



ANNUAL REPORT

Essex-Windsor Residential Waste Diversion 2021

Report Date: March 31, 2022

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Essex-Windsor Residential Waste Diversion

Annual Report for January – December 2021

1 Introduction

The Annual Waste Diversion Report provides information on the waste diversion activities carried out by the Essex-Windsor Solid Waste Authority (EWSWA) during 2021 in compliance with Condition 5.2 of the Environmental Assessment Approval for the Essex-Windsor Regional Landfill.

1.1 Residential Waste Diversion Rate 2021

This report also provides the EWSWA the ability to track any changes in the amount of waste diverted through its waste diversion initiatives from year to year.

In 2021, the seven County of Essex municipalities and the City of Windsor delivered 112,053 tonnes of residential waste to the Regional Landfill. During the same time period, 56,242 tonnes of residential waste were diverted from the landfill via the blue and red box recycling program, municipal hazardous or special waste program, composting, and other waste diversion programs. These waste diversion initiatives resulted in a 2021 residential diversion rate of 32.9%. The 2020 diversion rate was 32.4%.

2021 Residential Diversion Rate is calculated as follows:

$$\frac{56,242 \text{ Tonnes Diverted (see Table 19)}}{112,053 \text{ Tonnes of Residential Refuse Collected Curbside} + 2,632 \text{ Residuals} + 56,242 \text{ Diverted Tonnes}} = \frac{56,242}{170,927} \times 100 = 32.9\%$$

2020 Residential Diversion Rate is calculated as follows:

$$\frac{55,465 \text{ Tonnes Diverted (see Table 19)}}{109,902 \text{ Tonnes of Residential Refuse Collected Curbside} + 5,636 \text{ Residuals} + 55,465 \text{ Diverted Tonnes}} = \frac{55,465}{171,003} \times 100 = 32.4\%$$

2 Programs

2.1 Residential Recycling Blue Box Program

The tonnes of residential recyclable materials collected curbside during 2021 totaled 23,802 tonnes. The overall tonnes of recyclables collected in 2021 were slightly lower compared to the 24,585 tonnes collected in 2020.

A monthly summary and comparison of the tonnes collected curbside from the City and the County in 2020 and 2021 is shown in Table 1. Collection of recyclables in the County was carried out under contract in 2021 by the City of Windsor. Collection of recyclables in the City of Windsor in 2021 was carried out by Green For Life Environmental Inc.

All materials were processed at the EWSWA owned Essex-Windsor Material Recovery Facility (MRF), located at E.C. Row and Central Avenue in Windsor where HGC Management Inc. via contract process delivered materials.

In addition to the residential recyclables collected curbside, 605 tonnes of recyclables were delivered to the EWSWA's Public Drop Off Depots in 2021. This is up 33% from 2020 where 455 tonnes were delivered. This increase may be a result of the site being closed for a short period of time in 2020 due to COVID-19.

Table 1: Residential recycling blue box collection tonnes by month comparison

Month	2021 County of Essex*	2021 City of Windsor Tonnes	2021 Combined Tonnes	2020 Comparable Tonnes
January	1,047	1,018	2,065	4,130.00
February	892	869	1,761	3,522.00
March	1,021	975	1,996	3,992.00
April	1,006	994	2,000	4,000.00
May	948	922	1,870	3,740.00
June	1,034	1,051	2,086	4,171.00
July	1,015	1,065	2,079	4,159.00
August	932	906	1,838	3,676.00
September	965	1,021	1,986	3,972.00
October	1,014	978	1,991	3,983.00
November	947	974	1,921	3,842.00
December	1,110	1,099	2,210	4,419.00
Total:	11,931.00	11,872.00	23,802	24,585

* The County of Essex includes the Town of Amherstburg, the Town of Essex, the Town of Kingsville, the Municipality of Lakeshore, the Town of LaSalle, the Municipality of Leamington, and the Town of Tecumseh. Due to rounding, sum of combined tonnes for 2020 and 2021 will not equal total value.

