Since glass is heavier than aluminum cans, this shift alone has reduced the overall tonnes of materials supplied and returned (Figure 19).

At the same time, the returns for beer containers (i.e., units of bottles and cans) have dropped by 16% over this time period and other alcoholic containers by 4%. It is important to highlight that the deposit return fees, and associated redemption rates have not been adjusted since 2010, which may be impacting return rates. Accessibility has also declined for returns at the same time that the availability of purchase of deposit return containers has increased, meaning deposit return containers are more accessible than opportunities to return them

Figure 18: Supplied deposit return containers (excluding kegs) in Ontario 2010-2022

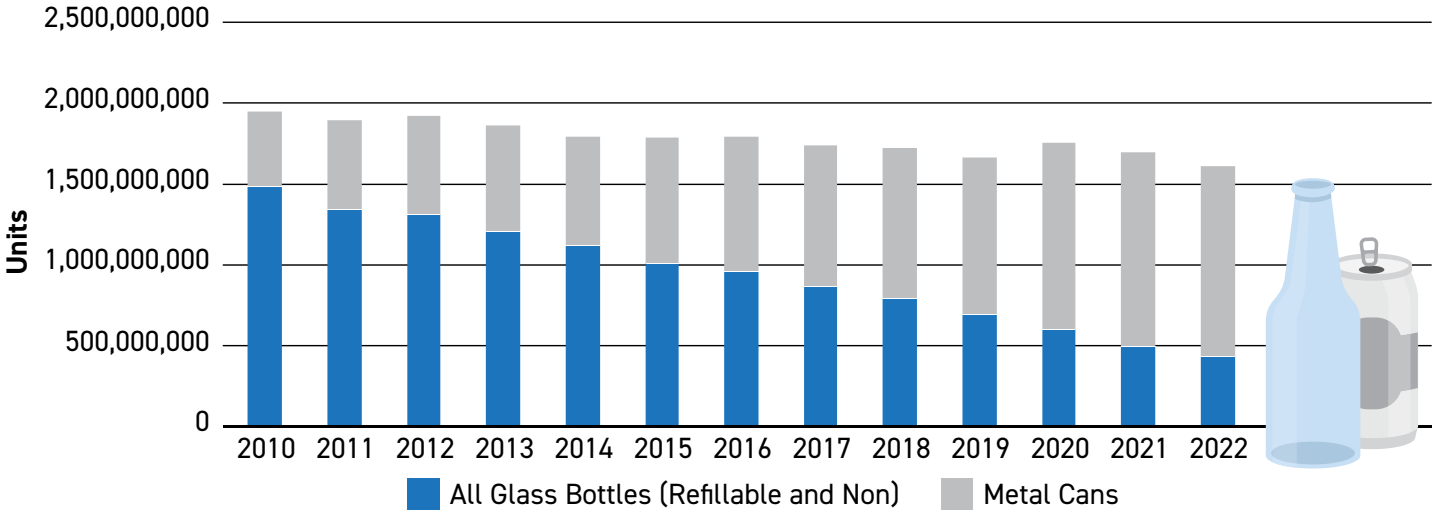
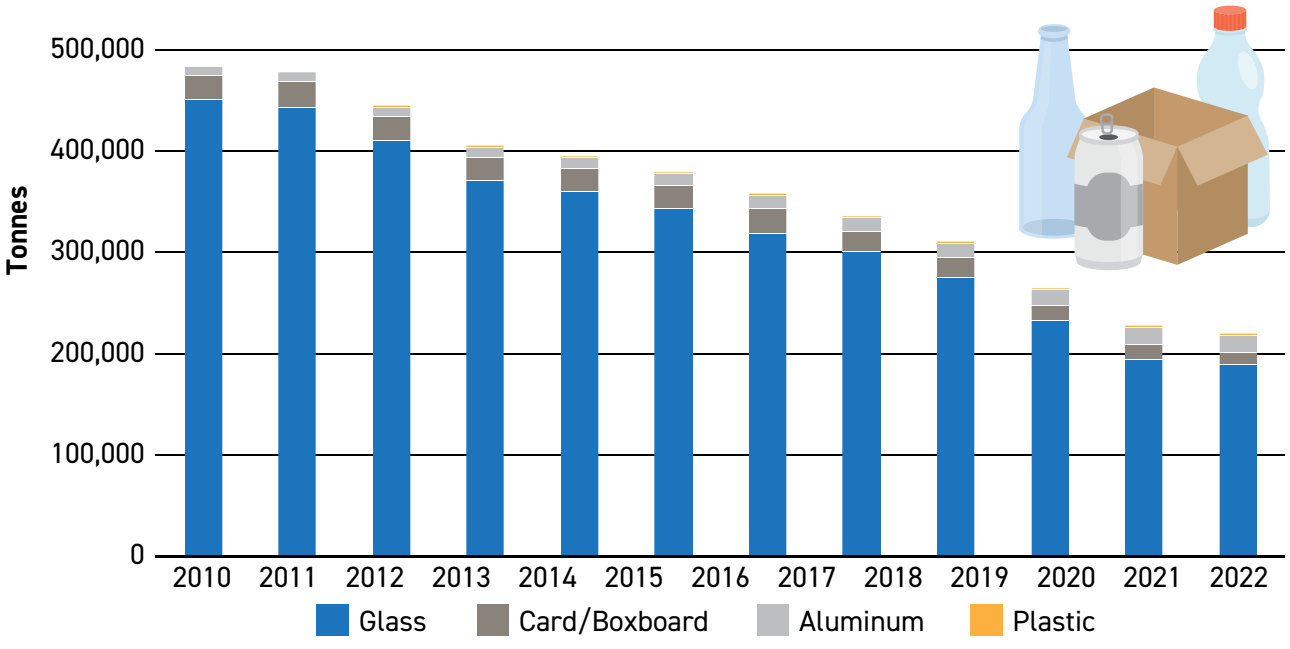
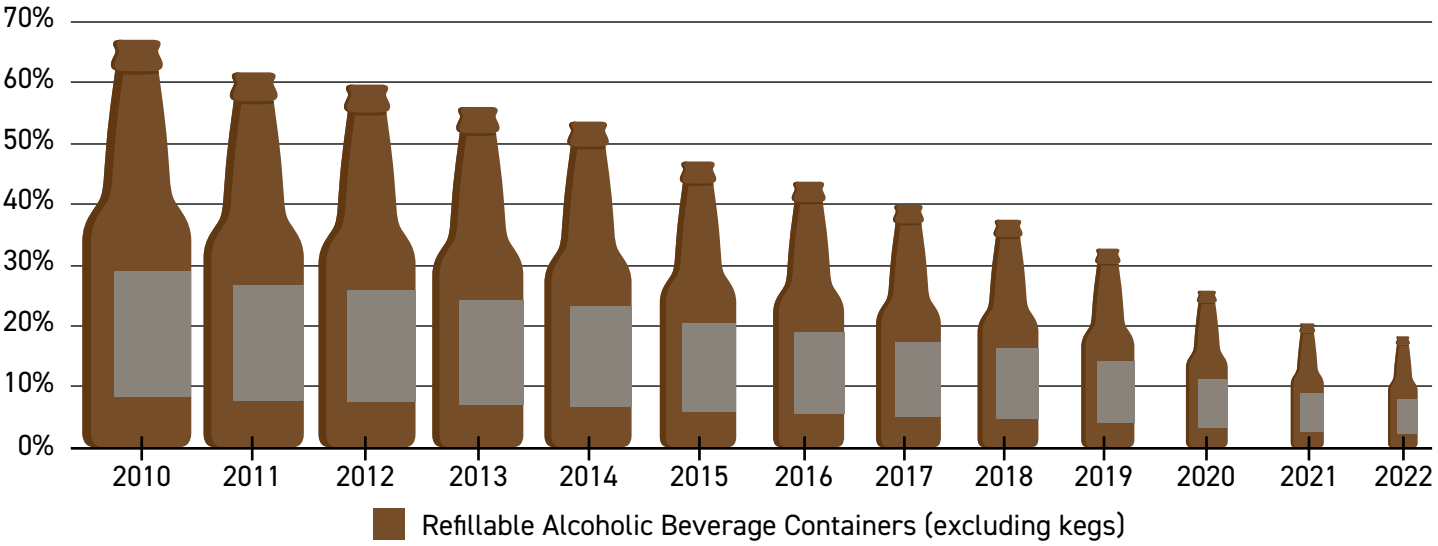


