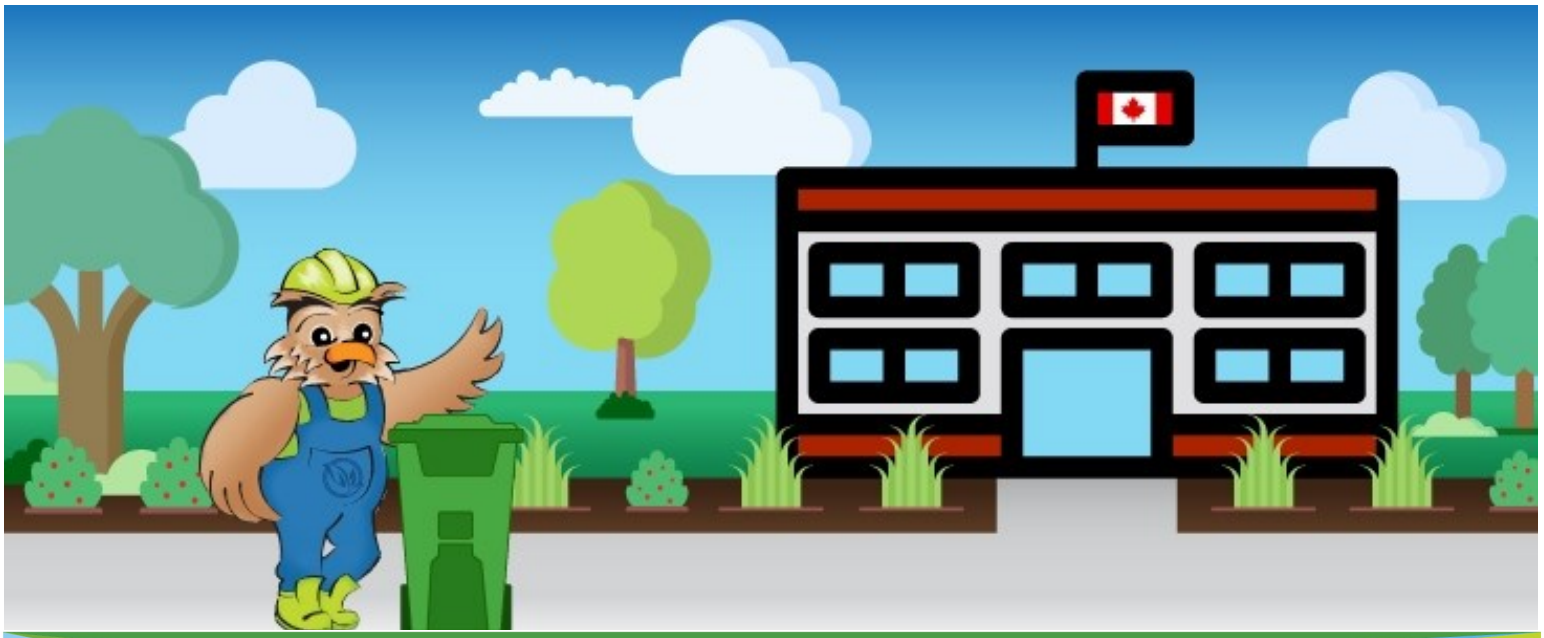


Waste & Diversion Operations

2022 Annual Report to Council

Prepared by: Waste & Diversion Operations Branch

Date: February 2023

For more information, visit stalbert.ca/waste
Email: wastewise@stalbert.ca

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PURPOSE

The purpose of the Annual Report to Council is to provide an update on the various programs and services provided by the Waste & Diversion Operations branch.

The branch provides curbside collection of garbage, organics, and recycling to nearly 21,000 households in St. Albert. The waste team oversees the operation of a year round recycling depot and seasonal compost depot, provides invaluable education & outreach and regional collaboration, and seasonal waste programs such as Curbside Waste Education, Curbside Large Item Pick Up, and Compost Giveaway.

This report provides an update on the full range of services provided by the Waste & Diversion



2021 HIGHLIGHTS

- Elmwood and diseased branches are now accepted for drop-off at the Mike Mitchell Recycling Depot while the Compost Depot is closed
- *Ditch the Bag*! Grasscycling campaign launched, encouraging residents to leave their grass clippings on their lawn
- Curbside Waste Education Program has now visited every single family home in St. Albert
- *Waste and our World* presentation back to in-person delivery, with staff visiting nearly 30 Grade 4 classrooms

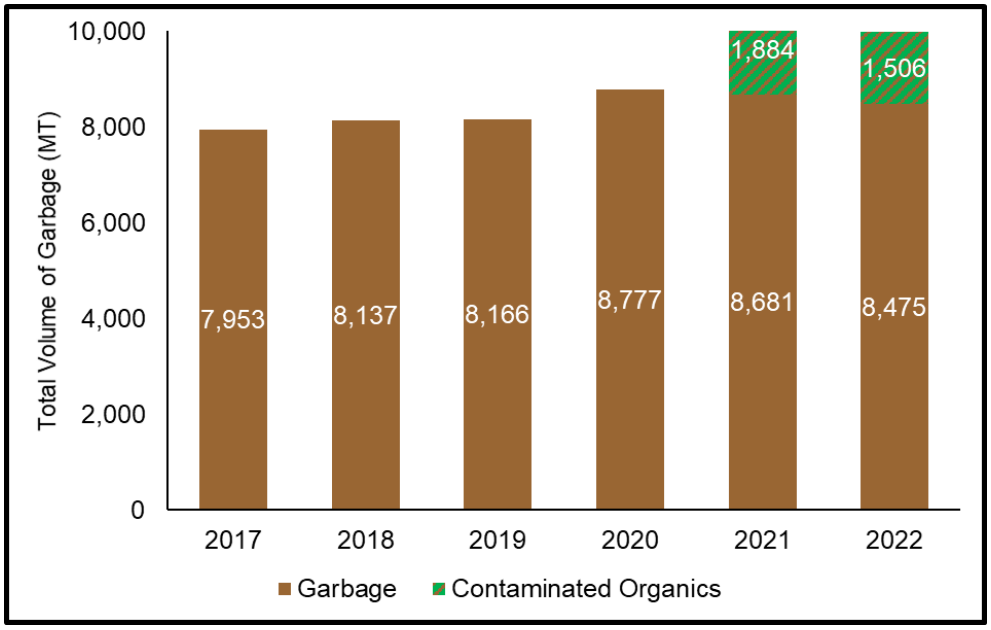
The Waste & Diversion Operations branch is no longer a part of the City's Environmental Master Plan. Instead, goals related to waste & diversion are included in Council's Strategic Priority #4 *Adapting to a Changing Natural Environment.*

Day-to-Day Operations

Brown Garbage Cart

In 2022, 8,475 MT of garbage was collected through the Brown Garbage Carts and sent to the landfill. Contamination of the organics cart was first recorded in June 2021, and throughout 2022, entire trucks loads of organics were sent to the landfill rather than to the compost pad. Contamination of the organics cart has decreased by 20% from 2021 (1,884 MT), but 1,506 MT of contaminated organics was sent to the landfill, bringing the total volume of garbage sent to the landfill to 9,981 MT.

Haulers self declare based on visual assessments, and if the load appears to have over 30% contamination, qualitatively, the entire load is landfilled. While this keeps contaminants out of the compost pad, it also means that up to 70% of the material being landfilled is compostable material. This takes up valuable landfill space and increases greenhouse gas emissions released from the landfill. Furthermore, results from the Curbside Waste Composition Study indicate that, quantitatively, Green Organics Cart contamination does not actually exceed 30% in any collection route. Rectifying the discrepancies between qualitative and quantitative assessments of contamination is discussed further in this report.



HOME HEALTH CARE WASTE EXEMPTION PROGRAM

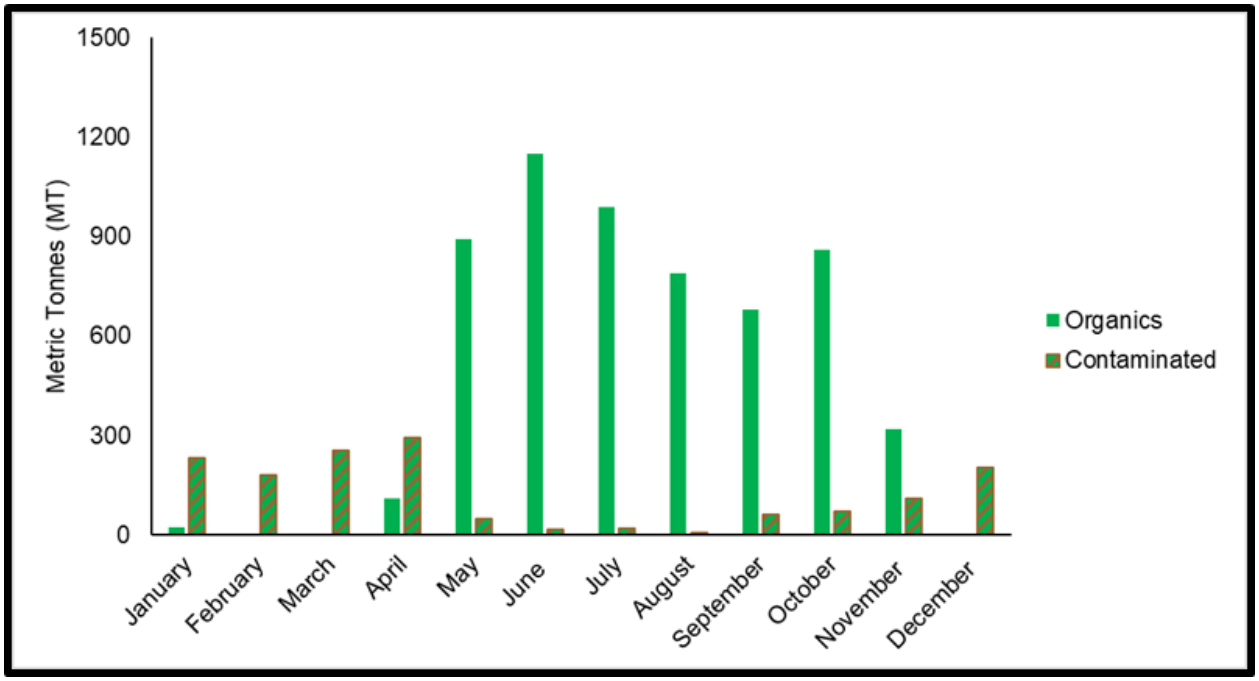
In 2022, 34 households participated in the Home Health Care Waste Exemption program to assist with their home health cart waste disposal needs. 31 households renewed their subscription, three new houses were added, and seven houses were removed from the program. Households withdraw from the program when they no longer require the service. The Home Health Care Waste exemption program continues to be a valuable program for residents in our community.