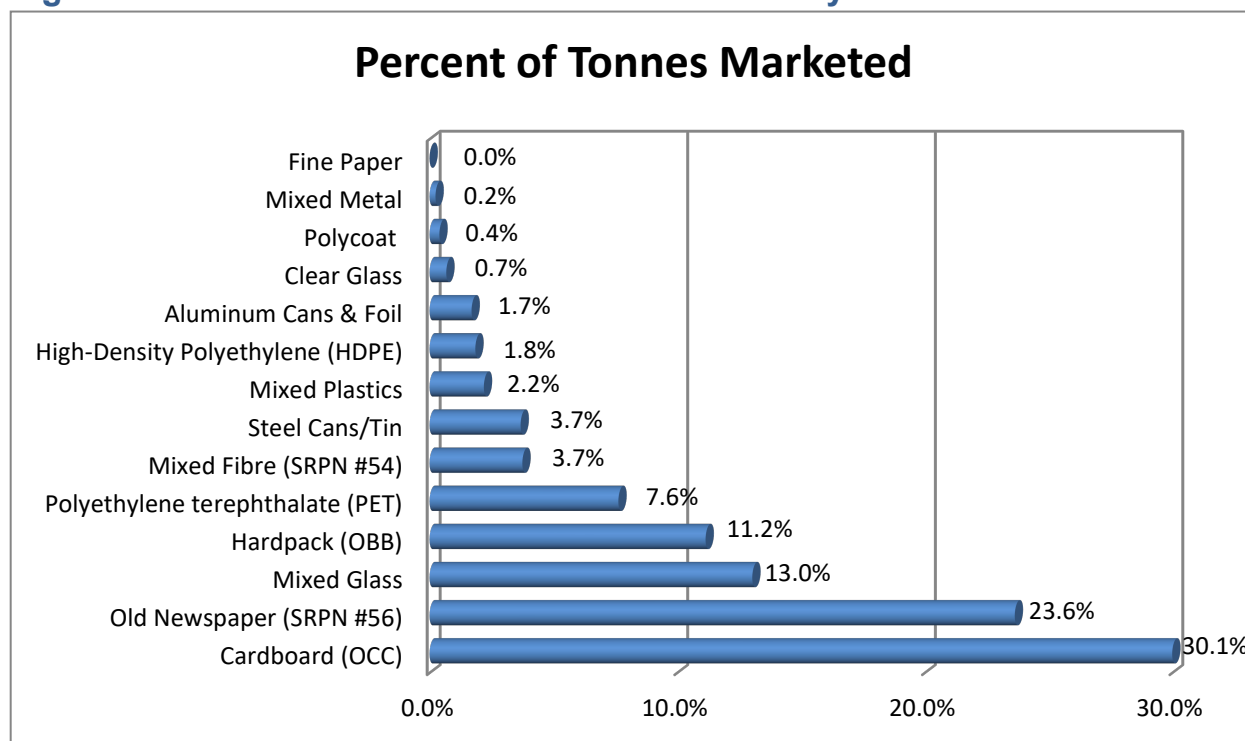
2.2 Recycling Residual Disposal

Recycling Residual is the material that is left over after the processing of the recyclable materials are collected and delivered to the MRF. The residuals consist of contaminated materials, non-recyclable materials, and packaging materials used to secure recyclables placed in the recycle box. A total of 2,632 tonnes of recycling residuals was disposed of in 2021. This is a significant decrease in residuals from 2020 (5,636 tonnes), as there were great favourable changes in market demands and HGC Management Inc. made processing refinements that supported these new market opportunities.

3 Tonnes Marketed

For the purposes of waste diversion calculations, tonnes marketed are used instead of the tonnes collected curbside. The tonnes marketed by material type are shown in Tables 2, 3, and 4. The EWSWA markets all materials processed through the MRF, and retains 100% of the revenue from the sale of materials. Revenue from the sale of material in 2021 was approximately \$4,967,436 (see Table 5) representing a basket-of-goods revenue of approximately \$237/tonne compared to a basket-of-goods revenue of \$114/tonne in 2020. This is as a result of very strong market conditions for the majority of recyclable materials marketed by the EWSWA. A brief discussion on market conditions and prices for each of the materials follows.

Figure 1: Percent of tonnes for 2021 marketed recyclables



Note: Due to rounding, total tonnes marketed does not total 100%.

3.1 Fibres

Old Newspaper (SRPN #56)

Ontario market price trends are published annually by the Continuous Improvement Fund's (CIFs) Price Sheet (January 2022). For 2021, SRPN #56 prices started the year at a low of \$102 per tonne in January and then increased gradually to finally close out the year at \$186 per tonne in December. The EWSWA average price for 2021 was \$155 per tonne which is higher than this provincially published CIF average of \$145 per tonne. The EWSWA 2020 average price for SRPN #56 was \$74 per tonne.

Old Corrugated Cardboard (OCC)

The EWSWA price for old corrugated cardboard ranged from a low of \$125 per tonne to a high of \$295 per tonne in 2021. The 2021 EWSWA average price per tonne was \$208 compared to \$117 in 2020. The EWSWA's average price of \$208 per tonne was higher than the provincial average of \$201 per tonne per the CIF Price Sheet - January 2022.

Hardpack (OBB)

(Example: cereal boxes, cardboard)

The EWSWA's prices for this cardboard/boxboard mix started the year low at \$69 per tonne and increased due to the global market conditions to a high of \$223 per tonne in 2021. The 2021 EWSWA average price was \$149 compared to \$56 per tonne in 2020, again as a result of global market conditions. The EWSWA's average 2021 price of \$149 per tonne was higher than the provincial average of \$103 per tonne per the CIF Price Sheet - January 2022.

Fine Paper

Fine paper was not marketed in 2021, as the amount of material available to market in 2021 was negligible.

Mixed Fibre (SRPN #54)

Like all fibre the pricing for mixed fibre started the year low (\$0 per tonne) and increased to \$120 per tonne by December in 2021. This is an increase from 2020 as market demands for this low-grade fibre drove the average price for 2021 to \$103/tonne; which is a significant increase in diversion of fibre materials.