Figure 19: Collected deposit return materials in Ontario 2011-2022



This shift from glass to aluminum has also meant a shift away from refillable containers. Over the last decade, the share of refillable containers has dropped from 67% to 18% (Figure 20).

Figure 20: Share of refillable alcoholic beverage containers (excluding kegs) in Ontario 2010-2022



4.4.3 Issues

The following key issues have been identified with the regulation:

1. Performance targets

a. There continues to be a significant amount of deposit return material that ends up in the curbside recycling system. A reassessment of deposit rates as well as aligning the accessibility of deposit return containers to return locations (e.g., retail locations) are needed.

b. Consideration should also be made by the government as to what mechanisms could be used to improve the proportion of refillable containers.

4.4.3 Summary

Table 9 provides a broad assessment of the deposit return system regulation as compared to the previous requirements and performance.

Table 9: Assessment of the Ontario Deposit Return Program (O.Reg. 293/15)

Indicator	Status	Progress
Materials designated	The types of alcoholic beverage containers included in the program have not changed in a number of years. The province has established a working group to discuss the potential of expanding the deposit return system to include non-alcoholic beverage containers.	Neutral
Performance		
Performance Trend	Diversion rates have been trending down from 95% for beer bottles and 77% for other alcoholic containers in 2010 to 79% for beer bottles and 74% for other alcoholic containers in 2022.	Worse

4.5 Hazardous Special Products Regulation (O.Reg. 449/21)

The hazardous special products (HSP) regulation includes the following designated materials:

- oil filters,
- refillable and non-refillable pressurized cylinders,
- antifreeze,
- oil containers,
- paints and coatings,
- solvents,
- pesticides,
- mercury containing devices (e.g., barometers, thermometers, thermostats), and
- fertilizers.

Table 10 provides an outline of the requirements associated with the different designated HSP materials.

Table 10: Requirements associated with designated HSP materials

Material	Collection System	Management System	Minimum Management Targets	Promotion & Education	Registration	Performance Reporting
Oil Filters	✔	✔	✔	✔	✔	✔
Non-Refillable Pressurized Cylinders	✔	✔	✔	✔	✔	✔
Refillable Pressurized Cylinders	✔ (call-in only)	✔			✔	✔
Antifreeze	✔	✔		✔	✔	✔
Oil Containers	✔	✔		✔	✔	✔
Solvents	✔	✔		✔	✔	✔
Paint & Coatings	✔	✔		✔	✔	✔
Pesticides	✔	✔		✔	✔	✔
Mercury Containing Devices	✔ (call-in only)	✔		✔	✔	✔
Fertilizers				✔	✔	✔
Propane Cylinders (refillable)	✔ (call-in only)	✔			✔	

