

Waste & Diversion Operations

2021 Annual Report to Council

Prepared by: Waste & Diversion Operations Branch

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PURPOSE

This report is a summary of the programs and services provided by the Waste & Diversion Operations branch in 2021.

This branch provides curbside collection of garbage, organics, and recycling to nearly 21,000 single family and 40 multi-family households. The City operates a year-round Recycling Depot, a seasonal Compost Depot, and coordinates seasonal waste programs such as Large Item Drop Off, Curbside Large Item Pick Up, and Compost Giveaway.

This report provides an update on the full range of services provided by the Waste & Diversion Operations branch according to the “Service and Service Levels Inventory”.



2021 HIGHLIGHTS

- Waste & Diversion Programs branch merged into Public Operations, becoming Waste & Diversion Operations
- Waste Reduction Week Scavenger Hunt encouraged residents to learn about waste reduction throughout the City’s trail system
- Curbside Waste Education Program returned in 2021, visiting over 7,000 households
- Garbage truck fleet wrapped with BeWasteWise branding

ENVIRONMENTAL STEWARDSHIP

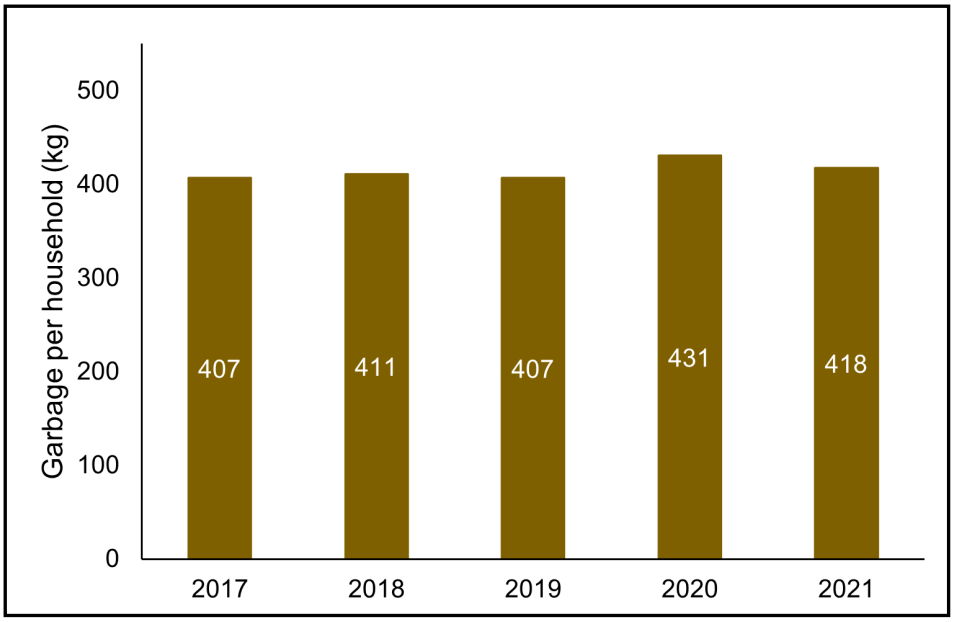
Waste minimization strategies with emphasis on reduce and reuse activities remains a planned activity under Council Strategic Priority #6: Environmental Stewardship.

Historical data can be found in previous Annual Reports on **stalbert.ca/waste**

GARBAGE PER HOUSEHOLD

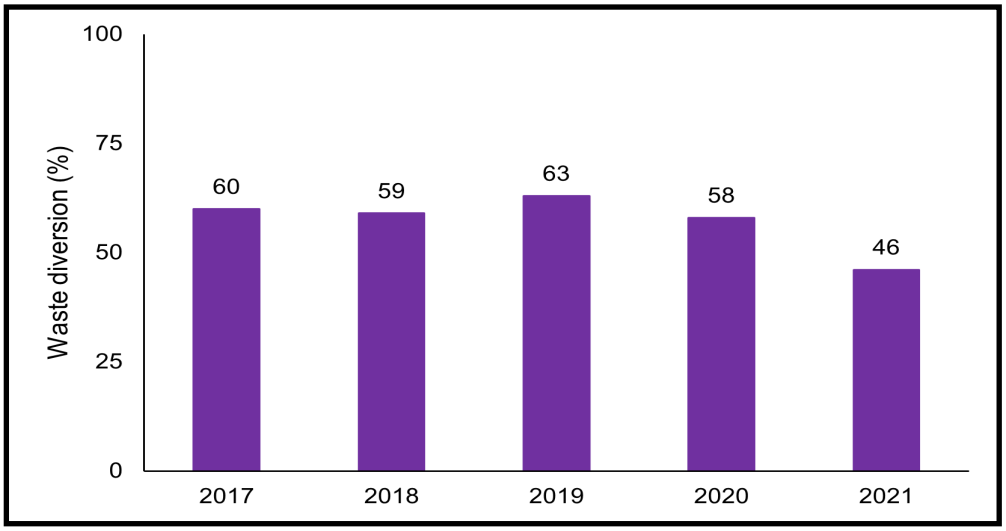
Similar to 2020, residents worked, learned, and played from home in 2021, which likely contributed to a higher amount of curbside garbage generation than historical trends. St. Albert residents generated 418 kilograms (kg) of garbage per household.

Garbage per capita, whose reduction was a goal of previous Environmental Master Plans, expresses the amount of garbage produced throughout the City as a function of the City's population. As the City does not provide curbside waste collection to residents living in some multi-family buildings, garbage per household is a more accurate value than garbage per capita, and is calculated by dividing the total amount of garbage collected through the Brown Garbage Cart by the total number of households receiving City curbside collection (20,770 in 2021).



