

# 2017 INTEGRATED WASTE MANAGEMENT REPORT



**Corporate Performance Department** Environmental & Corporate Initiatives Division

**Transportation and Utilities Department** Water & Waste Stream Division

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## INTRODUCTION

## What is Integrated Waste Management?

Integrated Waste Management (IWM) is a strategic approach to managing waste by combining waste handling and reduction strategies that include reducing, reusing, recycling, composting and disposal. An effective IWM system considers how to prevent, recover and manage waste in ways that protect human and environmental health. The goal of IWM is to maintain affordability, be convenient and maximize efficiency in the use of resources.

#### **City's Integrated Waste Management Services**

Integrated Waste Management falls within the Environmental Health and Utilities Business Lines. Management is provided by Water & Waste Stream Division and Environmental & Corporate Initiatives Division through the Waste Handling Service Line, the Waste Reduction & Resource Recovery Service Line and the Waste Services Utility Service Line.

In 2017, the core services that comprised the City of Saskatoon's Integrated Waste Management approach included:

Waste Diversion Services

- Recycling collections for single-family residential households (curbside collection);
- Recycling collections for multi-unit residential households;
- Recycling depots;
- Public space recycling;
- Recycling in civic facilities;
- Recycling opportunities at the Saskatoon Regional Waste Management Centre (Saskatoon Landfill);
- Yard & food waste collections (optional subscription based service) for singlefamily residential households;
- Yard waste depots and compost facility;
- Household hazardous waste drop-off days; and
- Christmas tree drop-off sites.

#### Waste Disposal Services

- Saskatoon Regional Waste Management Centre (Saskatoon Landfill);
- Garbage collections for single-family residential households (curbside collection); and

• Garbage collections for many multi-unit residential households and some commercial customers (other buildings and businesses contract to private haulers).

Education and Communications

- Webpage, social outreach, and Waste Wizard;
- Collection calendar and App (to be accessible on-line only for 2019 collections);
- Recycling Communications Campaigns and the 30-Day Waste Challenge;
- Rolling Education Unit and the Let's Roll Recycling Team;
- Newcomer recycling education workshops;
- Home composting education;
- Saskatoon Curbside Swap;
- Recycling education programs at Loraas Recycle and Cosmopolitan Industries;
- Recycling cart inspection and education blitzes; and
- Waste bylaw education and enforcement.

#### Waste Diversion Target

The City of Saskatoon (the City) has set a performance target to divert 70% of Saskatoon's waste from landfills by 2023, with a longer term vision of achieving Zero Waste (i.e. diverting 100% of waste from landfilling). This ambitious target and vision show a commitment by the City to establish new options for waste reduction, recycling, reusing and composting, as well as continuously improving our existing programs.

The performance target also links directly to the goal of Environmental Leadership as identified in the City's Strategic Plan 2013-2023. Priorities and strategies of this goal include:

- Eliminate the need for a new landfill by eliminating waste and/or diverting waste for reuse in other projects;
- Promote and facilitate city-wide composting and recycling to reduce the rate and volume of waste sent to the landfill; and
- Reduce greenhouse gas (GHG) emissions tied to City operations.

#### National Zero Waste Council

The National Zero Waste Council (NZWC) is a cross-sector leadership group that brings together governments, businesses and non-government organizations to advance waste prevention in Canada. The aim for the NZWC is to substantially reduce waste and the associated environmental and economic costs of waste management through product design and behaviour change. The City of Saskatoon became a member of NZWC in 2016. Saskatoon City Councillor, Mairin Loewen, sits on the Management Board of the NZWC.

## **Delivering Integrated Waste Management Services**

Waste management operations is provided by the Water & Waste Stream Division with the goal to provide efficient, effective, customer-oriented waste management services, including:

- Provision of garbage carts for curbside collections;
- Garbage collection services for single-family, multi-unit and commercial customers;
- Management of the Saskatoon Regional Waste Management Centre (Landfill);
- Operation of yard waste depots and the compost facility;
- Provision of carts, collections and customer service for Green Cart subscriptions;
- Collection of recyclable materials from recycling depots and civic facilities to Cosmopolitan Industries;
- Operation of the landfill gas collection system; and
- Education and enforcement of The Waste Bylaw (Bylaw No. 8310).