Green Organics Cart

In 2022, 7,476 MT of organic material was collected through the Green Organics Carts. However, when accounting for the organics that were contaminated and landfilled instead, the total volume of organic material that was actually composted was 5,894 MT. Contamination drastically increased in the cooler months, which can likely be attributed to the lack of leaf and yard waste that is generated in the winter, which “dilutes” the contamination.

Because there is no oxygen in a landfill, when quality organic material is landfilled, it undergoes anaerobic decomposition, which releases methane. Diverting organic waste from the landfill is an effective way to lower greenhouse gas emissions. In addition to the negative environmental impacts, there are also financial implications. Each load of organics that is landfilled costs the City 17% more than if it were composted. In 2022, the City paid just under $10,00 for additional charges to dispose of contaminated organics.

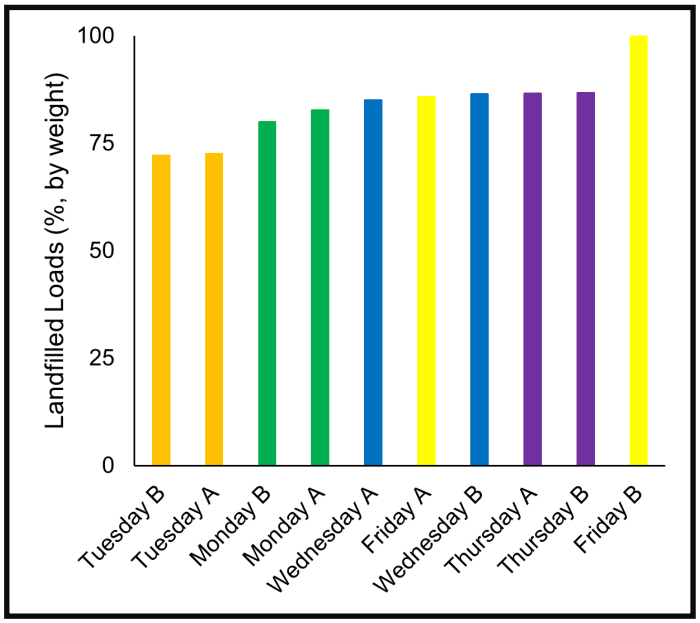
When unacceptable materials are placed in the Green Organics Cart, it lowers the quality of the finished product and may lead to increased program costs. Reducing contamination was a priority for the Waste & Diversion Operations branch in 2022.

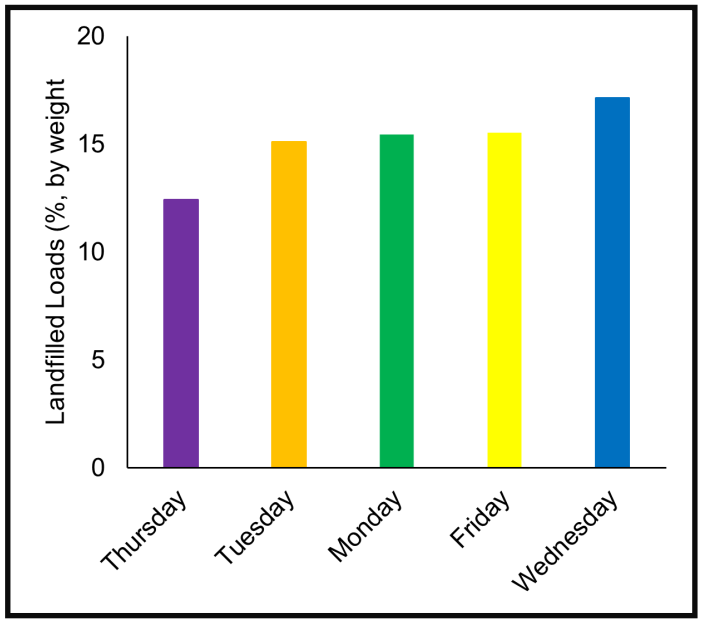


GREEN ORGANICS CART CONTAMINATION BY COLLECTION ROUTE

Landfilled loads of organics came from every neighbourhood in St Albert. In 2022, 25% (248 out of 962) loads of organic material was landfilled instead of composted. As noted, contamination is higher in the winter months, when organics collection occurs biweekly. While 25% of all organics in 2022 were landfilled due to contamination, 77% (171 out of 220) of all loads were landfilled during biweekly collection, and only 10% (77 out of 742) of all loads were landfilled during weekly collection.

Because organics collection occurs weekly from April through October, it is challenging to determine from which neighbourhoods the contamination is coming. For example, in March or November, if a load of organic material was landfilled on a Monday, we'd know if it came from Erin Ridge and Inglewood (Zone A) or Mission, Riverside, and Grandin (Zone B). However, during weekly collection, the operator may collected organic material from Mission, Riverside, and Erin Ridge in the same day, and we cannot be confident if the majority of contamination came from Zone A or B households. Therefore, the below graphs are split between weekly and biweekly collection frequencies.





Results from the Curbside Waste Composition Study do not strongly correspond to the above data; contamination was highest in Monday A, Tuesday A, and Thursday B in the spring study, and in Monday A, Tuesday A, and Wednesday B in the fall study.

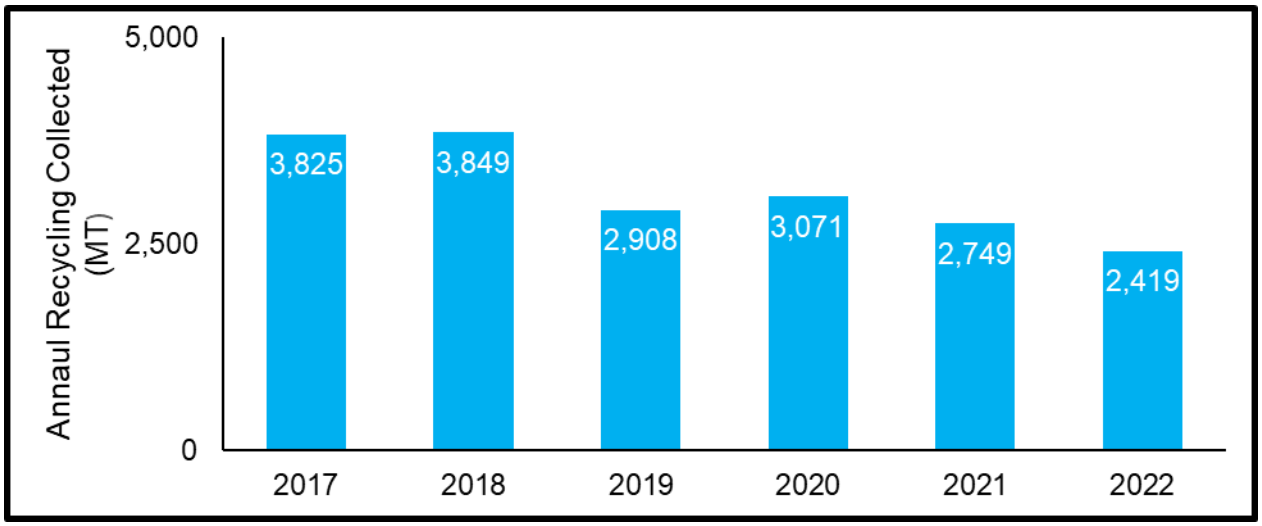
Therefore, education and outreach surrounding organics contamination should be focused on the City as a whole, rather than targeting specific neighbourhoods.

GREEN ORGANICS CART COLLECTION SCHOOL PROGRAM

Twenty schools, including Secondary, Junior High, and Elementary schools are participating in the Green Organics Cart Collection program. This program allows schools to receive organics collection at no cost to the school. Three schools (Muriel Martin Elementary School, Bellerose High School, and St Albert Catholic Highschool) began participating in the program in 2022. Depending on the population of the school, they receive 1-5 Green Organics Carts, a kitchen catcher for each classroom, a box of compostable bags, and educational materials, including a "What Goes Where?" sorting guide and an "Organics Origami" poster. In addition, a pre-recorded video is sent to the school to provide students and staff with some basic information about the program, including how to properly sort and set out the carts for collection.

Blue Recycling Bag

In 2022, 2,419 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 continues to decrease, likely due to more efficient packaging and as a legacy result from recycling changes announced in 2018.



Cart Maintenance Requests

Staff completed 2,679 requests for repairs, replacements, size swaps, and deliveries for additional carts or new homes in 2022 (726 deliveries, 62 pickups, 1,270 repairs, and 621 size swaps).

In 2022, staff delivered carts to 286 new homes. Additionally, staff delivered 154 additional carts (133 garbage, 21 organics), and removed 62 carts (48 garbage, 14 organics) from homes across St. Albert. The implications of neighbourhood growth are discussed further in the report

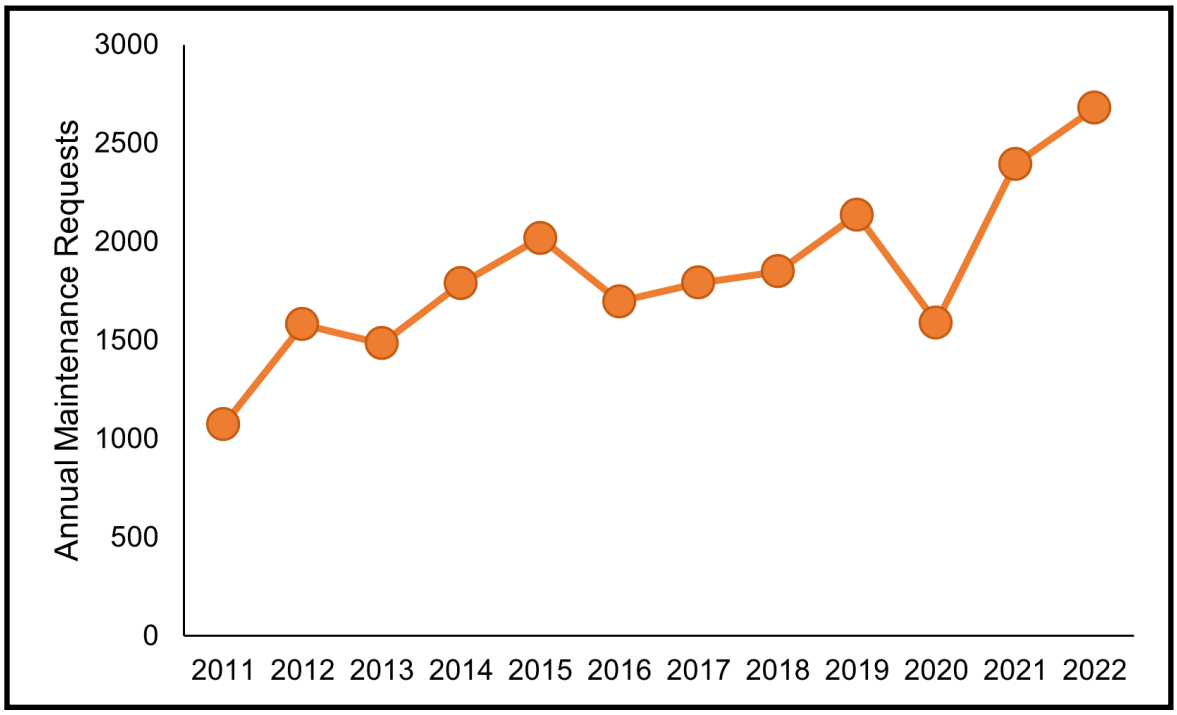
Residents can request one size swap per calendar year. In 2022, staff responded to over 600 requests for a size change (the majority of which were requests to increase the size of their garbage cart). In 2022, the branch partnered with a local plastics company who recycles the broken and no longer under warranty carts free of charge.