3.2 Containers

Steel Cans

The 2021 average price was \$429 per tonne compared to \$196 per tonne in 2020.

Aluminum Cans and Foil

The 2021 average price was \$2,157 per tonne compared to \$1,321 in 2020. Aluminum foil was sold at an average price of \$770 during 2021, whereas in 2020 it sold at \$449 per tonne.

Glass

Due to issues with this market, \$0 was received for this material in 2021, which is lower than the 2020 average price of \$27 per tonne. Clear glass is the only product that is not marketed FOB (Freight on Board) at the Essex-Windsor MRF. Mixed coloured glass was delivered to the Regional Landfill for use as road base.

Polyethylene terephthalate (PET)

(Example: plastic water bottles)

The average price was \$491 per tonne in 2021 which is much higher than the 2020 average price of \$186 per tonne.

High-Density Polyethylene (HDPE)

(Example: laundry soap bottles)

The average price was \$1,276 per tonne in 2021 compared to the 2020 average price of \$325 per tonne, again as a result of extremely favourable market conditions.

Polycoat and Gable Top

(Example: milk cartons)

Four loads of polycoat were shipped out in 2021 at an average price of \$19 per tonne compared to the average price of \$21 per tonne in 2020.

Mixed Plastics

(Example: tubs & lids, clamshells, trays, cups, plastic bottles, excludes polystyrene and plastic film bags)

The average price was \$168 per tonne in 2021 compared to the average price of \$81 per tonne in 2020.

Table 2: Marketed fibre summary comparison: 2020 versus 2021

Fibre Material	2020 Tonnes	2021 Tonnes	% Change
Old newspaper (SRPN #56)	5,015	4,963	-1.0
Cardboard (OCC)	5,491	6,311	14.9
Hardpack (OBB)	2,287	2,341	2.4
Fine paper	37	0	-100.0
Mixed fibre (SRPN #54)	19	787	4042.1
Totals:	12,849	14,402	12.1%

Table 3: Marketed containers summary comparison: 2020 versus 2021

Container Material	2020 Tonnes	2021 Tonnes	% Change
Clear glass	91	142	56.0
Mixed glass	2,571	2,737	6.5
Steel cans	744	772	3.8
Aluminum cans and foil	345	356	3.2
Polyethylene terephthalate (PET)	1,514	1,601	5.7
High-density polyethylene (HDPE)	307	388	26.4
Polycoat/gable top	65	83	27.7
Mixed plastics	588	461	-21.6
Totals:	6,225	6,540	5.1%

Table 4: Residential recyclables marketed comparison

Tonnes Marketed	2020 Tonnes	2021 Tonnes
a) Total tonnes marketed	19,074	20,942
b) ICI Tonnes	(484)	(630)
Net marketed residential recyclables	18,590	20,312

Notes: a) Total tonnes marketed less b) ICI delivered tonnes = Net marketed residential recyclables.

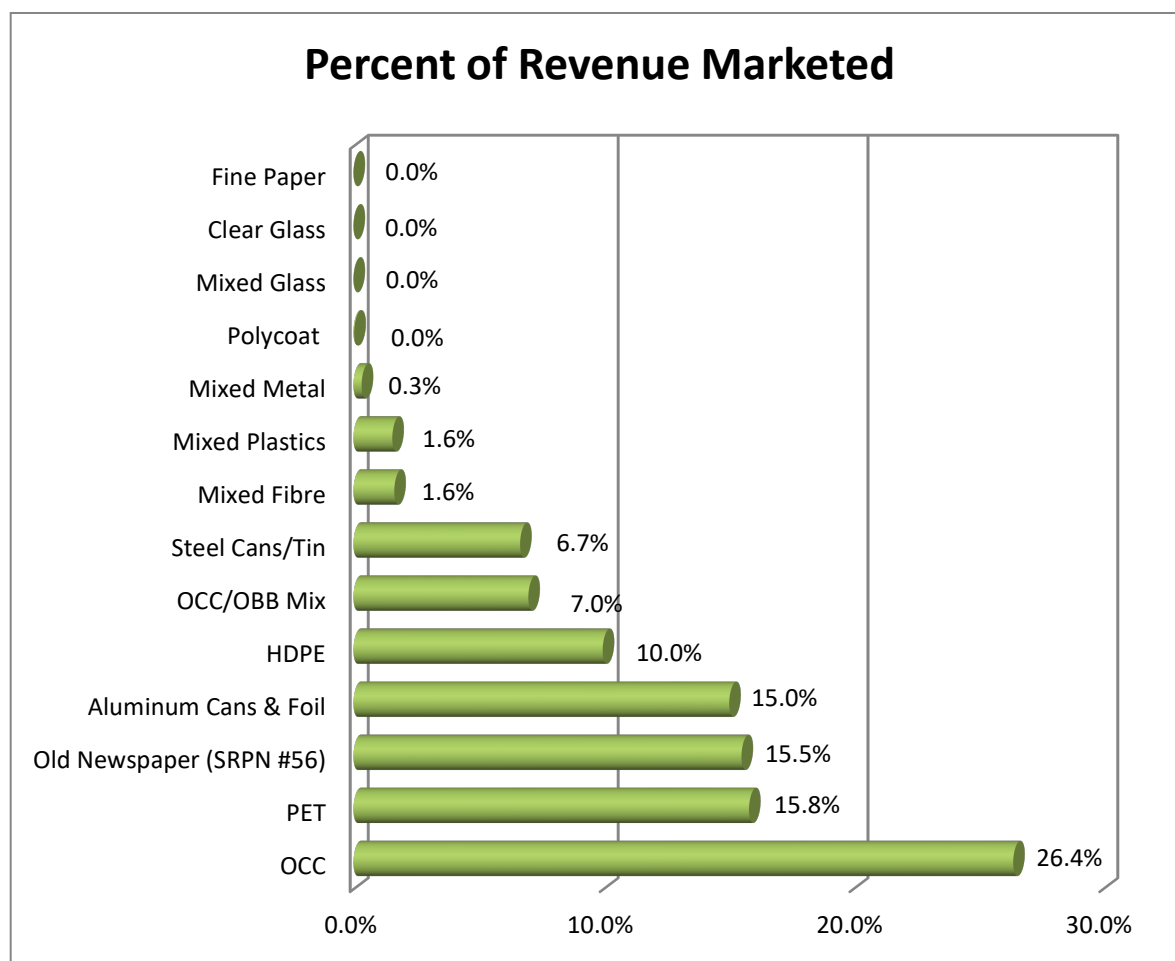
Table 5: Revenue comparison: 2020 versus 2021