Photo 1. Compactor in Operation at Saskatoon Regional Waste Management Centre

The Water & Waste Stream Division had the following resources dedicated solely to waste management in 2017:

- Under the Environmental Operations Manager, there was an Operations Superintendent for Collections & Containers with 43 staff in the summer and 29 in the winter, and an Operations Superintendent for Landfill with 29 staff in the summer and 22 in the winter; and
- Under the Senior Project Management Engineer, there was an Operations Engineer, a Project Engineer, a Waste Diversion Supervisor, an Instrumentation Technician for Landfill Gas and two Environmental Protection Officers.

Waste Reduction and Resource Recovery efforts are led by Environmental & Corporate Initiatives and focus on reducing, reusing, recycling, recapturing resources and seeking operational efficiencies. Initiatives under this program include:

- Managing recycling contracts with Loraas Recycle for curbside collections and Cosmopolitan Industries Ltd. for multi-unit collections;
- Waste diversion programs and initiatives including Curbside Swap, public space recycling and household hazardous waste drop-off;
- Development of capital initiatives related to waste diversion, such as Recovery Park;
- Energy efficiency initiatives;
- Development and amendments to plans, policies and regulations in order to meet waste reduction targets;
- Monitoring and reporting on waste diversion/reduction, energy use and greenhouse gas emissions;
- Increasing awareness, generating excitement and educating residents on how and why to reduce and recycle waste; and
- Public engagement.

The Environmental & Corporate Initiatives Division had the following resources in 2017: a Director, an Education & Environmental Performance Manager with six staff, an Environmental Protection Manager with three staff, an Energy & Sustainability Engineering Manager with five staff, and a Corporate Initiatives section with three staff. In addition to Waste Reduction and Resource Recovery efforts, the Environmental & Corporate Initiatives Division has responsibilities within the following Service Lines: Environmental Programs, Water, Wastewater, Facilities Management, River Landing and Corporate Projects.

The Waste Services Utility is jointly managed:

- The Water & Waste Stream Division manages organics; and
- The Environmental & Corporate Initiatives Division manages recycling.

The work of both Divisions is directly supported by Business Administration, Corporate Revenue (especially for recycling programs) and Communications staff.

## Planning New Initiatives for Waste Diversion

To achieve the 70% waste diversion target with a long term vision of achieving zero waste landfilled, the City is actively involved in the following initiatives.

#### Waste Diversion Planning

A waste diversion planning process was started in 2016, with a waste characterization study, an assessment of current waste diversion and disposal programs, and a study of best practices. The results of the 2016 Waste Characterization Study were reported in the 2016 Integrated Waste Management Annual Report.

In 2017, a number of milestones were achieved including:

- The adoption of environmental, social and financial values to guide the planning and decision making process;
- The completion of the 'Waste Diversion Opportunities' report that provided the results of the 'Waste Characterization Study' and analysis of opportunities for waste diversion. The report outlined the next steps which included further development of Organics, ICI Waste, and Solid Waste as a Utility;
- A series of reports further outlined the research conducted to date and the approaches that would be taken in each area, including: the 'Organics Opportunities' report (August), the 'Waste Services Utility Design Options' report (August), the 'Industrial, Commercial and Institutional (ICI) Waste Diversion Opportunities' report (November) and 'Next Steps in City-Wide (Mandatory) Organics and Waste Utility Program Development' (November); and
- A communications and engagement strategy was developed for Waste Diversion for launch in early 2018.

Waste diversion planning for 2018 is focused on the following areas:

<u>Organics</u> – developing a mandatory organics collection program for curbside residential sector with the potential to be expanded to the multi-unit and ICI sectors.