CART MAINTENANCE LABOUR

The Waste branch responds to requests for cart deliveries to new homes or accounts, cart size changes, and repairs or replacements for damages on a daily basis. Our current service level dictates requests will be completed within three weeks of the date on which they were received. These requests have been addressed by the waste branch since the inception of the cart program in 2011. However, as the City grows, so too does our cart inventory, and subsequently requests for cart maintenance.



Beginning in 2021, labour associated with cart maintenance was tracked on a separate work order, to better understand the resources being used to maintain service levels. The annual labour cost (in both hours and dollars) associated with cart maintenance is on par or in excess of a Solid Waste Operator's annual salary (based on a 40hr work week and current operator wages*).

There is no designated team member to complete these requests, and collecting waste and operating depots takes precedence for maintenance, sometimes resulting in maintenance delays in some busy periods of the year. Furthermore, emergent requests (e.g., if a cart falls into the truck and cannot be retrieved), are often completed by the Team Lead, as all other staff are otherwise occupied, which results in additional labour costs to the branch.

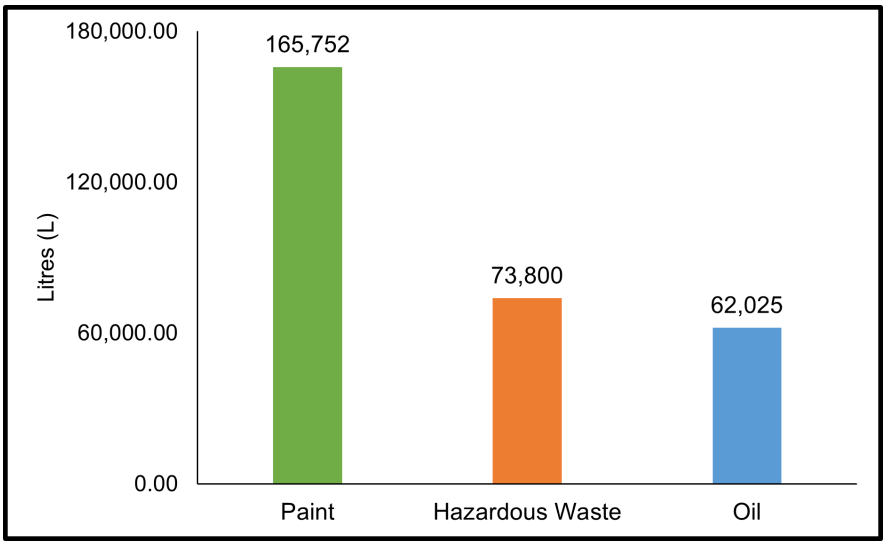
Table 1. Cart maintenance annual labour

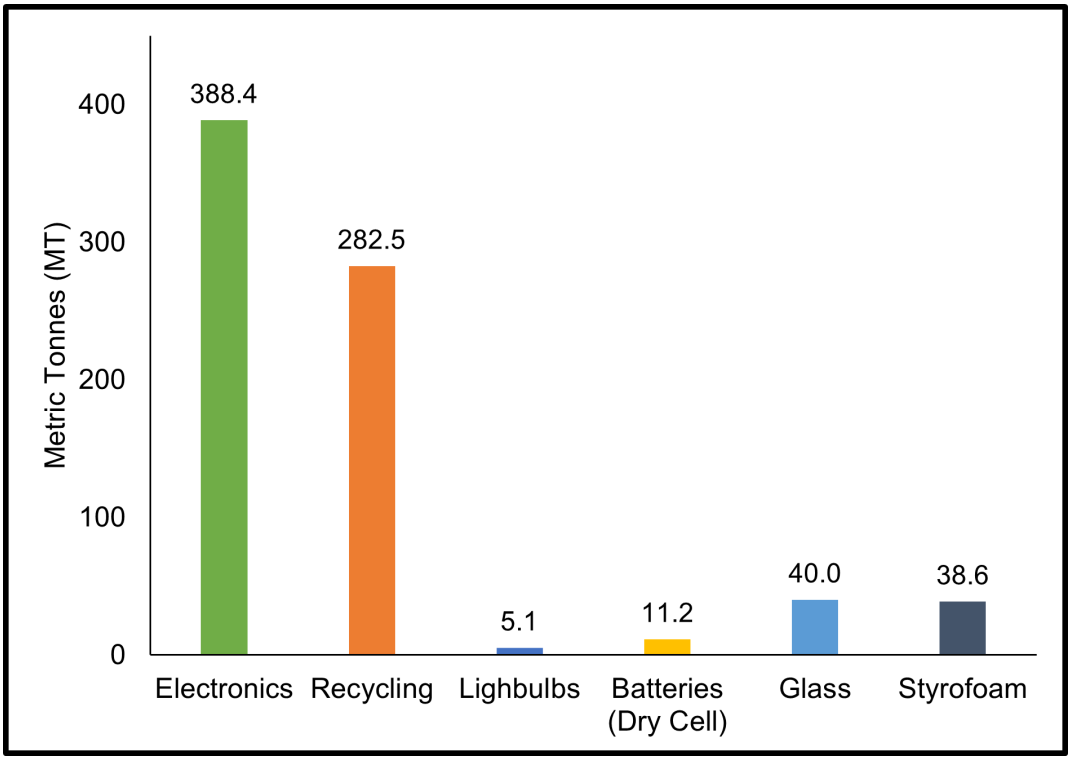
Year	Hours	Cost of Labour	Annual Salary*
2021	1,811.5	$66,140.59	$64,417.60
2022	2,207.5	$68,366.28	$64,417.60

Drop off Locations

MIKE MITCHELL RECYCLING DEPOT

The Mike Mitchell Recycling Depot operates six days a week (Tuesday through Sunday), and accepts recycling (paper, scrap metal, tin cans, cardboard, glass, Styrofoam), household hazardous waste (chemicals, paint, solvents), batteries, oil, tires, and electronics,. Any residential waste that is not accepted at the Mike Mitchell Recycling Depot (such as items with freon or coolant) can be brought to City of Edmonton facilities.





Residents can also purchase “Extra Garbage” tags to dispose of garbage that does not fit in their Brown Garbage Cart. In 2022, residents disposed of 288 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 the depot, especially as volumes of material taken to the depot increases year over year.

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. Food waste and other organic material is not accepted as it attracts pests. Soil, dirt, and sod continue to not be accepted at the depot.

Residents dropped off a total 1, 656 MT of yard waste in 2022. The total amount of material was comprised of 893 MT of grass clippings and 763 MT of other materials such as branches, trees, and leaves. Trees and branches were chipped on site and shipped along with leaves and grass to the compost pad at Roseridge.

Seasonal Programs

The City of St. Albert offers a variety of seasonal waste programs to encourage and allow residents to properly recycle and dispose of items that are nor accepted in the curbside program or at the Recycle Depot.

CHRISTMAS TREE PICKUP

1,050 natural Christmas trees were collected from households from January 9- 13 (Zone A) and January 16-20 (Zone B). New in 2022 residents could also drop off Christmas Trees at the Compost Depot on weekends in January.

COMPOST GIVEAWAY

Finished compost was available to residents for pick up at the Mike Mitchell Recycle Depot in May and October. Approximately 200 MT of compost was given away in 2022.

CURBSIDE LARGE ITEM PICK UP

The 2022 Curbside Large Item Pick Up took place from June 13-17 (Zone A) and June 20-24 (Zone B). 135 MT of garbage went to the landfill, while 7 MT of electronics and 42 MT of scrap metal and appliances were recycled. Mattresses were also accepted for recycling, and 599 mattresses were collected and recycled.

LARGE ITEM DROP OFF

Large Item Drop Off took place in the Jack Kraft Facility parking lot on Saturday, September 10, with 177 vehicles participating. 46 mattresses were dropped off and recycled, and 4 MT garbage was disposed of. In addition, one 40-yard bin was filled with scrap metal, which was recycled. Residents were encouraged to bring electronics to the Recycling Depot next door.

Staff assisted residents in unloading items, and each item required two "Extra Garbage" tags which had to be purchased and attached to item prior to the event.

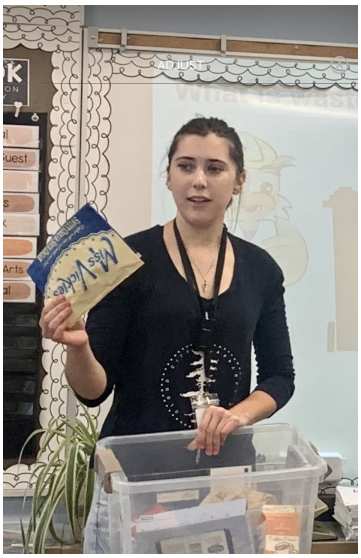
CURBSIDE LEAF PICK UP

The Curbside Leaf Pick Up program allows residents to set out bagged leaves at the curb to be picked up and composted. 114 MT of leaves were collected from reusable containers or paper yard waste bags. The program ran from September 26 to October 7, and again from October 24 to November 4.

Education & Outreach

SCHOOL PRESENTATIONS

The City offers a presentation (Waste & our World) that is aligned with the Alberta Science Curriculum for grade four students. The presentation includes an educational worksheet that follows the presentation, and a hands-on waste sorting game. In September 2022, the program returned to in-person presentations after two years of virtual presentation due to COVID-19. The Waste & our World presentation was delivered to 754 students in 29 classrooms in St. Albert Elementary schools.

