RPRA
Resource Productivity & Recovery Authority

DATACALL REPORT 2018

EXECUTIVE SUMMARY

Each year, municipalities, recycling associations and First Nation communities in Ontario report on their residential waste diversion programs to the Resource Productivity and Recovery Authority (RPRA) through the Datacall. Information submitted by communities includes tonnage and financial data associated with operating the Blue Box Program, and the impact on diversion achieved through other waste management activities.

RPRA is responsible for the oversight of the Blue Box Program and for determining the funding allocation for the program. The Datacall is the source of data for determining the net Blue Box system cost and for allocating funding under the Blue Box Program Plan. Each Ontario municipal program (municipality, recycling association or First Nation) providing recycling services must complete the Datacall to be eligible for Blue Box funding.

The 2018 Datacall report summarizes information generated by the 249 programs participating in the Blue Box Program. Key findings include:

- The provincial residential waste diversion rate has increased nominally from 49.6% in 2017 to 49.7% in 2018.
- The net cost of the Blue Box Program increased by 19.8% between 2017 and 2018. This is primarily driven by revenue decreases for the sale of Blue Box materials due to a drop in the global market prices related to tightening import restrictions in Asian end markets.
- Overall, revenues for Blue Box materials have dropped by 32.9% compared to 2017.
- The recovery rate for Blue Box material has decreased to 60.2%, just 0.2% above the provincially mandated 60.0% and down from 61.3% in 2017.
- While Blue Box tonnes have slightly decreased in 2018, organics tonnes continued to increase as households focus on diverting their leaf and yard material. In the coming years, we anticipate the organics streams to continue to grow and contribute to the residential waste diversion rate.

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INTRODUCTION

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Each year, municipalities, recycling associations and First Nation communities operating Blue Box programs complete the Datacall through which they report to RPRA the amounts of residential materials diverted under each of their waste diversion programs. Information submitted includes tonnage and financial information for Blue Box material and tonnage managed through all waste diversion activities, including Municipal Hazardous or Special Waste (MHSW), Waste Electrical and Electronic Equipment (WEEE), organics, garbage and other materials.

The Datacall is the source of data for determining the net Blue Box system cost and for allocating funding under the Blue Box Program Plan. Each Ontario program providing recycling services must complete the Datacall to be eligible for Blue Box funding. The Datacall is also used to determine the residential waste diversion rate of individual communities and the province overall.

Programs submit information through either the Short- or Long-form Datacall. Through the Long-form, communities report on all waste diversion activities. Communities with a population of over 30,000 or communities that would like to have their diversion rate calculated fill out the Long-form. Other communities only submit data necessary for calculating the Blue Box funding through the Short-form, which is a streamlined version that collects Blue Box tonnage and financial information.

The 2018 Datacall report summarizes information generated by the 249 programs participating in the Blue Box Program and highlights trends in residential waste management.

RPRA conducts a data verification process after the Datacall reporting period ends. The verification process can include the confirmation of any data variances from the previous year and an assessment of costs and tonnages reported. In collaboration with the Municipal Industry Program Committee (MIPC), RPRA also selects approximately 20 programs for audit by a third party for the Blue Box sections of their Datacall submission. RPRA does not guarantee the accuracy or completeness of data submitted even after RPRA conducts its data verification process and audits.

GLOSSARY OF TERMS

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Bottom ash disposed Ash from the incineration process that is not reused or recycled. These tonnes are included in the Disposed Tonnes calculation.

Bottom ash recycled Ash recovered from the incineration process that is used in the creation of other materials. These tonnes are included in the residential waste diversion rate calculation.

By-product material Material from households that ends up in the garbage, recycling and reuse streams.

Collected Blue Box tonnes Blue Box materials that are collected curbside and/or at a depot.

Communities ('Programs') Includes municipalities, amalgamated municipalities, recycling associations and First Nation communities that have a Blue Box program and submit a Datacall form.

Curbside collection Households receiving curbside Blue Box service, which includes single-family homes serviced individually and multi-family homes serviced collectively. These homes may also have access to depot service for Blue Box materials in addition to curbside service.

Depot collection Bringing residential Blue Box material to a specified location within a community.

Disposed Tonnes Includes garbage and residue from recycling and other waste management activities disposed at a landfill or energy-from-waste incineration facilities.

Diverted Tonnes Includes recycling activities, municipal organic collection and processing activities, provincial deposit systems for beer, wine and spirits containers, residential on-property management, municipally operated reuse activities and energy-from-waste recycling.

Energy-from-waste (EFW) Energy in the form of electricity and/or heat as a byproduct of incinerating waste.

Energy-from-waste non-ash residue Includes material that was rejected from the EFW incineration process that is not ash. These tonnes are included in the Disposed Tonnes calculation.

Fly ash (also 'EFW ash residue') Particulate matter emissions from the incineration process. These tonnes are included in the Disposed Tonnes calculation.

Generated Tonnes Includes recycling, reuse and garbage material produced by Ontario residents. Generated Tonnes is the combination of disposed tonnes and diverted tonnes.

Grasscycling The process of mulching and leaving grass clippings to decompose on the lawn when mowing.

Hazardous waste disposal Tonnes of hazardous household products that are sent to landfill.

Households served The number of households in the jurisdiction that receive Blue Box service either by curbside or depot. Households serviced by private collection are not included.

IC&I Industrial, commercial and institutional.

Landfilled residential material Includes garbage tonnes, EFW ash and MRF and organic processing residues. These tonnes are included in the Disposed Tonnes calculation.

Long-form Datacall Standard Datacall, available to all communities, includes sections related to waste management information beyond the Blue Box Program. Information submitted through this form is used to calculate the residential waste diversion rate.

Marketed Blue Box tonnes Blue Box materials sorted and processed by a MRF that is then sold and used in place of virgin materials. This does not include Blue Box materials that are sent for secondary processing.

Material recovery facility (MRF) A plant where recyclable materials are sorted and processed to sell to market as raw materials used to make new products.

Multi-family households A unit or apartment in a residential complex or building with six units or more.

Municipal Hazardous or Special Waste (MHSW) Hazardous household products, such as single-use batteries, paints, solvents and propane tanks.

On-property management Includes backyard composting, grasscycling, open burning, burning in a fireplace and evapotranspiration through the use of aerated carts for organics collection.

Organics Includes yard waste, leaves, Christmas trees, oversized yard waste and kitchen organics, grasscycling and backyard composting.

Other recyclables Includes textiles, bulky goods, scrap metal, drywall, wood, concrete, construction and demolition and other materials recovered from residences.

Recycling association Corporation governed by elected representatives from each of its member municipalities and/or communities.

Residential energy-from-waste mass reduction Any material processed at EFW incineration sites that is not recycled.

Residential residue ('residue') Materials that were collected but not marketed. Residue is calculated as collected tonnes minus marketed tonnes.

Short-form Datacall A shorter and streamlined version of the Standard Datacall introduced in 2016 and available to all programs with a population under 30,000. Programs that reported under the Short-form Datacall were only required to submit Blue Box data and are therefore not included in all sections of this report. All tables and graphs from previous years have been updated to only include Long-form submissions standardized to 2016.

Stockpiled Material that was processed and/or is ready for market but is stored temporarily and will not be marketed before the Datacall reporting deadline. Costs attributed to stockpiled material are deducted from the Datacall costs for that year and reported in the following year, or whenever the material is marketed.

Waste Electrical and Electronic Equipment (WEEE) End-of-life electronic materials, such as toasters, blenders, space heaters, refrigerators, televisions, computer monitors and washing machines.

THE 2018 DATACALL BY THE NUMBERS

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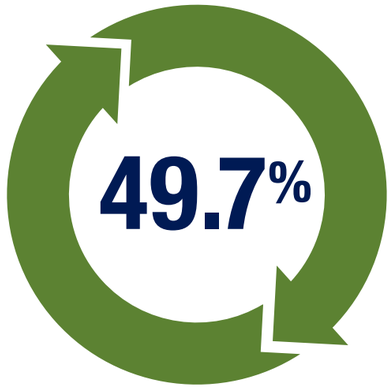
Ontario Residential Waste Diversion Rate ('Diversion Rate')



The year-over-year Ontario residential diversion rate has nominally **increased to 49.7%** from **49.6% in 2017**.