<u>Waste Utility</u> – the development of a pay-as-you-throw (PAYT) model where curbside residents are charged for the amount of waste they dispose of, based either on cart size or frequency of collections (not weight). The process includes transferring some or all waste related costs from property taxes to utility bills, but only charging once for any given service.

<u>Curbside Residential Sector</u> – through the consultation with curbside residential customers, additional opportunities for waste diversion or disposal services will be assessed, including bulky items, depots and accessibility services.

<u>Multi-Unit Residential Sector</u> – engagement will start in May 2018 and focus on development of an organics program for multi-unit residential buildings. Other things that will be looked at include: current garbage collection services and how they are paid for, as well as bulky waste, depots and programs to encourage waste reduction and reuse.

<u>Industrial, Commercial and Institutional Sector</u> – engagement of this sector will start in the fall of 2018, and will look at approaches to encourage or require recycling and organics collections, such as bylaws, programs and material bans.

The milestones for the 2018 waste diversion planning activities include:

- September 2017 to April 2018: Research on the development of a city-wide organics program and variable-rate waste utility;
- February to April 2018: YXE Talks Trash: Curbside public engagement;
- June 2018: Report on changes to waste management in Saskatoon and engagement results;
- September 2018:
  - Report on multi-unit engagement results and recommendations;
  - Report on detailed design and timeline for curbside waste collection programs; and
  - Industrial, Commercial and Institutional sector engagement begins.
- November 2018:
  - o Report on curbside waste management fees; and
  - Report on Industrial, Commercial and Institutional sector engagement and recommendations.

#### Recovery Park

Recovery Park is a recycling depot and material transfer station that will be integrated with the Saskatoon Regional Waste Management Centre in order to provide new opportunities for residents and businesses to divert waste materials for reuse or recycling. Planning and preliminary design work is ongoing, with procurement of an Owner's Engineer scheduled to occur in the third quarter of 2018. The project is planned as a Design-Build with construction planned to begin in 2019. When completed and fully operational, the new facility will offer users a one-stop location for waste disposal and recovery. Features of Recovery Park will include:

- Existing landfill recovery Existing recovery operations currently offered at the Saskatoon Regional Waste Management Centre – including drop-off of mixed metals, used appliances, batteries, compressed gas cylinders, bicycles and used oil and antifreeze – will be relocated to Recovery Park;
- Waste transfer station Recovery Park will house a new customer service area for landfilled garbage. Only City garbage trucks and commercial account holders will continue to access the active face of the Saskatoon Regional Waste Management Centre;
- Household Hazardous Waste (HHW) Recovery Park will provide a permanent HHW drop-off area which will provide a significant service level improvement over the existing eight HHW events each year;
- Blue bin recycling Recovery Park will provide users with the opportunity to drop
  off recyclables currently accepted at the City's existing recycling depots;

- Yard waste drop-off Recovery Park will allocate space for yard waste drop-off with processing continuing at an external site (currently Highway 7). Space may also be allocated for a future organics processing facility;
- Provincial Product Stewardship programs The Province supports the recycling of electronics (e-waste), used oil and antifreeze, batteries, tires, and paint. These materials can be collected at Recovery Park;
- Construction & Demolition (C&D) waste Recovery Park will allocate space for residents and businesses who separate their C&D materials by type, to dispose of these materials for recycling at a lower disposal fee than regular landfill rates;
- Mattress and box spring recycling It is estimated the Saskatoon Regional Waste Management Centre receives over 17,000 mattresses and box springs each year, which consume airspace and can cause problems for landfill equipment. A collection location for mattresses and box springs is intended to be created at Recovery Park to enable recycling off-site; and
- Future material recycling There is room for growth in the number of materials collected for recycling at Recovery Park. Materials such as gently used furniture and clothing, rigid plastics and Styrofoam may be accepted in the future. The Administration is further exploring these opportunities.