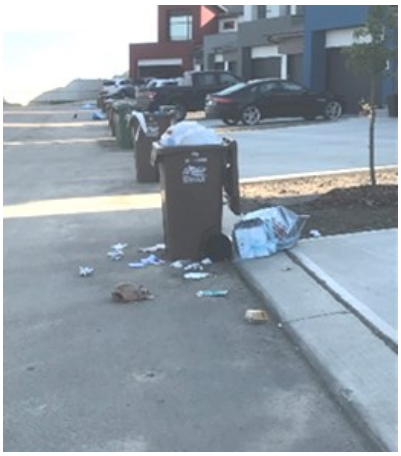


CURBSIDE WASTE EDUCATION

The Curbside Waste Education Program (CWEP) launched in 2017, and as of 2022, every household in St. Albert that receives three-stream waste collection has been visited by the CWEP team. The program ran from May 30– September 2, and the team inspected all three waste streams for proper sorting and set out at 7,588 households in every neighbourhood of St. Albert.

For the truck to safely collect carts, they must be parked at the curb, with the arrows pointing towards the street, with at least 1m spacing on all sides. Waste at each household was examined to ensure that it was set out correctly, and houses with carts that were not spaced or set out properly received a “Park It. Point It. Space It.” door hanger with directions on how to properly set out their carts. Approximately 4% of houses had errors in cart set out; incorrect spacing was the most common error.





To minimize the risk of litter and pests, carts must not be overflowing, and the lid must be able to close completely. Carts that were too full, or houses that placed an extra garbage bag beside their cart received an “Oops! Extra Garbage” door hanger. In 2022, 2% of households that were inspected overfilled their Brown Garbage Cart.

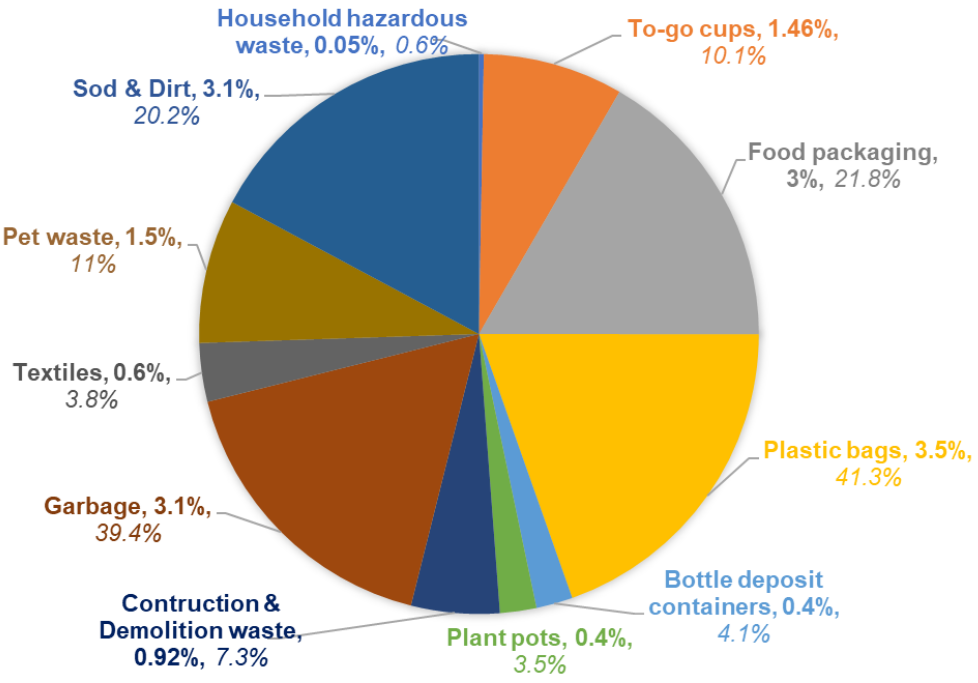
Similar to 2021, in 2022, a primary focus of the CWEP was tracking and reducing the contamination of the Green Organics Carts. Out of the 5,744 inspected carts, 711 (13%) of carts contained at least one contaminant, and 317 (6%) of carts were rejected. When carts were heavily or deliberately contaminated, the carts were sealed closed with a pink “Oops!” sticker, turned around, and were not collected. The number of rejected carts decreased by 3% from 2021, as 9% of carts in 2021 were rejected. The pictures below are example of carts that were rejected by the CWEP team in 2021.

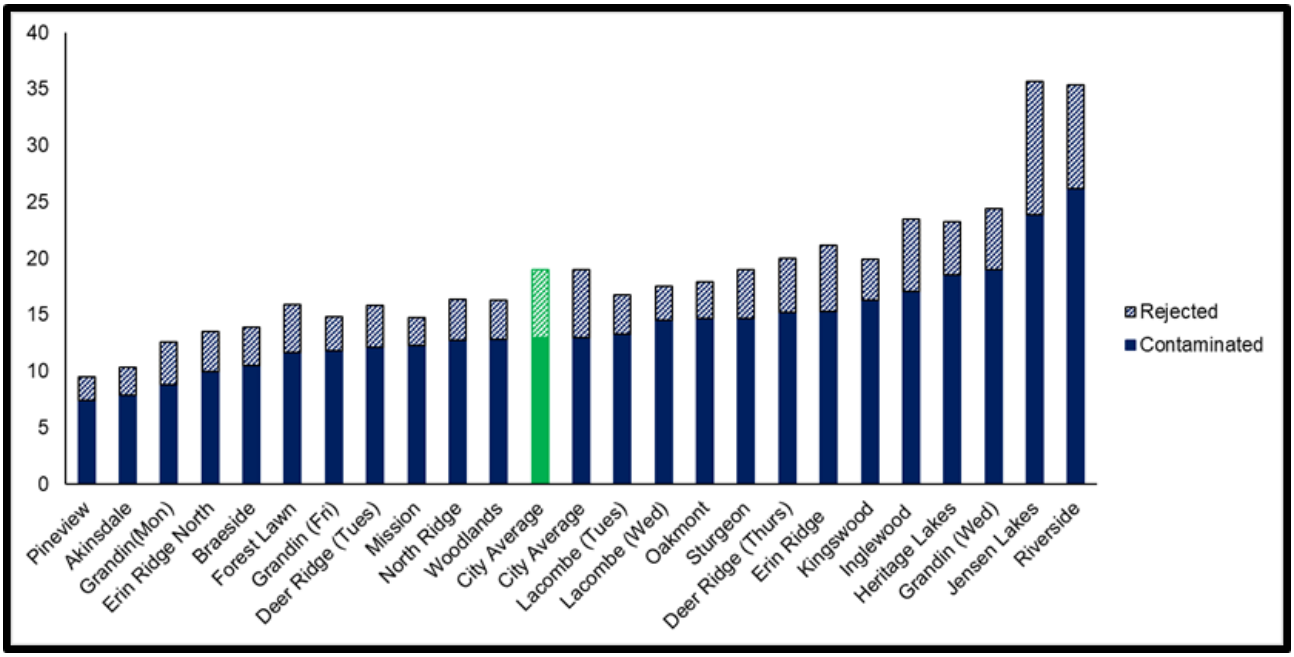






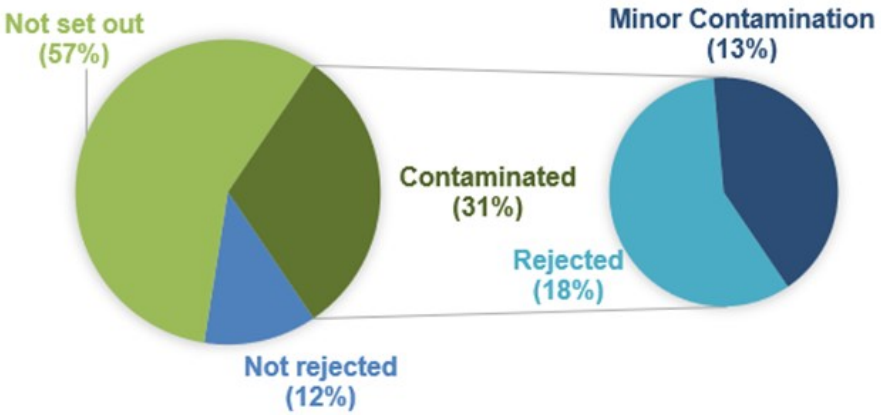
Both cart rejections and contaminations decreased in 2022 in comparison to 2021. The number of contaminated carts decreased by 6% (19% of carts in 2021, compared to 13% in 2022). The graph below shows contamination by material type, with the bold numbers representing the presence of the contaminated form the total carts inspected, and the number is italics representing the presence of that contaminant in the rejected carts. In 2022, the top three most common contaminants were plastic bags, garbage, and sod, found in 3.5%, 3.1%, and3.1% of carts, respectively. Garbage and plastic bags were among the top contaminants in the CWEP in 2021 (found in 7.6% and 5.5% of carts, respectively) however, food packaging was the third most common contaminant, which was found in 5.12% of carts. In 2021, sod was found in 1% of Green Organics Carts.





The above graph shows the frequency of contamination and rejection, as a fraction of all organics carts inspected, by neighbourhood. For example, 20% of inspected carts in Jensen Lakes were contaminated and 12% of inspected carts were rejected.

In September 2022, after the CWEP was completed, CWEP team members returned to some of the houses where the Green Organics Carts was rejected during the CWEP in 2021 and 2022 to check for further contamination of the organics cart. Out of the 67 houses that were checked, 57% of the carts were not set out, 18% of carts were heavily contaminated and rejected for a second time, 13% of the carts were contaminated but not rejected, and 12% of the carts had no contaminants and were not rejected. The graph below shows the results of the rejected organics follow up.



The CWEP team inspected 6,668 Blue Recycling Bags, 2,507 (38%) of which were contaminated. Bags that contained at least three contaminants, or bags containing any amount of glass, hazardous waste, or dirty containers were rejected with orange “Oops!” stickers.

The most common contaminants in the recycling stream were clamshells, takeout containers, and plastic bags and wrap.

A summary of the 2022 program can be found here.



