



RPRA
Resource Productivity
& Recovery Authority

2021

Datacall Report



Executive Summary

The 2021 Datacall at a Glance



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. The Resource Productivity and Recovery Authority (RPR) is responsible for the Blue Box Program's oversight and for determining the funding for the program.

Each year, municipalities, recycling associations and First Nation communities in Ontario report on their residential waste diversion programs to RPR through the Datacall, submitting information on tonnage and financial data associated with operating the Blue Box Program and the impact on diversion achieved through other waste management services. Each Ontario program (municipality, recycling association or First Nation community) providing recycling services must complete the Datacall to be eligible for Blue Box funding.

Under the *Resource Recovery and Circular Economy Act, 2016* (RRCEA), this 2021 Datacall Report is the last year programs transitioning out of the legacy program to the new producer responsibility regulatory framework in 2023 will be reporting data. Participating communities will continue transitioning out of the current legacy program in two additional tranches in 2024 and 2025 and will similarly cease to report into

the Datacall as they exit the current legacy program. Under the new framework outlined in the Blue Box Regulation issued under the RRCEA, producers of Blue Box materials will become fully financially responsible and accountable for the Blue Box Program, which will negate the need to determine system costs.

The 2021 Datacall report summarizes information generated by the 246 programs participating in the Blue Box Program. Key highlights include:

- The Blue Box Recovery Rate for 2021 was 53.3%.
- The provincial Residential Diversion Rate for 2021 decreased from the 2020 rate by 0.4% to 49.1%.
- Blue Box marketed tonnes decreased by 2.7% from 2020 to 736,380 tonnes in 2021.
- Organics tonnes for 2021 decreased by 0.6% compared to 2020.
- Other Recyclables tonnes increased by 5.3%.
- Waste Electrical and Electronic Equipment (WEEE) tonnes decreased by 9.5%.
- Municipal Hazardous or Special Waste (MHSW) remained stable with only a 0.1% decrease in tonnes.
- The net cost of the Blue Box Program decreased by 11.7% between 2020 and 2021.

Table of Contents

Section	Title	Page
01	Glossary of Terms	3
02	Introduction	5
03	The 2021 Datacall by the Numbers	7
04	Residential Waste Diversion	9
05	Blue Box	15
06	Organics	31
07	Other Recyclables	35
08	Waste Electrical and Electronic Equipment	37
09	Municipal Hazardous or Special Waste	39
10	Conclusion	41

01 Glossary of Terms

Definitions

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 submit a Datacall form.

Curbside collection: Households receiving curbside Blue Box service. 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 processing residuals from recycling and composting operations 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 and municipally operated reuse activities.

Energy-from-Waste (EFW): The process of generating energy in the form of electricity and/or heat from the incineration of 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.

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 July 1, 2020, single-use batteries became subject to the

01 Glossary of Terms

Batteries Regulation, along with reusable batteries. On October 1, 2021, paints, solvents and propane tanks became subject to the Hazardous and Special Products (HSP) Regulation under the *Resource Recovery and Circular Economy Act, 2016* (RRCEA).

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

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

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

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

Residential residue ('residue'): Materials that were collected but not marketed (calculated as Collected Tonnes minus Marketed Tonnes).

Residential Energy-from-Waste mass reduction: Any material processed at EFW incineration sites that is not recycled.

Short-Form Datacall (SFD): 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 SFD 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 will be deducted from the Datacall costs for that year and reported in the following year, or whenever the material is marketed.

Waste Electronic and Electrical Equipment (WEEE): End-of-life electronic materials subject to Electrical and Electronic Equipment (EEE) Regulation under the *Resource Recovery and Circular Economy Act, 2016* (RRCEA).

02 Introduction

What is the Datacall?

Each year, municipalities, recycling associations and First Nation communities operating Blue Box programs complete the Datacall through which they report to the Resource Productivity and Recovery Authority (RPR) 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 programs and of the province overall.

Programs submit information through either the Short-Form or the 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 2021 Datacall report summarizes information generated by the 246 programs participating in the Blue Box Program and highlights residential waste management trends.

Between July 1, 2023 and December 31, 2025, the current legacy Blue Box Program transitions to the new extended producer responsibility regulatory framework outlined in the Blue Box Regulation issued under the RRCEA. Under the new regulatory framework, producers will become fully responsible and accountable for funding and operating the system for collection, reuse and recycling of Blue Box materials.

The 2021 Datacall report summarizes information generated by the 246 programs participating in the Blue Box Program and highlights residential waste management trends.

A specific transition date is set for each community, marking the point for when a community is no longer eligible for funding under the current Blue Box Program Plan. View the transition [schedule here](#).

The 2021 Datacall and this report is the last year that data is collected for programs that transition in 2023. As such, the 2021 Datacall Report will be the final written report published. Datacall statistics will continue to be published for the 2022 and 2023 Datacall years for remaining programs.

02 Introduction

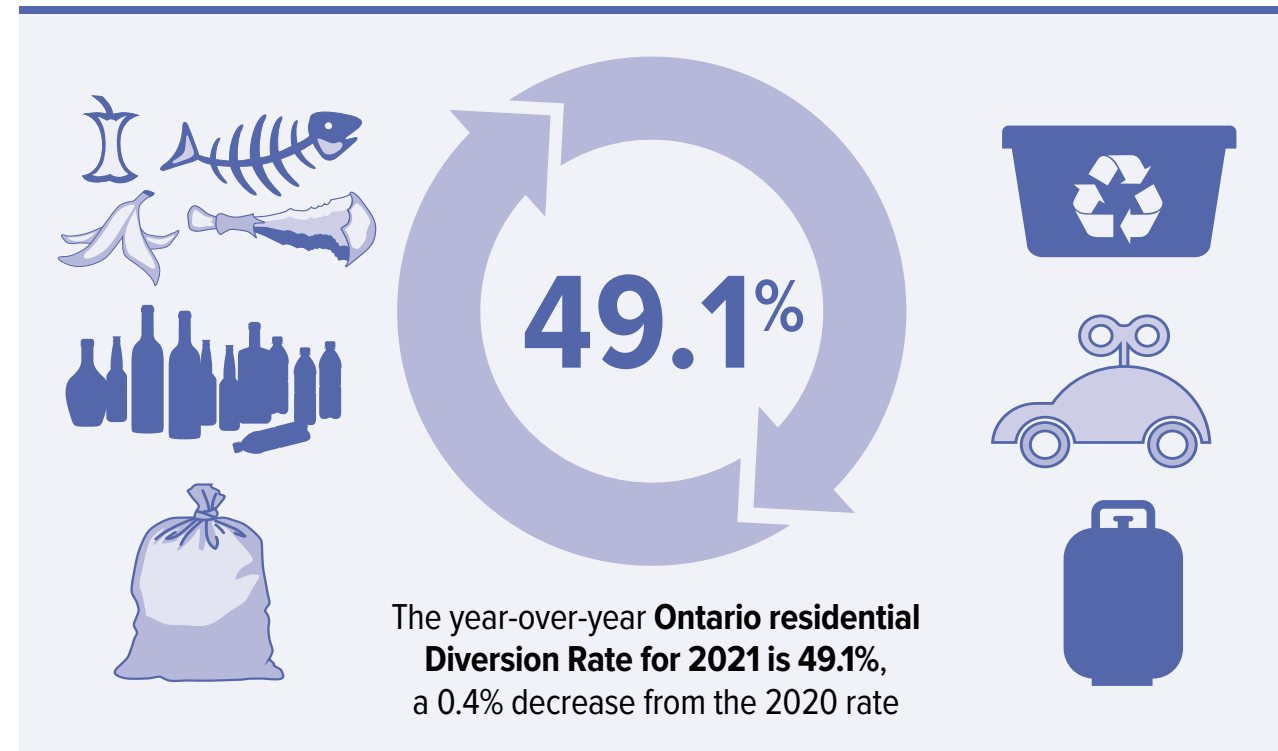
Data Verification Process



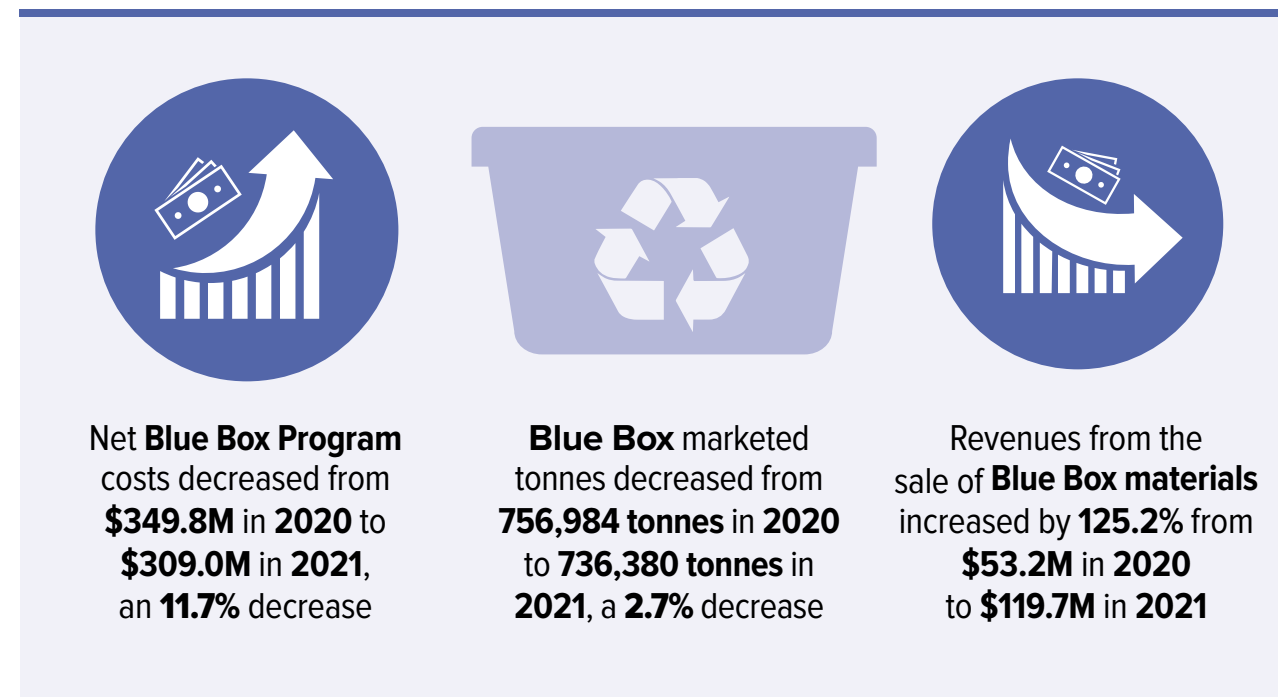
RPR) conducts a data verification process after the Datacall reporting period ends for the purpose of assessing the consistency and accuracy of the reporting. The verification process can include the confirmation of any data variances from the previous year and an assessment of costs and tonnages reported. In collaboration with the Municipal Industry Program Committee (MIPC), RPR) also selects approximately twenty programs for audit by a third party for the Blue Box sections of their Datacall submission.