Recyclable Material	2020 Revenue	2021 Revenue
Old newspaper (SRPN #56)	\$371,557	\$771,507
Cardboard (OCC)	\$646,101	\$1,311,714
Hardpack (OBB)	\$127,847	\$347,701
Clear glass	\$2,423	\$0
Mixed fibre (SRPN #54)	\$0	\$81,149
Steel cans	\$145,504	\$331,266
Fine paper	\$5,740	\$0
Aluminum cans and foil	\$441,106	\$747,075
Polyethylene terephthalate (PET)	\$281,271	\$786,433
High-density polyethylene (HDPE)	\$99,769	\$495,494
Mixed glass	\$0	\$0
Polycoat/gable top	\$1,366	\$1,626
Mixed metal	\$10,701	\$16,259
Mixed plastics	\$47,396	\$77,212
Total Revenue	\$2,180,781	\$4,967,436

Table 6: Annual revenue comparison

Year	Revenue
2015	\$3,101,234
2016	\$3,414,055
2017	\$4,241,411
2018	\$3,204,744
2019	\$2,076,450
2020	\$2,180,781
2021	\$4,967,436

Figure 2: Percent of revenue marketed in 2021



Note: Due to rounding, total revenue marketed does not total 100%.

3.3 Markets

While overall delivered tonnages for 2021 were slightly lower than 2020, total marketed tonnes were higher due to market availability and processing refinement. Total revenue increased significantly in 2021 due to exceptionally favourable market conditions for most commodities. Specifically, the mixed fibre market saw a tremendous increase in tonnage diverted and favourable pricing as a result of these market conditions. On the flip side, there was an unfavourable shift in revenue in 2021 for the clear glass and polycoat markets as a result of poor market conditions for these commodities.

4 Other Residential Recycling Programs

4.1 White Goods

Since 1991, white goods, such as fridges, stoves, air conditioners, washers, dryers, freezers, dishwashers, etc. have been restricted from landfill disposal. In 2021, curbside collection of white goods from County municipalities captured 1,952 white good units (approximately 176 tonnes).

While the City of Windsor did not operate a white goods collection program during 2021, there were also 171 tonnes of white goods delivered to the Public Drop Off Depots for a combined total of approximately 346 tonnes. Using the Resource Productivity & Recovery Authority (RPRA) Municipal Datacall residual percentage of 20%, approximately 277 tonnes of white goods were recycled and diverted. Table 8 details the white goods collection program for each of the municipalities in the County of Essex by month during 2021.

Table 7: Summary of white goods diversion for 2021

White Goods Summary	2021 Tonnes
Curbside Collection Converted to Tonnes	176
Drop Off Depots	171
Total White Goods Tonnes	346
Less 20% Residual Calculation Amount	(69)
Total Tonnes Recycled and Diverted	277

Note: Total White Goods Tonnes does not equal the sum of Curbside Collection Converted to Tonnes and Drop Off Depots due to rounding.