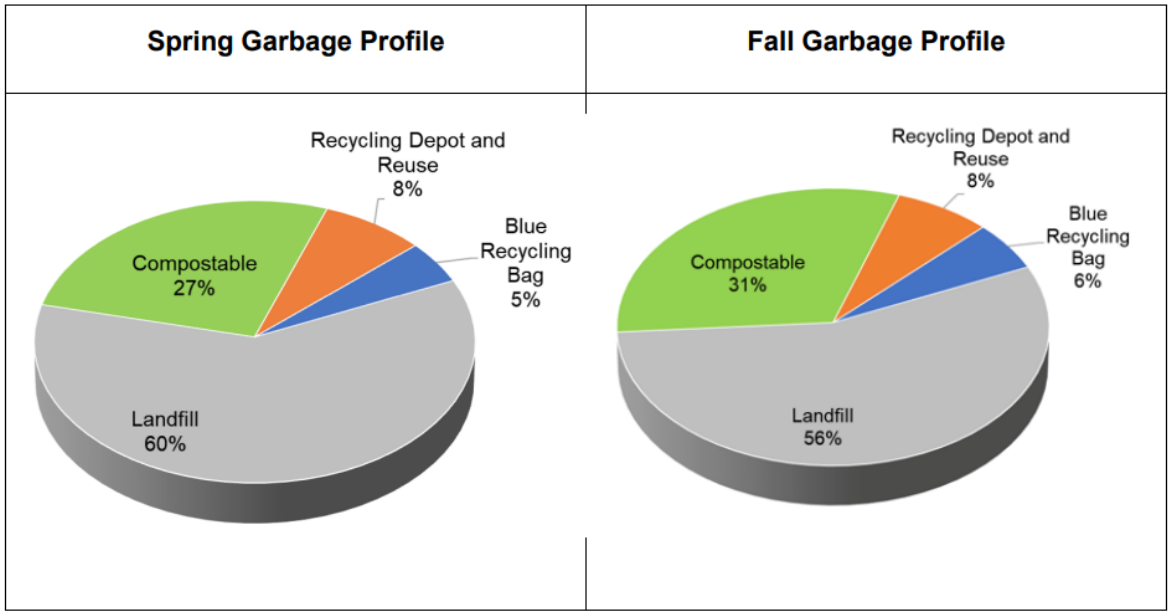
CURBSIDE WASTE COMPOSITION STUDY SUMMARY

In the spring and fall of 2022, the City engaged S-Cubed Environmental, a local consulting company, to carry out a Curbside Waste Composition Study to collect data on St. Albert’s current residential garbage, organics and recycling collection program. The quantitative data that was collected during the study will be used by the City to help set targets for waste reduction and diversion, optimize effective communication with residents, identify opportunities for cost savings, and inform corporate sustainability reporting.

The Study examined the waste from 100 households across St. Albert. The sample consisted of 10 households from a different neighbourhood each day over 10 waste collection days. The same households were visited in the spring and fall study periods. The Brown Garbage Cart (BGC), Green Organics Cart (GOC), and Blue Recycling Bag (BRB) streams were examined. The contents from each waste stream were categorized into paper, plastics, metal, glass, organics, beverage containers, electronics, textiles, household hazardous waste (HHW), or landfill, with numerous sub-categories for each.

The 2022 Curbside Waste Composition Study showed a 57% diversion rate, meaning that 57% of the waste produced by St. Albert residents is diverted from the landfill, and instead goes into other waste streams, such as recycling or compost.

The biggest opportunity to improve the City’s diversion rate is to improve sorting habits. On average, 29% of the garbage stream consisted of compostable materials. The most common compostable materials that could have been diverted were edible and inedible (bones, vegetable peels) food waste. Other compostable materials included yard waste and compostable paper. In addition, 8% of items in the garbage stream could have gone to the Recycle Depot or been donated/ reused, and 5% of materials could have gone in the Blue Recycling Bag stream. The figure below shows the composition of the garbage stream from both study periods.

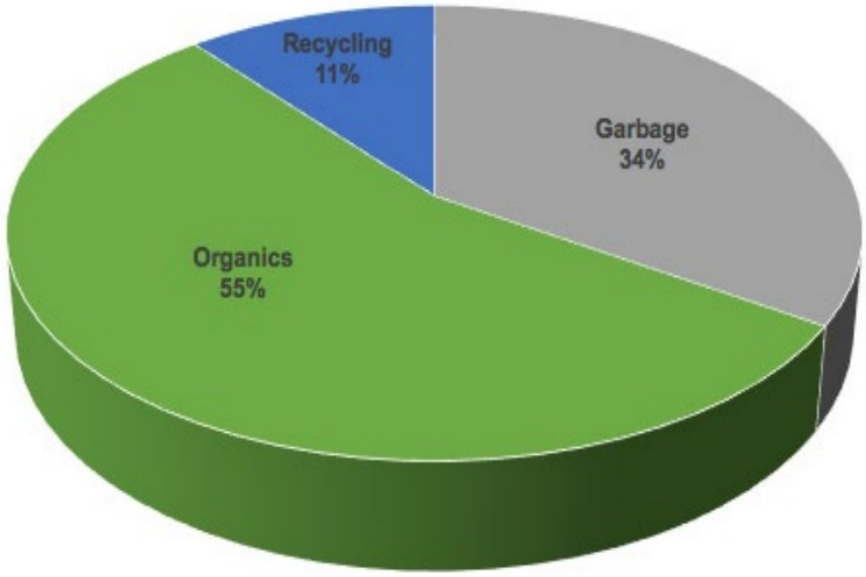


During the spring study, the Blue Recycling Bag stream had a 12% contamination rate. In the fall study, the contamination rate decreased to 7%. A possible explanation for the decrease is due to the CWEP. The CWEP team visited households on five streets that were part of the waste composition study. The education provided by the CWEP team may have played a role in the decreased level of contamination.

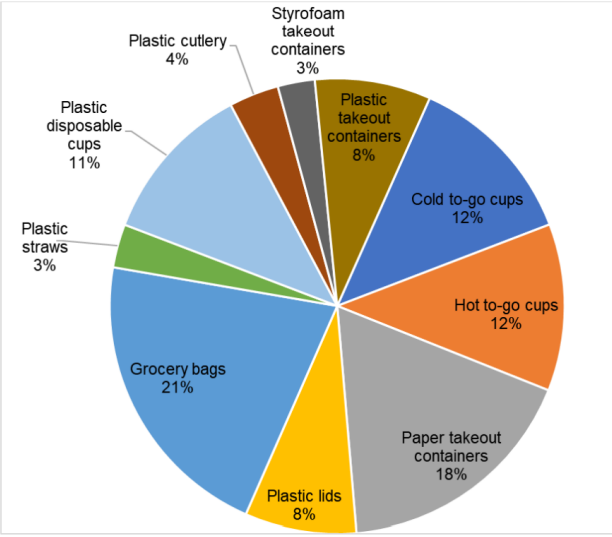
The Green Organics Cart stream also had decrease in contamination between the spring and fall study. The spring study had a contamination rate of 21%, while the fall study had a contamination rate of 5%. In the spring study, soil, sod and clay made up 92% of the contamination by weight. The organics generation rate is highly variable by season due to the fluctuations in yard and garden material production. The biggest differences in the Green Organics Cart stream between the spring and fall studies were that the spring study included a large quantity of yard and garden waste and more contamination from soil, sod and clay. There were minimal differences in the quantities of food waste (edible and inedible) and compostable paper between the spring and fall study periods.

However, in both the spring and summer, a small quantity of households made up a large portion of contamination. During the fall study, three Green Organics Carts contained 57% of the contamination found in the entire organics stream (100 households!). In addition to soil, sod and clay, other common contaminants from both the spring and fall study included non-compostable take out containers, black garbage bags, textiles, and plastic wrap.

The chart below shows the average proportion of garbage, organics, and recycling material (by weight) set out by St. Albert residents during the spring and fall waste composition study, regardless of which stream they were placed in (i.e., edible food waste in the garbage cart is tracked as organics in the below chart). During the two study periods, on average, organics made up 55%, recycling made up 11%, and garbage comprised 34% of the total material generated.



The waste composition study also tracked single use items from all three waste streams. By weight, 0.67% of materials (2,673 items) from all 3 streams were single-use items. The federal regulations for single-use items will address 31% of items that were counted as part of the waste composition study, including items such as plastic check out bags, plastic straws, Styrofoam takeout containers and plastic cutlery. The figure to the right shows the proportion of single-use items by count from the garbage, recycling, and organics streams during both study periods.



The Curbside Waste Composition Study outlined recommendations on how to optimize the residential curbside collection program and increase waste diversion. The broad tactics that are most successfully used by communities to increase waste diversion are to implement extensive public education and communication, make waste diversion convenient and easy, provide financial incentives to reward waste diversion, and ban recyclable and/ or reusable materials from the waste stream.

For the City of St. Albert, the largest opportunity for waste diversion is to increase the quantity of organic material placed in the GOC, and divert compostable materials from the BGC. The most effective methods to increase waste diversion are through public outreach and education via both in-person events and online campaigns. In addition, continuing the Curbside Waste Education Program is crucial to educating residents and gathering data on what areas of each waste stream need to be targeted in order to increase diversion and reduce contamination.

Furthermore, the report recommends collaborating with the our organics contractors to evaluate the contamination assessment approach. Currently, organics haulers conduct visual assessments to determine if the load is more than 30% contaminated, and consequently landfilled. Re-evaluating this assessment to establish a more quantitative and consistent way to assess the level of contamination may help to reduce the number of relatively uncontaminated organics loads that are sent to the landfill unnecessarily.

The combined results of the Curbside Waste Composition Study and the Curbside Waste Education Program indicate that there are challenges with a small number of households deliberately placing garbage bags and other contaminants in the Green Organics Carts. If fines were implemented and there were periodic random checks of the Green Organics Carts for deliberate contamination, this would likely help improve sorting habits.

To see the full report including the complete list of recommendations, click here Provide link?

INFORMATION BOOTHS

In 2022, staff participated in some City sponsored events. At the Father's Day booth, staff provided Green Organics Carts for the event, spoke with over 50 residents to answer questions about proper waste sorting, and ensured that only compostable material was put in the Green Organics Carts. At the Canada Day event run by the City, over 150 residents stopped at the booth run by Waste and Environment to ask questions, participate in the waste sorting game and other environmentally related activities.

GRASSCYCLING CAMPAIGN

From May to August 2022, the Waste branch held a grasscycling campaign to encourage residents to remove the bag from their lawnmowers and leave grass clippings on their lawn instead of disposing of them in the Green Organics Cart. Staff used a webpage, social media, and lawn signs to spread awareness about grasscycling.

The messaging encouraged residents to "Ditch the Bag" and leave grass clippings on the lawn to save money and the environment, and to learn more about the benefits of grasscycling by visiting the webpage on the City's website. Throughout the summer, staff distributed 35 lawn signs. The webpage received 1,237 views. On social media platforms, the campaign had 41,624 reaches, 114,236 impressions, 819 link clicks, and 6,766 video plays. Staff plan to continue the campaign in 2023.







Outside of St. Albert

Bylaws, Bans, Collaborations

EXTENDED PRODUCER RESPONSIBILITY

Extended Producer Responsibility (EPR) is an environmental / economic policy that shifts the physical and financial burden of collecting, sorting, processing and recycling waste to the producer and away from local governments and taxpayers. The goal of the EPR regulations is to diversify Alberta's economy by encouraging companies to find innovative ways to recycle more materials and produce less packaging waste. The table below shows the timeline for the regulations.