Blue Box

Revenue from the sale of **Blue Box** materials dropped 32.9% from **$111.8M in 2017** to **$75.1M in 2018**

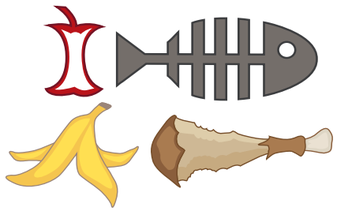
Blue Box marketed tonnes decreased 5.2% from **855,979 tonnes in 2017** to **780,555 tonnes in 2018**

Net **Blue Box Program** costs increased from **$243.3M in 2017** to **$291.5M in 2018**, a 19.8% increase

Organics

Organics diverted tonnes **increased by 6.4%** between 2017 and 2018

Organics now make up **42.6%** of all **residential diverted** materials



Kitchen organics continue to increase, **making up 50.6%** of all organics tonnes reported

Other Recyclables

Other recyclables declined in 2018 compared **to 2017** but continues to **trend upwards**

Wood for the second year in a row made up the **largest portion** of **other recyclables**, representing **37.2%** of materials collected

RESIDENTIAL WASTE DIVERSION

4

In 2018, 249 communities submitted data through the Datacall, covering a total population of 13,909,705 and a total household count of 5,614,017, representing 95.1% of the total Ontario population. Of the 249 participating programs, 102 completed the Long-form Datacall and are included in the diversion rate calculations. In 2017, out of the 245 programs that completed the Datacall, 109 of them submitted a Long-form Datacall. The 245 programs that submitted a Datacall in 2017 represented 97.3% of Ontario's population[1,2].

The diversion rate is calculated using the following formulas:

Diversion Rate Calculation

Diverted Tonnes + Disposed Tonnes = Generated Tonnes

Diverted Tonnes ÷ Generated Tonnes × 100 = Diversion Rate

[1] Ontario Ministry of Finance. 2019. Ontario population projections, 2018-2046. Retrieved from https://www.fin.gov.on.ca/en/economy/demographics/projections/table1.html.

[2] Only communities wanting Blue Box funding are required to submit a Datacall form. It is possible that communities are operating diversion programs but choose to refrain from submitting a Datacall form.

The following graphics outline the activities that contribute to Diverted and Disposed Tonnes, which feed into the diversion rate.

Activities Contributing to Diverted Tonnes

Residential recycling activities

- Blue Box Program for printed paper and packaging
- Waste Electrical and Electronic Equipment (WEEE) Program
- Municipal Hazardous or Special Waste (MHSW) Program
- Other recyclables (e.g. wood, construction/demolition material, scrap metal)
- Used Tires Program[3]
- EFW recycling

Organics collection and processing of

- Yard waste
- Leaves
- Christmas trees
- Oversized yard waste
- Household organics (kitchen waste)

Provincial deposit systems for beer, wine and spirits containers

- Beer, wine and spirits containers returned from the residential sector[4]

Residential on-property management activities

- Backyard composting and grasscycling

Reuse activities

- May include textiles, toys, kitchen tools and items for the home

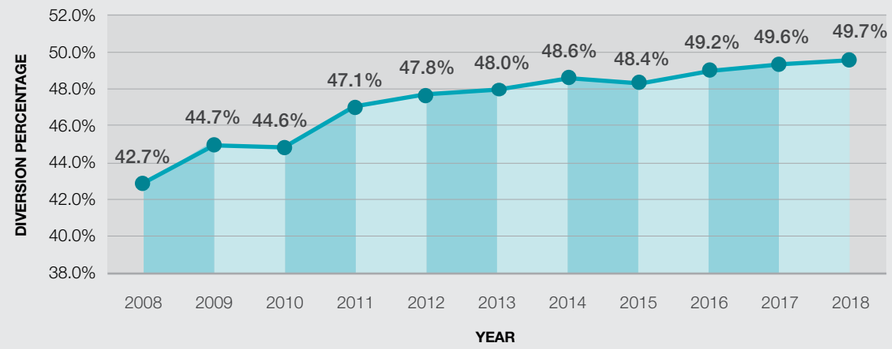
Activities contributing to Disposed Tonnes

[3] Diversion of passenger and light truck tires is estimated by a credit of 7.1 kg/capita.

[4] A credit of 5.51 kg/capita is included for the return of residential beer, wine and spirits containers.

Between 2017 and 2018, the overall diversion rate increased 0.1% to 49.7% (Figure 1). Over a 10-year period, the diversion rate increased 7%.

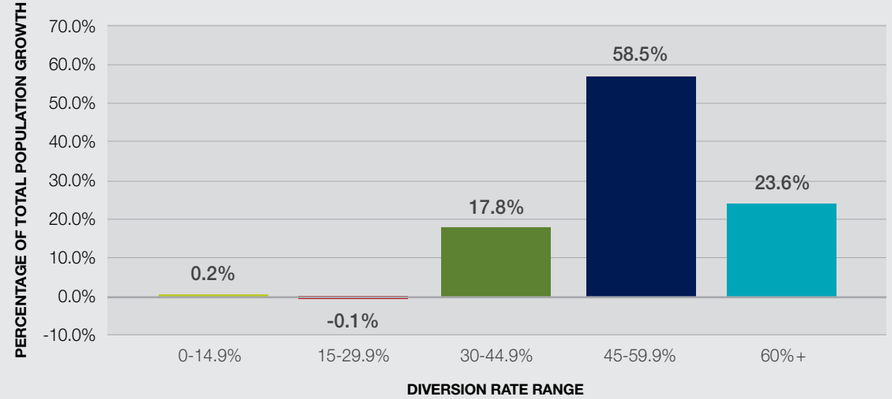
Figure 1: Ontario Residential Waste Diversion Rate, 2008-2018[5]



There are several key factors influencing the diversion rate:

- Communities are improving or expanding their waste diversion initiatives as they increase their strategic focus on diversion.
- The 10.8% increase in population (and thus generated tonnage) over the last decade has not been evenly distributed among programs but has instead been concentrated in programs with higher performance (Figure 2).

Figure 2: Distribution of Population Growth, 2008-2018



[5] As part of the 2016 Datacall, RPRA introduced the Short-form Datacall available to all programs with a population under 30,000. Programs that report under the Short-form Datacall are only required to submit Blue Box data. The diversion rate is based only on programs reporting in the Long-form Datacall. All tables and graphs from previous years have been updated to only include Long-form submissions, standardized to 2016.

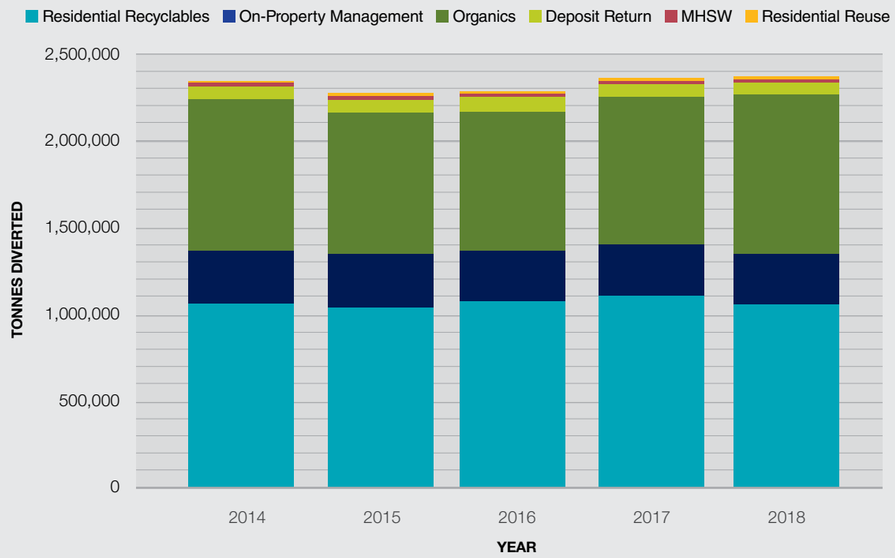
Organics tonnes diverted reached a peak in 2018, up 4.2% from its previous high in 2014 (Table 1). Although the residential kitchen organics program is currently optional in Ontario, 10 of the 12 programs that report into the Datacall with a population over 250,000 have a residential kitchen organics program. An overview of organics information is presented in Chapter Six.

Other waste diversion strategies that have a smaller influence on the total diversion rate are also reporting their highest tonnages to date: on-property management was up 2.3% from a previous record in 2014 and deposit return has shown steady increases over the past five years (Figure 3).