Table 8: 2021 White goods collected by month in municipalities across Essex County

Month	Tecumseh	Essex	LaSalle	Amherstburg	Leamington	Kingsville	Total for Month
January	22	22	33	53	23	23	176
February	16	27	20	25	13	27	128
March	12	27	27	51	32	21	170
April	22	24	46	52	36	24	204
May	21	31	31	47	19	50	199
June	23	25	20	46	15	30	159
July	23	19	31	32	32	19	156
August	22	29	31	36	16	23	157
September	14	26	24	33	24	34	155
October	27	25	27	50	18	28	175
November	26	22	22	40	22	34	166
December	21	23	10	19	15	19	107
Total Units	249	300	322	484	265	332	1,952

Notes: 1,952 units with the average weight of 90 kilograms per unit results in diversion of approximately 175.68 tonnes; there were no tonnes reported for Lakeshore in 2021.

4.2 Tires

In 2021, RPRA Datacall resulted in the diversion of approximately 3,001 tonnes of used tires in the Essex-Windsor area. While automotive tire recycling is now offered at many locations across Essex-Windsor, EWSWA still collects and recycles used tires through the RPRA program.

4.3 Scrap Metal

There are 40-yard roll off bins located at the Windsor Public Drop-off Depot for the collection of ferrous and non-ferrous scrap metal material. The metals are sold through a competitive bid process to local scrap dealers. In 2021, approximately 550 tonnes of metals were collected and recycled. While the EWSWA does not advertise that it accepts other metal household objects besides steel cans in the blue box program, the EWSWA does receive and does try to capture any metal objects through its programs which are called "mixed metal".

4.4 Electronics Recycling

Under contract to the EWSWA, Quantum Lifecycle Partners Inc. supplies sea containers for the collection of electronics at the EWSWA's Public Drop-off Depots. The EWSWA staff place electronic items that are received from the public in these containers. In 2021, approximately 302 tonnes of computers, televisions, audio visual equipment, and various electronic items were collected through the Waste Electrical and Electronics Equipment (WEEE) stewardship program. Based on a residual portion of 20%, the total electronics recycled was approximately 241 tonnes.

4.5 Deposit/Return Program

The EWSWA has a capture program at its Material Recovery Facility (MRF) for deposit/return containers (i.e. aluminum beer cans; glass, wine and spirit bottles) that were placed curbside for blue box collection. During 2021, approximately 84 tonnes of deposit/return containers were received at the MRF and are included as part of the 2,329 tonnes that were diverted throughout Essex-Windsor as part of the Deposit/return & stewardship program. The 2,329 diversion tonnes figure is calculated as part of the 2021 RPRA datacall and is based on the Essex-Windsor population as determined by the latest Statistics Canada census data.

4.6 WE ReCYCLE Bike Program

The EWSWA recognizes the importance of providing waste diversion programs that are convenient and safe for the public to access. In 2021, the EWSWA Board approved a bike reuse program, that supports bikes that are collected at the EWSWA sites to be refurbished, and recycled back into the Essex-Windsor area through a community partnership program. A total of 150 bicycles were recycled through this program as a result of its launch in fall 2021.

Table 9: Bikes recycled through the WE ReCYCLE program in 2021

	Windsor Public Drop Off	Kingsville Transfer Station #2	Total
Number of Bikes Recycled	121	29	150

As the average bike weighs 10 kg, and 150 bikes were recycled in 2021, it is estimated that 1,880 kgs or 1.88 tonnes of bikes were diverted through the WE ReCYCLE Program in 2021.

4.7 Election Signs

As the EWSWA attempts to divert materials where feasible, it has been successful to offer a drop off program at its sites for election signs after an election. As 2021 was an election year, approximately 720 kgs or 0.72 tonnes of signs were dropped off at the EWSWA sites and later recycled.

Table 10: Other recyclables comparison: 2020 versus 2021

Other Recyclable Programs	2020 Tonnes	2021 Tonnes	% Change
White goods (all sites)	286	277	-3.1%
Used tires	2,831	3,001	6.0%
Scrap & mixed metal	496	550	10.9%
Electronics	258	241	-6.6%
Deposit/return & stewardship	2,197	2,329	6.0%
Bicycles	N/A	2	N/A
Election Signs	N/A	1	N/A
Total Other Recyclables	6,068	6,401	5.5%

Notes: RPRA data call calculation is based on population for Used tires and Deposit/return & stewardship programs in the Essex-Windsor area as reported by the Statistics Canada census. N/A as program started in 2021.

5 Residential Organics

5.1 Yard Waste

Grass, leaves, tree trimmings, and brush are restricted from disposal at the Essex-Windsor Regional Landfill site. As a result, all local municipalities have established separate collection systems for yard waste, including special collections in January for Christmas trees. Furthermore, individual residents and grounds maintenance contractors also brought yard waste to each of the three depots operated by the EWSWA in 2021.

The Essex-Windsor area accepts the use of paper bags, wheeled carts, garbage bins, and cardboard boxes for the collection of yard waste. Plastic bags are not accepted. Approximately 24,521 tonnes of yard waste was received in 2021, which is a decrease of 5% compared to the 25,690 tonnes delivered in 2020.