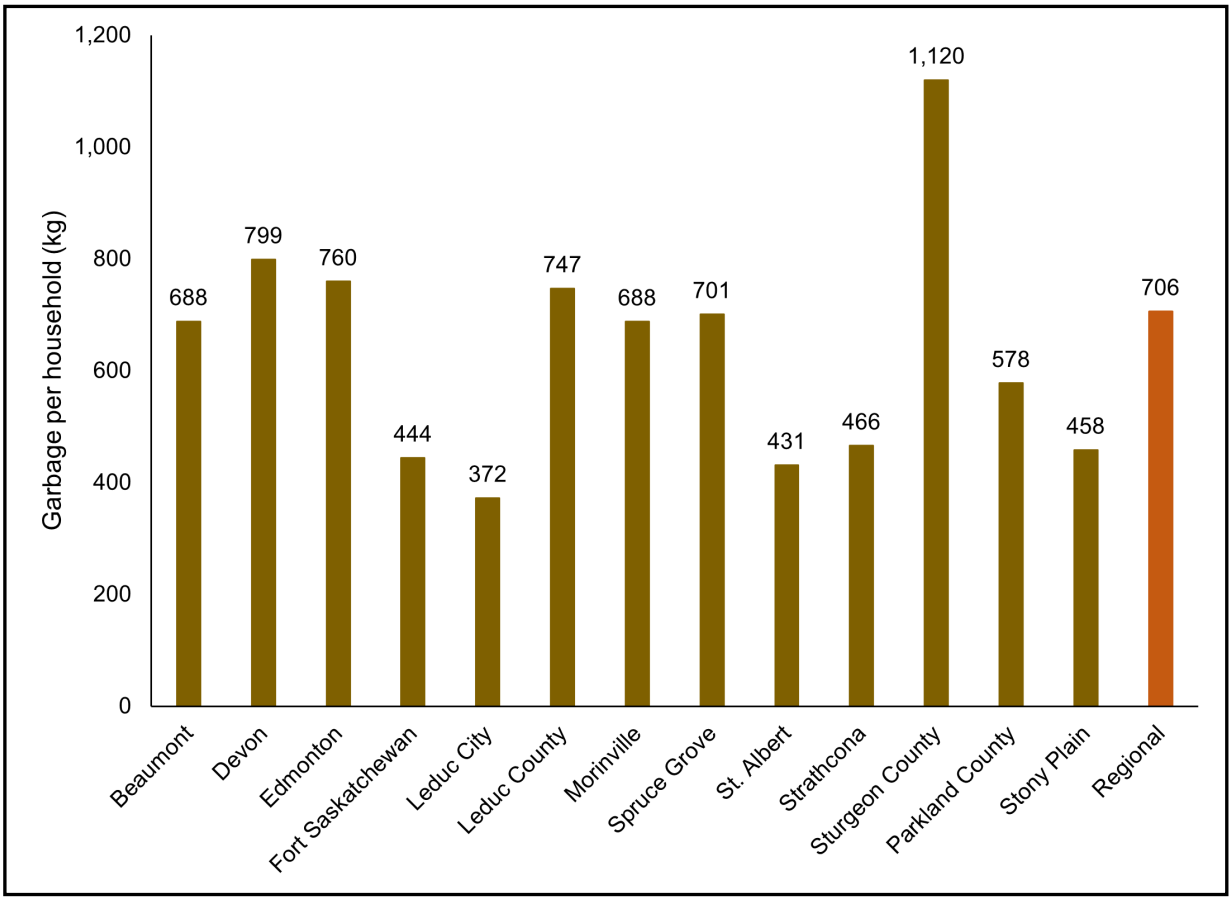
WASTE DIVERSION

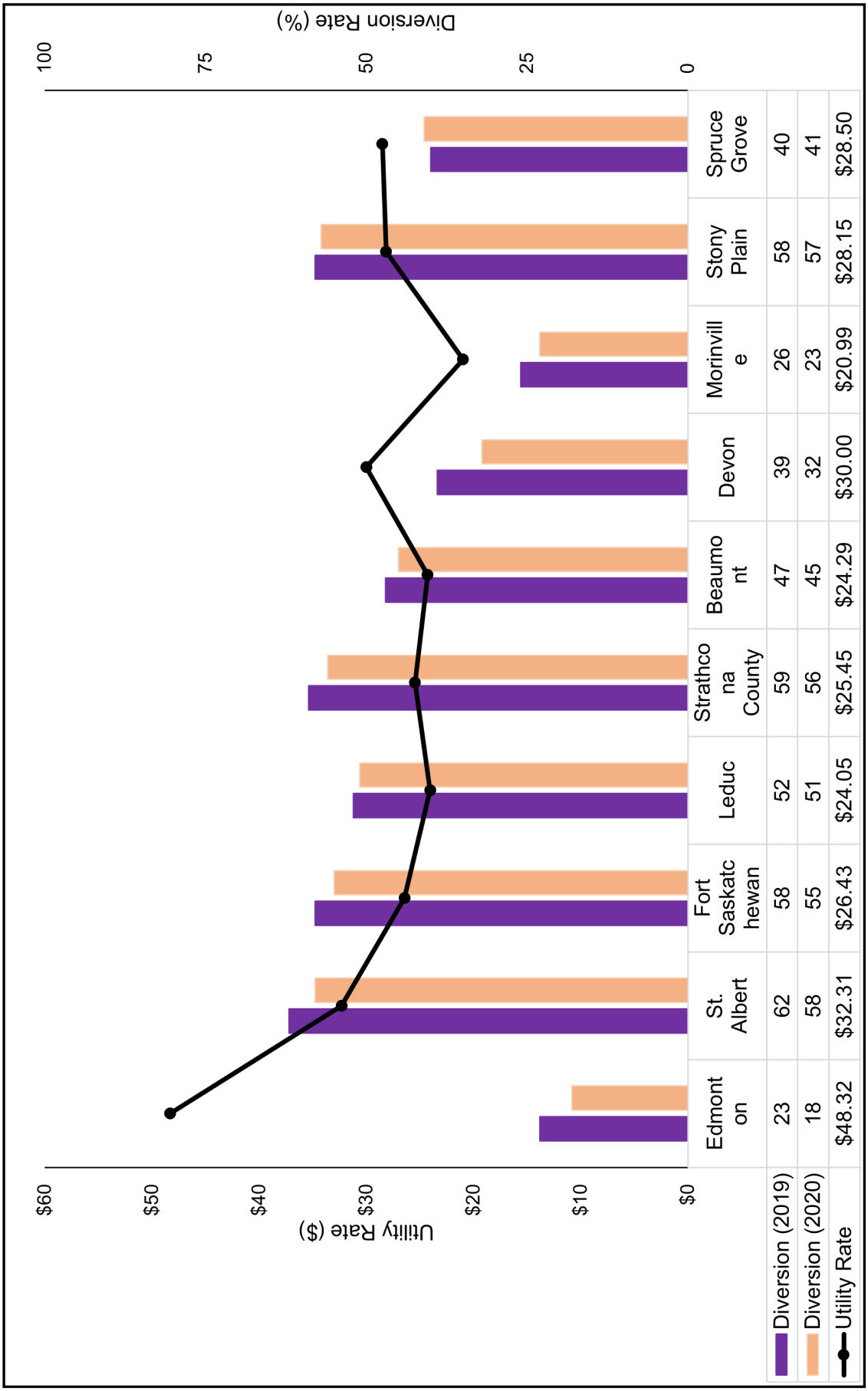
Waste that is diverted from the landfill includes materials from the Blue Recycling Bag, Green Organics Cart, and electronics collected at the Mike Mitchell Recycling Depot. In 2021, residents diverted 46% of waste from the landfill. Garbage in the Green Organics Cart, greater curbside garbage generation, and a dry summer likely contributed to the substantial drop in how much waste St. Albert residents diverted in 2021. Organics contamination will be discussed in depth later in this report.