Table 1: Diverted Tonnes by Category, 2014-2018

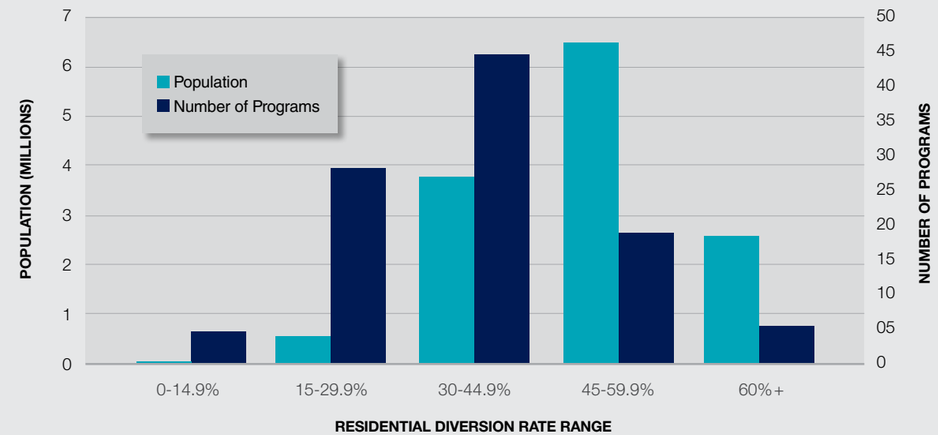
Material	2014	2015	2016	2017	2018
Residential Recyclables	1,065,056	1,043,537	1,076,023	1,103,983	1,047,796
Organics	966,913	932,632	907,239	946,291	1,007,289
Deposit Return	70,694	71,341	71,762	72,718	73,653
On-Property Management	203,873	202,876	194,060	198,591	208,489
MHSW	15,012	15,622	15,518	15,945	15,017
Residential Reuse	10,016	10,657	12,706	11,847	12,358
Total Diverted	**2,331,564**	**2,276,664**	**2,277,309**	**2,349,374**	**2,364,603**

Figure 3: Materials Contributing to Diversion, 2014-2018



Distribution of diversion rates among individual programs is not uniform, with diversion typically being higher in programs with a higher population. For example, in 2018 only 25 of the 249 programs reported a diversion rate above 45% but represented 68.6% of the total population in Ontario (Figure 4). This distribution results in the overall provincial average equalling 49.7% despite 229 of the 249 programs having a diversion rate below the average.

Figure 4: Population Represented in Each Diversion Rate Range, 2018



BLUE BOX

5

Printed paper and packaging waste is collected from residences in 249 municipalities and First Nation communities as part of Ontario's Blue Box Program.

The financing of the Blue Box Program is split approximately 50/50 between stewards (the brand owners, first importers or franchisors of printed paper and packaging) and Ontario communities. Stewardship Ontario is the organization responsible for collecting fees from stewards to fulfill their funding and other obligations. On August 15, 2019, the Minister of the Environment, Conservation and Parks directed Stewardship Ontario and RPRA to transition Ontario's Blue Box Program to full individual producer responsibility under the *Resource Recovery and Circular Economy Act, 2016* by the end of 2025. Following transition, producers will become responsible for both funding and operating the program.

Accessibility

The number of households with access to curbside and/or depot collection programs is shown in Table 2.

- From 2017 to 2018, the total number of households receiving Blue Box service increased by 39,502, an increase of 0.8%. From 2014 to 2018, the increase in households with Blue Box service rose by 4.0%.
- In 2018, 168 of the 249 reporting programs had utility-based systems for garbage collection (e.g. user-pay waste collection, pay as you throw, partial user-pay, full user-pay and/or bag limit program), compared to 165 in 2017.
- In 2018, 94.0% of Ontario households reporting to RPRA had access to Blue Box services provided by their community, decreasing from 94.4% in 2017. This slight decline aligns with a trend of increasing populations living in multi-residential buildings, like condos or apartments, that may opt for private (i.e. commercial) rather than community waste management servicing. Private servicing data is not reported through the Datacall and households receiving private service are not included in the household accessibility calculation.

Table 2: Number of Households Receiving Community Blue Box Service, 2014-2018

Type of Service	2014	2015	2016	2017	2018	2014-2018 % Change
Curbside[6]	4,874,210	4,939,602	4,959,657	5,025,226	5,071,600	4.0%
Depot Only	208,948	225,552	215,273	212,452	205,580	-1.6%
Total	**5,083,158**	**5,165,154**	**5,174,930**	**5,237,678**	**5,277,180**	**3.8%**

Materials

In accordance with Ontario regulation, all Blue Box programs[7] collect, at minimum, the following five basic materials:

1. Aluminum food or beverage cans (including cans made primarily of aluminum)
2. Glass bottles and jars for food or beverages
3. Newsprint
4. Polyethylene terephthalate (PET) bottles for food or beverages
5. Steel food or beverage cans (including cans made primarily of steel)

Communities may expand the scope of materials they collect. Table 3 illustrates the prevalence of additional material categories. Most communities have opted for the inclusion of paper-based packaging, while less choose to accept polystyrene material.

[6] May also have access to depot service for Blue Box materials in addition to curbside service.

[7] O. Reg. 101/94 Recycling and Composting of Municipal Waste states "A local municipality that has a population of at least 5,000 shall establish, operate and maintain a blue box waste management system if the municipality is served by a waste management system owned by or operated by or for the municipality that collects municipal waste or accepts such waste from the public at a waste disposal site."

Table 3: Number of Households with Blue Box Service Beyond the Five Basic Materials, 2018

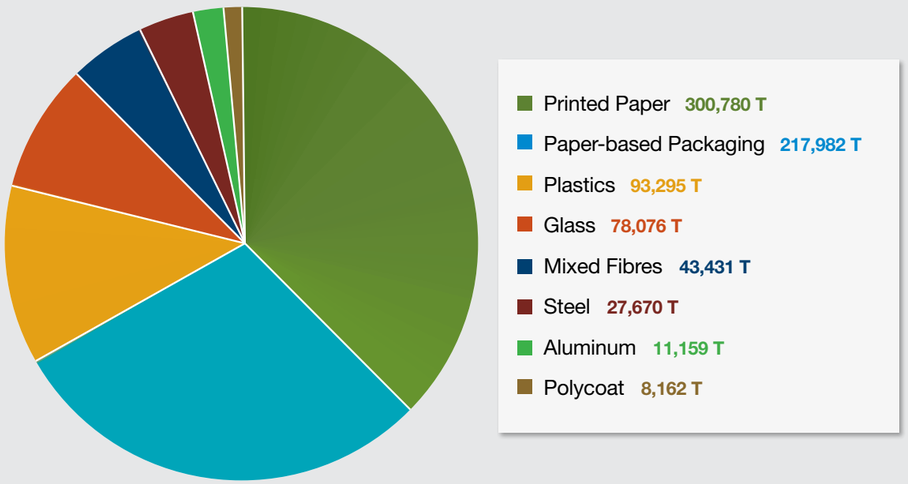
Blue Box Material	2018 Households Served	Number of Programs	2018 Households Served as % of Total Households Reported
Paper-based Packaging			
Corrugated Containers	5,277,180	249	100.0%
Boxboard	5,273,103	246	99.9%
Polycoat			
Gable Top Containers	5,190,482	220	98.4%
Aseptic Cartons	5,100,575	194	96.7%
Metals			
Aluminum Foil Packaging	5,239,666	235	99.3%
Empty Aerosol Cans	4,652,959	164	88.2%
Empty Paint Cans	4,983,086	180	94.4%
Plastics			
HDPE Containers	5,265,952	239	99.8%
Other Containers (#3,4,5,7)	5,200,454	225	98.5%
HDPE/LDPE Film (#2,4)	3,745,677	178	71.0%
Polystyrene Foam	3,343,120	115	63.4%
Polystyrene Crystal	4,366,964	141	82.8%

Marketed Tonnage

2018 highlights and recent changes

In 2018, 780,555 tonnes of Blue Box material was marketed. The composition of this material is illustrated in Figure 5.

Figure 5: Marketed Blue Box Materials (in tonnes), 2018



10-year trend

Marketed Blue Box tonnage continued to decrease in 2018 for a fifth straight year, with a 16.0% decrease in Blue Box marketed tonnage over the past ten years (2008-2018) (Figure 6 and Table 4).

The last decade has seen a decline in newsprint (Figure 7) and a shift to the use of lightweight plastic packaging over heavier packaging alternatives such as glass (Figure 8). Further, recent changes in global commodity markets and specific restrictions to paper product standards have resulted in materials that were previously marketed now being considered residue and disposed.