Date	Policy Change
October 3, 2022	Alberta's EPR regulation created
November 30, 2022	Alberta's EPR regulations come into force
April 1, 2024	Deadline for producers to provide verification of collection and management plans to the Alberta Management Recycling Authority
April 1, 2025	EPR for single-use products, packaging and printed paper (PPP) and hazardous and special products (HSP) will be operational.

Alberta will have two EPR systems. Both systems include a variety of materials from residential sectors. Alberta's EPR framework does not include material from the industrial, commercial or institutional sector.

1) Single-use products, packaging and printed paper (PPP), which includes:

- Paper products (newspapers, packaging, cardboard, printed paper, and magazines
- Plastics (both rigid and flexible)
- Metal and glass

2) Hazardous and special products (HSP), which includes:

- Solid, liquid, and gaseous products that are flammable, corrosive, and toxic
- Batteries
- Pesticides

The Alberta Recycling Management Authority (ARMA) is the designated organization that will provide oversight of Alberta's EPR systems. They will have the authority to develop bylaws related to registration, reporting auditing, promoting of EPR, thresholds for exemptions and compliance matters. The ARMA is accountable to the Minister of Environment and Parks and must provide business plans, reports, audited financial statements, and changes in bylaws to the Minister.

This policy will improve St. Albert's curbside recycling program and make recycling easier and more accessible for all St. Albert residents. The province-wide EPR system collecting a consistent list of products will clarify what can be recycled while reducing program costs.

FEDERAL SINGLE-USE PLASTICS PROHIBITIONS REGULATIONS

On June 20, 2022, the Government of Canada announced the Single-use Plastics Prohibitions Regulations. The policy is part of the governments' plan to address pollution, meet its target of zero plastic waste by 2030, and help reduce greenhouse gas emissions. The regulations prohibit the manufacture, import and sale of single-use plastics in Canada.

The regulations include six categories of single-use plastics:

- Checkout bags
- Cutlery
- Foodservice ware containing harmful plastics
- Ring carriers
- Stir sticks
- Straws

The prohibition will be implemented on a staggered timeline to minimize impacts to businesses and enable industry to adapt to the changes. The first of these regulations came into effect on December 20, 2022, and they will be fully in place by December 20, 2025.

There will be no immediate impacts to the City of St. Albert due to the staggered implementation. As businesses in the City exhaust their existing stock, they may chooses to find alternative items to provide to consumers, such as compostable or recyclable items, reusable items, or eliminating single use items from their businesses all together.

The Curbside waste Composition Study, conducted in 2022, found that single-use items that are included in the regulations do not comprise a large portion of any curbside waste stream. It is expected that the federal regulations will address approximately 31% of the items counted during the composition study (grocery bags, cutlery, straws, and Styrofoam).

REGIONAL APPROACHES TO SINGLE USE ITEMS

Edmonton Single-use item Reduction Bylaw (20117) aims to reduce waste by targeting single use items that can easily be avoided or replaced with reusable items. The bylaw includes single use items made of any material, including plastic, woods, bamboo, cardboard, or any other material. The Federal single-use item regulations complement Edmonton's bylaw. Both ban shopping bags, and foam cups, plates, and take out containers. However, Edmonton's bylaw aims to reduce all single-use items regardless of material and make it easier to choose reusable items. Edmonton's bylaw has been approved by City Council and will go into effect on July 1, 2023.

On January 1, 2022, The City of Spruce Grove's Single-use Items Reduction Bylaw came into effect. This bans the use of plastic straws, plastic checkout bags, and polystyrene food service ware. The Town of Devon has had a ban on plastic checkout bags since January 1, 2020. This bylaw only bans the distributions of single-use plastic retail bags.



Source: City of Edmonton Single Use Bylaw Guide

Other cities across the province, including Calgary, Banff, and Okotoks have implemented a single-use items ban to some degree in recent years. All of these bans will align with the federal ban, and will make the transition away from single-use plastics easier for both consumers and producers in these municipalities.

In the spring of 2022, a survey on St Albert's single use item reduction strategy was open to the public to share their thoughts and opinions. The survey for residents involved questions about the single use items that they commonly use, barriers and concerns to reducing single use items, and the methods that should be implemented to reduce single use items. Most participants felt that some or all single use items (checkout bags, straws, takeout containers, should be targeted in the reduction strategy. The main barriers that would prevent residents from using reusable items are that it is difficult to change their habits and remember to bring reusable items. The reduction methods that the participants were most in support of was fee for use and a discount if they brought their own reusable items.

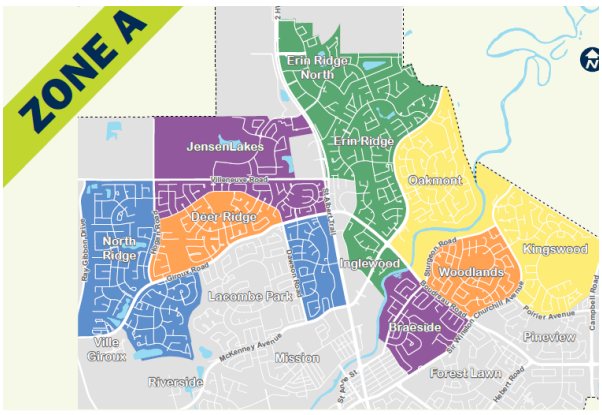
With the federal government's upcoming single use plastics ban, the promise of EPR improving municipal curbside recycling programs, and the results of the City's Curbside Waste Composition Study, creating a St. Albert specific Single Use Items Reduction Strategy is not a priority for the city.

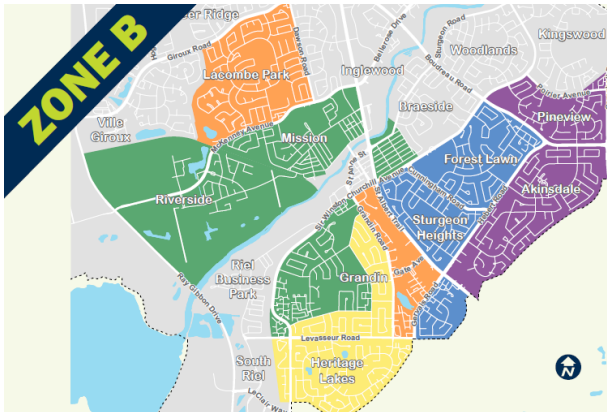
Education and outreach resources will be better allocated to programs and campaigns discussed later in this report.

RECOMMENDATIONS

ROUTE EXPANSION AND GROWTH PLANNING

In 2011 the City introduced the automated cart system for curbside waste collection. At the time of the program's inception, there were 17,937 households receiving curbside collection. City-wide, there's been a 14% growth in serviced households between 2011 and 2022, and we now service 20,431 homes (755 of which have more than one garbage cart). While some collection zones comprise of neighbourhoods that were fully developed in 2011, others have experienced exponential growth (35-49%) over the last 11 years. However, we have not added additional operators nor equipment over this time frame. Currently, the city is split into two collection zones – A and B, and each zone collects waste from ten different neighbourhoods.





On any given regular collection day, we will send out four operators. Each operator has the ability to collect about 600 carts (summer), and about 500 carts (winter, as frozen garbage does not compact as easily) before needing to unload at the landfill. From 2019 to 2022, we averaged 533 cart tips per truck, per day, for an average of 2,132 carts per day (red line in Figure X).

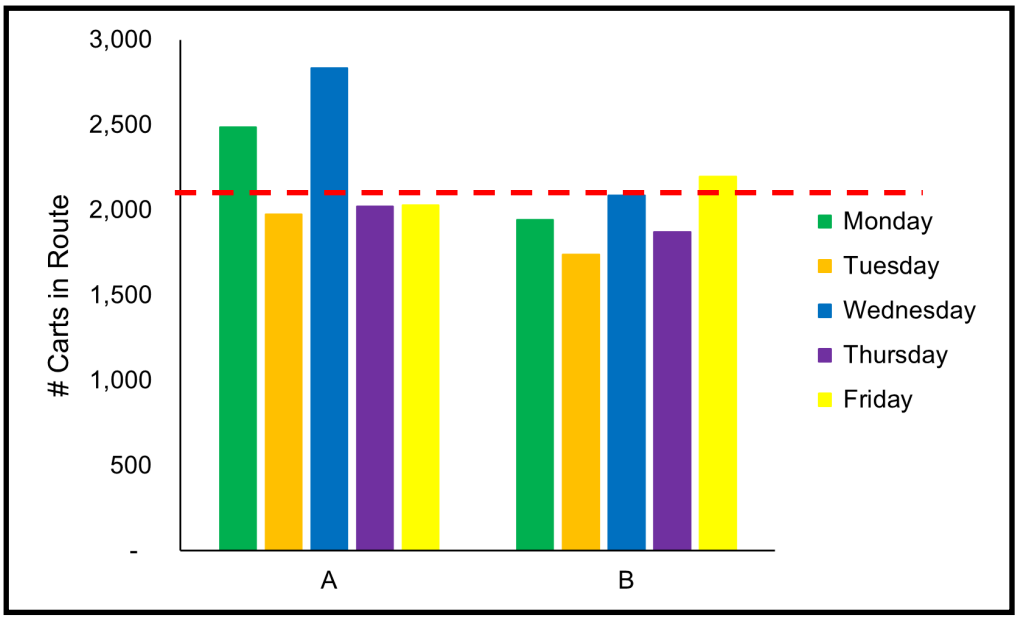


Figure X. The number of carts in each collection route at the end of 2022

2030 PROJECTIONS

With continued development across the city, by 2030 we will provide curbside collection to 26,812 households.

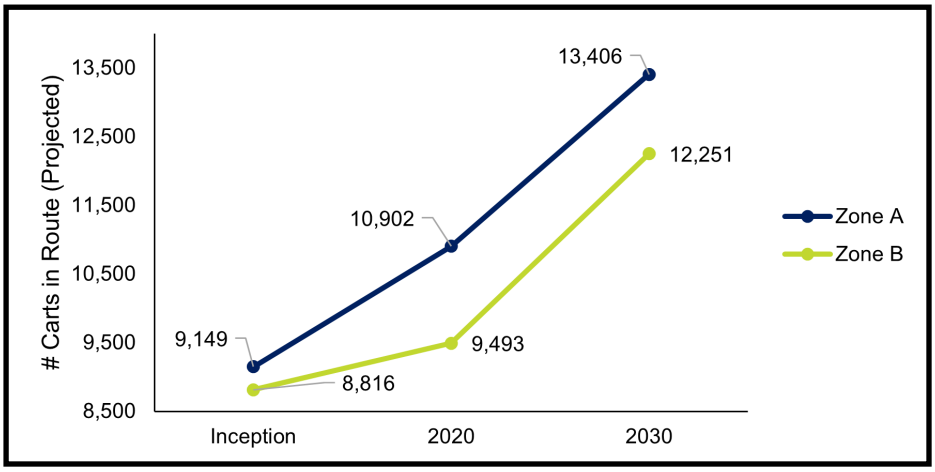


Figure X. The projected number of carts by 2030 by zone.