03 The 2021 Datacall by the Numbers

Ontario Residential Waste Diversion Rate

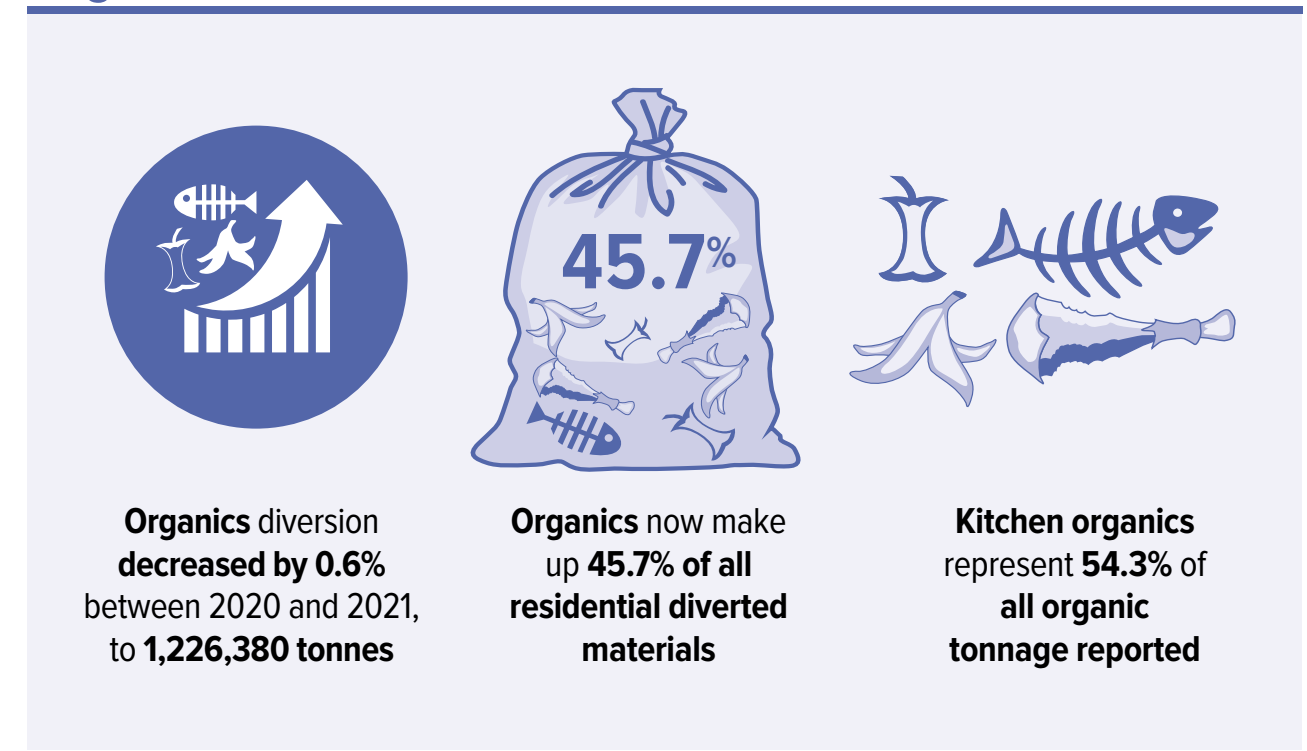


Blue Box

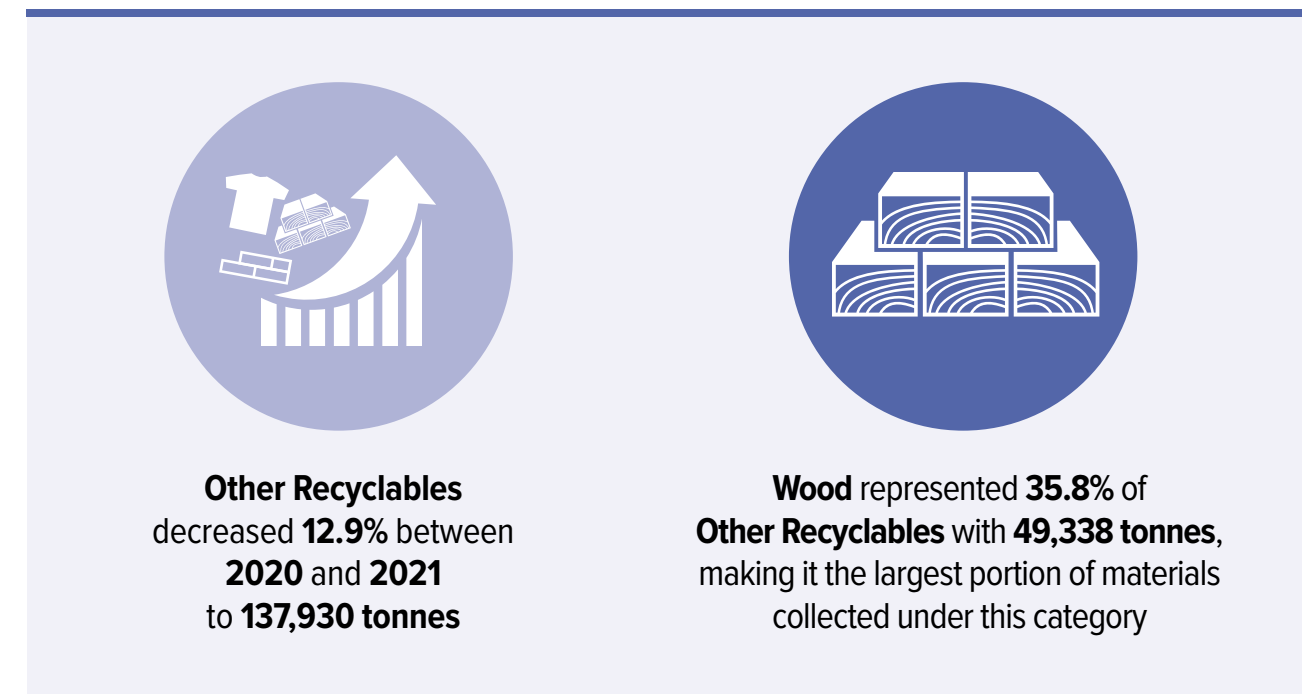


03 The 2021 Datacall by the Numbers

Organics



Other Recyclables





04 Residential Waste Diversion

Residential Recycling Activities

In 2021, 246 communities submitted data through the Datacall, covering a total population of 14,361,054 and a total household count of 5,733,378,¹ which represents 97.0% of the total Ontario population.²

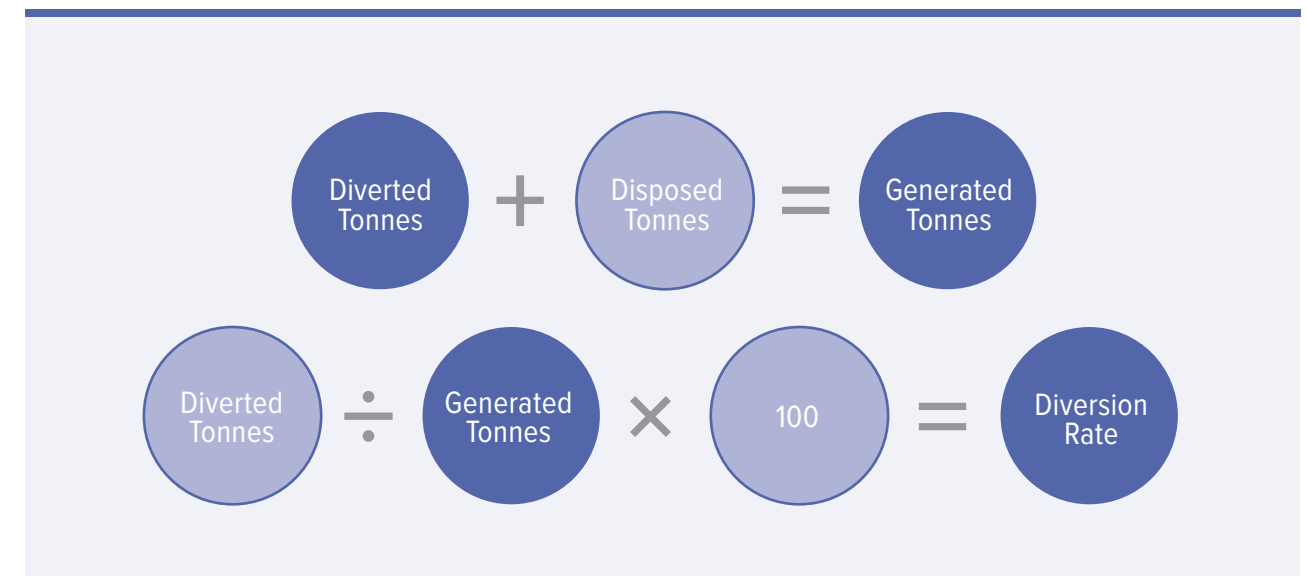
Of the 246 participating programs, 96 completed the Long-Form Datacall and are included in the Diversion Rate calculations. These programs have

97% of the total Ontario population participated in the Blue Box Program in 2021.

a population of 13,770,284 and a household count of 5,494,682, which represents 95.9% and 94.6% of the respective totals in the Datacall.

Diversion Rate Calculation

The Diversion Rate is calculated using the following formulas:



¹ [Statistics Canada](#). Canada's population estimates, average of 2021 quarters.

² Communities are not required to submit a Datacall form. It is possible that communities are operating diversion programs but choose to refrain from submitting a Datacall form.

04 Residential Waste Diversion

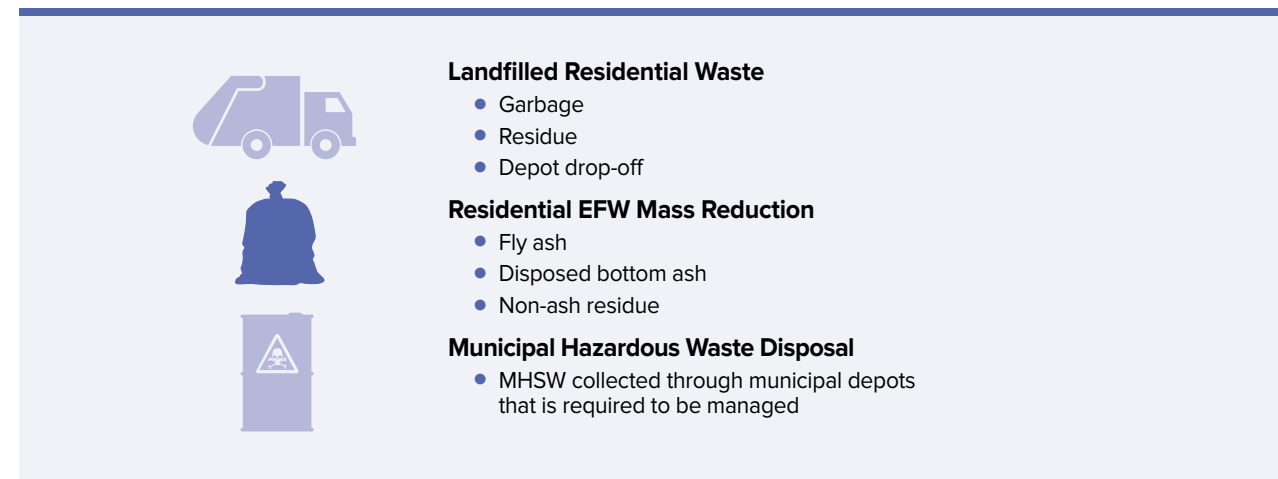
The following graphics outline the activities that contribute to Diverted and Disposed Tonnes, which feed into the Diversion Rate.

Activities Contributing to Diverted Tonnes



- Residential Recycling Activities**
 - Blue Box Program for printed paper and packaging
 - WEEE
 - MHSW
 - Other Recyclables (e.g. wood, construction and demolition material, scrap metal)
 - Used Tires³
- Organics Collection and Processing of**
 - Yard waste
 - Leaves
 - Christmas trees
 - Oversized yard waste
 - Household Organics (i.e. kitchen waste)
- Provincial Deposit Systems for Beer, Wine and Spirits Containers**
 - Beer, wine and spirits containers returned from the residential sector⁴
- Residential On-Property Management**
 - Backyard composting and grasscycling
 - Open burning
- Reuse Activities**
 - May include textiles, toys, kitchen tools and items for the home

Activities Contributing to Disposed Tonnes



- Landfilled Residential Waste**
 - Garbage
 - Residue
 - Depot drop-off
- Residential EFW Mass Reduction**
 - Fly ash
 - Disposed bottom ash
 - Non-ash residue
- Municipal Hazardous Waste Disposal**
 - MHSW collected through municipal depots that is required to be managed