4.5.1 Performance

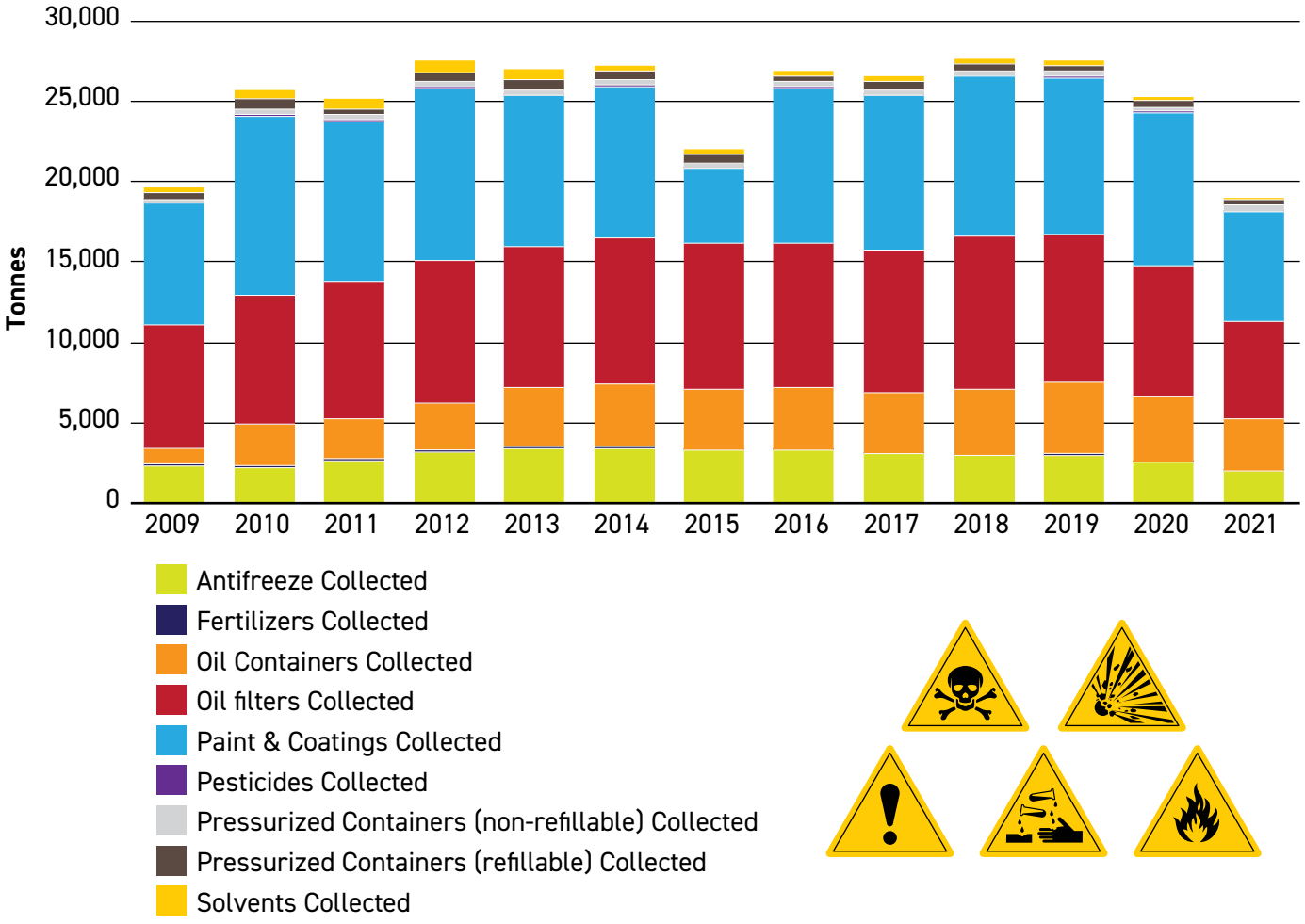
The weight of materials collected through the HSP regulation are small, representing only 0.15% of Ontario's total waste generation. However, due to potential hazards and environmental damage that improper disposal can cause, it is an important material stream that requires safe management.

In 2021, 18,980 tonnes of HSP material were collected. This represented a drop of 6, 248 tonnes versus the previous year's performance. Historically the annual tonnage collected have averaged 25,659 tonnes (Figure 21).

Did you know?

The HSP regulation currently only includes on average 11% of the pesticides, 7% of the miscellaneous organics (including solvents), and 51% of aerosols returned to municipal depots. As a result, municipal taxpayers are forced to pay for the cost of managing these materials instead of the companies that produced them.

Figure 21: HSP collected in Ontario by material type 2009-2021



4.5.2 Issues

The following key issues have been identified with the regulation:

1. Additional materials

a. While the province committed to add designated items to the regulation for over a decade, they have not followed through. On the contrary, instead of expanding the materials list, the regulation eliminated some items like fertilizer. Other Provinces such as Alberta, British Columbia, and Manitoba have significantly more items designated under their regulations such as lubricating oil, lead acid batteries and a full suite of pesticides. Designating additional items could increase collection by 3,594 tonnes (~19% increase).

b. A more comprehensive policy under the *Resource Recovery and Circular Economy Act, 2016* is required for pharmaceuticals and sharps. The current regulation still places much of the burden on municipal governments to collect these materials. It is estimated that municipal governments collect over 52,800 kg of pharmaceuticals and over 20,150 kg of sharps at municipal taxpayers' expense.[20] Pharmaceuticals are covered under EPR policies in British Columbia, Manitoba, PEI, and Quebec (2024) and sharps in British Columbia (proposed).

2. Performance targets

a. The regulation does not have targets for collection or the management of HSP items except for oil filters and non-refillable cylinders. This is a glaring miss and does not provide adequate incentives for producers to invest in maximizing collection and management of materials.

b. The accessibility targets are difficult to discern for the regulator and assessing producer compliance with the target has not yet occurred more than 8 months into implementation of regulatory requirements.

3. Annual third-party performance and supply audits

a. Third-party audits are only required every three years from producers, instead of annually. While on the surface this appears to reduce regulatory burden, producers are still required to provide audits for all three years. This delay in audit information adds costs to RPRA as it means they have to use alternative means to ensure producers are compliant.

20 Surveys of municipalities collecting pharmaceuticals and sharps were completed in 2020. The population of the sampled communities equated to 25% of the Province's total population. These results were extrapolated to estimate Provincial totals.

4.5.3 Summary

Table 11 provides a broad assessment of hazardous special products (HSP) regulation as compared to the previous requirements and performance.