However, this growth will not be evenly distributed among the ten collection routes. Based on approved Area Structure Plans, four collection routes will bear the weight of the population growth.

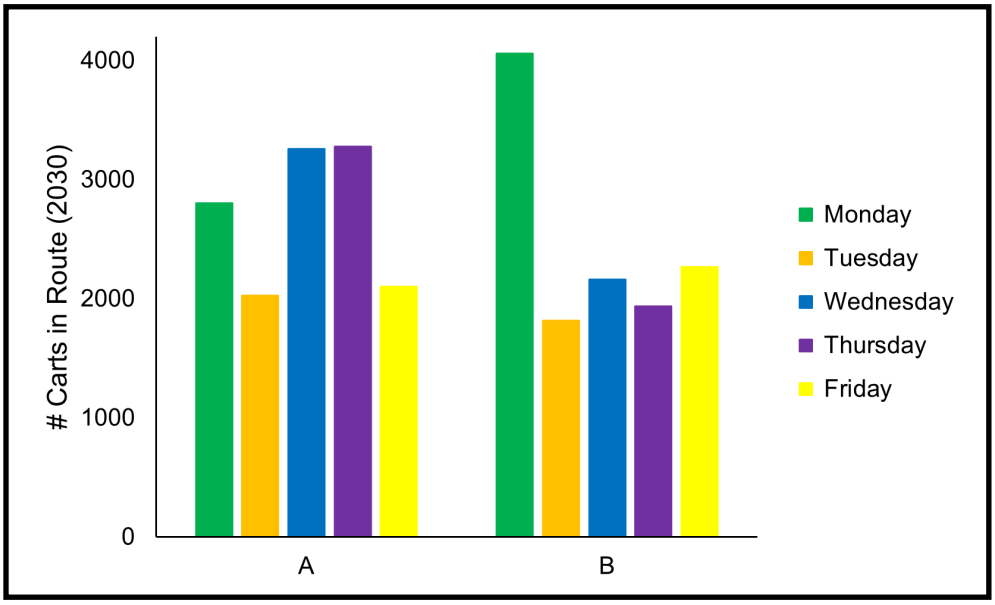


Figure X. The projected number of carts by 2030 by collection date.

Residents took possession of new homes in Erin Ridge North, Jensen Lakes, and Riverside in 2012, 2015, and 2014, respectively. North Ridge II and Ville Giroux are not yet lived in, but all five neighbourhoods are anticipated to be fully developed by 2030. Table 1 shows the number of currently occupied homes and projections for 2030.

Area	Zone	2022	2030
Erin Ridge North	Monday (A)	545	815
Jensen Lakes	Thursday (A)	415	1,584
North Ridge II	Wednesday (A)	-	283
Riverside	Monday (B)	497	2,513
Ville Giroux	Wednesday (A)	-	85

MAINTAINING SERVICE LEVELS

Currently, three of our ten collection routes are approaching or have already exceeded our daily cart collection capacity:

- Monday, Zone A (2,308 homes)
- Wednesday, Zone A (2,834 homes)
- Friday, Zone B (2,198 homes)

We anticipate that Monday Zone B will exceed our daily collection capacity by the end of 2024. Therefore, in the near future, the Waste & Diversion Operations branch will require additional operators and equipment to maintain service levels.

As each collection zone varies in how many households it services, a short term (i.e., before 2030) solution is to modify collection routes. This would be a large undertaking, and Administration recommends a consultant be hired for route planning and the extensive messaging that will be required.

MULTI-FAMILY PROPERTIES WASTE COLLECTION

In June 2011, the City of St. Albert introduced a three-stream automated collection system for residential waste. All single-family homes received a garbage and organics cart. Correspondence with multi-family complexes began in January 2011. Multi-family complexes (MF) that were receiving City-provided curbside collection prior to 2011 were given two options moving forward:

- Each unit receives three-stream (garbage, organics, recycling) collection
- Find a private waste collector

Many MF contacted the City and explained that they were not interested in receiving organics collection for numerous reasons:

- They were already under contract with a private landscape company
- They do not have the storage capacity to have two carts per unit
- Residents do not generate enough kitchen waste to justify an organics program

Thus, some complexes were allowed to “opt-out” of the organics program (herein referred to as “grandfathered complexes”). Beginning in 2019, any new multi-family complexes (new builds or new customers) interested in receiving city-provided waste collection **must** have all-or-nothing support, meaning every unit must receive garbage, organics, and recycling collection.

CURRENT STATE

The City currently provides curbside collection to 41 MF complexes:

- 30 receive garbage and recycling collection
- 1 receives recycling collection only
- 10 receive garbage, organics, and recycling collection

There are currently 96 other MF properties in St. Albert that have contracted out their own waste collection. In recent years, residents at some of the grandfathered complexes have inquired about individual units receiving curbside organics collection. To the disappointment of many residents, the city remained firm that there must be all-or-nothing buy in.

Municipalities across Canada, such as Vancouver, Calgary, and Halifax, mandate waste diversion from MF complexes in their respective solid waste bylaws. Edmonton intends to introduce a similar mandate in 2024. The St. Albert bylaw currently does not mandate diversion of organic waste in MFC including townhomes, duplexes, apartments, and condos. Creating such a mandate is not planned in the short or midterm for St. Albert. However, Administration is exploring the challenges and opportunities associated with introducing mandatory organics collection in grandfathered complexes.

Making this change would constitute a service-level change, and requires Council approval.

CHALLENGES

Utility Billing

Billing for MF complexes is not as straight forward as single-family home billing:

- In some complexes, each unit has an individual metre and receives a monthly utility bill, similar to single family homes. It would be easy to add a Curbside Organics charge to these homeowners' monthly bills
- In some complexes, waste charges are incorporated into condo fees, and the condo board is charged the monthly fee for each unit as a lump sum
- In some complexes, units do not have an individual metre and 3-4 units are lumped together onto one metre

These billing complexities would inhibit the City allowing *some* units in a complex to opt-in to organics collection

Planning and Development

New MF complexes and developments do not always take waste collection spacing requirements into account and the City has had to refuse to collect from some MFC due to tight turn-arounds and or narrow roads, as well as limited space for a resident to store both carts on site.

In 2021, Waste worked with Legal to provide Planning and Engineering with a handbook of waste collection guidelines that is shared with potential developers. Waste has also been added as a key stakeholder for new development approval and is subsequently involved in the schematic review process.

Snow Removal and Road Maintenance

Snow clearing and road maintenance are the responsibility of the landowner, and in private MF complexes, this falls onto the property management or condo board. Some private roads may not have been built to sustain the weight of a garbage truck and can be damaged with repetitive use.

During the freezing rain and freeze-thaw cycles of the 2021-2022 winter season, Waste had to delay collection in some MF complexes due to poor driving conditions. To effectively collect waste in MF complexes, property owners must clear and sand their roads prior to waste entering the complex for collection. This requirement may be challenging to achieve in some complexes in the City.

OPPORTUNITIES

Waste Diversion

Under Council's Strategic Priority 4 *Adapting to a Changing Natural Environment*, Administration is directed to explore waste minimization strategies.

Based on the results from the 2022 Curbside Waste Composition Study, up to X % of a Brown Garbage Cart is filled with organic material that could be diverted in the Green Organics Carts. In complexes without current organic diversion programs, it can be assumed the volume of organic material in their garbage cart exceeds that from single-family homes. Introducing organics collection to MF complexes would enhance waste diversion and minimize the amount of divertible material entering the landfill.

Revenue Generation

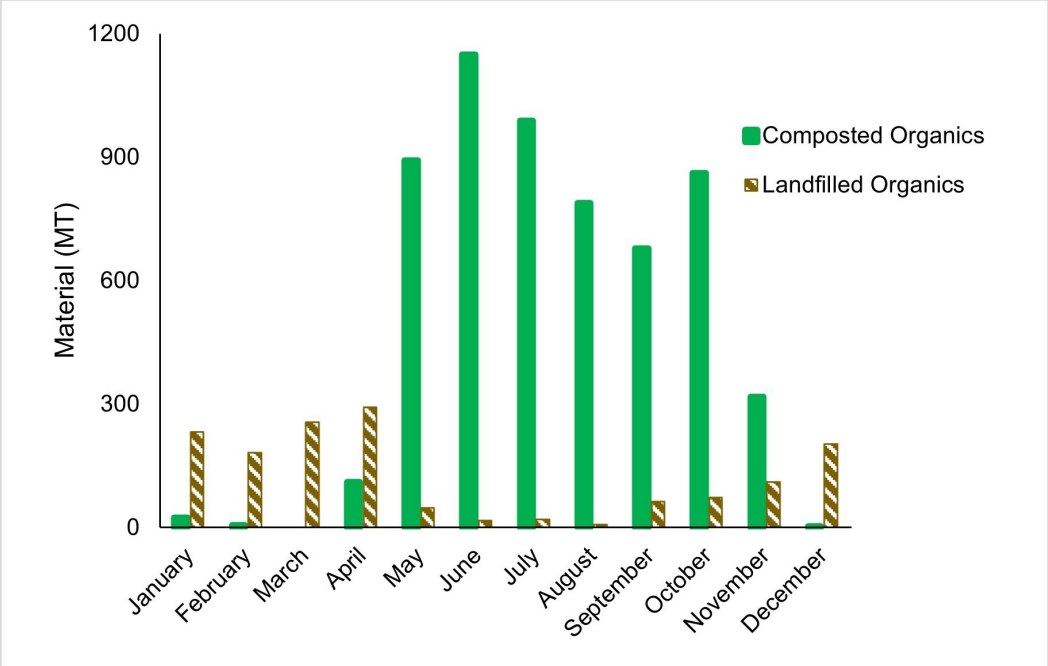
We can calculate potential revenue generation based on assumptions from 2022 utilities fees for waste collection, contractor and disposal fees charged to the City, and a household's monthly organic waste generation (from the Curbside Waste Composition Study).

If the City were to require grandfathered complexes to introduce organic waste collection, there would be an approximate 34% return on investment for each unit (contractor fee + disposal fee - monthly utility fee), generating approximately $20,000 annually through utility charges.