REGIONAL REPORTING

Waste collection differs across the region; some municipalities collect organics biweekly year round, others don't offer curbside organics collection. Some municipalities have their own recycling facility, while others rely on third-party processors. Therefore, analyzing and comparing data from municipality to municipality is not always feasible. In 2021 the City collaborated with municipalities in the Edmonton region to standardize reporting on waste data and metrics. The below graph showcases data from 2020.




Utility Rate ($)
$0
$10
$20
$30
$40
$50
$60
Diversion Rate (%)
0
25
50
75
100
Edmonton
St. Albert
Fort Saskatchewan
Leduc
Strathcona County
Beaumont
Devon
Morinville
Stony Plain
Spruce Grove
Diversion (2019) 23 62 58 52 59 47 39 26 58 40
Diversion (2020) 18 58 55 51 56 45 32 23 57 41
Utility Rate $48.32 $32.31 $26.43 $24.05 $25.45 $24.29 $30.00 $20.99 $28.15 $28.50

CURBSIDE COLLECTION

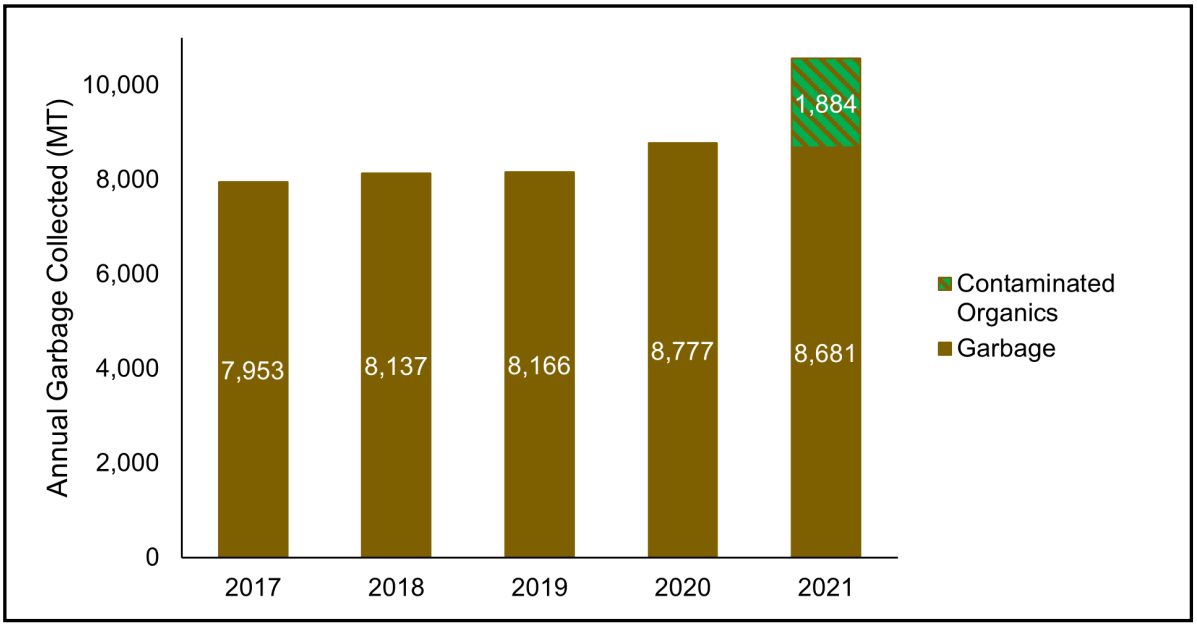
The City of St. Albert provides curbside waste collection of garbage, organics, and recycling to nearly 21,000 single family and 40 multi-family households. Multi-family households that do not receive City collections contract private haulers to collect and remove their waste. Historical data can be found in previous Annual Reports on stalbert.ca/waste

BROWN GARBAGE CART

Since the start of the pandemic, contamination in the Green Organics Cart has increased. Starting in June 2021, for the first time in the history of the curbside organics program, entire truck loads of organics were so contaminated with garbage they were sent to the landfill rather than composted. We currently do not have quantitative data on contamination in the organics stream prior to June 2021. This is discussed at length later in the report.

In 2021, 8,681 MT of garbage was collected through the Brown Garbage Carts and sent to landfill. From June to December, 1,884 MT of organics were landfilled, bringing the total volume of garbage sent to the landfill to 10,565MT.

It is important to note that while entire loads of organics are landfilled, not everything in the load is garbage. Landfilling waste that could be diverted takes up valuable landfill space, and landfilled organic material will undergo anaerobic digestion (digestion in the absence of oxygen) and release methane as a by-product in the process. Methane is a potent greenhouse gas that can accelerate climate change.