Table 11: Assessment of the Hazardous Special Products Regulation (O.Reg. 449/21)

Indicator	Status	Progress
Materials designated	The regulation does not designate all of the products collected and deemed hazardous at municipal collection sites/events e.g., pharmaceuticals and sharps, automotive additives and cleaners, automotive additives and cleaner containers, fuels, miscellaneous flammable materials, oxidizers, corrosives – acids, corrosives – caustics, reactive chemicals, and lubricating oil. The regulation removed some items previously included like fertilizer	Worse
Exemptions	Unlike the previous *Waste Diversion Act* regulation, the new regulation exempts producers that only generate small amounts of HSP. It is unclear of the scale of the impact of this exemption but it would impact targets as these materials are not included in the denominator. This type of exemption is not used in other Canadian jurisdictions.	Worse
Performance		
Collection	The accessibility targets are complex and problematic to quantify as they can be reduced/ supplemented/ augmented by producers based on a combination of depots, events, collections and use of return-to-retail locations. This lack of clarity makes enforcement challenging and is compounded by the lack of management targets for most HSP materials.	Worse
Recycling	The regulation does not include targets except for oil filters and non-refillable pressurized containers.	Worse
Promotion and Education	Similar requirements for promotion and education as to current conditions	Neutral
Performance Trend	In 2021, 18,980 tonnes of HSP material were collected. This represented a drop of 6,248 tonnes versus the previous year's performance and historically annual tonnage collected has averaged 25,659 tonnes. There may be some rationale for recent declines due to consumption changes and product design. There is concern however that regulation will see lower quantities of material captured as a number of items previously included have been eliminated (e.g., fertilizer) and collection site requirements are opaque and not being enforced.	Neutral
Oversight and Enforcement	RPRA has the ability to conduct audits and take compliance actions if issues are identified. However, accessibility targets are difficult to enforce and there no collection or management targets for most of the materials.	Better

4.6 Tires Regulation (O.Reg. 225/18)

The tire regulation includes the following designated materials:

- automobile tires,
- motorcycle tires,
- motor assisted bicycle tires (e.g., mopeds, non-kick scooters),
- tractor tires,
- tires on industrial and agricultural vehicles and equipment,
- transport truck tires,
- trailer tires (e.g., boat trailers, RVs),
- all-terrain vehicle tires,
- riding lawn mower tires,
- aircraft tires if not supplied on aircraft,
- snow blower tires,
- wheelbarrow tires,
- hand truck tires,
- dolly tires,
- push lawn mower tires,
- segway tires, and
- any other tire that weighs 1 kg or more

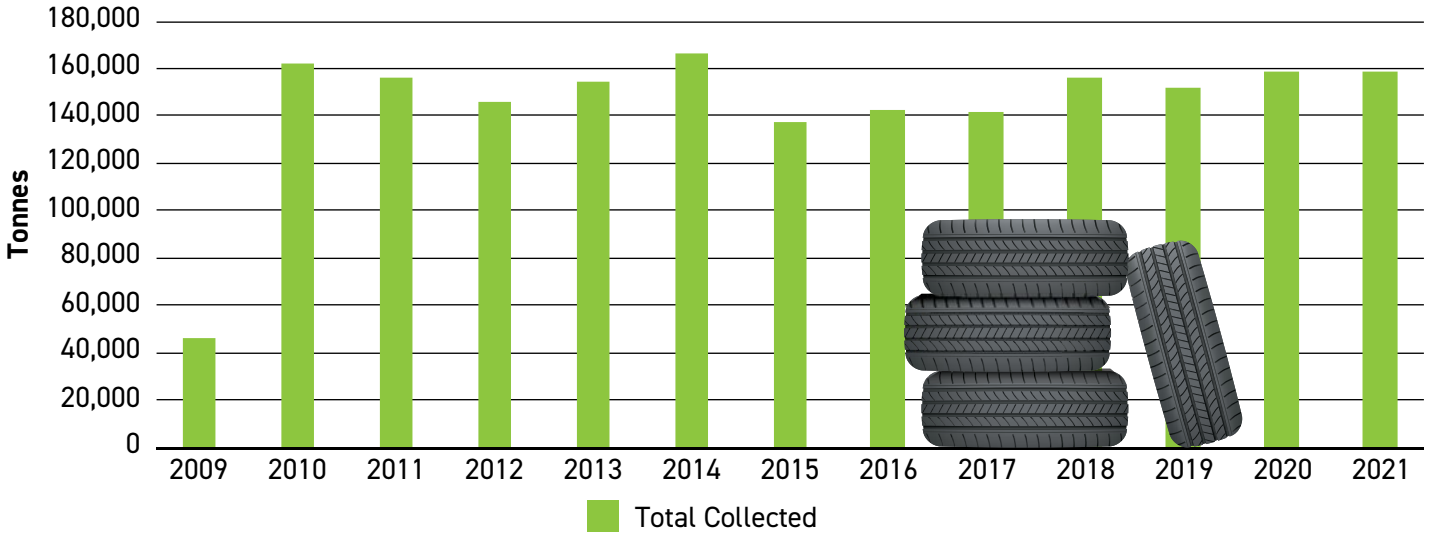
4.6.1 Performance

Overall, the amount of tires collected has been increasing steadily (Figure 22) for the last 12 years with no concerns with tires being stockpiled or illegally dumped. A report completed by Waste to Resource Ontario completed several years ago indicated the policy was supporting roughly 800 well-paid jobs and contributing over $65 million annually to Ontario's economy through the collection of tires that were being recycled into new products.

Did you know?

In 1990, a site with 14 million stockpiled tires caught fire in Hagersville, Ontario and burned for 17 days forcing 4,000 residents from their homes. The fire forced the government to put measures in place to ensure used tires were being properly managed that eventually lead to a producer responsibility regulation.

Figure 22: Tires collected in Ontario 2009-2021



4.6.2 Issues

The following key issues have been identified with the regulation:

1. **Unnecessary exemptions, deductions and credits**
   a. The regulation provides an exemption for small producers. While it is unclear of the overall impact of this exemption, it has the potential to impact targets (as materials are supplied but not included in the denominator) and creates an unlevel playing field. Similar exemptions are not provided in other Canadian jurisdictions.
2. **Annual third-party performance and supply audits**
   a. Third-party audits are only required every three years from producers, instead of annually. While on the surface this appears to reduce regulatory burden, producers are still required to provide audits for all three years. This delay in audit information adds costs to RPRA as it means they have to use alternative means to ensure producers are compliant.

4.6.3 Summary

Table 12 provides a broad assessment of tires regulation as compared to the previous requirements and performance.