As a result of the 2018 Asian export market restrictions, Blue Box printed paper marketed material has dropped by 43.6% since 2008, and steel and glass decreased 18.9% and 17.8%, respectively. Conversely, over the same 10-year period, plastic, paper-based packaging and aluminum material categories saw the only increases in marketed tonnes, rising 64.5%, 11.6% and 4.4%, respectively. The gradual change in the composition of materials collected through the Blue Box, and of materials marketed, is illustrated further in Figure 9.

Figure 6: Marketed Blue Box Tonnes, 2008-2018

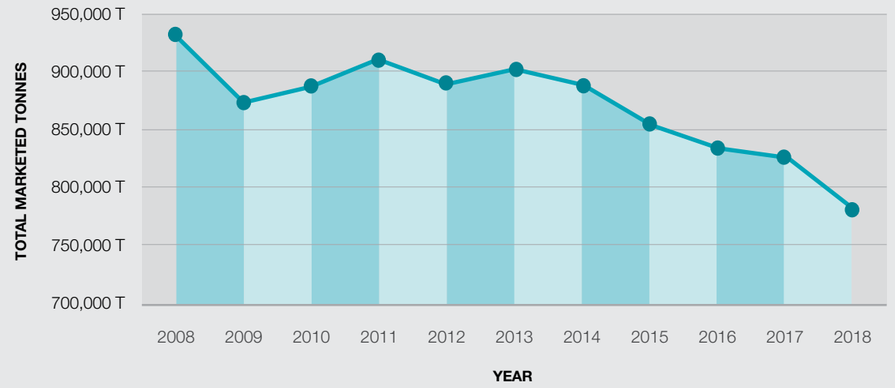


Table 4: Marketed Blue Box Tonnes, 2008-2018

Blue Box Material[8]	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2017-2018 Tonnage % Change	10-year Tonnage % Change	% of Total 2018 Blue Box Tonnes
Printed Papers[9]	533,652	436,335	487,684	508,269	493,966	484,794	474,658	456,560	436,978	416,489	300,780	-27.8%	-43.6%	38.5%
Mixed Fibres[10]	–	–	18,423	27,767	22,998	27,595	19,657	14,928	12,616	7,005	43,431	520.0%	–	5.6%
Paper-based Packaging[11]	195,388	233,566	190,107	167,689	169,413	162,746	161,973	156,951	167,951	180,910	217,982	20.5%	11.6%	27.9%
Polycoat[12]	3,957	5,266	5,257	4,956	5,657	6,176	6,810	7,099	7,180	6,452	8,162	26.5%	106.3%	1.0%
Total Paper	**732,997**	**675,167**	**701,471**	**708,681**	**692,034**	**681,310**	**663,098**	**635,538**	**624,724**	**610,856**	**570,356**	**-6.6%**	**-22.2%**	**73.1%**
Aluminum[13]	10,693	10,840	10,843	10,314	11,208	10,606	10,862	10,465	10,593	10,944	11,159	2.0%	4.4%	1.4%
Steel[14]	34,138	33,384	31,237	30,800	30,825	31,197	31,361	29,525	29,138	29,096	27,670	-4.9%	-18.9%	3.5%
Glass[15]	94,983	92,609	85,071	88,335	87,224	93,430	90,083	86,559	80,703	81,857	78,076	-4.6%	-17.8%	10.0%
Plastic[16]	56,717	58,214	58,621	66,720	71,634	83,591	89,101	90,351	91,069	90,226	93,295	3.4%	64.5%	12.0%
Total Blue Box	**929,528**	**870,214**	**887,243**	**904,850**	**892,925**	**900,135**	**884,505**	**852,438**	**836,227**	**822,979**	**780,555**	**-5.2%**	**-16.0%**	**100.0%**

[8] Stewardship Ontario's material allocation method is subject to change.
[9] Includes newspaper, household fine paper, telephone books, magazines and catalogues.
[10] Includes mixed fibres not included in the Printed Paper and Paper-based Packaging categories.
[11] Includes old corrugated cardboard, old boxboard and a portion of residential mixed papers and mixed fibres packaging.
[12] Includes gable top containers and aseptic cartons.
[13] Includes aluminum food & beverage containers and other aluminum packaging.
[14] Includes steel food & beverage containers, aerosols and empty paint cans.
[15] Includes flint glass, coloured glass and allocations of mixed glass.
[16] Includes PET, HDPE, plastic film, tubs and lids, polystyrene and other mixed plastic packaging.