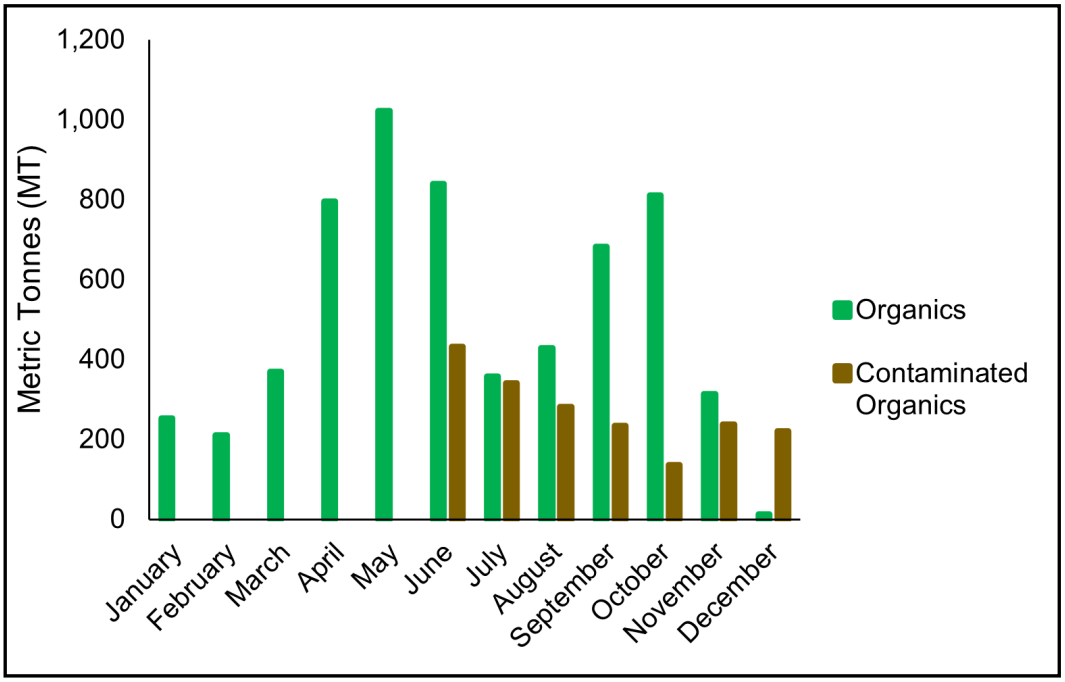
WASTE EXEMPTION PROGRAM

37 households (26 renewals, 11 applicants) participated in the Home Health Care Waste Exemption program to assist with their home health care waste disposal needs. The Home Health Care Waste Exemption program continues to be a valuable program for residents of our community.

GREEN ORGANICS CART

In 2021, 7,982 MT of material was collected through the Green Organics Carts. When accounting for the organics that were landfilled instead, the total volume of organic material composted in 2021 was 6,098 MT. Contamination dramatically increased in the cooler months, which can likely be attributed to the lack of leaf and yard waste being generated in the winter, both of which may essentially "dilute" the contamination.

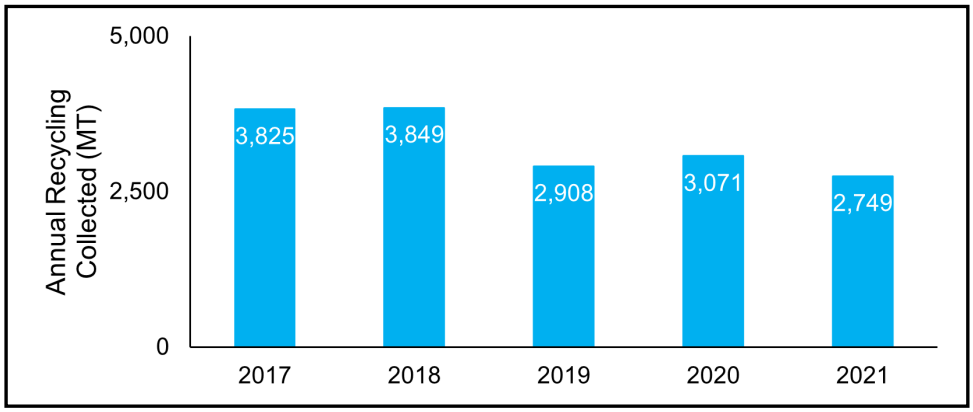
In addition to the negative effects that landfilling organic material has on the environment, there are also financial implications. Each load of organics that is landfilled costs the City 13% more than if it were composted. From June-December 2021, the City paid an ***additional*** $11,304 to dispose of contaminated organics. Unacceptable material in the Green Organics Cart lowers the quality of the finished product and may lead to increased program costs. Reducing contamination was a priority for the Waste & Diversion Operations branch in 2021 and our approach is discussed later in this report.



	Composted (MT)	Landfilled (MT)	% Contaminated
June	839	432	34
July	357	341	49
August	429	282	40
September	682	234	26
October	812	137	14
November	314	237	43
December	13	220	95

BLUE RECYCLING BAG

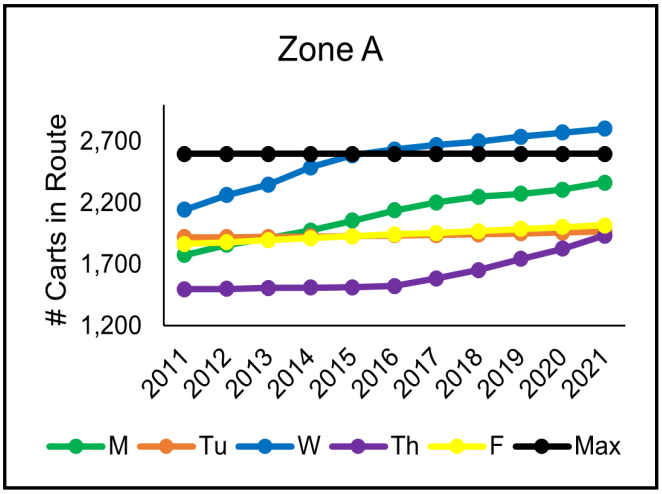
In 2021, 2,749 MT of recycling was collected through the Blue Recycling Bags and sent to a materials recovery facility to be sorted. The total annual volume of recycling collected at the curb has remained relatively consistent since the changes to the Blue Recycling Bag program in 2018.