Table 12: Assessment of the Tires Regulation (O.Reg. 225/18)

Indicator	Status	Progress
Materials designated	The regulation covers all passenger and large format tires that were included in the previous regulation under the *Waste Diversion Act*.	Neutral
Exemptions	An unnecessary exemption for small producers is included but considered minor. Other provinces do not include a similar exemption.	Neutral
Performance		
Collection	There are less collection sites required	Worse
Recycling	Targets are consistent with previous performance	Neutral
Promotion and Education	Promotion and education requirements included in the regulation to ensure consumer protection were removed.	Worse
Performance Trend	Performance has remained relatively steady over the duration of the policy.	Neutral
Oversight and Enforcement	RPRA has the ability to conduct audits and take compliance actions if issues are identified.	Better

4.7 Pharmaceutical and Sharps Regulation (O.Reg. 298/12)

The pharmaceutical and sharps regulation includes:

- a drug within the meaning of section 2 of the *Food and Drugs Act* (Canada) and includes a natural health product within the meaning of the Natural Health Products Regulations made under that Act, and
- a needle, safety engineered needle, lancet or other similar instrument that is designed to puncture the skin of individuals or companion animals for medical purposes.

4.7.1 Performance

The amount of pharmaceuticals and sharps has increased over the last seven years (Figure 23) with growth in the number of pharmacies participating in the program. However, there has been concern about the lack of rigour associated with this regulation and the amount of materials that end up at municipal sites. Municipalities collected 52,500 kg of pharmaceutical waste and 20,000 kg of sharps in 2019 at the taxpayer's expense, despite the existence of a sharps and pharmaceuticals program.[21] Municipal governments have advocated that the existing program should be shifted to a regulation under the *Resource Recovery and Circular Economy Act* to ensure better performance and oversight.

Did you know?

Home health care waste (e.g., dialysis tubing, urinary bags, and tubing, IV bags, needles and sharps) is a growing area of concern for waste management workers as more people are receiving care at home. In 2019, the Region of Peel reported that processing line stoppages at their recycling facility had increased by 32% since 2016 due to these materials.

Figure 23: Amount of Pharmaceutical and Sharps Collected

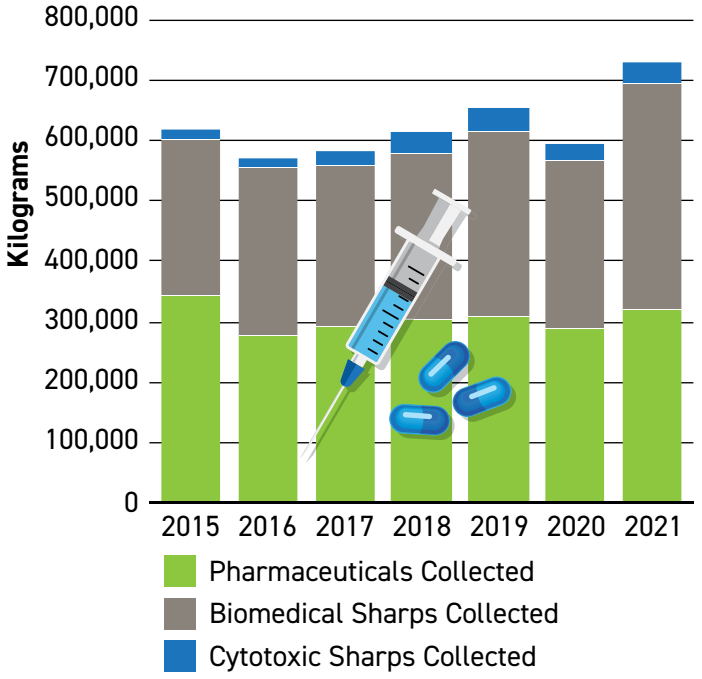
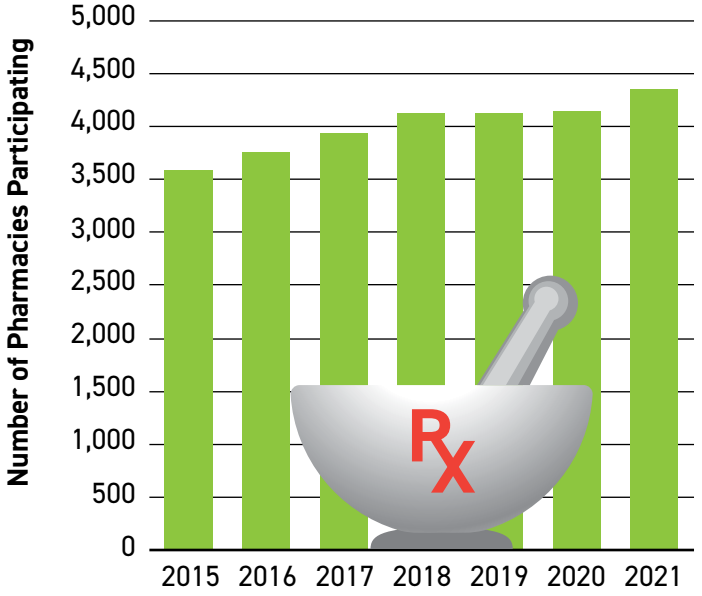


Figure 24 – Number of Ontario Pharmacies Participating



21 This is about 14% of all pharmaceuticals and 6% of all sharps collected in 2019, including by producers and municipalities collectively. Available at https://www.amo.on.ca/advocacy/waste-diversion/hazardous-special-products-ie-municipal-hazardous-special-wastehousehold

4.7.2 Issues

The following key issues have been identified with the regulation:

1. **Performance targets**
   a. Municipal facilities continue to be the backstop for collection of these products. Based on data from municipalities, over 14% of all pharmaceuticals and 6% of all sharps are collected by municipal governments at the cost to the property taxpayer.
   b. There are few requirements for collection sites to advertise that they collect pharmaceuticals and sharps.
2. **Oversight and Enforcement**
   a. No dedicated resources and oversight are provided as part of the global Ministry budget.
   b. It is unclear if any actions have been taken on non-compliance as the Ministry does not provide reports. There is no transparency.
3. **Additional materials**
   a. Although established a decade ago, there have been no new materials added despite growing number of individuals receiving medical care at home. Common home health care items such as dialysis waste, catheters, urinary bags and tubing, and colostomy bags should be added.