Table 11: 2021 Yard waste summary for all EWSWA sites

Material Type	Windsor Public Drop Off	Kingsville Transfer Station 2	Regional Landfill	Total
Municipal Delivered	11,418	1,849	4,727	17,994
Residential Delivered	4,095	1,132	298	5,525
Total Res. Organics	15,513	2,981	5,025	23,519
*ICI Organics and Pallets	578	333	90	1,002
Grand Total (Tonnes)	16,092	3,315	5,114	24,521

Notes: *ICI is Industrial, Commercial, and Institutional delivered material type. Total numbers do not equate due to rounding.

Table 12: Yard waste tonnes comparison: 2020 versus 2021

Material Type	2020 Tonnes	2021 Tonnes
Municipal Delivered	19,368	17,994
Residential Delivered	5,442	5,525
Total Res. Organics	24,810	23,519
*ICI Organics and Pallets	880	1,002
Grand Total (Tonnes)	25,690	24,521

*ICI is Industrial, Commercial, and Institutional delivered material type.

5.2 Screened Compost Sales

The EWSWA undertakes an in-depth process to the organics and yard waste it receives to turn it into saleable, quality compost. The composting process involves grinding up yard waste and placing it in long rows called 'windrows'. The material is turned frequently and the temperature is maintained above 55 degrees Celsius in order to kill any pathogens or weed seeds. Once the compost has matured, it is tested, screened, and then sold for use in landscaping, as well as flower and vegetable gardens.

In 2021, compost was sold as bulk (delivered or pick-up), bag-your-own, and prepackaged items as listed below.

Table 13: Compost sales 2021 summary

Compost Material	Quantity Sold	Tonnes
Delivered	1,056 cubic yards	528
Bulk sales	21,788 cubic yards	10,894
Bag-Your-Own	1,362 bags	75-78
Prepackaged Garden Gold	11,030 bags	199-243
Total Tonnes		11,696-11,743

Notes: Pre-packaged bag weights are based on approximately 18 to 22 kg/bag; Bag-Your-Own is approximately 55-57 kg/bag; Bulk compost is approximately 500 kg/cubic yard. Compost weight is expressed in 'ranges' due to the differing moisture content & density. One cubic yard = one bucket from the small EWSWA loader in Windsor. Weights are approximate.

Under contract to the EWSWA, Frank Dupuis Landscaping and Trucking provided delivery services for the sale of 528 tonnes of bulk compost locally. Also 10,894 tonnes in bulk sales were sold to residents and businesses at EWSWA Depots. Additionally, about 11,030 prepackaged bags of compost were sold at the Depots. Many residents also bagged their own compost at one of the depots. The combined total weight of compost sold in 2021 was approximately between 11,696 to 11,743 tonnes. In 2021, compost sales totaled \$223,693.

5.3 Backyard Composting

Backyard composters (BYC) with the brand name "The Earth Machine" and "The Green Cone" were sold to Essex-Windsor residents in 2021. The Earth Machine was sold through local Home Hardware stores year-round. Both units were sold during an EWSWA week long fall sale. Approximately 40 Earth Machine units were sold through the Home Hardware stores and 24 units were sold during the fall sale and miscellaneous sales for a total of 64 units sold in 2021. There were 14 Green Cones sold in 2021. This brings the cumulative total to 811 Green Cones distributed since 2010, which is when they were first introduced to the area. The combined BYC distributed in 2021 was 78 units bringing the total number of units sold since 1988 to 40,148 units.

Current research has indicated that approximately 100 kg/year/BYC is diverted as a result of the backyard composting program. This translates into 4,015 tonnes of organic waste diverted from the landfill through this

program. This does not consider homemade composters or composting done independent of the EWSWA’s backyard composting program.

Table 14: Residential organic waste reduction comparison: 2019 — 2021

Residential Organic Programs	2019 Tonnes	2020 Tonnes	2021 Tonnes
BYC Program	3,988	4,006	4,015
Mulching Blades	1,343	1,343	1,343
Yard Waste (Residential)	23,707	24,810	23,519
Total Residential Organics	29,038	30,159	28,877

Notes: The mulching blade program was no longer directly offered through EWSWA after 2001. Even though mulching blades and mowers are used by residents in the area, it can’t be measured for the purposes of this report; therefore, no increase in diversion is indicated.

6 Promotion and Education (P&E)

6.1 Community Outreach

EWSWA staff traditionally organize displays and talk to area residents at various special events scheduled such as the Horticultural Show, Earth Day Celebrations, and the Truckload Sale. With Covid-19, public presentations were limited in 2021. EWSWA staff conducted 1 presentation via Zoom to Elder College Seniors. There were a total of 21 participants. The topic of the presentation was “Recycle: Why Should I?” In lieu of opportunities to visit the community, staff were allocated to address visitor direction challenges at the Windsor Public Drop off by implementing a 2019 sign audit of the site. By fall 2021, new wayfinding signage throughout the site were installed at key decision-making points on the site to improve customer visits to this site.