Figure 1. Conceptual Layout of Recovery Park

#### Multi-Material Recycling Program

The Multi-Material Recycling Program (MMRP) is the waste paper and packaging stewardship program administered by Multi-Material Stewardship Western (MMSW). The program was launched on January 1, 2016 in response to provincial regulations.

Municipalities and regional waste authorities are now compensated for some portion of the cost of collection and processing of recyclables (\$11.75/unit). In 2017, the funds received by the City were used toward the Multi-Unit Residential Recycling Program, the Green Cart program, and the research and development of additional waste diversion programs.

# WASTE DIVERSION SERVICES

Photo 2. Compost Windrow Turner at West Compost Depot



#### Waste Diversion in Saskatoon

A variety of programs and initiatives including recycling, composting, hazardous waste collection, and reuse of gently-used items help to divert waste from regional landfills. Outreach and education supports these programs and raises awareness about the importance of waste reduction and diversion. Education programs include Saskatoon Curbside Swap, home composting education, the Rolling Education Unit, and school-based recycling education. The figure below shows the tonnes of recyclable materials diverted through each initiative (total of 27,900 tonnes) and how each initiative contributed to the diversion rate of 22.8% in 2017.



Figure 2. Tonnes of Materials Diverted in 2017

## Saskatoon's Waste Diversion Rate

The City's Waste Diversion Rate for 2017 was 22.8%, up from 21.8% in 2016. This performance indicator is trending in the right direction, but clearly far below the target of 70% that has been established for 2023.





The City currently calculates the waste diversion rate based on City-run diversion and disposal programs. It does not include reduction, reuse, recycling or disposal through non-City programs, such as beverage containers, e-waste or nearby landfills.

The total amount of waste managed by the City in 2017 was lower than in 2016. The annual quantities of garbage, recyclables and organics (yard and food waste) are shown in the figure below. Clean fill is not counted towards diversion as it is used in construction or as cover material at the Saskatoon Regional Waste Management Centre. The decline in the amount of waste managed does not necessarily indicate that Saskatoon residents and businesses are reducing their overall waste, as it could be due to increased use of other landfills.



Figure 4. Waste Quantities Managed by City of Saskatoon, 2009-2017

The City's waste diversion rate of 22.8% continues to place well below many other Canadian municipalities, as indicated in the following table. The average diversion rate among cities and regions participating in municipal benchmarking (listed below) is 43.7%.

City/Region	Diversion Rate
Metro Vancouver	63.0%*
York Region	61.5%
City of Halifax	56.2%
Niagara Region	55.9%
Region of Durham	52.8%
Region of Waterloo	52.6%
City of Toronto	52.1%
City of Edmonton	52.0%**
City of Hamilton	46.0%
City of London	44.7%
City of Sudbury	43.3%
City of Windsor	38.7%
City of Montreal	35.9%
City of Winnipeg	34.9%
City of Calgary	27.2%
City of Thunder Bay	25.9%
City of Saskatoon	22.8%
City of Regina	21.7%

Table 1. Diversion Rates of Other Canadian Cities and Regions

Source: 2016 MBNCanada Performance Measurement Report, Municipal Benchmarking Network Canada (<u>http://mbncanada.ca/app/uploads/2017/11/waste\_management\_2016.pdf</u>)

\*Source: Metro Vancouver Performance Dashboard

(http://www.metrovancouver.org/dashboards/services/solid-waste/Pages/Waste-diversion-rate.aspx) \*\*Source: City of Edmonton Citizen Dashboard (<u>https://dashboard.edmonton.ca/en/stat/goals/yujd-4pdd/etge-hz36/5q27-38s3/view</u>)

## Recycling

The City's residential recycling services are operated by Loraas Recycle and Cosmopolitan Industries, who are responsible for collection and processing of recyclables generated by residents.