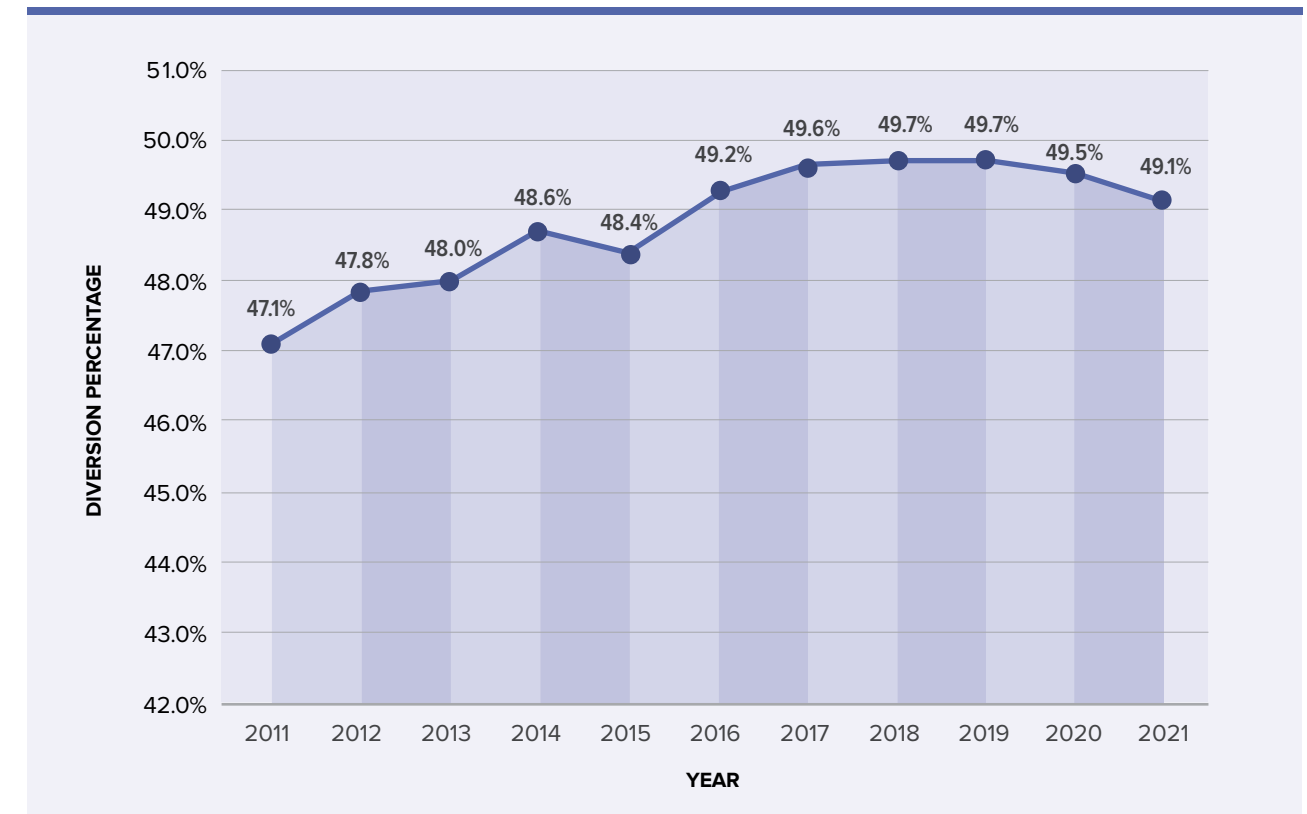
³ Diversion of passenger and light truck tires is estimated by a credit of 7.1 kg/capita.

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

04 Residential Waste Diversion

The Provincial Diversion rate continues to remain stable in 2021, decreasing by 0.4% to 49.1% (Figure 1).

Figure 1: Ontario Residential Waste Diversion Rate, 2011-2021⁵

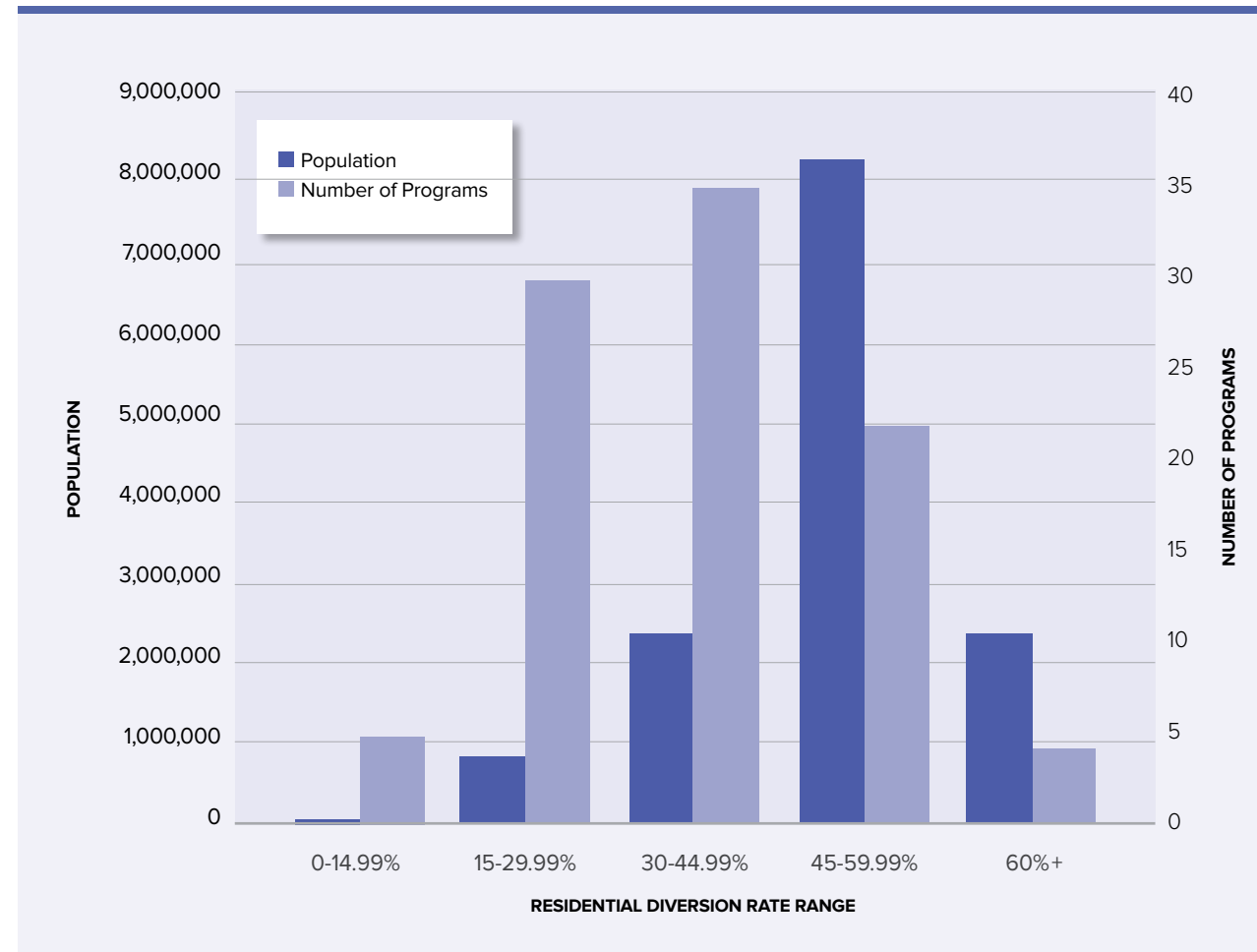


⁵ As part of the 2016 Datacall, RPRA introduced the Short-Form Datacall available to all programs with a population under 30,000. Programs that report under the Short-Form Datacall are only required to submit Blue Box data. The diversion rate is based only on programs reporting in the Long-Form Datacall.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

04 Residential Waste Diversion

There is a high variance in diversion performance among programs. In 2021, only 26 of the 96 programs that reported through the Long-Form achieved a diversion rate above 45.0%. These programs however represent 78.0% of the total population and 81.5% of the diverted tonnage. This distribution is further illustrated below in Figure 2.

Figure 2: Population Represented in Each Diversion Rate Range, 2021



04 Residential Waste Diversion

The contribution of each type of diversion activity is shown below in Table 1. Most categories saw small decreases from 2020, with Residential Recyclables (3.9%) being the largest decrease.

Please note that municipalities and First Nation communities do not operate the deposit return systems and data represented in Table 1 is based on an estimate.⁶

Table 1: Diverted Tonnes by Type of Diversion Activity, 2016-2021

Material	2016	2017	2018	2019	2020	2021	2020-2021 % Change
Residential Recyclables	1,076,023	1,103,983	1,047,796	1,027,167	1,055,213	1,013,975	-3.9%
On-Property Management	194,060	198,591	208,489	213,898	216,852	212,171	-2.2%
Organics	907,239	946,291	1,007,289	1,048,546	1,130,823	1,119,764	-1.0%
Deposit Return	71,762	72,718	73,653	74,336	74,806	75,874	1.4%
MHSW	15,518	15,945	15,017	16,147	15,849	15,601	-1.6%
Residential Reuse	12,706	11,847	12,358	11,983	12,521	12,570	0.4%
Total Diverted	2,277,309	2,349,374	2,364,603	2,392,077	2,506,063	2,449,956	-2.2%

⁶ An estimate of 5.51 kg/capita is used for the weight of returned residential beer, wine and spirits containers. This may be an underestimation of the volumes returned. For more information, please see [The Beer Store Responsible Stewardship Report 2021](#)



05 Blue Box

Ontario's Blue Box Program

Through Ontario's Blue Box Program, designated printed paper and packaging is collected in communities across the province. Under O. Reg. 101/94,⁷ communities with a population over 5,000 must provide Blue Box services to its residents and report into the Datacall to be eligible for Blue Box funding. In 2021, 246 municipalities and First Nation communities completed the Datacall.

The financing of the Blue Box Program is split approximately 50/50 between stewards (i.e., the brand owners, first importers or franchisors of printed paper and packaging) and Ontario communities (i.e., municipalities, First Nation communities and recycling associations). Stewardship Ontario is the industry funding organization that administers the Blue Box Program on behalf of stewards.

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 the new extended producer responsibility

The Blue Box Program will transition to Ontario's new extended producer regulatory framework starting on July 1, 2023, through to its wind up on December 31, 2025.

framework under the RRCEA. Under the RRCEA, producers will become individually responsible and financially accountable for the management, operations, and full costs of collecting and recycling printed paper and packaging. The Government of Ontario finalized the [Blue Box Regulation](#) under the RRCEA on June 3, 2021, and the Blue Box Program will transition to the new regulatory framework starting on July 1, 2023, through to its wind up on December 31, 2025.

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."

05 Blue Box

ACCESSIBILITY

The number of households with access to curbside and/or depot only collection is shown in Table 2 along with a summary of the changes below.

- From 2020 to 2021, an additional 43,514 households began receiving Blue Box service, an increase of 0.8%. From 2016 to 2021, the total number of households receiving Blue Box service has increased by 4.7%.
- In 2021, 170 of the 246 reporting programs, or 71.8%, had utility-based collection systems (e.g., user-pay waste collection, pay as you throw, partial user-pay, full user-pay and/or bag limit program).

- In 2021, 93.1% of Ontario households reporting to RPRRA received Blue Box services provided by their community, compared to 93.7% in 2020. It is likely that the majority of the remaining 6.9% of households are receiving services from private contractors. This occurs primarily with populations living in multi-residential buildings, like condominiums or apartments, that can use municipal services but opt for commercial alternatives. Private servicing data is not reported through the Datacall, and households receiving private service are not included in the household accessibility calculation or any subsequent reports of tonnages and cost.

Table 2: Number of Households Receiving Community Blue Box Service, 2016-2021

Type of Service	2016	2017	2018	2019	2020	2021	2016-2021 % Change
Curbside ⁸	4,959,657	5,025,226	5,071,600	5,134,303	5,175,266	5,218,780	5.2%
Depot Only	215,273	212,452	205,580	198,858	198,290	200,109	-7.0%
Total	5,174,930	5,237,678	5,277,180	5,333,161	5,373,556	5,418,889	3.8%

⁸ May also have access to depot service for Blue Box materials in addition to curbside service.

05 Blue Box

MATERIALS

All Blue Box programs⁹ must 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)

Programs may expand the scope of materials they collect as seen in Table 3, which illustrates the prevalence of additional material categories. Most communities have opted to include paper-based packaging, while polystyrene and plastic film are adopted by a limited number of large programs.

Table 3: Number of Households with Blue Box Service Beyond the Five Basic Materials, 2021

Blue Box Material	2021 Households Served	Number of Programs	2021 Households Served as % of Total Households Reported
Paper-based Packaging			
Corrugated Containers	5,408,964	240	99.8%
Boxboard	5,416,397	243	100.0%
Polycoat			
Gable Top Containers	5,228,116	211	96.5%
Aseptic Cartons	5,156,809	188	95.2%
Metals			
Aluminum Foil Packaging	4,584,783	150	84.6%
Empty Aerosol Cans	4,999,849	168	92.3%
Empty Paint Cans	5,400,981	236	99.7%
Plastics			
HDPE Containers	5,294,540	212	97.7%
Other Containers (#3,4,5,7)	3,920,738	158	72.5%
HDPE/LDPE Film (#2,4)	3,404,700	105	62.8%
Polystyrene Foam	4,327,802	122	79.9%
Polystyrene Crystal	5,247,047	224	96.8%

⁹ 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."