6.2 Special Community Events

Due to Covid-19, there were only three special events serviced with recycling in 2021. As a result, many special event venues had implemented their own sustainable recycling program throughout the season where events were permissible.

6.3 On-going Public Education Activities

The EWSWA maintains a Waste Reduction Hotline (1-800-563-3377), a

website (www.ewswa.org), and an annual newsletter called EnviroTips which is delivered to each household and is available online. In fall 2021, the newsletter "Enviro Tips" was delivered to every household, apartment, farm and business in Windsor/Essex County. Over 171,000 newsletters were delivered. The newsletter featured the 3 basic rules of recycling collection, information about 'bulky items', the Recycle Coach App, the new bicycle recycling program as well as information about where to purchase EWSWA products, and a reminder about the ban on plastic bags.

Early in 2021, the EWSWA initiated a "Recycling Recharge" campaign to help address common issues that were noted with Blue Box collection. Over 85,000 postcards were distributed by Canada Post. Set-out by 6 a.m., keeping blue and red box items separated, and the "Size Right" of cardboard so that it is no larger than 30" x 30" were the three highlights of this campaign. This campaign also reached residents through local radio, social media ads, EWSWA.org and an updated OOPS sticker.

E-newsletters are also part of the program as they are low cost and another way to reach residents. The EWSWA has 3,168 e-newsletter subscribers. Industry standards indicate that a decent open rate is anything between 20-33%. Open rates for e-newsletters are as follows: Gold Box, 54%; Spring Sale 2021, 54%; Fall Sale 2021, 56%.

The EWSWA website (www.ewswa.org) is updated on a regular basis to provide detailed information and public education to residents. Topics covered range from waste management and reduction, to details regarding waste diversion activities. Through the website, residents have access to instructions, tenders, reports, calendars, acceptable recycle box materials, incentives, etc. In 2021, there were approximately 64,353 hits on the website bringing the total hits to 416,260 hits since the launch of this website in 2012; the monthly average hits in 2021 had a duration of approximately 1.45 minutes. The 'What Goes Where' material search database resulted in 55,227 searches and municipal calendar searches were at 63,180 searches in 2021. In 2021, method of access by device was 60.2% mobile; 35.8% desktop computer, and 4.0% tablet.

Recycle Coach is an app which makes recycling and collection schedule information easy to find. The app is continuously developing new programs that combat complacency and gets people re-engaged in recycling. It promotes best practices ideas on better waste management to improve

outcomes such as increasing the amount recycled, proper disposal and diversion of solid waste, etc. In 2020 & 2021, EWSWA made it a priority to promote this app and get local residents onboard with accessing information around solid waste through this app. As a result, increased metrics listed below were noted for Recycle Coach in 2021:

- 43,166 total subscribers
- 2,090,720 resident interactions
- 174,227 average monthly resident interactions

EWSWA also continues to maintain a presence in social media sites such as Facebook, Instagram, and Twitter. EWSWA started with 30 Twitter followers in January 2015 and had 933 followers by December 2021. A total of 220 tweets were sent out from our EWSWA Twitter account in 2021.

Due to a major technical glitch in 2021, the original EWSWA Facebook account was disabled, forcing the EWSWA to establish a new Facebook account. Unfortunately, after thorough review, the consultant advised that the two Facebook accounts could not be merged. The EWSWA Facebook page had the EWSWA is using various strategies to increase their following in 2022. Additionally, the EWSWA added an Instagram account in 2021 and attracted 133 followers through 149 posts.

The EWSWA board meetings have been conducted via Zoom since 2020. In November 2021, the EWSWA began live streaming the board meetings on Facebook (via Zoom). In accordance to the provincial social distancing guidelines, the general public and media were invited to watch the board meetings live on the EWSWA Facebook page.

6.4 Gold Star Program

In 2016, the EWSWA launched a new recycling incentive program aimed at increasing public awareness regarding the red and blue box recycling program. Residents were encouraged to apply for a new “Gold Recycling Box” through a program that evaluated their curbside recycling, provided feedback and rewarded successful recyclers with a gold box. The program’s ultimate objective is to decrease the amount of contamination being put out by residents and thereby decrease the amount of residual waste leaving the MRFs. The program was renewed in 2017 and 2,050 residents registered for the “Gold Star” program and by 2018, 1,217 homes were awarded a gold box. Due to the community engagement in this program, it was also offered

in 2019 and 2020. In 2021, 100 more applicants were accepted into the program and all were awarded gold star boxes. To date, 2,667 homes that have registered to have their recycling inspected and were rewarded for excellent recycling habits with a Gold Box.

7 Municipal Hazardous or Special Wastes (MHSW) Program

7.1 MHSW Depots

The EWSWA opened its Windsor MHSW Depot in October 1995. In addition to the Windsor facility, the EWSWA opened a second MHSW Depot at Transfer Station No. 2 in the Town of Kingsville in 1997. A third depot was opened at the Essex-Windsor Regional Landfill in October 2013. The Depots replaced the annual Household Chemical Waste Days held in Essex-Windsor. A total of 546,504 litres and 123,829 kg of MHSW materials were delivered to the sites in 2021. See Table 15 and 16 for details.