#### **Recycling Markets**

In 2017, global recycling markets were greatly impacted when China's Ministry of Environmental Protection announced that the country would prohibit the importation of some grades of paper and plastic by the end of 2017. This combined with low oil prices has led to diminished market options for plastics, since using virgin materials is currently more cost-effective than sorting and processing recycled material. In addition, China's new standards on imported materials has had a significant impact on recycling programs internationally, resulting in fewer market options for paper and plastic and an overall demand for higher quality material. Recycling Collections for Single-family Residential Households (Curbside Collection) Loraas Recycle has been providing curbside recycling service to single-family households in Saskatoon since 2013. Each household (including secondary suites) in Saskatoon is provided with a blue cart that is collected from their curb every second week based on a published collection schedule. Households can also request a second cart for additional recyclables for a fee. In 2017, there were approximately 69,700 active carts in the single-family residential recycling program.

Photo 3. Residential Recycling Curbside Collection



In 2017, a total of 10,121 tonnes of material were collected through the curbside collection program; 8% of this was contamination (materials placed in the cart that are not recyclable) or residual (materials that are technically recyclable but could not be recovered typically because of their small size). The remaining 9,311 tonnes of recyclable materials were marketed to be recycled into new products, contributing 7.6% toward the City's waste diversion rate of 22.8%. This is down from 2016 when 9,767 tonnes were recycled.

#### Set-out Rate

The average set-out rate for the curbside collection program was 70.8%, which provides a snapshot of what occurs on each collection day. This does not indicate how many

people use their blue carts since many do not necessarily put them out each collection. The '2017 Waste Awareness & Behaviour Survey' indicates that 83% of households with individual blue carts claim to recycle all or most of their recyclable items.

Carts not being collected due to incorrect placement or overfilling continue to occur. In 2017, there were an average of 849 non-compliant carts per month. To put that into context, there were a total of 1,274,923 blue carts tipped in 2017, which means the non-compliance rate was under 1%. Other ongoing concerns are carts left out in back lanes for more than 24 hours and scavenging of high value materials (beverage containers and milk jugs). Back lane issues are addressed through communications such as the waste and recycling Collection Calendar and through warnings and tickets issued by the City's Environmental Protection Officers (EPOs).

#### Multi-Unit Residential Recycling Collection

The Multi-Unit Residential Recycling (MURR) program was launched on October 6, 2014 and was fully operational in 2015. Service is provided by Cosmopolitan Industries.

In 2017, a total of 2,354 tonnes of materials were collected through the multi-unit residential recycling program; 17% of this was contamination (materials placed in the bins that are not recyclable) or residual (materials that are technically recyclable but could not be recovered, usually because of their small size). The remaining 1,954 tonnes of recyclable materials were marketed to be recycled into new products, contributing 1.6% toward the City's waste diversion rate of 22.8%.

The '2017 Waste Awareness & Behaviour Survey' indicates that 69% of households with individual blue carts claim to recycle all or most of their recyclable items.

#### Recycling Program Customer Service

Resident inquiries regarding the curbside residential recycling program continue to be low at an average of 299 inquiries per month, although this figure is up from an average of 241 inquiries per month in 2016.

Inquiries for the MURR program increased slightly in 2017, with Cosmopolitan Industries receiving and responding to 743 customer service calls and emails throughout the year (or on average 62 inquiries per month as compared to 58 calls per month in 2016).

#### **Recycling Depots**

In 2017, 1,784 tonnes of material were collected at the depots contributing 1.5% to the City's diversion rate of 22.8%.

The four City-operated depots accept the same materials as the curbside collection and multi-unit recycling programs in a single stream with no sorting, as does all recycling at civic facilities. The bins at the depots remain the property of Cosmopolitan Industries (Cosmo); all materials are collected by the City and are processed at Cosmo's Material Recovery Facility.

City staff use front loader trucks to collect recyclables from the depots (stored in metal bins) and rear loader trucks to collect illegally dumped waste. Illegal dumping is often a problem since the depots are unstaffed, and as such employees from Water & Waste Stream spend a considerable amount of time servicing the sites.