05 Blue Box

MARKETED TONNAGE

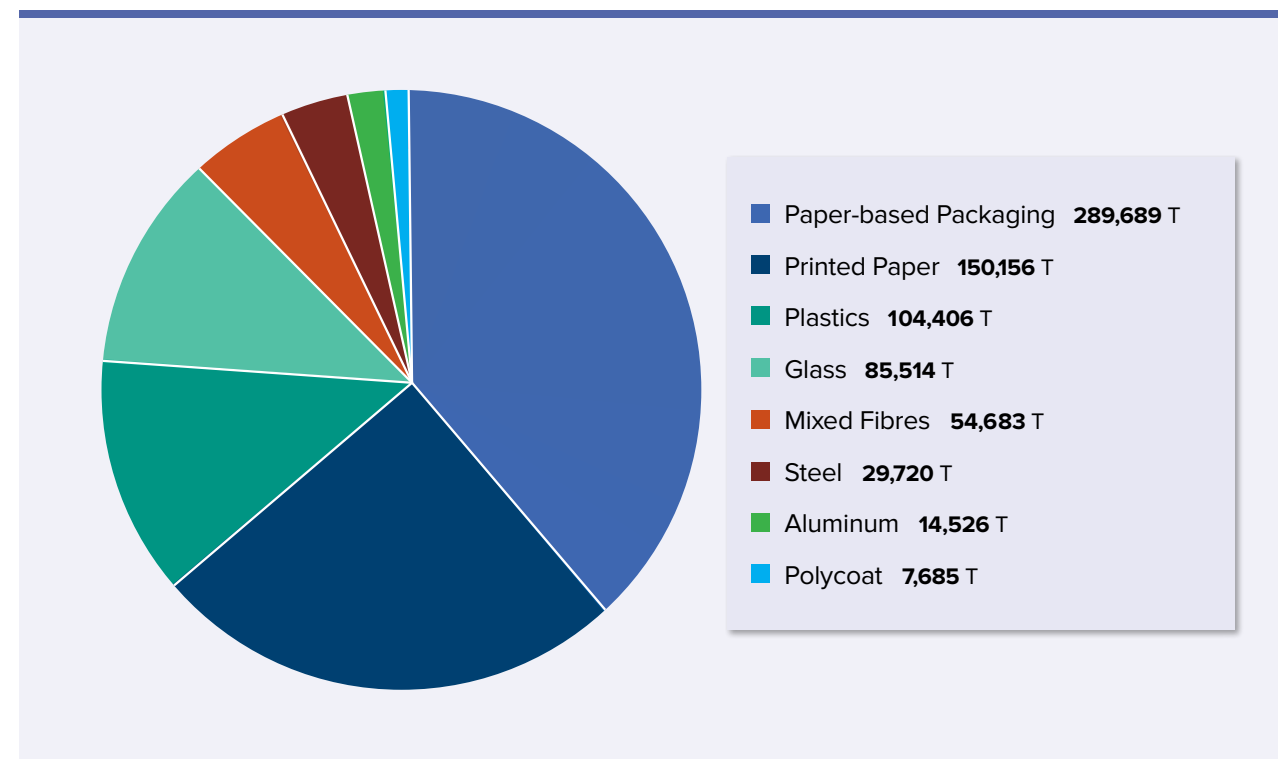
Fluctuations in Blue Box marketed tonnes respond to three key factors:

1. The amount of printed paper and packaging supplied onto the Ontario market
2. The amount of printed paper and packaging collected through the Blue Box system
3. The demand for the related recycled materials on the regional or international commodities markets

Factors 1 and 3 are the major drivers for year-over-year changes in marketed tonnes.

In 2021, 736,380 tonnes of Blue Box materials were marketed, which represents a decrease of 2.7% compared to 2020. Of the marketed materials, paper-based packaging makes up 39.4% of the tonnes (Figure 3). Printed paper, although making up 20.4% of the marketed tonnes, accounts for a persistently reducing portion of the overall Blue Box marketed tonnes. More context is provided on those trends in the following section.

Figure 3: Marketed Blue Box Materials (in tonnes), 2021



05 Blue Box

Blue Box Highlights and Trends

Marketed Blue Box tonnage, after a steady six-year decline, has somewhat stabilized over the past three reporting years, with tonnages from 2021 remaining 0.9% above the total reported in 2019 (Figure 4).

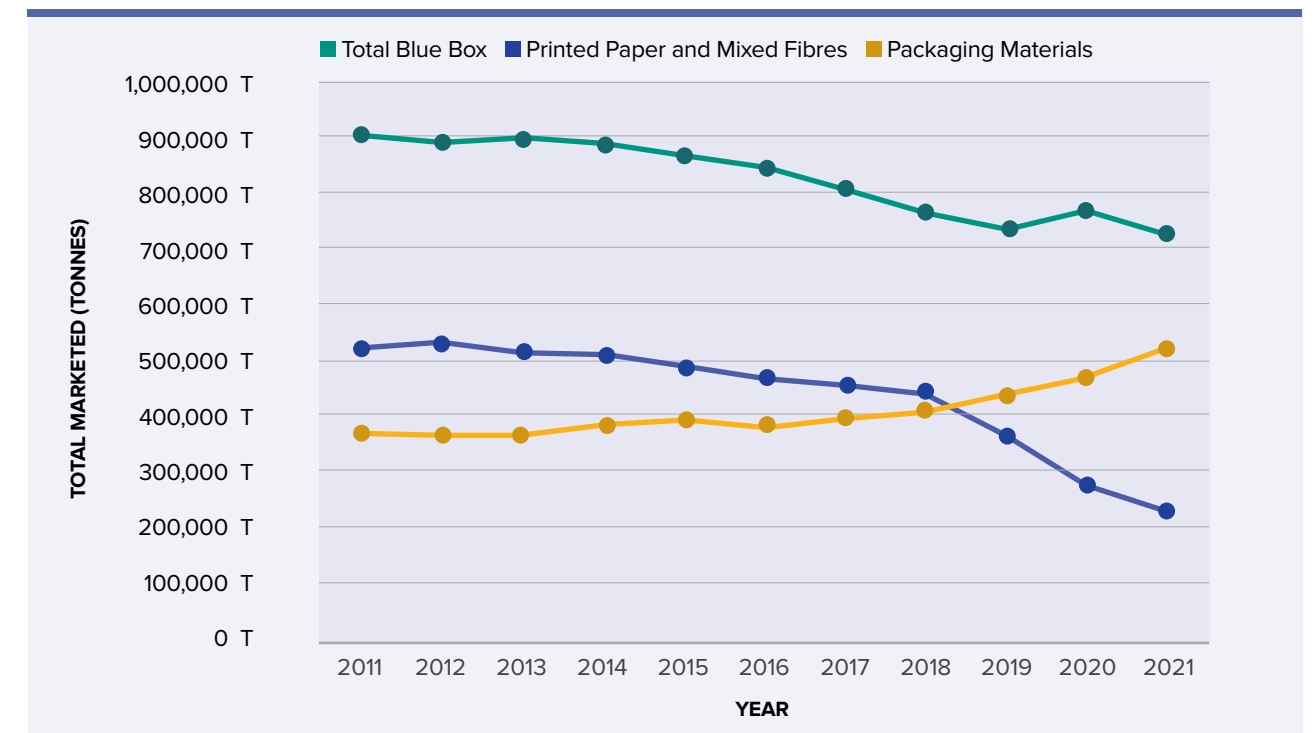
Printed paper continues to face challenges with a 13.8% decrease when compared to 2020. This is further impacted by decreases of 20.4%, 27.2%, and 27.8% over the prior three years. With new markets being found after the disruption caused by China's Operation National Sword policy introduced in 2017 and implemented in 2018, which, among other things, banned the importation of low grade plastics and unsorted mixed paper, it is possible that a majority of the decrease is due to decreases in the amount of material generated and available for collection. With a continued trend towards paperless, it is likely that this downward trend on printed paper continues. Table 4 and Figure 5 further illustrate an increase and then stabilization in the lower grade mixed fibres commodity grades alongside the decline in printed paper.

Paper-based packaging continues its steady growth, increasing 6.7% from 2020 and 72.5% since 2016 (Table 4). With continued demand for online orders and shipping, it is likely that this trend will continue.

Polycoat and plastic have also both seen moderate increases of 6.6% and 2.3% respectively. Shown in Table 4, both have had a positive growth trend and look likely to continue. Finally, aluminum, steel, and glass all saw moderate decreases to more historical levels after each saw a substantial increase in 2020 reporting.

The ten-year trend continues to show a decline in overall tonnage, with an 18.6% decrease in Blue Box marketed tonnage from 2011 to 2021 (Figure 4). The decrease in marketed Blue Box tonnes is due to the continuing decline of supply of printed paper to the Ontario market and the decreasing marketability of recycled printed paper. Printed paper has seen a 70.5% decrease in tonnage over the last decade, with newsprint accounting for 56.2% of the total Blue Box marketed tonnes in 2011, and now only making up 20.4% of the tonnage (Figure 7).

Figure 4: Marketed Blue Box Tonnes, 2011-2021



05 Blue Box

Table 4: Marketed Blue Box Tonnes, 2016-2021

Blue Box Material ¹⁰	2016	2017	2018	2019	2020	2021	2020-2021 Tonnage % Change	5-year Tonnage % Change	% of Total 2021 Blue Box Tonnes
Printed Papers ¹¹	436,978 T	416,489 T	300,780 T	218,947 T	174,289 T	150,156 T	-13.8%	-65.6%	20.4%
Mixed Fibres ¹²	12,616	7,005	43,431	47,448	56,612	54,683	-3.4	333.5	7.4%
Printed Paper and Mixed Fibres	449,594 T	423,494 T	344,212 T	266,395 T	230,901 T	204,839 T	-11.3%	-54.4%	27.8%
Paper-based Packaging ¹³	167,951	180,910	217,982	240,075	271,433	289,689	6.7	72.5	39.3
Polycoat ¹⁴	7,180	6,452	8,162	7,572	7,210	7,685	6.6	7.0	1.0
Aluminum ¹⁵	10,593	10,944	11,159	11,935	14,651	14,526	-0.9	37.1	2.0
Steel ¹⁶	29,138	29,096	27,670	27,760	32,460	29,720	-8.4	2.0	4.0
Glass ¹⁷	80,703	81,857	78,076	80,713	98,285	85,514	-13.0	6.0	11.6
Plastic ¹⁸	91,069	90,226	93,295	95,457	102,044	104,406	2.3	14.6	14.2
Packaging Materials	386,632 T	399,486 T	436,344 T	463,512 T	526,083 T	531,541 T	1.0%	37.5%	72.2%
Total Blue Box Tonnes	836,227 T	822,979 T	780,555 T	729,906 T	756,984 T	736,380 T	-2.7%	-11.9%	100.0%

¹⁰ Stewardship Ontario's material allocation method is subject to change.

¹¹ Includes newspaper, household fine paper, telephone books, magazines and catalogues.

¹² Includes mixed fibres not included in the Printed Paper and Paper-based Packaging categories.

¹³ Includes old, corrugated cardboard, old boxboard and a portion of residential mixed papers and mixed fibres packaging.

¹⁴ Includes gable top cartons and aseptic containers.

¹⁵ Includes aluminum food & beverage containers and other aluminum packaging.