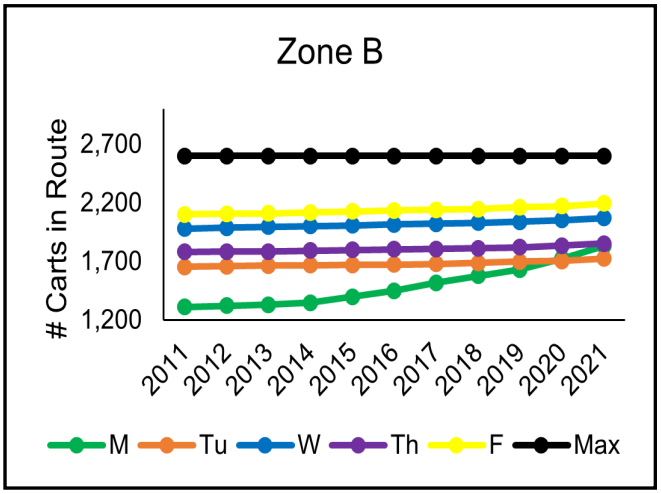


CART MAINTENANCE REQUESTS

Staff completed 2,394 requests for repairs, replacements, and deliveries for additional carts or new homes in 2021. Since the inception of the cart system in 2011, staff have responded to approximately 20,000 requests (7,037 Repairs, 9,354 Swaps, 3,101 Deliveries).

It is assumed that the City can collect 2,600 carts per day, and the City's ten collection routes ranged from 1,308 carts to 2,098 carts in 2011. Some routes, particularly those with expanding neighbourhoods (Erin Ridge North, Jensen Lakes, Riverside) have grown exponentially since 2011, and are approaching or exceeding the 2,600 cart per day capacity. It is possible that routes may need to be altered in the near future.





DROP-OFF LOCATIONS

The City of St. Albert operates a year-round Recycling Depot and seasonal Compost Depot for residents to drop-off household waste in a convenient and environmentally-friendly way. Depots are open to residents of St. Albert only; proof of residency may be required. Non-residents and commercial vehicles will be turned away by on-site staff.

MIKE MITCHELL RECYCLING DEPOT

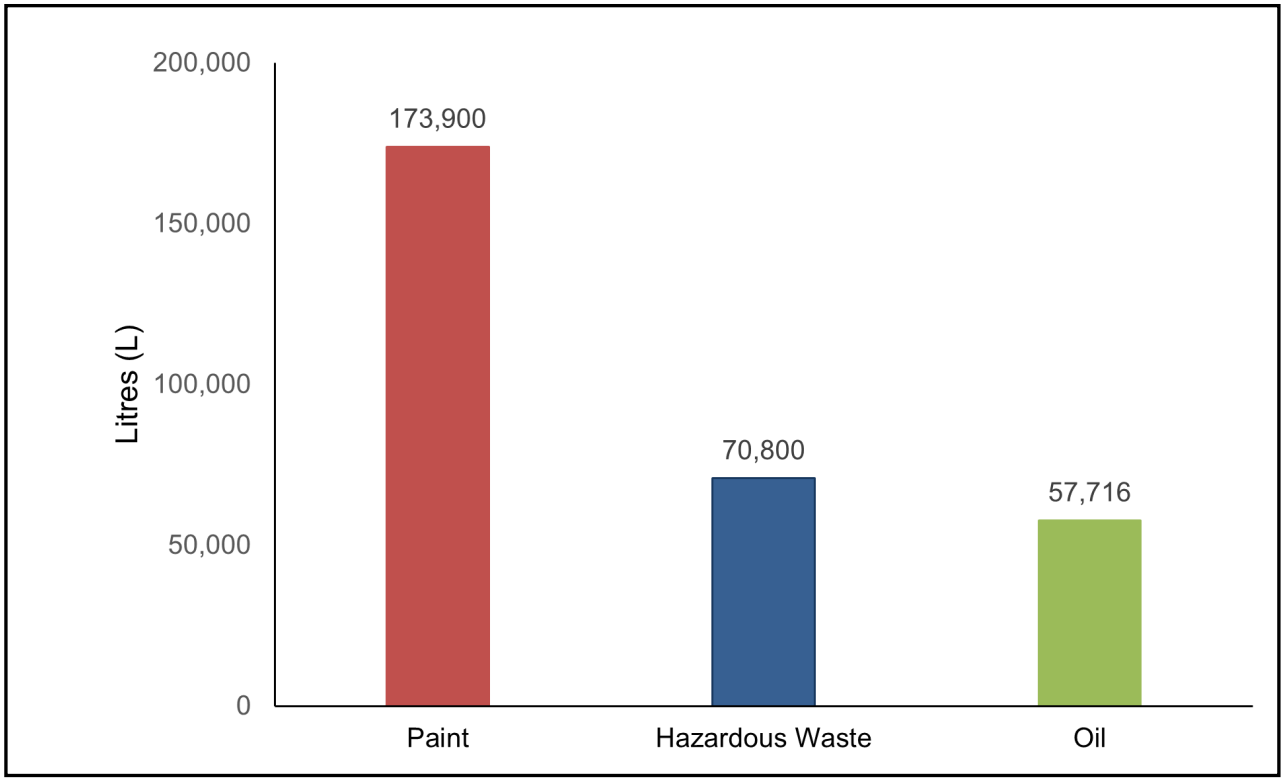
The Mike Mitchell Recycling Depot operates Tuesday through Sunday and accepts household hazardous waste (chemicals, paint, solvents), batteries, oil, tires, electronics, and recycling (paper, scrap metal, tin cans, cardboard, Styrofoam, glass).