ADDRESSING CURBSIDE CONTAMINATION

Contamination of the GOCs continues to be widespread throughout the City.



COLLABORATION WITH HAULER

As discussed earlier in the report, 25% of loads of organics were landfilled instead of composted in 2022. However, as detailed in the Curbside Waste Composition Study, organics contamination does not actually exceed the 30% threshold. To set more accurate qualitative thresholds, individual load audits could be completed at the landfill. Roseridge has indicated they have the capacity to conduct 4-5 random audits per week, which could be used to better inform our hauler of what 30% contamination actually looks like, potentially diverting some minimally contaminated loads from the landfill.

EDUCATION & OUTREACH

In 2021, the Waste & Diversion Operations branch conducted an online “Oops! What Goes Where?” campaign detailing commonly observed contaminants in the Green Organics Cart across the City. The campaign directed residents to a landing page on our website, and also encouraged residents to download the BeWasteWise app. Over the course of this 10-week campaign, there were 906 mobile app downloads, accounting for nearly one quarter of all app downloads since 2017. Additional campaigns can be considered to tackle more common contaminants.



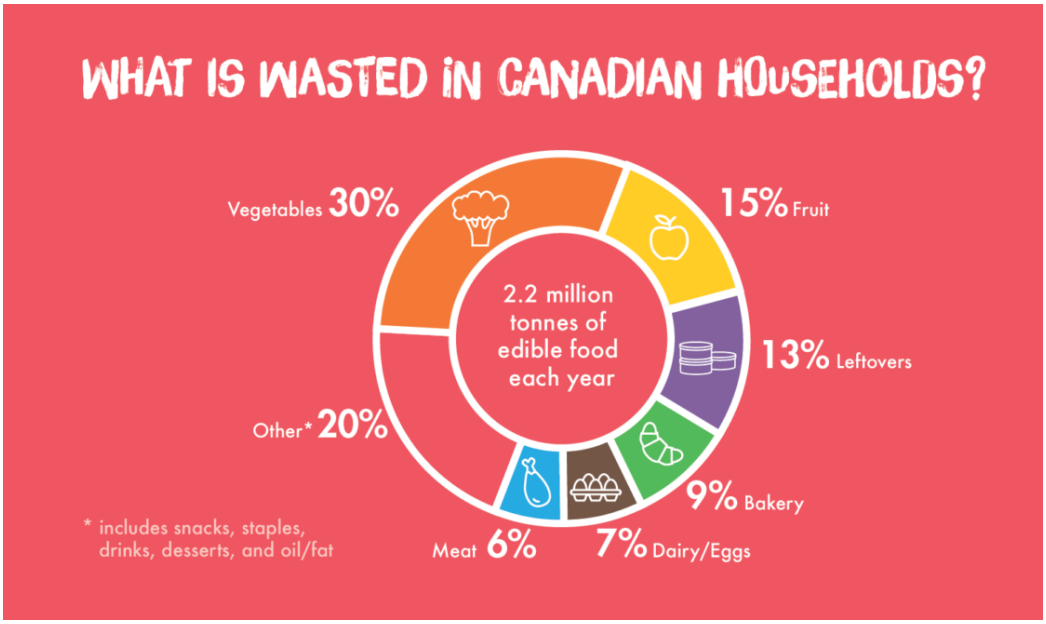
Waste & Diversion Operations Branch | 2022

FOOD WASTE

The Curbside Composition Waste Study revealed that 29% of the Brown Garbage Cart (27% and 31% in the spring and fall audit, respectively) comprised of organic material, despite having weekly organics collection during both audit study periods. As discussed at length throughout this report, when organic material is landfilled instead of composted, not only does it take up valuable landfill space, but anaerobic decomposition results in the production and release of methane to the atmosphere.

The National Zero Waste Council of Canada estimates that 63% of food discarded by Canadians in 2022 could have been eaten, and the average Canadian household throws out $1,300 of avoidable food waste per year.

Specific campaigns centered around food waste reduction, and, where not possible to reduce food waste, proper disposal, can help residents save space in their Brown Garbage Cart, may reduce contamination of the Green Organics Cart, and assist the City in reaching its environmental goals around greenhouse gas reduction. The National Zero Waste Council provides promotional material to municipalities at no cost.



Source: Love Food Hate

The Curbside Waste Education program continues to show sorting improvements throughout the City. Beginning in summer 2023, waste staff will return to homes that were visited in years prior, but on diversion days rather than garbage days. This will provide us with the necessary data to assess the success of this program.

The rate of landfilled organics loads continues to be highest in the winter months when leaf and yard waste does not “dilute” the contamination. In addition to the Curbside Waste Education program, staff can conduct “inspection blitzes” throughout the winter specifically looking for contamination in the Green Organics Cart.

To continue providing year-round education, it is paramount that the Waste & Diversion Operations branch obtain a permanent Waste & Diversion Associate.

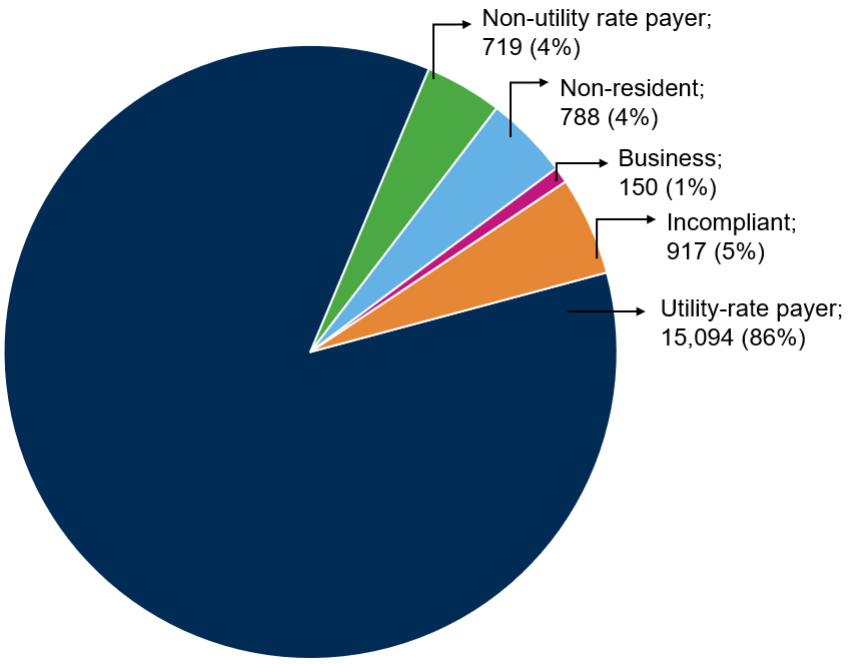
BYLAW ENFORCEMENT

The *Residential Solid Waste Bylaw* already prohibits placing anything other than organic material in the organics cart, and explicitly states that misuse of the carts can result in fines. To date, there has been no enforcement of these fines. Through consistent data tracking and collaboration with our hauler, we know that some households deliberately contaminate the organics cart every waste collection day. Municipal Enforcement Officers have visited numerous homes since 2021, but no tickets have yet been issued.

Despite consistent education, outreach, and communication with bylaw officers, some homes continue to misuse the Green Organics Cart program, and Administration is recommending that the bylaw be enforced and fines be given out for consistent, documented, deliberate misuse of the organics program. These fines would not only result in less contamination reaching the compost pad, but also have the potential to be a source of revenue generation for the City.

WASTE DISPOSAL CARDS

The Mike Mitchell Recycling Depot and Compost Depot are open to utility-rate payers of St. Albert only. In the summer of 2019, the waste branch conducted ID checks at the recycling depot to determine the demographic of users.



The majority of visitors to the depot(s) are utility-rate payers. However, non-residents, non-rate payers (i.e., those who do not receive curbside collection), and contractor visits are not insignificant. Staff on site at the Compost Depot turn away contractors on a daily basis during the summer.

In addition to non-rate payers utilizing our depots, illegal dumping continues to be a problem. For example, in 2022, we had to pay to dispose of nearly 50 appliances containing freon that were dumped illegally at the recycling depot. The cost of illegal dumping and depot misuse is ultimately borne by the rate payers of St. Albert.

There is a revenue-generating opportunity to accept waste from these non-utility rate payers with a fee-for-disposal model. Some municipalities in the Edmonton Metropolitan Region distribute resident-ID cards, which allow residents to pay a smaller fee than non-residents and contractors to dispose of waste at their depots or transfer stations. These same municipalities accept contractor and non-resident waste for disposal with an associated fee.

Some municipalities, such as Edmonton, have weigh scales at the entrance to their Eco Stations, which allows them to charge a by weight. Other municipalities, such as Devon, visually inspect an incoming load and charge accordingly.

There are many considerations to make when implementing such a program, including the implications and implementation of the City's *Cash Handling Administrative Directive*, the funding model and charges per item, who is permitted to purchase a disposal card, and under what parameters the card can be used.

PROGRAM IMPLEMENTATION OPPORTUNITIES AND CHALLENGES

Funding Model	Opportunity	Challenges
Waste Disposal Card — Annual Flat Fee	• Waste minimization: improved City-wide waste diversion • Revenue generation: charging for disposal would enhance cost-recovery • Cost offset: could help mute the impact of increased volume of materials disposed and volatile market pricing	• Card misuse: a flat fee may not allow for 100% cost-recovery with respect to the City's disposal/recycling fees • Cash handling: who would be responsible for issuing and maintaining the cards • Enforcement: how would the card be attached to an address; who would be responsible for checking cards at the depots, additional staff may me required
Charge per item	• Waste minimization: improved City-wide waste diversion; more materials could be accepted for disposal (e.g., freon-containing appliances, mattresses) • Revenue generation: charging for disposal would enhance cost-recovery • Cost offset: could help mute the impact of increased volume of materials disposed and volatile market pricing	• Cash handling: who would be responsible for taking payment; additional training required, storage of payments on site • Fee setting: how would fees be determined and set (e.g., by item, by weight), how would fees be charged (e.g., cash, credit, to a utility account)

The implementation of such a program would constitute a service level change and will require input from Legal and Financial services, as well as potentially substantial overhead costs including purchasing and distributing disposal cards, implementing a payment system at the depots, etc.

Therefore any changes to our current levels of service at both depots require Council direction.

CONCLUSION

Waste management continues to evolve at a federal, provincial, and municipal level. The Waste & Diversion Operations team will continue to assess upcoming legislation changes and impacts to provide City of St. Albert residents the quality levels of service they have come to expect.

This past year was incredibly busy for the waste team, and we are looking forward to exploring and implementing new opportunities to improve waste reduction and diversion within the City.