4.7.3 Summary

Table 13 provides a broad assessment of pharmaceutical and sharps regulation as compared to the previous requirements and performance.

Table 13: Assessment of the Pharmaceutical and Sharps Regulation (O.Reg. 298/12)

Indicator	Status	Progress
Materials designated	The regulation covers pharmaceutical and sharps but no new materials have been added to since 2014	Neutral
Exemptions	n/a	n/a
Performance		
Collection	Required to meet a minimum of participating pharmacies	Better
Recycling	n/a	n/a
Promotion and Education	No promotion and education requirements	Neutral
Performance Trend	The amount of materials collected has generally increased as has the participating pharmacies	Better
Oversight and Enforcement	Oversight and enforcement by the Ministry lacks transparency	Neutral

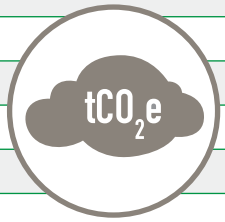
5.0 Other Potential Material Designations

In 2022, a review was undertaken to explore opportunities associated with designating additional products under extended producer responsibility (EPR) policies in Ontario, with a focus on adding products under existing regulations (for EEE, and HSP) and new designations under new regulations (for carpets, furniture, mattresses, and textiles).

The tables below rank the largest opportunities in terms of additional tonnes diverted, GHG emissions reduced, jobs created, and estimated annual income by designating additional materials under EPR. These are meant to be illustrative. While HSP ranks lowest in all categories, these measurements do not capture all impacts (e.g., toxins, health and safety related issues).

Ranking	Material Categories	Estimated Amount Collected in Ontario under an EPR Approach (Tonnes, per Year)
1	Textiles	155,497
2	Furniture	76,157
3	Carpet	63,203
4	Electrical and Electronic Equipment	16,944
5	Mattresses	12,296
6	Household Hazardous or Special Products	3,594

Ranking	Material Categories	Estimated GHG Emissions Reduced under an EPR Approach (tCO_2e, per Year)
1	Textiles	1,243,973
2	Furniture	251,319
3	Carpet	167,337
4	Electrical and Electronic Equipment	46,409
5	Mattresses	27,297
6	Household Hazardous or Special Products	1,978



Ranking	Material Categories	Estimated Jobs Related to Diversion Activities, under an EPR Approach (Low Estimate)	Estimated Jobs Related to Diversion Activities, under an EPR Approach (High Estimate)
1	Furniture	1,557	4,211
2	Electrical and Electronic Equipment	1,036	1,036
3	Textiles	423	1,022
4	Carpet	570	758
5	Mattresses	81	141
6	Household Hazardous or Special Products	31	31

Ranking	Material Categories	Estimated Annual Income (Salary Generated) (per Year)
1	Electrical and Electronic Equipment	$51.0M
2	Textiles	$50.0M
3	Furniture	$24.5M
4	Carpet	$20.4M
5	Mattresses	$4.0M
6	Household Hazardous or Special Products	$1.5M

It is important to emphasize EPR policies are not the only policy mechanism that could be used to improve outcomes. Other tools such as mandatory recycled content mandates, disposal bans, disposal levies, and source separation requirements can be successfully implemented either in combination or instead of EPR.

6.0 Litter

There has been an increasing focus on waste products and packaging ending up in our oceans, lakes, rivers, and other bodies of water that pose a dire threat to sensitive ecosystems, wildlife, communities, and individuals. This is a growing public health and safety issue as well as an environmental concern. It is of particular concern to municipal governments, which are forced to deal with plastics at the "end of the pipe" as litter in the garbage stream, in recycling programs, or at wastewater treatment facilities. Studies estimate 8 million tonnes of plastics are ending up in our oceans annually.[22] An additional 10,000 tonnes per year are estimated to be entering the Great Lakes.[23] This has profound impacts on marine mammals, fish, and birds. At the same time, microplastics are being found increasingly in our drinking water with uncertain health impacts.

Municipal governments play a key role in helping to address litter through:

- creating and maintaining infrastructure (e.g., collection bins in public spaces, equipment within wastewater facilities, street cleaners),
- dedicating costly resources to collect litter,
- planning and leading community clean-up days (as well as providing resources to community groups on an on-going basis),
- performing litter audits and resulting data analysis,
- providing education and awareness campaigns on the issue,
- enacting bylaws (e.g., fines, requirements related to collection bins), and
- ensuring compliance and enforcement (e.g., bylaw officers and public reporting hotlines).

In 2020, the provincial government enacted legislation to recognize the second Tuesday of every May as the Provincial Day of Action on Litter to raise awareness and encourage action to reduce waste and litter. Within the blue box regulation, it also created requirements for public space recycling. There are no benchmarks currently established to measure the impact of these initiatives on litter. Some municipal governments have done litter composition audits but there is not a consistent approach being taken, which makes comparisons difficult.

Did you know?

The City of Toronto estimates that litter costs the City approximately $36 million annually.[24]

22 J. R. Jambeck et al., Plastic waste inputs from land into the ocean (Science, 13 February 2015).
23 M. J. Hoffman and E. Hittinger, Inventory and transport of plastic debris in the Laurentian Great Lakes (Marine Pollution Bulletin, Vol 115, 15 February 2017).
24 City of Toronto. 2019 Budget Report on Solid Waste Management Services. https://www.toronto.ca/wp- content/uploads/2017/11/931b-Budget-Notes-SWMS-op-nov17-503p.pdf (p. 14).