Figure 7: Marketed Tonnage Trends for Paper-based Packaging, 2008-2018

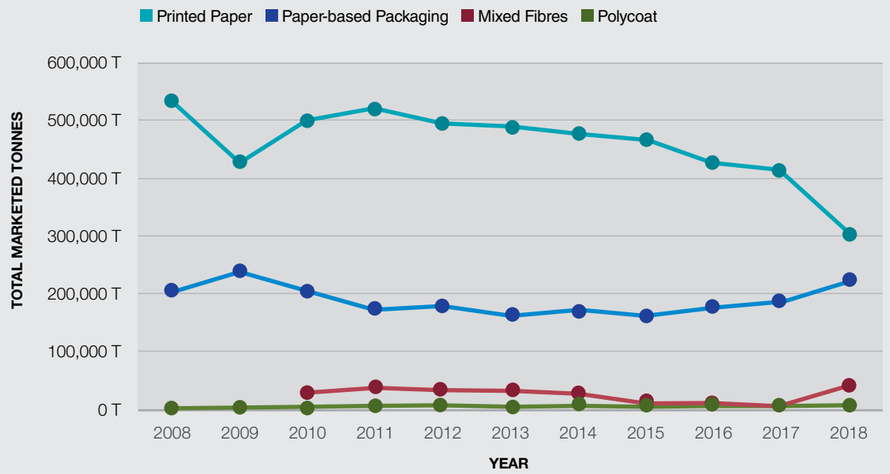


Figure 8: Marketed Tonnage Trends for Non-paper-based Packaging, 2008-2018

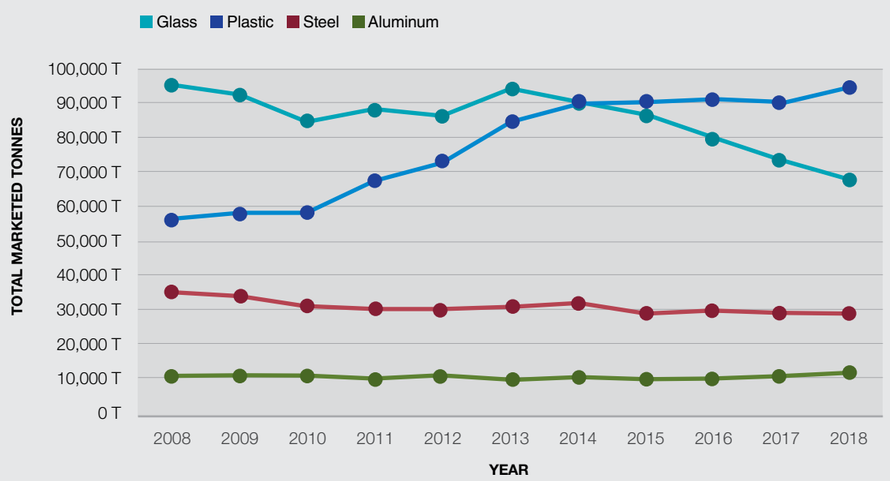
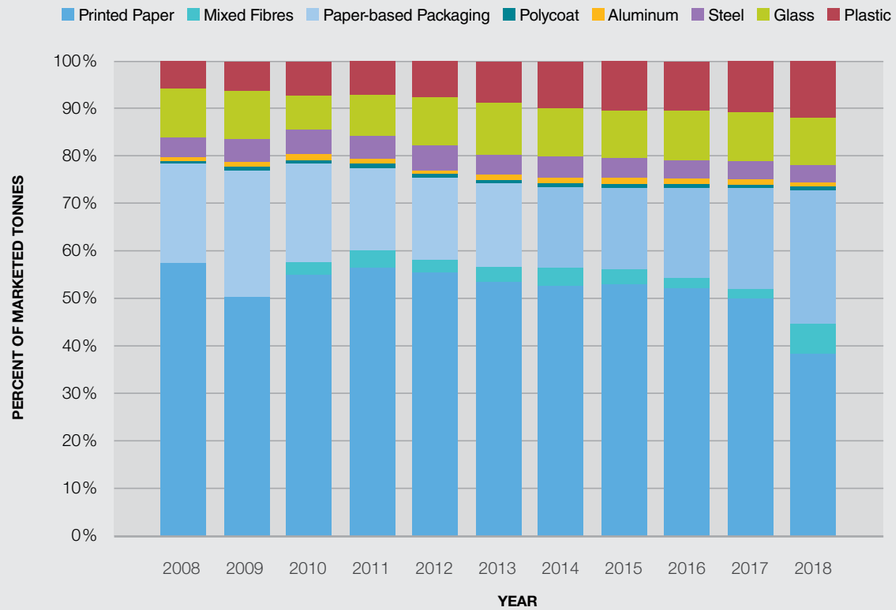
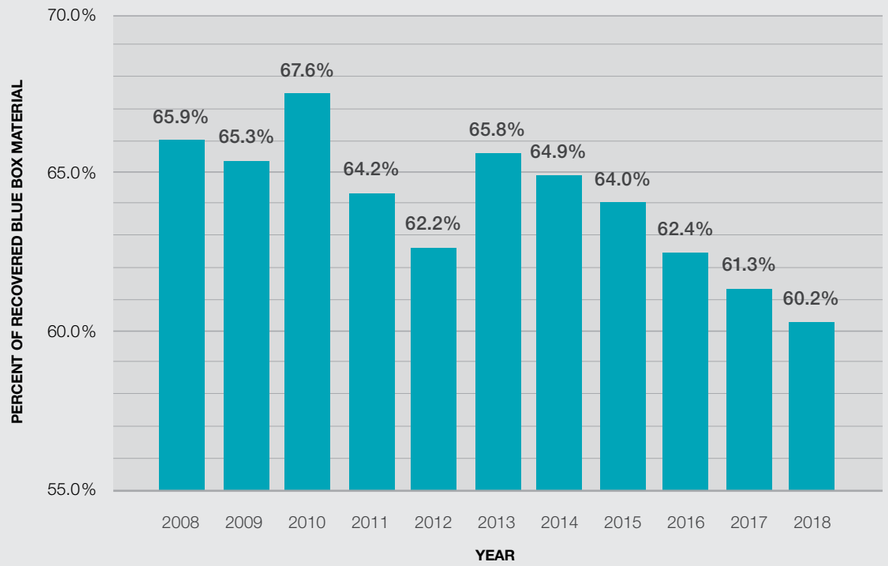


Figure 9: Marketed Tonnes by Material, 2008-2018



Since 2008, the recycling rate target for the Blue Box Program has been set at 60% by the Ministry of the Environment, Conservation and Parks. This percentage is calculated by dividing the marketed material reported into the Datacall by generated tonnes. Generated tonnes are reported by producers of printed paper and packaging to Stewardship Ontario[17]. Between 2013 and 2018, the recycling rates have steadily decreased, with the rate at 60.2% for 2018 (Figure 10). This decline is mainly driven by the changes in recycling commodity markets and the nature and amounts of printed paper and packaging put on the Ontario market.

Figure 10: Percent of Recovered Blue Box Material, 2008-2018[17]



[17] Stewardship Ontario. Fee calculation model. Retrieved from https://stewardshipontario.ca/stewards-bluebox/fees-and-payments/

Cost and Revenue

The Blue Box costs reported in the Datacall account for operating and capital costs spent by each program, including:

- Collection of curbside Blue Box material
- Processing of Blue Box material
- Management of material transfer stations and drop-off depots
- Promotion and education activities
- Administrative costs[18] and interest[19] on the amortization of capital equipment

2018 highlights and recent changes

Net Blue Box Program costs increased from $243.3M in 2017 to $291.5M in 2018, a 19.8% increase.

The primary contributor to the change in the Blue Box Program's net cost was the decrease in revenue received for the material collected (Table 5). Revenue received for the sale of Blue Box materials decreased by 32.9%, from $111.8M in 2017 to $75.0M in 2018. This steep decrease is due in part to a drop in the global market prices related to tightening import restrictions in Asian end markets that specifically affected the printed paper and mixed paper commodities, which together made up 44.1% of the 2018 Blue Box marketed tonnes.

Commodity prices from 2017 to 2018 for paper markets were especially volatile, with newsprint decreasing 44.1%, along with corrugated cardboard and hardpack decreasing by 42.1% and 52.9% respectively. Aluminum and glass also saw a decrease of 2.2% and 2.4% in their respective markets. In contrast, steel prices increased 22.9%, which may be due to the local steel end markets that remained isolated from international policy changes. Like steel, PET and mixed plastics saw increases of 12.5% and 46.9% respectively, again, likely due to local end markets for the material.

For example, in 2017, programs received $111 for every tonne of newspaper they marketed[20]; while, in 2018, programs received about half the amount ($62)[21]. Additionally, the quality specifications changed in 2018[22], causing some material to be marketed as a lower grade at a lower price. In some cases, programs may have performance requirements with their service providers tied to defined levels of residue or contamination, impacting revenue received.

[18] Administrative costs are calculated at 3% for services that are contracted out and 5% for services provided by the municipal program.
[19] Interest is calculated as the prime interest rate of the year of capital purchase.
[20] CIF. (2017). Price sheet- December 2017. Retrieved from https://thecif.ca/wp-content/uploads/2018/02/2018-jan-price-sheet.pdf
[21] CIF. (2018). Price sheet- December 2018. Retrieved from https://thecif.ca/wp-content/uploads/2019/01/2018-December-Price-Sheet.pdf
[22] CIF. (2019). Ontario Fibre Capacity Study. Retrieved from https://thecif.ca/wp-content/uploads/2019/02/789-Ontario_Fibre_Capacity_Final_Report.pdf

Table 5: Dollar per Tonne for each Material Commodity, 2017-2018 [23, 24]

Commodity	Market Price in 2017 $/Tonne	Market Price in 2018 $/Tonne	% Change
Newspaper	111	62	-44.1%
Mixed Paper	73	2	-97.3%
Corrugated (OCC)	221	128	-42.1%
Hardpack (OBB/OCC)	121	57	-52.9%
Boxboard (OBB)	n/a	n/a	n/a
Polycoat Containers	64	63	-1.6%
PET (mixed)	383	431	12.5%
HDPE (mixed)	497	483	-2.8%
Plastic Tubs and Lids	n/a	n/a	n/a
Mixed Plastics	32	47	46.9%
Film Plastic	24	15	-37.5%
Aluminum Cans	1772	1733	-2.2%
Steel Cans	262	322	22.9%
Glass (mixed)	-42	-41	-2.4%

In 2018, gross costs increased by 3.2% compared to 2017 (Table 6). The primary contribution to the increase in total gross cost was the increase in Blue Box Operation Services Costs[25], representing 93.3% of the total growth. This is aligned with the 10-year trend, outlined in the following section.

A detailed breakdown, by program, of the collection, processing and depot costs can be found in the 2018 Blue Box Cost and Revenue report found on RPRA's website.

[23] CIF. (2018). Price sheet- December 2018. Retrieved from https://thecif.ca/wp-content/uploads/2019/01/2018-December-Price-Sheet.pdf

[24] CIF. (2019). Ontario Fibre Capacity Study. Retrieved from https://thecif.ca/wp-content/uploads/2019/02/789-Ontario_Fibre_Capacity_Final_Report.pdf

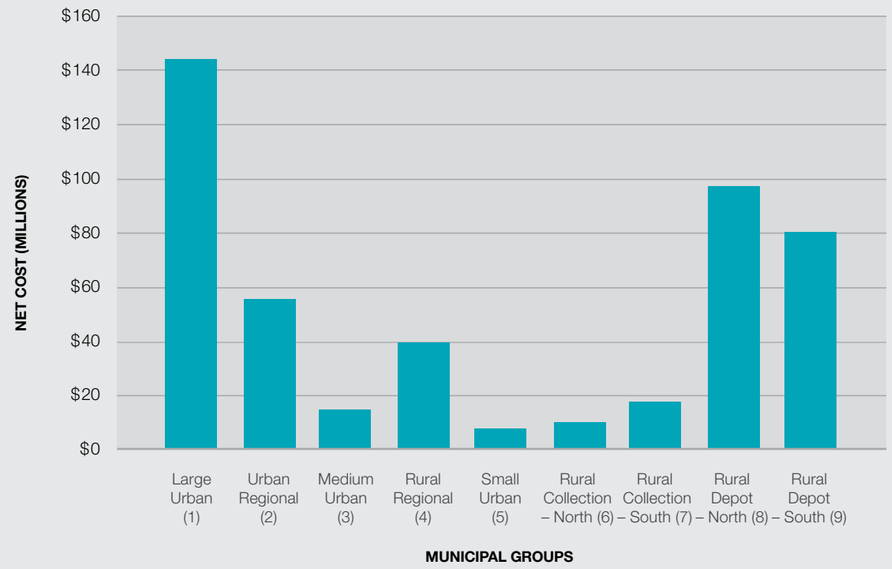
[25] Some programs choose to hire a single service provider to collect their Blue Box material, with the service provider taking ownership of the material at that point. This is commonly reported as a single cost under collection, as the program has no insight into the post-collection cost allocation done by the service provider. Other programs, in a similar manner, may report all costs under processing and depot/transfer. To better represent the reporting structure described above, the category "Blue Box Operation Services Costs", which encompasses all costs reported as collection, processing, or depot/transfer in the Datacall.