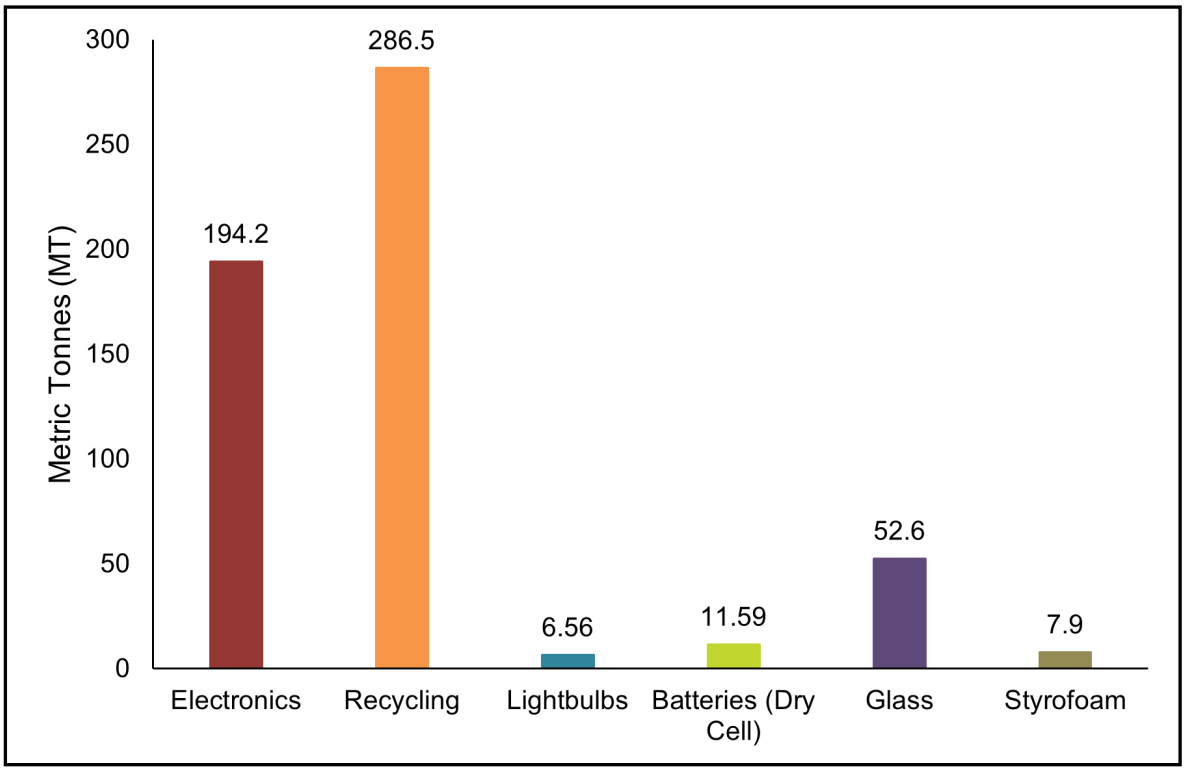
Residents can also purchase “Extra Garbage” bag tags to dispose of garbage that does not fit in their Brown Garbage Cart. In 2021, residents disposed of 285 MT of extra garbage.

The City receives funding through the Alberta Recycling Management Authority’s rebate programs for electronics, oil, paint, and tires; however, this funding does not cover the cost of operating the Depot.

Historical data can be found in previous Annual Reports on stalbert.ca/waste

Materials Collected





Electronics including those eligible for rebates through ARMA and those that are not eligible are accepted for recycling. Paper products including magazines, office paper, mixed paper, newspaper, and cardboard comprise the “Recycling” category in the above graph.

COMPOST DEPOT

The City’s Compost Depot is located on Villeneuve Road (between Ray Gibbon Drive and Hogan Road). It is open from April through October; exact opening and closing dates are weather-dependent.

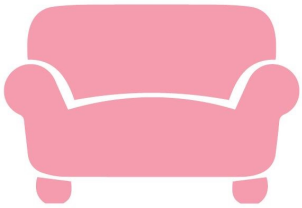
Residents can drop off yard waste including branches, grass, and leaves. Natural Christmas trees are also accepted after the holidays.

Historically, residents could also dispose of soil, dirt, and sod at the Compost Depot. As this material is not organic and therefore not compostable, the City stored it for on-site operations. Due to space constraints, sod, dirt, and soil are no longer accepted at the Depot.



Residents dropped off approximately 2,100 MT of yard waste in 2021. Trees and branches were chipped on site and shipped along with leaves and grass to the compost pad at Roseridge.

SEASONAL WASTE PROGRAMS



The City of St. Albert offers seasonal waste programs to allow residents to reuse, recycle, or dispose of items that are not accepted in the curbside program.

CHRISTMAS TREE PICK-UP

1,439 natural Christmas trees were collected from households from January 10 to 14 (Zone A) and January 17 to 21 (Zone B).

COMPOST GIVEAWAY

Finished compost was available to residents for pick-up at the Mike Mitchell Recycling Depot in May and October. Approximately 200 MT of compost was given away in 2021.

CURBSIDE LARGE ITEM PICK-UP

The 2021 Curbside Large Item Pick Up took place from June 14 to 18 (Zone A) and June 21 to 25 (Zone B). 173 MT of garbage went to the landfill, while 7 MT of electronics and 59 MT of scrap metal and appliances were recycled. Mattresses were once again accepted for recycling in 2021. 812 mattresses were collected and recycled.

LARGE ITEM DROP-OFF

Large Item Drop-Off took place on Saturday, September 18 with 244 vehicles participating. 84 mattresses were recycled, while 8.55 MT of garbage was disposed of. Residents were encouraged to bring electronics and scrap metal to the depot next door.

COVID-19 protocols were followed where residents were asked to self unload items, observe physical distancing, and wear a face covering. “Extra Garbage” bag tags had to be attached to each item prior to the event; staff did not handle tags.

CURBSIDE LEAF PICK-UP

The Curbside Leaf Pick-Up program allows residents to set out bagged leaves at the curb to be picked up and composted. 87 MT of leaves were collected from reusable containers or paper yard waste bags. The program was held from September 27 to October 8, and again from October 25 to November 5.

EDUCATION AND OUTREACH

SCHOOL PRESENTATIONS

The City offers a presentation for grade four (Waste & Our World) classrooms, based on the Alberta Science Curriculum, with corresponding educational worksheets and optional additional hands-on games and activities. The Waste & Our World presentation was delivered virtually to 616 students in 25 classrooms in 12 St. Albert elementary schools.