Recommendations to reduce litter:

1. Enact legislation, regulations, and proper enforcement
   a. Ensure most commonly littered items are designated under producer responsibility requirements and strengthen requirements related to public spaces
   b. Strengthen litter and illegal dumping laws especially related to roadside litter
   c. Review requirements related to waste management vehicles to ensure these vehicles are not contributing to litter
2. Invest in proper data management, research, analysis and innovation
   a. Better track litter data to ensure progress is being made similar to other jurisdictions like England and Scotland
   b. Create a litter innovation fund to pilot, implement and evaluate small scale local research projects
   c. Fund municipal and provincial litter audits
3. Help to educate, train, and encourage collaboration
   a. Coordinate province-wide messaging and seek partnership opportunities with sponsors to help fund or support municipal clean-up efforts
   b. Provide information about best practices in addressing litter
   c. Provide greater recognition to community leaders or community groups, and
   d. Collaborate or initiate voluntary actions across the Province especially related to problematic litter such as fast-food packaging, cigarette butts, plastic bags, snack wrappers, fast food packaging, drink containers, beverage cups and chewing gum
4. Invest in infrastructure and servicing
   a. Require businesses such as gas stations and drive-thru restaurants to provide accessible collection bins to reduce roadside litter
   b. Provide funding to upgrade municipal stormwater and wastewater systems to help reduce the amount of contaminants making their way into lakes and rivers

7.0 Conclusion

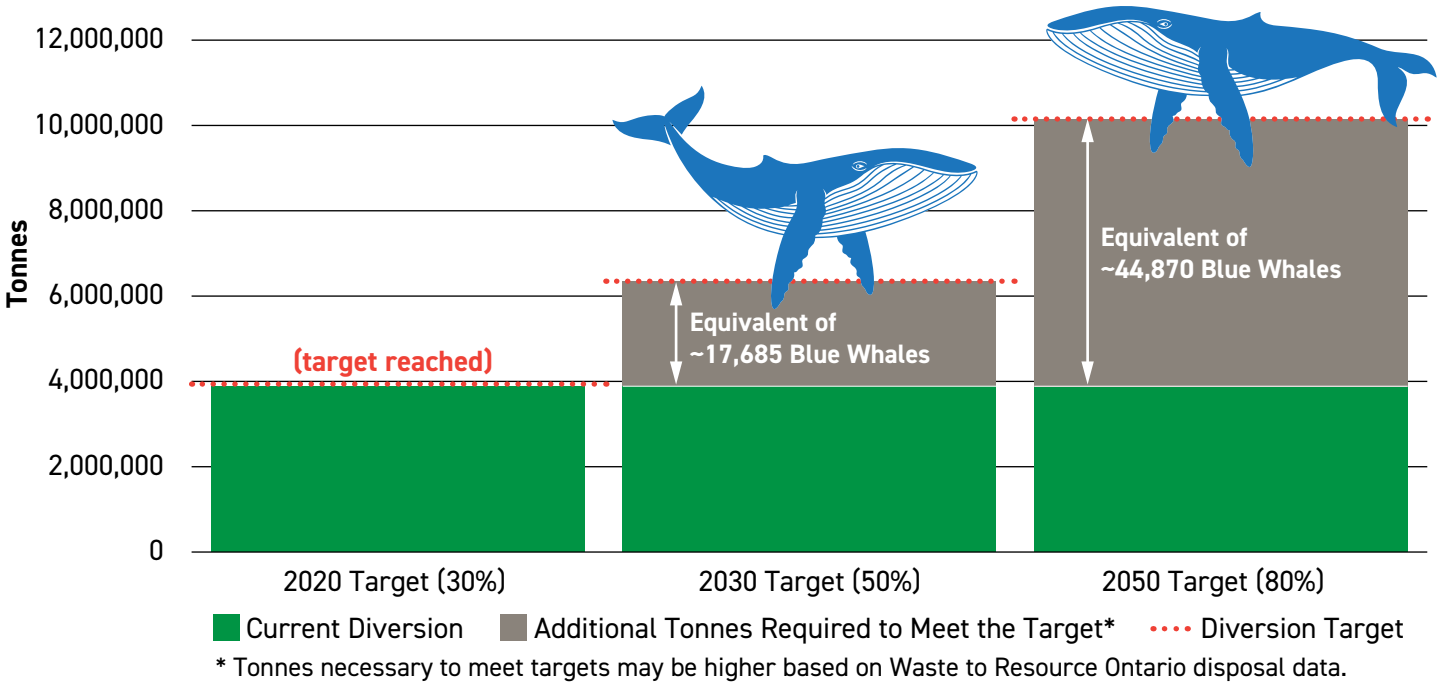
From border disputes with U.S. Senators to burning tire piles and rising tensions related to the siting of new landfill capacity, managing Ontario's increasing waste generation has been a chronic concern for decades. Current estimates show that Ontario only has 10 years of remaining disposal capacity available. The Provincial government's goal of building 1.5 million new homes will only exacerbate the issues related to disposal capacity. Ensuring sufficient waste disposal resources to accommodate this growth will be crucial. Some of the pressure on finding new disposal capacity can be alleviated by increasing waste diversion efforts and keeping resources in the economy.

Ontario municipalities understand the importance of transitioning to a circular economy, including the benefit of re-directing resources from disposal and keeping them in the economy. The transition will help conserve resources, reduce greenhouse gas (GHG) emissions and generate local jobs and investment. However, further provincial and federal policy development is required to support this transition.

The provincial government's efforts to transition existing diversion programs to full producer responsibility and expand diversion of food and organic waste from disposal have helped. Based on the low generation rate, it is estimated that Ontario achieved its goal of 30% waste diversion in 2022. However, in order to reach the provincial government's goal of 50% diversion by 2030 and 80% diversion by 2050, significant new effort and new policies are required.

The Made-in-Ontario Environment Plan updated in late 2020 commits to a number of circular economy policies and initiatives that could enable the provincial government to meet the 50% diversion goal for 2030. However, actions need to made on these commitments.