Table 6: Gross Costs by Category, 2017- 2018

Blue Box Program Category	Gross cost in 2017	Gross cost in 2018	% Change between 2017 and 2018
Blue Box Operation Services Costs	$330,550,452	$342,008,037	3.5%
Promotion and Education	$6,857,776	$7,552,449	10.1%
Administrative Cost and Interest (on capital)	$17,725,934	$17,088,477	-3.6%
Total	**$355,134,163**	**$366,648,958**	**3.2%**

Figure 11 shows the net cost by municipal grouping. Each program is sorted into one of nine groups using a range of characteristics, such as population density, curbside collection availability and geographic location. Differences in program characteristics can have significant effects on the net costs of operation. For example, recycling programs in the north typically have higher recycling net costs, as longer distances must be travelled to collect, process and market the material and fewer tonnes over which to spread the costs.

Figure 11: Net Cost by Municipal Group, 2018

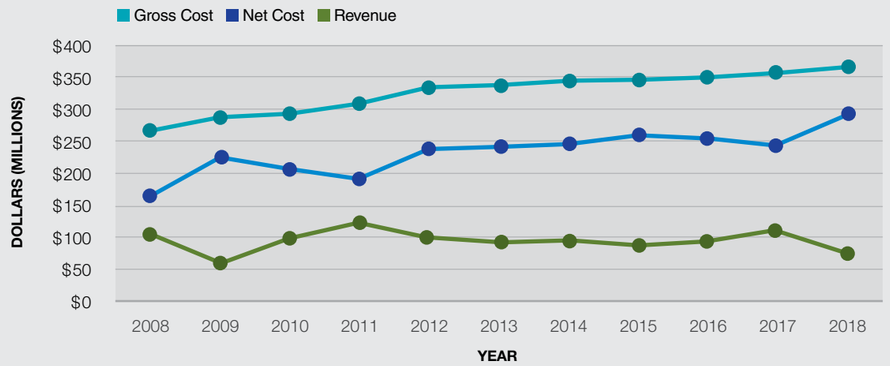


10-year trend

Net Blue Box costs reported by programs, shown in Figure 12, increased 73.1% from $168.4M in 2008 to $291.5M in 2018. The fluctuations in the net cost trend are caused in part by end markets, which have seen significant volatility before 2012, and again in 2018.

In 2008, revenue received by communities for the sale of materials, the sale of Blue Boxes and any fees or penalties charged to contractors was $105.9M. Since 2008, Blue Box revenues have dropped by 29.1% to $75.0M.

Figure 12: Gross and Net Blue Box Costs (in millions), 2008-2018



Blue Box Program at a Glance

Increased standards for Blue Box tonnes able to reach an end market

Changes in global commodity markets have resulted in an increased standard for Blue Box material accepted at end markets. Material that was once able to reach end markets is no longer accepted and instead, sent to landfill as residue.

Steady increase in Blue Box Program cost

Since 2017, Blue Box operational costs have steadily increased. Not accounting for inflation, gross costs incurred by Ontario communities operating a Blue Box program have increased collectively by 3.2%.

Sharp decrease in revenue received for the sale of Blue Box material

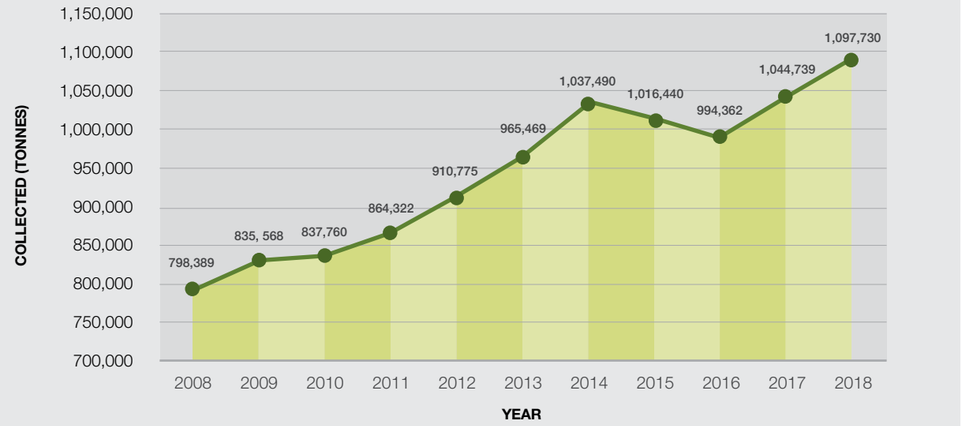
The volatility of global commodity markets has directly affected the revenue received for Blue Box material. Between 2017 and 2018, Blue Box revenue has decreased by 32.9%, driving up the net cost of the Program significantly.

ORGANICS

6

As shown in Figure 13 below, in 2018, nearly 1.1M tonnes of residential organics were collected in Ontario, as reported by 102 programs. These 102 programs represent a population of 13,367,225 and a total household count of 5,325,668. Since 2008, the amount of organics collected has increased by 37.5%, despite a temporary dip through 2016, and increasing again to 1,097,730 tonnes in 2018.

Figure 13: Organic Waste Collected (in tonnes), 2008-2018



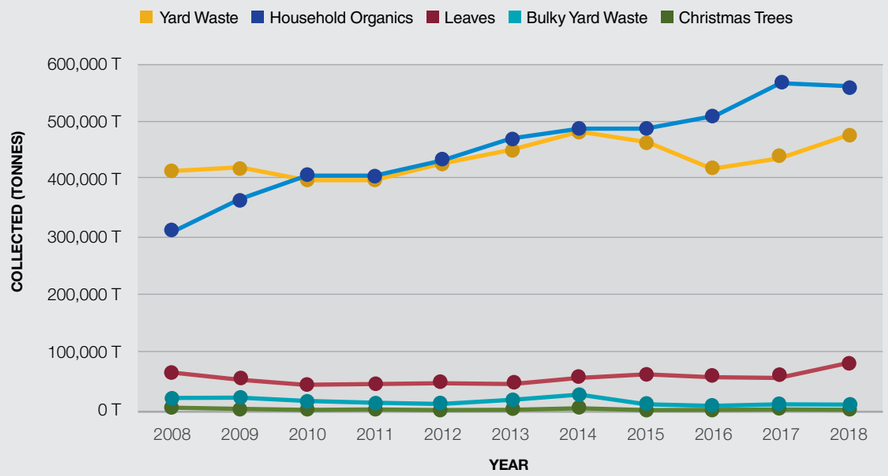
Organics diverted from landfill includes:

- Yard waste (a mixture of leaves, grass clippings, sticks and twigs)
- Leaves
- Christmas trees
- Bulky and oversized yard waste (e.g. large tree branches)
- Household or kitchen organics (e.g. food scraps and food-soiled paper)

Organics diverted from landfills are processed at compost facilities (processing includes oxygen), anaerobic digestion plants (processing without oxygen) or through the wood and brush chipping operations.

Following a steady increase between 2015 and 2017, household organics tonnes stagnated in 2018, increasing just 0.1% from 2017. After a 10.5% decline between 2015 and 2016, yard waste tonnes have been steadily increasing, showing 8.1% growth between 2017 and 2018. Leaves, Christmas trees and bulky yard waste cumulatively make up 7.4% of the total organics tonnes. Leaves and bulky yard waste have increased by 40.3% and 1.7% between 2017 and 2018, while Christmas trees have dropped 33.4% (Figure 14).