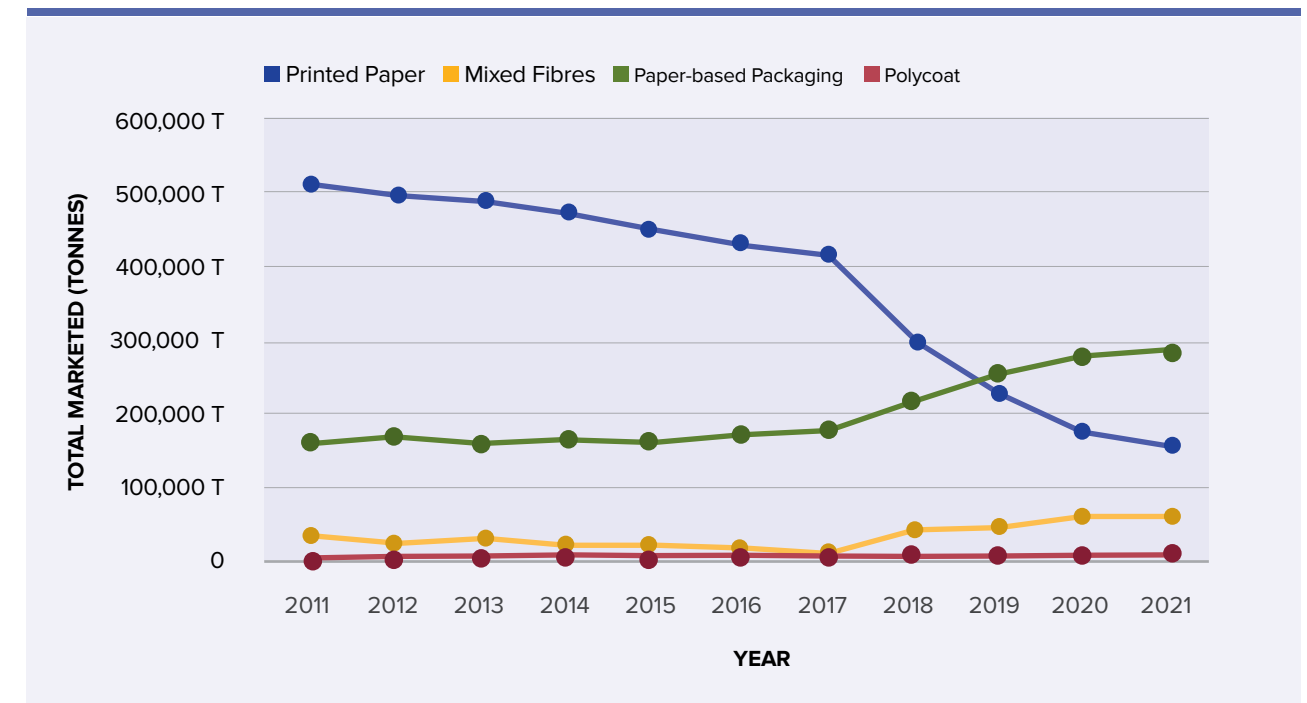
¹⁶ Includes steel food & beverage containers, aerosols, and empty paint cans.

¹⁷ Includes flint glass, coloured glass, and allocations of mixed glass.

¹⁸ Includes PET, HDPE, plastic film, tubs and lids, polystyrene, and other mixed plastic packaging.

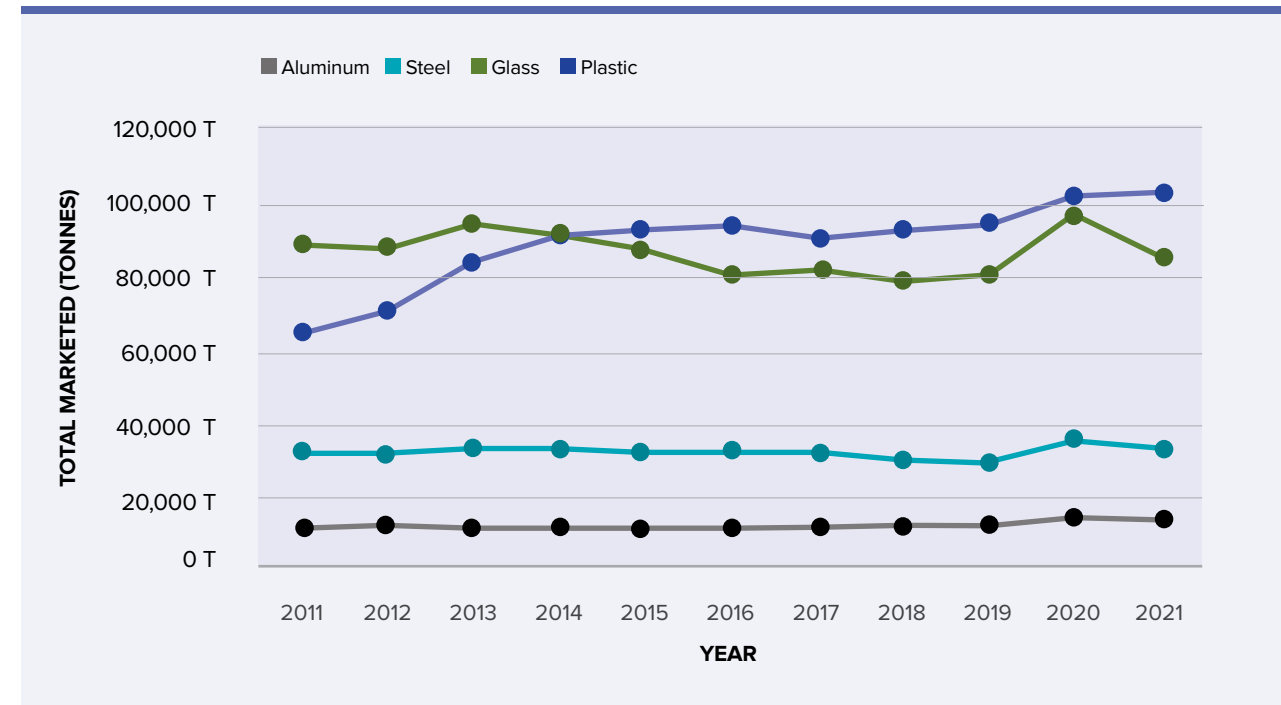
05 Blue Box

Figure 5: Marketed Tonnage Trends for Printed Paper and Mixed Fibres, 2011-2021



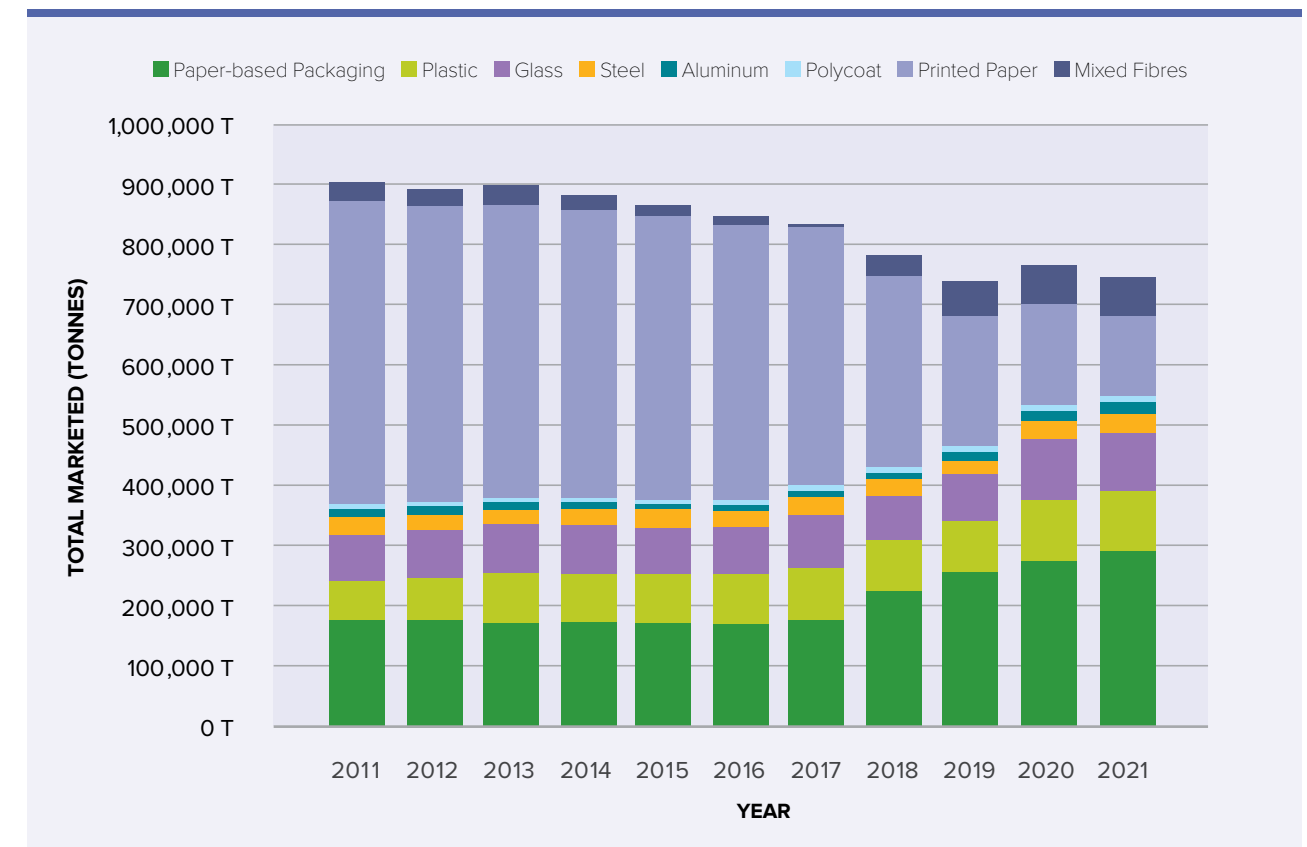
05 Blue Box

Figure 6: Marketed Tonnage Trends for Non-Paper Based Packaging Materials, 2011-2021



05 Blue Box

Figure 7: Marketed Tonnes by Material, 2011-2021



05 Blue Box

Blue Box Recovery Rate

As part of the ongoing wind-up of the Blue Box Program, Stewardship Ontario consulted on updating its reporting requirements for stewards in 2021, followed by RPRC consulting on and approving the proposed updates in 2022. For more information on the consultation, [visit our webpage](#).

The outcomes of the consultation resulted in stewards no longer being required to report sales data to Stewardship Ontario and the development of a new methodology to calculate generated tonnes for the purpose of calculating the Blue Box Program Recovery Rate through to the final wind-up of the program in 2025. This methodology was based on curbside audit data collected in 2021 and only impacts the Blue Box Program recovery rate and not the provincial residential diversion rate.

With this new methodology, the Blue Box Recovery Rate was calculated to be 53.3% in 2021. Due to the change, a direct comparison should not be made with recovery

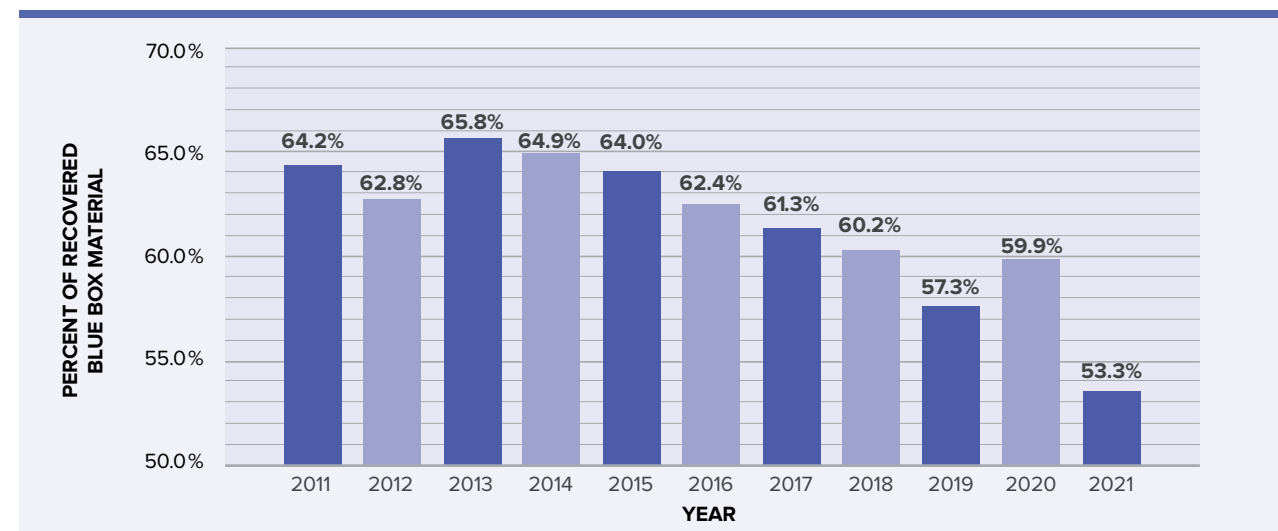
rates of prior years, as generated tonnes have not been calibrated to the new methodology. As shown below in Table 5, recovered tonnes, calculated using the previous methodology, has seen a 2.7% decrease when compared to 2020 and remains above the level reported in 2019. Generated tonnes however has seen a substantial increase of 9.3% and is the highest total since 2012. The impacts of these changes are further illustrated in Figure 8.