Figure 25: Additional tonnes necessary to meet Ontario's diversion goals



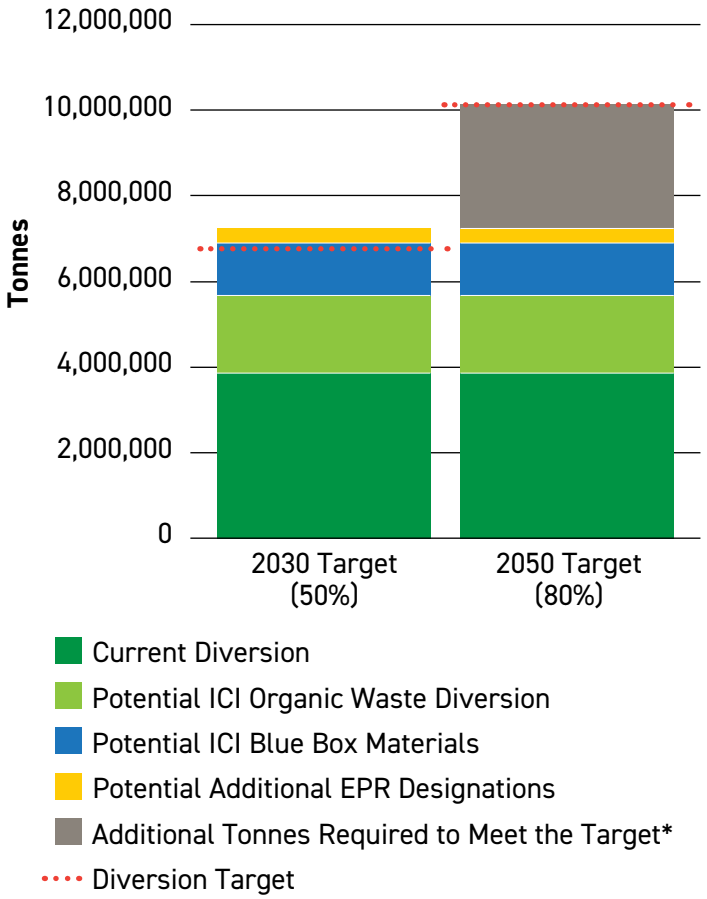
* Tonnes necessary to meet targets may be higher based on Waste to Resource Ontario disposal data.

Recommendations to increase diversion:

1. Target regulations to drive ICI waste diversion

   Actions taken by the government to date have mainly focused on residential materials, including the Ontario blue box regulation. As this paper identifies, the waste generated by the ICI sector offers a significant opportunity to drive increased diversion (Figure 26). There are various policy mechanisms that could be used to achieve this from a disposal levy (i.e., similar to Quebec, Manitoba and a number of other U.S. States) to expanding producer responsibility requirements to small businesses or at least a larger range of businesses (i.e., similar to Quebec and other U.S. States). A policy for ICI paper and packaging could provide a solution for stranded small businesses who are not eligible for blue box services under the current blue box regulation.

Figure 26: Potential additional diversion tonnes from new policies.



* Tonnes necessary to meet targets may be higher based on Waste to Resource Ontario disposal data.

2. Enhance current EPR regulations and expand material designations

   Addressing issues with current EPR regulations could help to improve outcomes and ensure a stronger foundation for new designations, including:

   i) Ensuring performance targets are measurable, and drive meaningful and continual improvement;

   ii) Ensuring designations align with other Canadian jurisdictions;

   iii) Removing unnecessary exemptions, deductions and credits;

   iv) Requiring annual third-party performance audits in all regulations to reduce enforcement costs and ensure a level playing field; and

   v) Establishing clear timelines for new designations with ample lead time to allow for proper planning.

   Further, by following through with the provincial government's commitments to designate small appliances, electrical tools, mattresses, carpets, clothing and other textiles, furniture, and other bulky items could provide an additional 327,700 tonnes of diversion per year.

Finally, the province needs better mechanisms to track and analyze waste data. Given the province already requires annual reporting from most waste management facilities, including landfills, it should have a better understanding of how materials are currently being managed. The RPRA Residential Datacall will also no longer be available with the transition of the blue box, which will make it increasingly difficult to accurately measure progress.

Without these actions or other significant steps taken, Ontario will not achieve its goal of 50% diversion by 2030, and given the state of Ontario's landfill capacity, significant new disposal capacity will be needed. Most of the recommended actions are initiatives that the provincial government has previously committed to implementing in the Waste-Free Ontario Strategy and the subsequent Made-in-Ontario Environment Plan.

We urge the government to continue moving forward with policy efforts to advance a circular economy that will improve economic and environmental outcomes for Ontarians.

Appendix A

Table 14: Data sources

	Parameters/ Entries	How Captured	When Captured	Quality Control
RPRA Municipal Datacall	Information submitted includes tonnage and financial information for blue box material and tonnage managed through all waste diversion activities, including Municipal Hazardous Special Products (HSP), Electrical and Electronic Equipment (EEE), organics, garbage, and other materials.	Survey needs to be completed by all municipal programs participating in the blue box program. Programs that have transitioned to full producer responsibility no longer report.	Annual (since 2002) * Programs that have transitioned to full producer responsibility no longer report.	Data accessed by RPRA but certain data entries have greater focus than others.
Stewardship Annual Reports	Information includes on designated materials collected, available for collection and diverted, promotion and education metrics and financials for both designated materials (batteries, tires, EEE, HSP, packaging, pharmaceuticals and sharps) and voluntary (agricultural plastics).	Annual reports completed by producer responsibility organizations	Annual (up to date materials transitioned to RRCEA)	Data accessed by RPRA for all designated materials. Pharmaceutical and sharps accessed by MECP.
RPRA Resource Recovery Reports	Information provided includes amount of designated material supplied, management requirements and performance data for all designated materials under the RRCEA.	Reporting required annually to RPRA.	Annually	Data accessed by RPRA for all designated materials.
Statistics Canada Waste Management Industry Survey	Information included the amount of material by type and by province and territory that is disposed or diverted from residential and ICI sources. It also includes information on financial and employment for both private and public sector entities.	Surveys received from Statistics Canada are mandatory to complete	Biennial	Data accessed by Statistics Canada
CIF Waste Composition Audits	Information has been captured from composition audits of the garbage, recycling and organics streams undertaken from single-family and multi-family homes in various communities across Ontario.	Waste composition audits completed of garbage, recycling and organics stream in participating municipalities	Annually for the last 7 years	Data accessed by CIF
Waste to Resource Ontario	Information was gathered through surveys or public reports from landfills and organic waste processing facilities across Ontario that included general information about operations and the waste received on an annual basis.	Survey	Landfill surveys completed in 2014, 2017, 2018 Organics surveys completed in 2014, 2016, 2018	Data assessed versus other available data and previous years.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