Figure 14: Organics Tonnes by Category, 2008-2018



Household organics and yard waste continue to make up the largest portion of total organics diverted at 50.6% and 42.0% respectively (Table 7). Overall, between 2017 to 2018, total organics tonnes have increased by 5.1%.

Table 7: Organic Material Collected by Category (in tonnes), 2017-2018

Organic Material	2017	2018	Year Over Year % Change	% of 2018 Tonnes Relative to Total Organics
Yard Waste	426,450	461,512	8.1%	42.0%
Leaves	47,667	66,880	40.3%	6.1%
Christmas Trees	3,559	2,437	-33.4%	0.2%
Bulky Yard Waste	11,400	11,597	1.7%	1.1%
Household Organics	554,929	555,305	0.1%	50.6%
Total Organics	**1,044,005**	**1,097,730**	**5.1%**	**–**

OTHER RECYCLABLES

7

In 2018, a total of 142,556 tonnes of other recyclables were collected. This represents a 6.5% decrease from the previous year's reported data. However, over the past ten years, the amount of other recyclables diverted has increased by 47.5%, as shown in Figure 15. Other recyclables diverted from landfill, include:[26]

- Textiles
- Bulky goods
- Scrap metal
- Drywall
- Wood
- Brick and concrete
- Other construction and demolition (C&D) material

Brick/C&D materials, wood and scrap metal remain the largest contributors representing over 80.0% of the total amount of other recyclables collected in Ontario, as illustrated in Figure 16. While wood, bulky goods, drywall and textiles have remained relatively stable between 2017 and 2018, brick/C&D material and scrap metal tonnage have decreased.

Figure 15: Total Other Recyclables Collected (in tonnes), 2008-2018

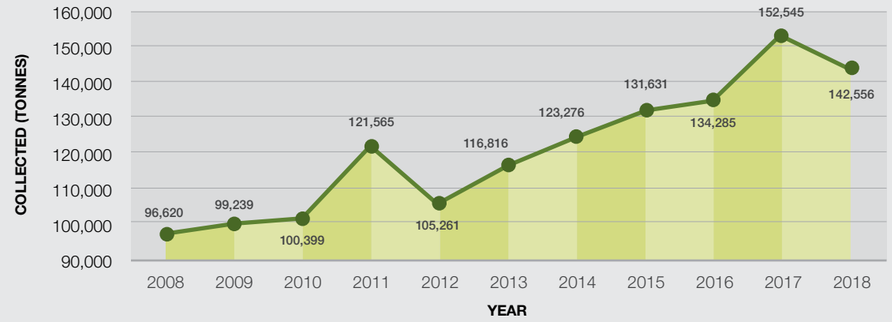
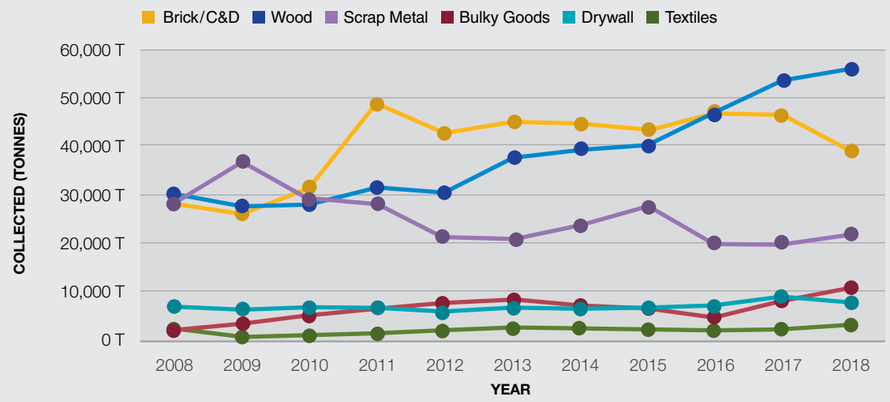


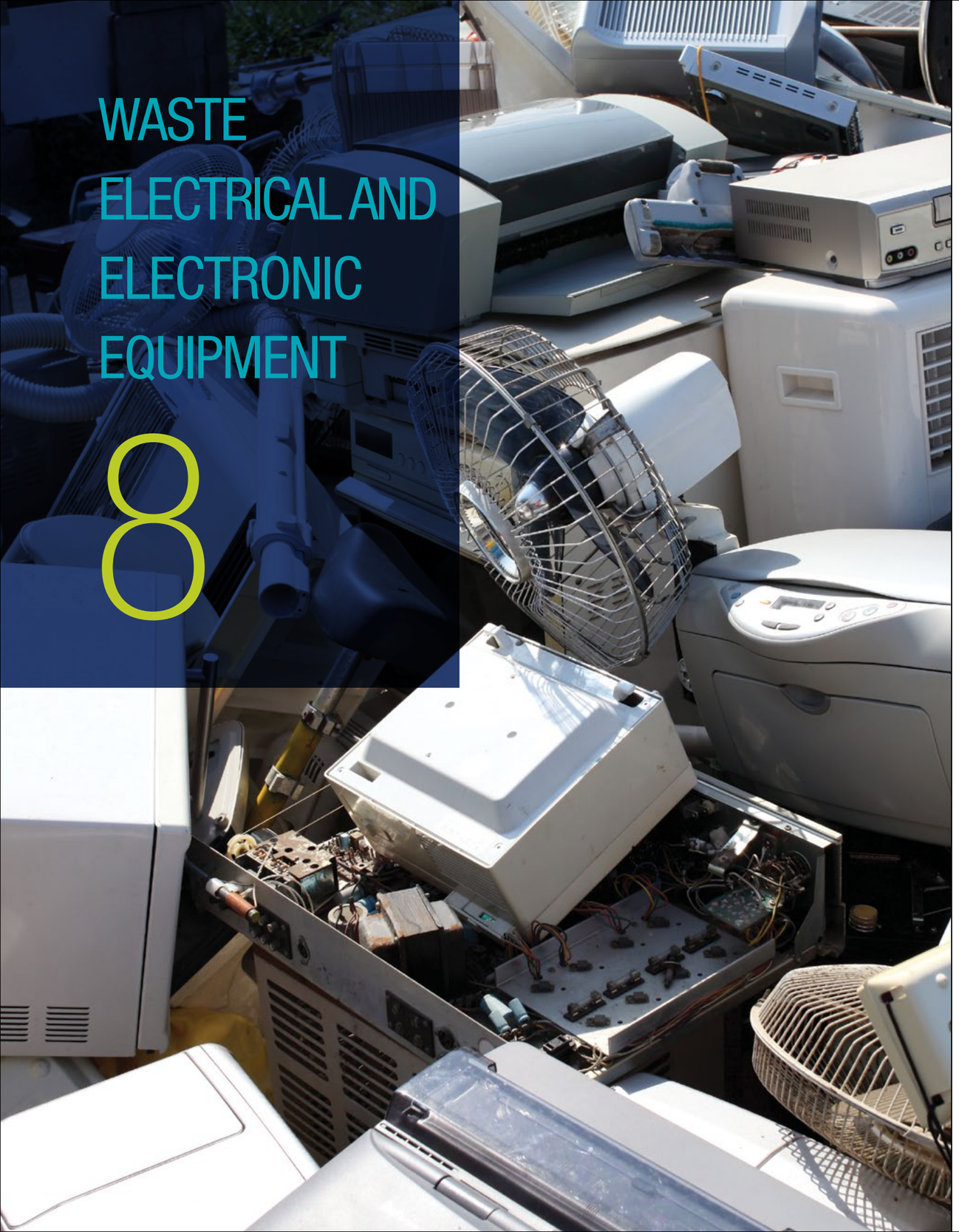
Figure 16: Other Recyclables Collected by Material (in tonnes), 2008-2018



[26] Other Recyclables does not include tonnages for used tires or reusable materials.

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT

8



In 2018, programs that submitted the Long-form Datacall collected 18,793 tonnes of WEEE. This is a 9.2% decrease from 2017, when 20,690 tonnes were diverted.