Moving forward, measurement of year-over-year changes will remain difficult as both generated and recovered tonnage will also see changes as programs begin to exit the Blue Box Program to the new Blue Box Regulation and the percentage of tonnage measured by this metric in Ontario falls. True comparison between years will likely need to wait until data collected by RPRC under the RRCEA begins to develop and mature. Diversion data points will begin in 2023, with that data being collected in 2024 and released on an annual basis.

Table 5: Generated and Recovered Tonnes of Blue Box Materials, 2016-2021

	2016	2017	2018	2019	2020	2021	2016-2021 % Change	5-year % Change
Generated	1,340,947	1,342,018	1,296,207	1,274,310	1,263,401	1,380,911	9.3%	3.0%
Recovered	836,227	822,979	780,555	729,906	756,984	736,380	-2.7%	-11.9%
Recovery %	62.4%	61.3%	60.2%	57.3%	59.9%	53.3%	-11.0%	-14.5%

Figure 8: Percent of Recovered Blue Box Materials, 2011-2021



05 Blue Box

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 materials
- Processing of Blue Box materials
- Management of material transfer stations and drop-off depots
- Promotion and education activities
- Administrative costs¹⁹ and interest²⁰ on the amortization of capital equipment

2021 Highlights

Net Blue Box Program costs totaled \$309.0M in 2021, an 11.7% decrease from 2020 (\$349.8M).

This change was primarily driven by revenue changes, as gross costs for the program increased by 6.4% from \$403.0M in 2020 to \$428.6M in 2021 from \$403.0M in 2020.

Revenue for the Blue Box Program increased by 125.2% from \$53.2M in 2020 to \$119.7M in 2021, over double its prior year total and the highest total revenue for the program since 2011.

Commodity Pricing Impact

Commodity prices reported by the Continuous Improvement Fund (CIF), detailed in Table 6, show a strong recovery in market pricing with all but one category reporting increases in price, with many being an increase over 100%.

Under paper packaging, revenue for printed paper increased 150% compared to 2020 and was the highest price this material has had since reporting began in 2005 at \$145/T. Mixed paper has completely reversed its trend, going from a negative revenue in 2020 to its highest total at \$78/T. Finally, increases were reported in corrugated-OCC (71.8%) and hardpack-OBB (243.3%) with corrugated also at its highest point since reporting began and hardpack seeing its second-best year, behind only 2017.

Plastics recovery followed a similar trend with PET increasing 196.2% to \$628/T and the highest price since 2011. HDPE (295.8%) and mixed plastic (168.3%) each saw large increases and hit historical highs, almost doubling and tripling those benchmarks respectively. Mixed plastic pricing has increased by 220% and plastic film has recovered to a positive revenue after it fell into negative values in 2020.

¹⁹ Administrative costs are calculated at 3% for services that are contracted out and 5% for services provided by the program.

²⁰ Interest is calculated as the prime interest rate of the year of capital purchase.

05 Blue Box

Both metal categories saw substantial increases, with aluminum and steel increasing 52.2% and 100.5% respectively.

Mixed glass and polycoat were the only two decreasing totals, falling 30.0% and 10.8%.

This strong recovery of material pricing is likely due to a combination of factors. With the end of COVID-19

regulations, many economies saw demand for commodities outpace supply in many sectors. This increased demand for recycled content as virgin materials became more expensive. Further, over the past two years there has been a slow stabilization of prices following the implementation of China's Operational National Sword policy in 2018 to reduce the importation of lower quality recyclable waste imports.

Table 6: Dollar per Tonne for each Material Commodity, 2020-2021²¹

Commodity	2016	2017	2018	2019	2020	2021	2020-2021 Price % Change	5-year Price % Change
Newspaper (ONP#8/SRP #56) ²²	103	111	62	44	58	145	150.0%	40.8%
Mixed Paper (#54/ONP#6) ²³	73	73	2	-18	-4	78	-	6.8%
Corrugated (OCC)	152	221	128	84	117	201	71.8%	32.2%
Hardpack (OBB/OCC)	91	121	57	19	30	103	243.3%	13.2%
Boxboard (OBB)	50	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Polycoat Containers	114	64	63	40	20	14	-30.0%	-87.7%
PET (mixed)	295	383	431	377	212	470	121.7%	59.3%
HDPE (mixed)	617	497	483	444	310	1,227	295.8%	98.9%
Mixed Plastics ²⁴	58	32	47	74	82	220	168.3%	279.3%
Film Plastic	47	24	15	3	-21	4	-	-91.5%
Aluminum Cans	1,548	1,772	1,733	1,354	1,311	1,995	52.2%	28.9%
Steel Cans	200	262	322	253	215	431	-100.5%	115.5%
Glass (mixed)	-30	-42	-41	-38	-37	-41	-10.8%	36.7%

²¹ CCIF. (2022). Price sheet- December 2022. Retrieved from <https://thecif.ca/wp-content/uploads/2023/01/2022-December-CIF-Price-Sheet.pdf>

²² Paper Stock Industries (PSI) have eliminated the ONP#8 grade specification. For continuity, the new PSI grade specification, Sorted Residential Paper (SRP #56), has been included as it most closely represents the ONP#8 commodity ON programs are producing.

²³ Paper Stock Industries (PSI) have eliminated the ONP#6 grade specification and added a new PSI grade specification, Mixed Paper #54.

²⁴ The composition for mixed plastics varies from each program based on the range of materials accepted and the specifications from their end markets.

05 Blue Box

Gross Cost Overview

The primary expense in gross costs for the Blue Box Program is direct Blue Box Operational Service Costs,²⁵ representing 93.9% of the total. The cost of this category increased by 6.8% from 2020 (Table 7).

A detailed breakdown of the collection, processing, and depot costs, by program, can be found in our [2021 Blue Box Cost and Revenue report](#).

Table 7: Gross Costs by Category, 2020-2021

Blue Box Program Category	Gross cost in 2020 (\$)	Gross cost in 2021 (\$)	% Change between 2020 and 2021
Blue Box Operation Services Costs	\$ 377,060,611	\$ 402,625,432	6.8%
Administrative Cost and Interest	\$ 7,086,074	\$ 6,346,154	-10.4%
Promotion and Education	\$ 18,857,427	\$ 19,694,001	4.4%
Total	\$ 403,004,112	\$ 428,665,587	6.4%

²⁵ Some programs choose to hire a single service provider to collect their Blue Box materials, 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" encompasses all costs reported as collection, processing, or depot/transfer in the Datacall.

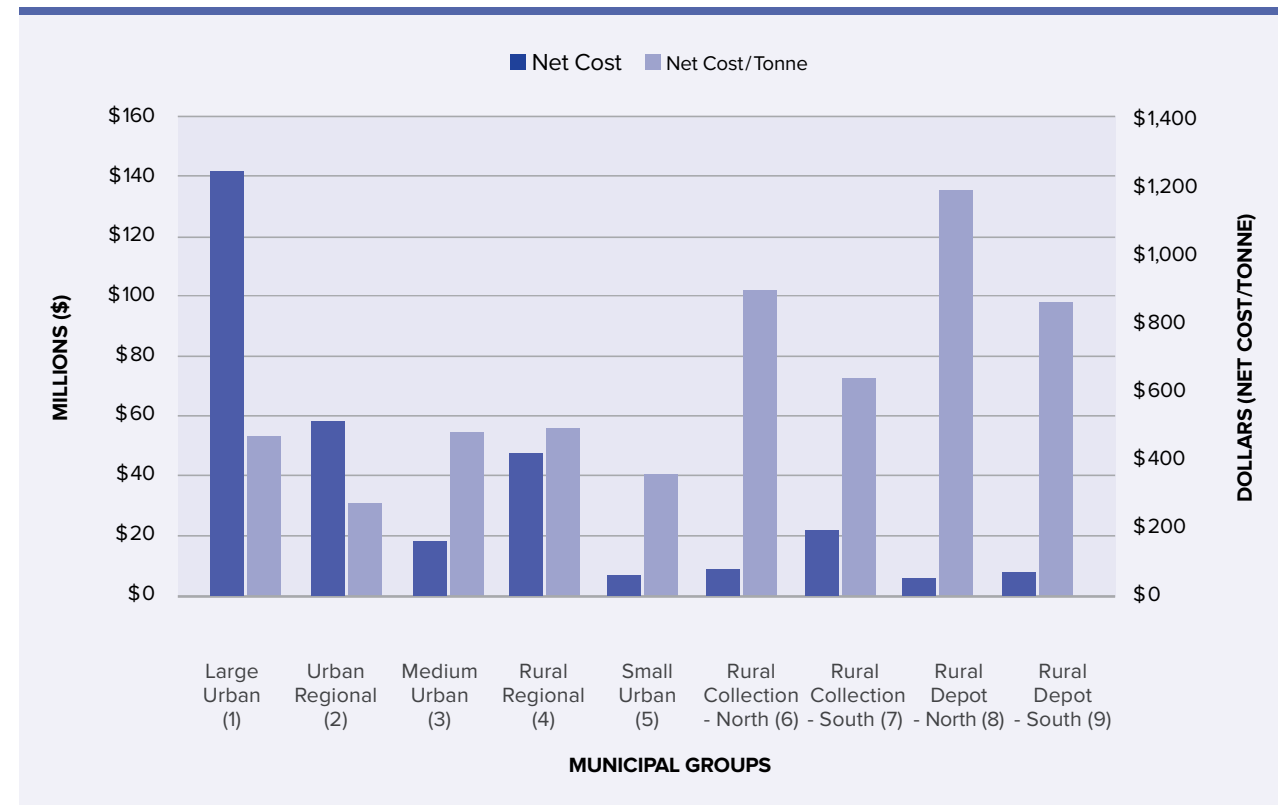
05 Blue Box

Net Cost Overview

Figure 9 shows the net cost and net cost per tonne by municipal grouping.²⁶ Programs are sorted into nine groups based on 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.

Figure 9: Net Cost and Net Cost per Tonne by Municipal Group, 2021



²⁶ RPRA. (2021) Description of Municipal Groupings for Datacall. Retrieved from <https://rprr.ca/wp-content/uploads/Descriptions-of-Municipal-Groups-for-Datacall.pdf>

05 Blue Box

10-Year Trend

Net Blue Box costs, shown in Figure 10, have increased 62.3% from \$190.4 in 2011 to \$309.0M in 2021.

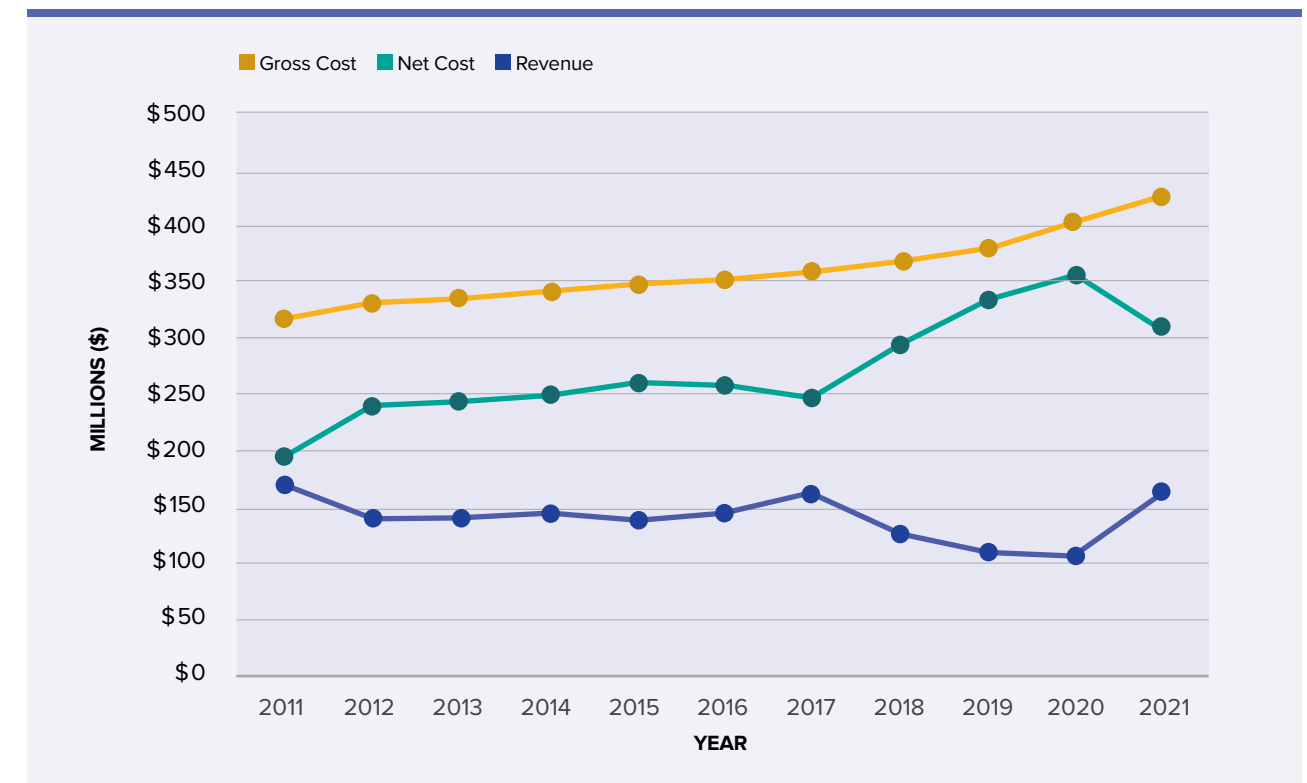
Gross costs have continuously increased since 2011, with the 6.4% increase in 2021 being the largest change over the past 10 years. Cumulatively, gross cost has increased by 35.9% since 2011.