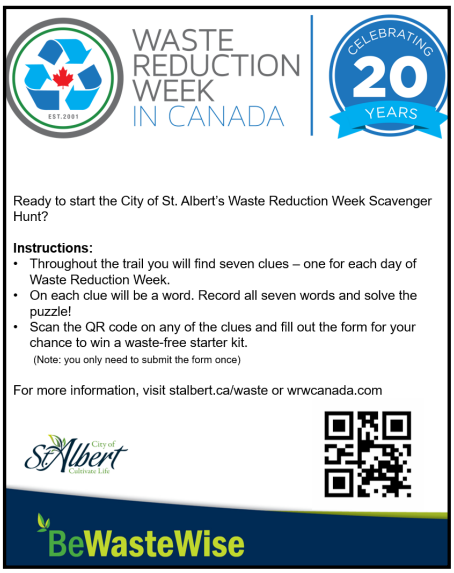
INFORMATION BOOTHS

As COVID-19 restrictions were loosened in the summer, staff were able to participate in some City-sponsored events. A total of 111 residents stopped by at the Waste branch's booth at the Home Schoolers' Welcome Picnic and Clean & Green Riverfest in 2021.



WASTE REDUCTION WEEK

Waste Reduction Week is a national program focused on the principles of circular economy, resource efficiency and waste reduction. It takes place the third week of October each year. In 2021, the Waste branch sponsored a scavenger hunt, whereby residents had to find seven informational placards distributed throughout Red Willow Park, which, when put together, formed a sentence encouraging waste reduction. The winners of the scavenger hunt received their very own waste reduction starter kit.



ORGANICS CONTAMINATION—ROSERIDGE STUDY

In September 2020, staff completed a one-week study at Roseridge to better understand common contaminants in the Green Organics Cart and discern any geographic trends (i.e. are certain neighbourhoods responsible for higher levels of contamination than others?). The results of this formed the basis of the "Cultivate the Conversation" outreach in late 2020.

From May to August 2021, staff returned to Roseridge for one week per month to examine the material arriving at the compost pad from residents' Green Organics Carts. Approximately 30 loads are brought to the compost pad each week (6/day) from St. Albert; City staff examined 109 loads over the study period. 100% of the loads were contaminated, and 10% were so contaminated they were immediately landfilled instead of being brought to the compost pad.











Large pieces of garbage, like intact black bags or construction & demolition waste, **may** be screened out at the compost pad. However, small pieces of garbage, hazardous waste, and shattered glass do not get screened out and reduce the quality of the finished product.

Contaminant		% of Loads Present
Plastic bags	Black garbage bags Grocery bags used as liner	100
Food packaging	Plastic, foil, or cling wrap Onion netting Cartons (e.g., milk, juice)	96
To-go items	Takeout containers Hot or cold drink cups Plastic cutlery	93
C&D materials[1]	Shingles or siding Ceiling tiles Treated wood	69
Textiles	Garden mesh Clothing Food delivery service “pillows”	51
Plant pots	Plastic plant pots and trays Plastic hanging baskets	47
Pet waste	Plastic bags Loose dog waste Kitty litter	42
COVID-19 PPE[2]	Disposable or fabric face masks Nitrile gloves	42
HHW[3]	Medication Electronics Aerosols Chemicals and solvents	21

1. Construction and demolition materials
2. Personal protective equipment
3. Household hazardous waste

A detailed report on the contamination study can be provided to Council upon request.

CURBSIDE WASTE EDUCATION PROGRAM

The Curbside Waste Education Program (CWEP) returned in 2021. Staff inspected waste for proper sorting and set-out at 7,841 households in St. Albert. Historically the program has taken place in July and August only. However, to make up for 2020 when the program was cancelled due to COVID-19, the 2021 program ran from May through August.

The primary focus of the 2021 program was contamination in the Green Organics Carts.



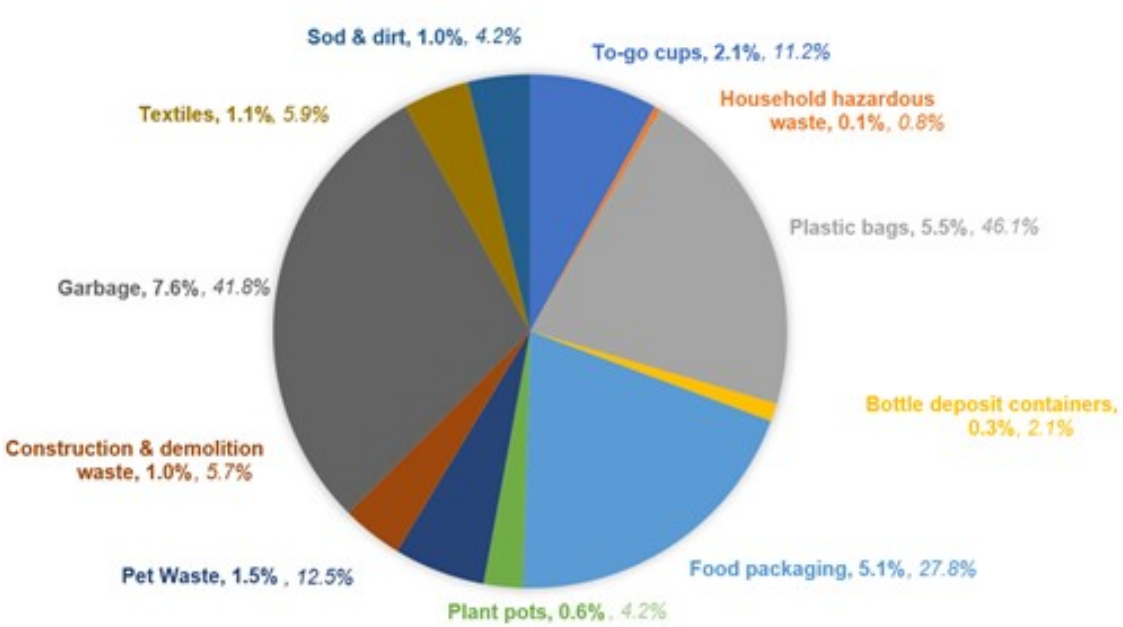
Carts must be parked at the curb, arrows pointed towards the street, with at least 1m spacing on all sides. Waste at each household was examined to ensure it was set out and sorted properly; carts that were not set-out or spaced properly received a door hanger encouraging them to “Park It. Point It. Space It.”