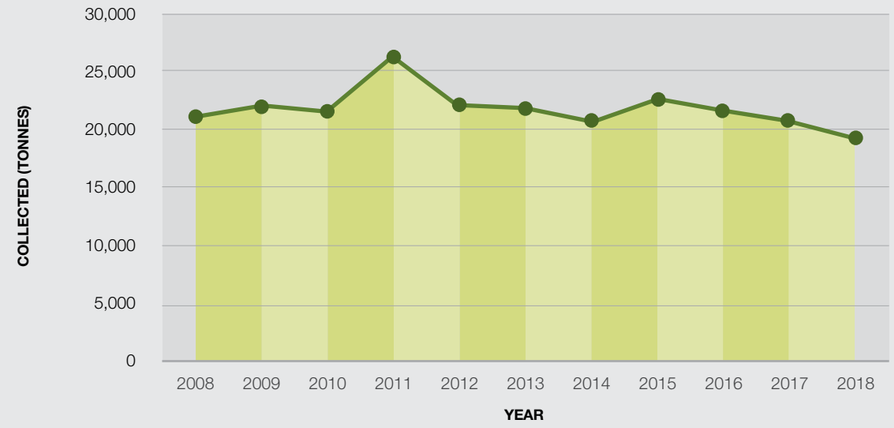
The WEEE Program Plan was created in 2009 to collect and divert computers, monitors, computer peripherals, printers, fax machines and televisions. This program includes both recovery from residential and IC&I sources. For more information on the WEEE Program, please see Ontario Electronic Stewardship's (OES) Annual Report. The information reported through the Datacall, only includes data sources community staff have access to, such as tonnage collected through municipal collection points.

The WEEE category in the Datacall is not limited to the materials specified in the WEEE Program Plan. The WEEE material category in the Datacall includes:

- **White Goods** Large electrical goods used domestically (e.g. refrigerators and washing machines, typically white in colour)
- **Small Appliances** Small appliance or small domestic appliance is a portable or semi-portable machine, generally used on table-tops, counter-tops or other platforms to accomplish a household task (e.g. toasters, blenders, space heaters, electric razors, hair styling equipment, food grinders, hair clippers, food processors, microwave ovens, humidifiers and coffee makers)

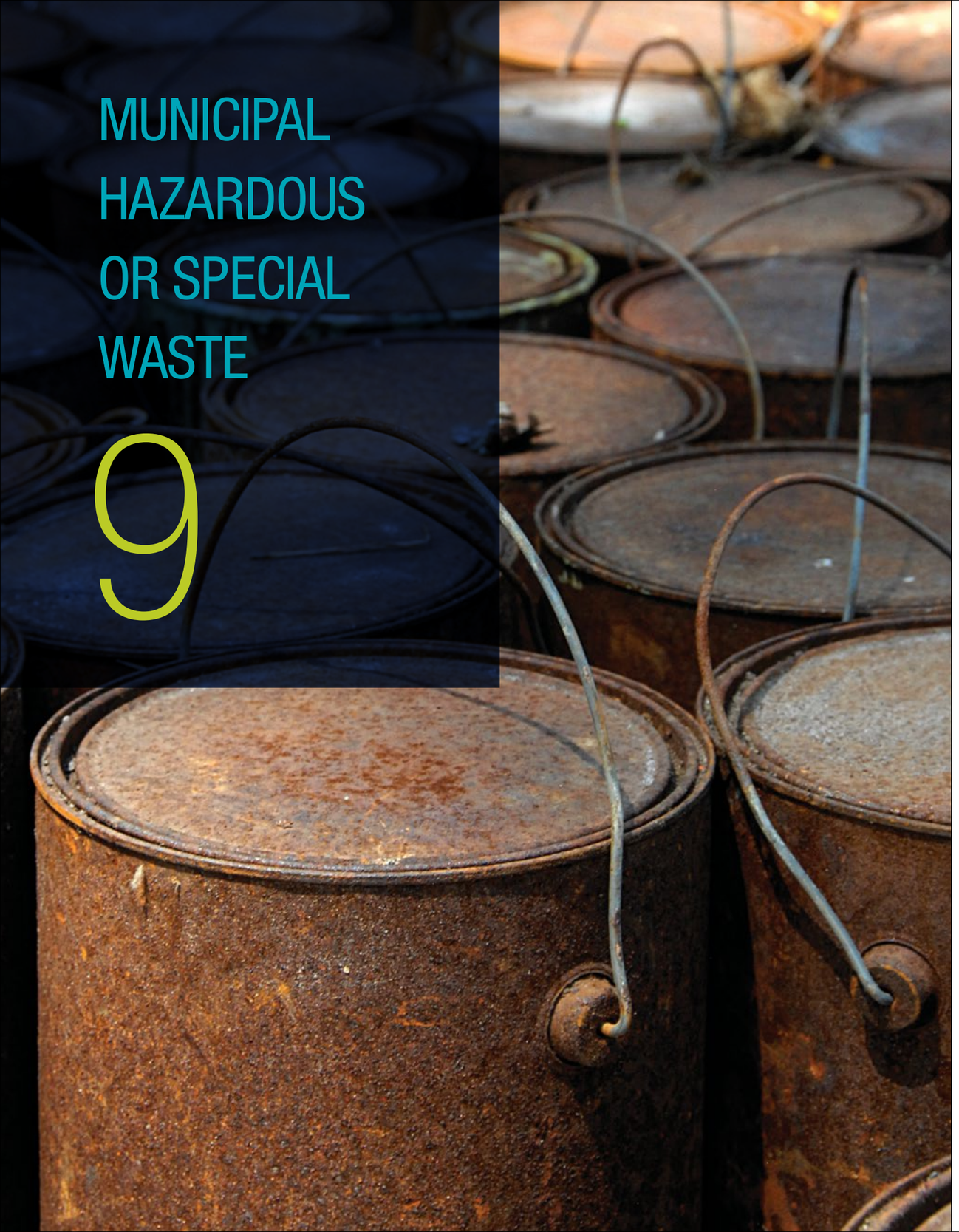
In 2010, the program was expanded to include floor standing printers and copiers, telephones and other personal communication devices as well as cameras and other audio/visual equipment. The 2010 expansion of obligated materials under the OES Program may explain the increase in tonnes collected between 2010 and 2011 (Figure 17).

Figure 17: Total WEEE Collected (in tonnes), 2008-2018



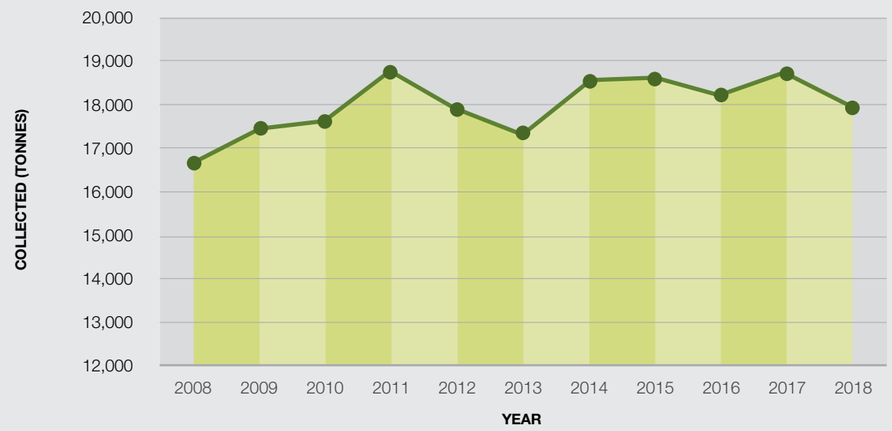
MUNICIPAL HAZARDOUS OR SPECIAL WASTE

9



In 2018, programs completing the Long-form Datacall collected 17,841 tonnes of MHSW material. This material was collected at either a community event day or community depot. Since 2008, the amount of material collected has increased by 13.6%; however, between 2017 and 2018, the material collected by communities has decreased by 4.7%. For more information on MHSW recycling activities, please review the annual reports from Stewardship Ontario, Product Care, Automotive Material Stewardship and SodaStream (Figure 18).

Figure 18: Total MHSW Collected (in tonnes), 2008-2018



CONCLUSION

10

The 2018 Datacall results have shown significant shifts in the Blue Box Program and other residential waste management programs. A sharp decline in the amount of revenue received per Blue Box tonne marketed and the increased standards for material being accepted into end markets have affected the Blue Box recovery rate. The 2018 Blue Box recovery rate dropped to 60.2%, only 0.2% above the government-mandated 60.0%. While Blue Box Program tonnes have decreased, organics tonnes have increased, keeping the overall diversion rate stable at 49.7%. Although the diversion rate has increased by only 0.1% between 2017 and 2018, it is the highest it has ever been, indicating that Ontario residents are focusing on driving their waste management programs forward.

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