Revenue totals for 2021 made a large leap, and as noted above and shown in Figure 10 below, have

reached the highest point since 2011. The 10-year trend in revenue has recovered to only a 4.3% decline since 2011, a substantial change when compared to the 10-year decline reported in 2020 of 44.0%.

Combined, net cost saw a substantial decrease, and over the past 10 years has increased by 62.3%, a total that is more in line with increases in gross cost experienced over the same period.

Figure 10: Gross and Net Blue Box Costs, 2011-2021





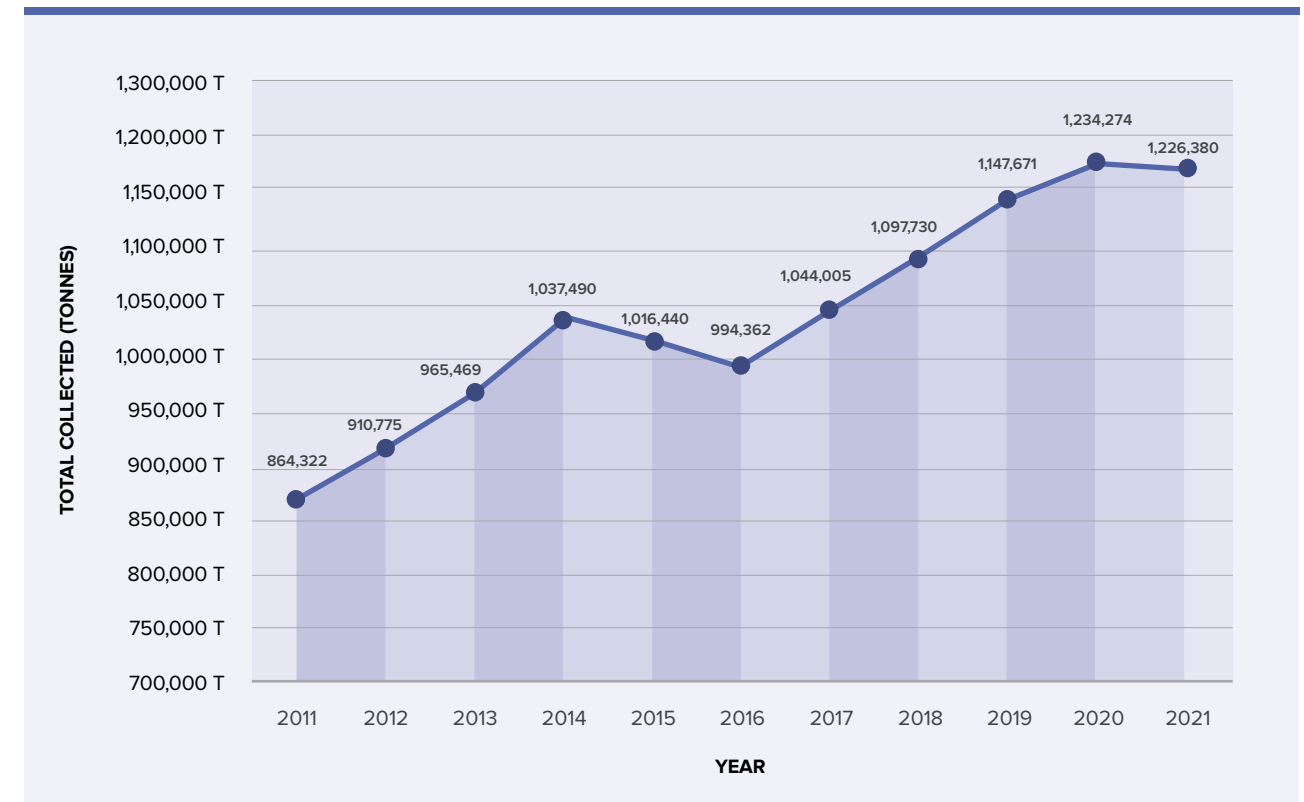
06 Organics

Diverting Organics from Landfills

As shown in Figure 11, the amount of residential organics has declined for the first time in five years. A total of 1,226,380 tonnes of organics was collected in 2021, a decrease of 0.6% as compared to the previous year. In 2021, 96 programs reported the amount of organics collected through their waste collection services, representing a population of 13,315,168 and a total household count of 4,944,359.

The quantity of organics collected has increased by 41.9% since 2011.

Figure 11: Organic Waste Collected, 2011-2021



06 Organics

Organic material 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 wood and brush chipping operations.

As shown in Figure 12, despite the decline in overall organic waste collected, household organics collection continues to trend upwards and has increased by 4.4% from 2020 to 2021, making up the majority of total organics diverted at 54.3% (Table 8).

All other categories saw declines in total tonnage collected. Yard waste, the largest remaining category, saw a 4.9% decrease while representing 40.4% of all tonnage. Bulky yard waste and leaves and Christmas trees all saw larger declines, dropping 16.3%, 12.7%, and 25.0% respectively. These latter three categories often see greater volatility in a given year due to how interchangeable reporting can be year-to-year depending on the measuring method. Collectively, non-household organics declined by 6.0% when compared to 2021.



06 Organics

Figure 12: Organics Collected Tonnes by Category, 2011-2021

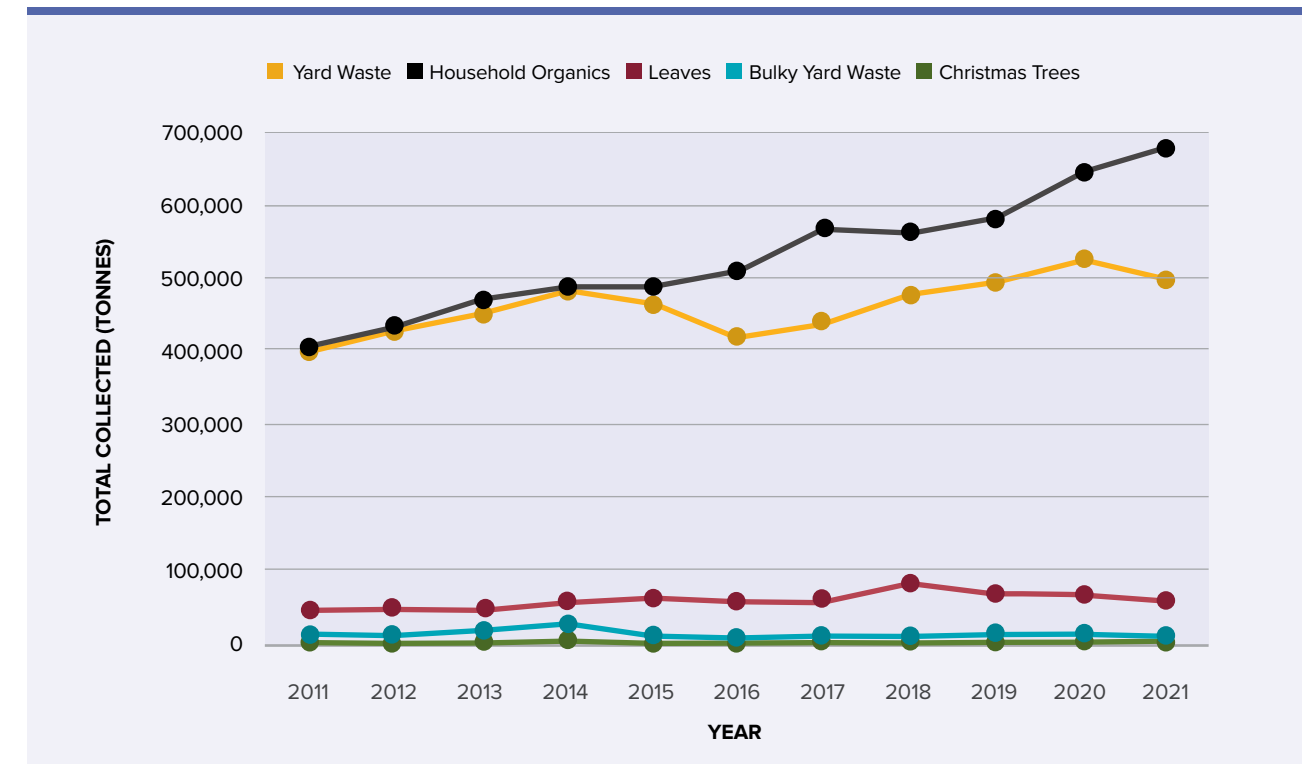


Table 8: Organics Collected Tonnes by Category, 2020-2021

Organic Material	2020	2021	Year Over Year % Change	% of 2021 Tonnes Relative to Total Organics
Yard Waste	521,314	495,658	-4.9%	40.4%
Leaves	59,957	52,366	-12.7%	4.3%
Christmas Trees	3,165	2,374	-25.0%	0.2%
Bulky Yard Waste	12,439	10,417	-16.3%	0.8%
Household Organics	637,399	665,565	4.4%	54.3%
Total Organics	1,234,274	1,266,380	-0.6%	-

07 Other Recyclables

Collecting Other Recyclables in Ontario

In 2021, a total of 137,930 tonnes of Other Recyclables were collected, representing a 12.9% decrease from 2020. Over the past ten years, the quantity of Other Recyclables diverted has increased by 13.5%, as shown in Figure 13.

Other Recyclables diverted from landfill include:²⁷

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

Figure 13: Total Other Recyclables Collected, 2011-2021



²⁷ Other Recyclables does not include tonnages for used tires or reusable materials.