Reuse Centre

A Reuse Centre has been operational at the Windsor MHSW facility since 1995.

Paint is distributed in both 1-gallon and 5-gallon pails for reuse. According to the records, 673 residents accessed the Reuse Centre and took 23,672 products or approximately 33,954 kg of paint and miscellaneous materials in 2021 compared to 10,201 products or 14,663 kg of reusable materials in 2020. Due to Covid-19, this program had been closed since March 2020. It re-opened in July 2021.

Mercury Roundup Program

In June 2019, the EWSWA launched Mercury Roundup: an initiative designed to divert a toxic chemical—liquid mercury—from the waste stream. In partnership with Scout Environmental, and with funding from the Ontario Trillium Foundation, Essex-Windsor has become one of the first environmentally conscious municipalities to launch the Mercury Roundup program that expanded to six other Ontario municipalities by 2021. With this program, residents who dropped off a product containing mercury received a free digital thermometer. Throughout the partnership, the EWSWA was able to collect 342 products and divert a total of 25.65 kilograms of mercury from landfills.

Table 15: Municipal Hazardous or Special Waste for 2021 in litres

Material	MHSW from Facilities	Reuse Centre Quantities	Total
Adhesives/flammable liquids	68,509	7,453	75,962
Aerosols	8,538	606	9,144
Antifreeze (Glycol)	11,857	0	11,857
Corrosive liquid	7,570	207	7,777
Inorganic acids	978	0	978
Paints & Coatings	220,067	22,599	242,666
Pesticides	4,526	219	4,745
Waste oils (used motor oil, hydraulic oil, etc.)	193,375	0	193,375
Total MHSW Litres	515,420	31,084	546,504

Table 16: Municipal Hazardous or Special Waste for 2021 in kilograms

Material	MHSW from Facilities	Reuse Centre Quantities	Total
Car batteries	29,303	0	29,303
Dry cell batteries	15,423	0	15,423
Fire extinguishers	1,984	0	1,984
Fluorescents/misc. lamps/ballasts	21,196	0	21,196
Inorganic oxidizers	3,187	2,870	6,057
Mercury (HG items)/lead	51	0	51
Pharmaceuticals	1,042	0	1,042
Plastic used oil containers	15,788	0	15,788
Propane cylinders	4,040	0	4,040
Propane tanks/misc. tanks	21,943	0	21,943
Rechargeable & mixed batteries	4,389	0	4,389
Corrosive solids (e.g. cement)	1,698	0	1,698
Waste oil filters	915	0	915
Total MHSW Kilograms	120,959	2,870	123,829

Table 17: MHSW Diversion Comparison

	2020 Tonnes	2021 Tonnes
MHSW recycled or reused	667	670
MHSW not recycled	(19)	(17)
Total MHSW Diverted	648	653

7.2 Waste Oil

Waste motor oil is collected curbside alongside the residential recycling program. As well, residents are able to deliver waste oil to EWSWA's MHSW facilities. The quantity of waste oil collected during 2021 was 193,375 litres, which is down by 5.5% compared to the 204,650 litres collected in 2020. The quantity of oil collected by month is shown in Table 18 with historical data over four years.

Table 18: Litres Waste Oil collected

Month	2018 Litres	2019 Litres	2020 Litres	2021 Litres
January	10,225	8,875	13,825	7,950
February	4,950	6,025	5,925	4,300
March	13,100	11,025	11,425	23,625
April	20,800	20,850	19,125	20,700
May	22,750	17,950	6,750	14,625
June	16,400	20,900	21,625	21,950
July	20,150	20,075	23,825	17,000
August	16,350	18,725	20,475	19,250
September	15,325	17,950	26,700	18,775
October	18,425	15,275	20,900	14,850
November	13,425	14,275	18,900	15,925
December	13,050	11,525	15,175	14,425
Total:	184,950	183,450	204,650	193,375

Note: Due to contractor change in 2021, the data for 2021 accounts for all types of oil collected, both hydraulic and motor.

8 Overall Summary of Residential Diversion Quantities

8.1 Residential Waste Diversion

This table below summarizes the residential waste diversion activities detailed in this report.

Table 19: Residential Waste Diversion Summary

Residential Waste Diversion Summary	2020 Tonnes	2021 Tonnes
Net Marketed Recyclables (Table 4)	18,590	20,312
Other Recycling Programs (Table 10)	6,068	6,401
Yard Waste, BYC & Mulching Blades (Table 14)	30,159	28,877
MHSW Waste including Waste Oil (Table 17)	648	653
Total Residential Tonnes Diverted	55,465	56,242

Due to rounding, the Total Residential Tonnes Diverted does not equate to the sum of tables 4, 10, 14, and 17.

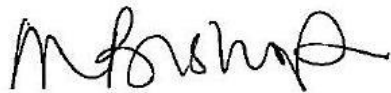
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