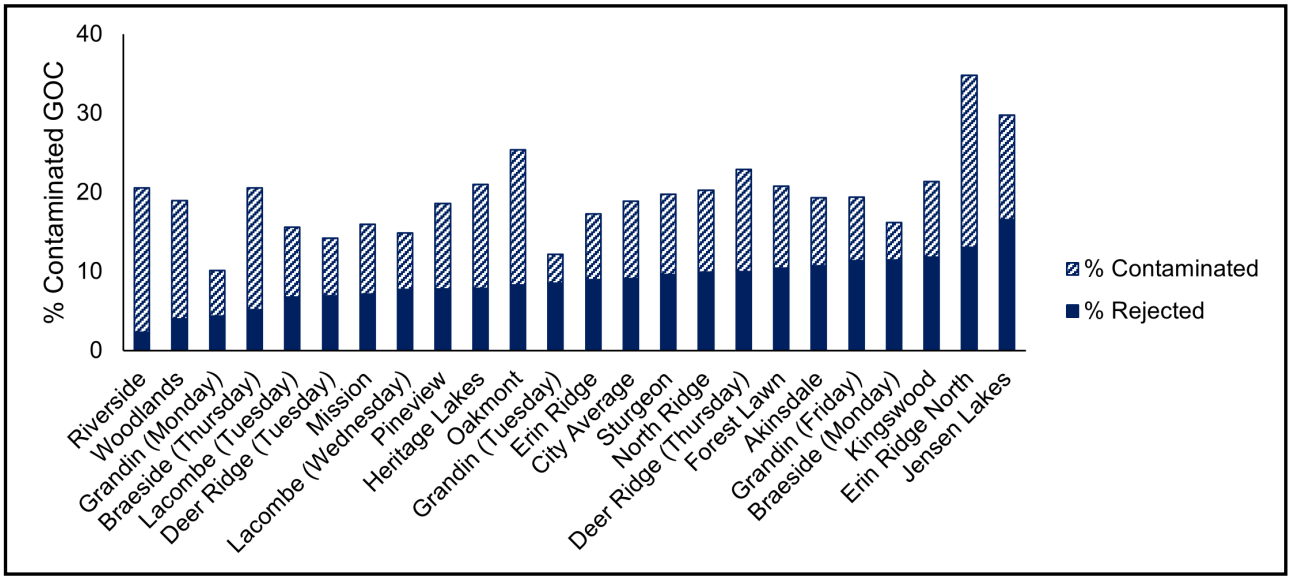
To minimize the risk of litter, carts must not be overflowing and the lid must be able to close completely. Carts that were too full were given an “Oops! Extra Garbage” door hanger. Approximately 6% of households had set out errors, while 4% of households had overfilled their Brown Garbage Carts.



New to the program in 2021, heavily and/or deliberately contaminated carts were sealed closed with a bright pink “Oops!” sticker and were not collected.

In total, 5,839 Green Organics Carts were inspected, 1,103 (19%) contained at least one contaminant, and 529 (9%) were rejected. The below graph shows contamination by material type, with italicized numbers representing each material’s presence in rejected carts.





The above graph showcases the frequency of contamination and rejection, as a fraction of all organics carts inspected, by neighbourhood. For example, 17% of organics carts inspected in Jensen Lakes were contaminated, and 13% of inspected carts were rejected.



The CWEP team inspected 6,777 Blue Recycling Bags, 2,973 (44%) of which were contaminated. Bags that contained at least three contaminants, glass, hazardous waste, or dirty containers were rejected with bright orange “Oops!” stickers.



A summary report of the 2021 program can be found here.

WHAT GOES WHERE? CAMPAIGN

The ten most observed contaminants at Roseridge in September 2020 formed the basis for the online campaign. The goals of this campaign were to raise awareness about commonly missorted items and increase app usage. The BeWasteWise app lets residents set a reminder for collection and search for how to properly dispose of hundreds of household items. In driving traffic to the app, it is hoped that contamination in the Green Organics Cart and calls for missed collections (due to residents forgetting to set out their waste on time) will be reduced. Both reductions have cost-savings potential.

There were ten paid social media posts, one for each contaminant, between March and July 2021. Each post ran for one week, or whenever the advertising budget ($10 per post) was empty. Each post explained how to properly dispose of each respective contaminant and encouraged viewers to download the BeWasteWise app for sorting tips. There were 906 new mobile app downloads over the course of the campaign; these downloads account for 26% of all downloads since the app was first launched in late 2017. An archive of the posts can be found here.





2022 and BEYOND

FEDERAL AND PROVINCIAL LEGISLATION

Newly announced regulations at the federal (*Canadian Environmental Protection Act)* and provincial (*Environmental Protection and Enhancement Act)* level will impact the future of waste nationwide.

The federal government has proposed a ban on the manufacture, import, and sale of six single -use or harmful plastics:

- Cutlery
- Six-pack ring carriers
- Check-out bags
- Straws
- Stir sticks
- Foodservice ware containing problematic plastics

This ban will impact the City's proposed Single Use Item Reduction Strategy, which was put on hold in 2020 due to COVD-19.

In late 2021, the provincial government approved Bill 83, which will bring Extended Producer Responsibility (EPR) to Alberta. EPR is a framework that shifts the physical and financial responsibility of recycling waste to industry product and packaging producers and away from local governments and taxpayers. This framework has the potential to improve St. Albert's curbside recycling program while reducing costs.

CONCLUSION

The City continued to provide excellent service to the 20,770 households receiving curbside waste collection in 2021.

Education and outreach, particularly surrounding contamination in the Green Organics Cart, was a main priority in 2021. The City will continue to address contamination in 2022 through outreach, engagement, and enforcement. Additionally, the City will complete a curbside waste composition study in 2022, which will provide invaluable information for the curbside organics program and the City's proposed Single Use Item Reduction Strategy.

Collaboration with regional colleagues is ongoing, and the future of waste collection and processing in St. Albert and the rest of the province is exciting and promising.

If you have any questions, please contact wastewise@stalbert.ca