07 Other Recyclables

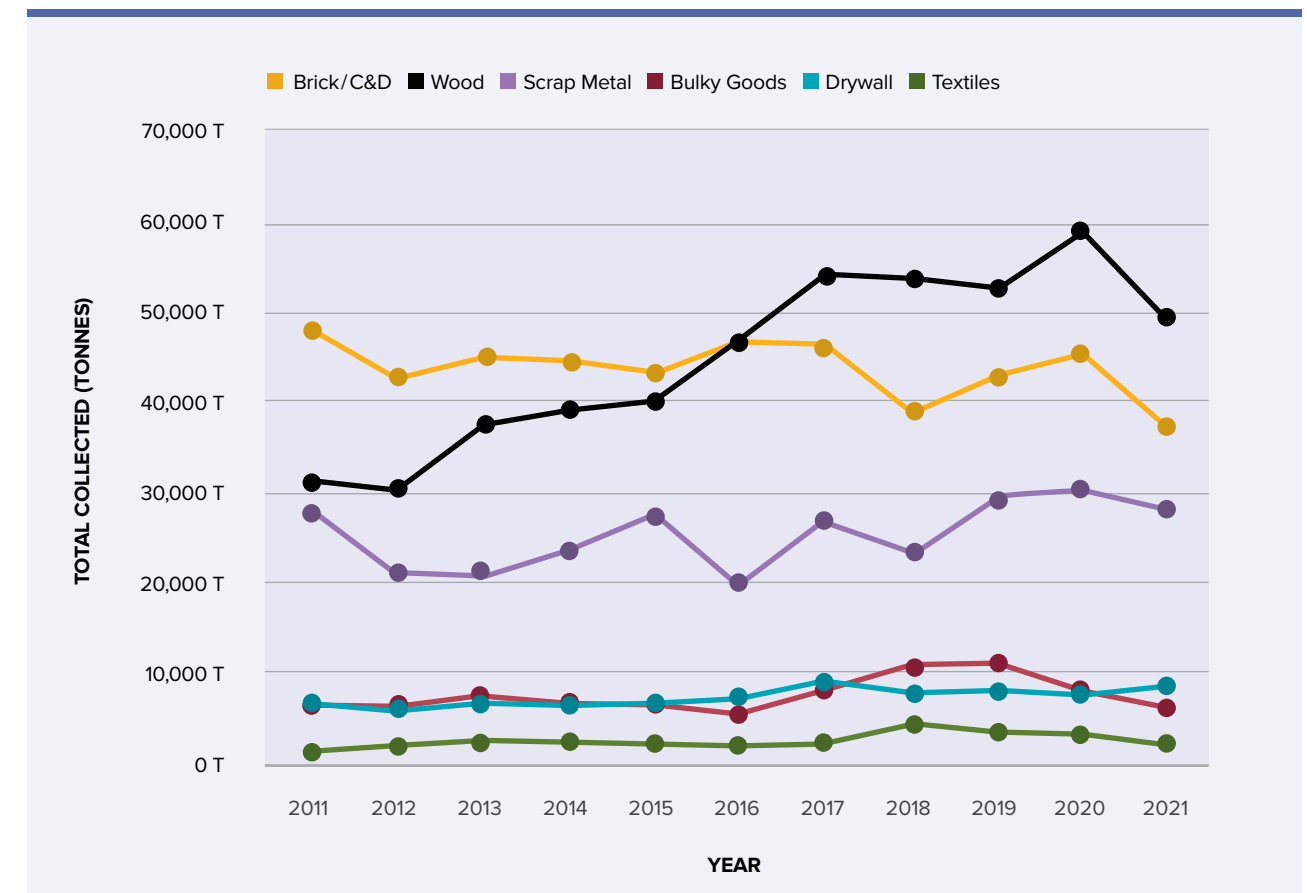
Other Recyclables saw decreases in all but one material type, drywall, which saw a 4.5% increase from 2020 and represents 6.1% of the total tonnage reported.

As shown in Figure 14, while making up 82.7% of overall tonnage, brick/C&D materials, wood, and scrap metal collected by Datacall programs declined

19.6%, 15.4%, and 6.1% respectively. These activities often vary year-to-year as programs are part of a broader collection network with many of these materials being collected by the private sector.

Bulky goods and textiles both saw sharp declines from 2020 of 35.6% and 39.4%, accounting for 5.5% of the total Other Recyclable tonnage.

Figure 14: Other Recyclables Collected by Material, 2011-2021





08 Waste Electrical and Electronic Equipment

Recycling Waste Electronics

In 2009, the WEEE Program operated by Ontario Electronic Stewardship (OES), was created to collect and divert computers, monitors, computer peripherals, printers, fax machines and televisions from landfills. 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 WEEE Program wound up on December 31, 2020, and on January 1, 2021, producers of information technology, telecommunications, audio-visual (ITT/AV) equipment became individually responsible for the recovery and recycling of waste products designated under the Electrical and Electronic Equipment (EEE) Regulation under the RRCEA.

The WEEE category in the Datacall is not limited to the materials specified in the WEEE Program Plan or in the EEE Regulation under the RRCEA. The WEEE material category in the Datacall includes:

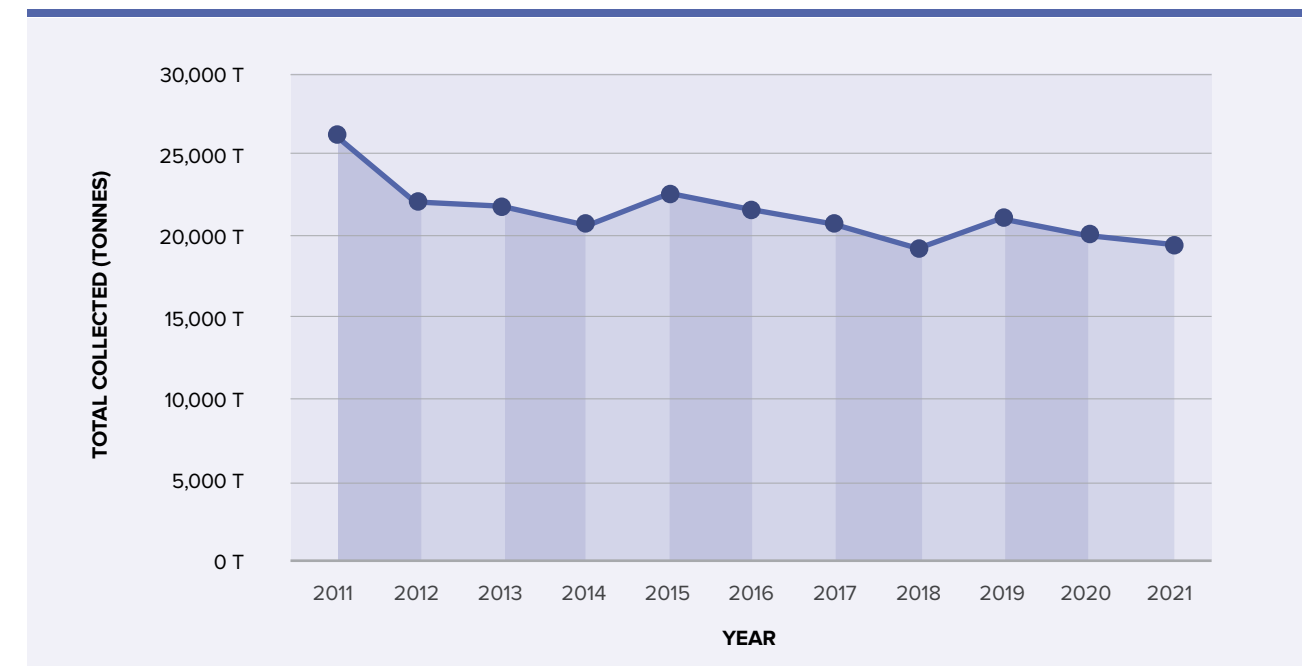
- **White Goods:** Large electrical goods used domestically (e.g., refrigerators and washing machines, typically white in colour).

- **Small appliances (or small domestic appliance):** Portable or semi-portable machines, 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).

Programs that submitted the Long-Form Datacall in 2021 reported 19,494 tonnes of WEEE, representing a 2.7% decrease from 2020 collected tonnage of 20,025 tonnes (Figure 15). Of the total WEEE tonnage collected in 2021, 7,672 tonnes were collected curbside, while 11,822 tonnes were collected through depot.

It is important to note that municipalities and First Nation communities are not the primary sources of WEEE collection in Ontario and submitting this data through the Datacall is not mandatory. For more details on electronics recycling in Ontario, read the [resource recovery reports](#) on the RPRA website.

Figure 15: Total WEEE Collected, 2011-2021



09 Municipal Hazardous or Special Waste

Municipal Hazardous or Special Waste Collection

In 2006, the MHSW Program was created for Ontario residents to safely dispose of household products that require special handling, such as single-use batteries, propane tanks and oil filters. Stewardship Ontario was the industry funding organization that operated the MHSW Program. Industry stewardship organizations (Automotive Materials Stewardship, Product Care Association and Soda Stream) were responsible for recovering additional hazardous waste products, including automotive materials; paints and coatings; pesticides, solvents and fertilizers; and proprietary carbon dioxide cylinders.

On July 1, 2020, batteries was the first material implemented under the RRCEA for the new HSP program. All other materials managed under the prior program transitioned on October 1, 2021.

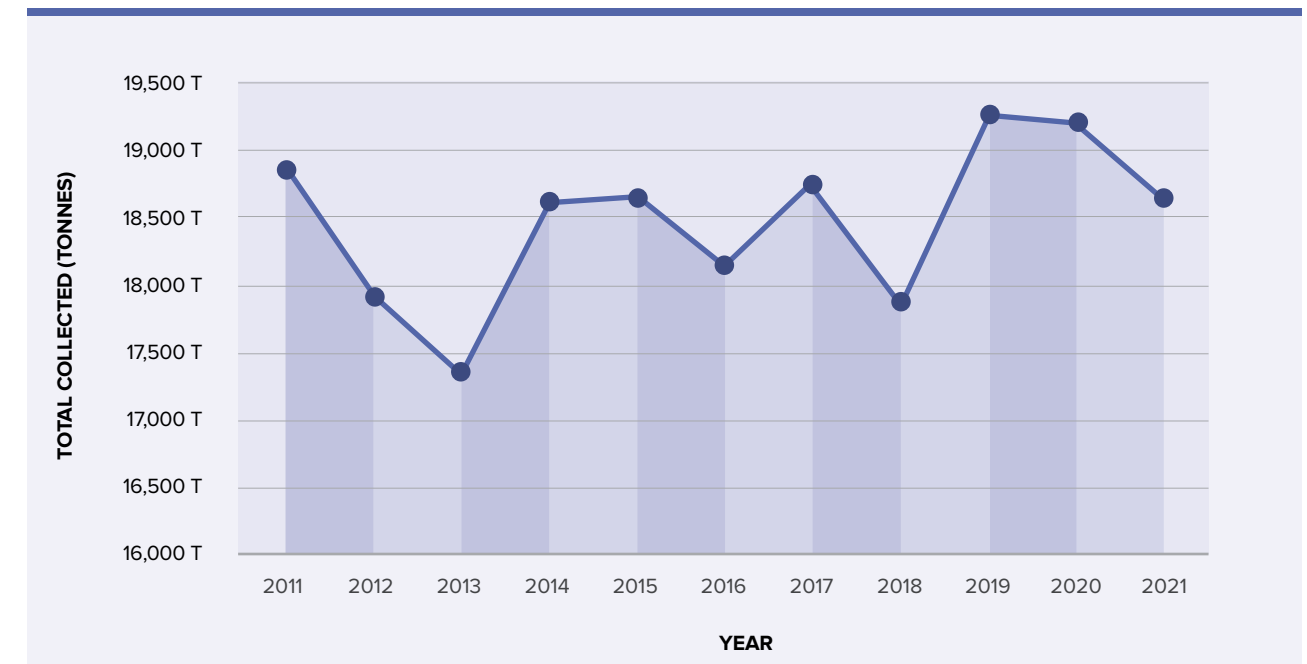
In 2021, programs completing the Long-Form Datacall collected 18,624 tonnes of MHSW material.

This material was collected at either a community event day or at a community depot. As shown in Figure 16, MHSW tonnages reported in the Datacall significantly vary year-to-year but have trended upwards overall. Since 2011, the amount of material collected has decreased by 0.8% and between 2020 and 2021, the material collected by communities has decreased by 2.9%.

Similar to WEEE, there is no requirement to report on collected MHSW materials through the Datacall, and municipalities and First Nation communities are not the primary collectors of this material. For a more detailed picture of MHSW materials diverted in Ontario, see the annual reports from Stewardship Ontario, Automotive Materials Stewardship, Product Care Association and Soda Stream, all of which are found in the appendices of [RPRA's 2021 Annual Report](#). Due to changes in reporting, all reports in the Annual Report will be up to October 1, 2021. Details on tonnage totals thereafter will be reported by RPRA.

09 Municipal Hazardous or Special Waste

Figure 16: Total MHSW Collected, 2011-2021





10 Conclusion

Summary

The 2021 Datacall saw reporting that indicated a strong recovery in commodity markets, which may be due to the end of many COVID-19 restrictions, with record high revenue totals reported by programs and a decline in total net costs. Multiple material categories saw increases that more than doubled their price per tonne when compared to 2020 and the preceding years.

Tonnages totals in all major categories (Blue Box, organics, Other Recyclables, WEEE, MHSW, and garbage) declined, resulting in a decline in the overall provincial diversion rate to 49.1%, along with generated tonnes as a whole. With Stewardship Ontario's new methodology, the Blue Box Program Recovery Rate was calculated to be 53.3%. Going forward, it is likely that direct comparisons year-over-year will remain difficult until all communities transition to the new Blue Box Regulation under the RRCEA.



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