Figure 5. Recycling Depot Quantities, 2009-2017

## **Charity Bins**

In 2017, 122 tonnes of material were collected at charity bins located at the four Cityoperated recycling depots contributing 0.1% toward the City's total diversion rate of 22.8%. In 2017, the charity bins at the City's recycling depots were provided by Community Living and Diabetes Canada.

## Public Space Recycling

3 tonnes of recyclables were collected through the City's Public Space Recycling programs in 2017. Collection bins installed in pedestrian-oriented commercial areas offer separation of paper and beverage containers (bottles and cans) from the regular garbage.

In 2017, the City continued to phase out the use of private vendor "Metrobins" in pedestrian-oriented public spaces. The City added 25 paper recycling baskets to waste bins with bottle and can recycling baskets as shown in Photo 4. Paper recycling baskets were installed in the Broadway (9), Downtown (11), Riversdale (8) and Sutherland (6) Business Improvement Districts (BIDs) in 2017.

Photo 4. Bottle Basket and Paper Recycling Container



The locations and number of paper recycling bins installed in each BID was done in consultation with the BIDs and the City's operations staff, to ensure the bins would be well utilized and easy to access by pedestrians and servicing staff. The City will continue to service the paper recycling bins and look for opportunities to expand the program to other public areas beyond Saskatoon's BIDs.

The self-serving model for bottle and can recycling continues to be successful and allows for expansion of bottle and can recycling beyond the City's core areas. The City utilized a grant from SARCAN to purchase bottle and can baskets for Leif Erickson, Pierre Radisson, Henry Kelsey and Henry Kelsey North Parks and will continue to expand the self-serving model to other parks and special use facilities in 2018.

The City continues to work as an inter-divisional team to ensure that recycling amenities are given the appropriate consideration during the early stages of any streetscape or public space design projects.

#### **Recycling in Civic Facilities**



Recycling opportunities are available in most civic facilities, with single-stream collection in place at 26 facilities in 2017 (including 4 seasonal sites). Recyclable materials from civic facilities are collected with material from the depots, so exact tonnages generated by civic facilities are not available. However, dedicated recycling runs of civic facilities were completed in March, June and November 2017 in order to benchmark program success. It is estimated that 14 tonnes of recyclables are diverted through civic facilities annually.

## **Organics Programs**

The City of Saskatoon's organic collection programs include Green Carts for yard and food waste, compost depots and Christmas tree drop-off sites.

#### Green Carts for Yard and Food Waste

The Green Cart program for yard and food waste is an optional fee-for-service program available to households with curbside cart collection. The City owns and maintains the green roll-out carts provided to program subscribers. In 2017, the number of subscribers to the Green Cart program reached an all-time high of 7,500 which equates to 11% of eligible households. In addition, 28 community gardens and 9 civic facilities subscribed to the program. All collected materials are taken to the West (Highway 7) compost depot for processing. The program is not available for multi-unit residential complexes or commercial customers. The subscription rate was \$55 per year with collections provided on a bi-weekly basis from May through October. In total, 14 collections were provided which equates to a cost to the resident of approximately \$4 per collection. The total amount of material diverted through the Green Cart program in 2017 was 2,418 tonnes, contributing 2% toward the City's waste diversion rate of 22.8%.

Photo 5. Green Cart for Yard and Food Waste



#### **Compost Depots**

In 2017, the City operated two compost locations for drop off of leaves, grass, non-elm tree and shrub branches, as well as garden waste that would otherwise end up in the landfill. The composting sites, located on Highway 7 (West depot) and on Highway 5 (East transfer station) are available to residents at no charge and to commercial haulers by permit (\$150 for the season). In 2017, 11,600 tonnes of material were diverted through the compost sites, contributing 9.5% toward the City's diversion rate of 22.8%.

The Highway 5 compost site serves as a transfer station and all materials are processed at the Highway 7 depot. At the end of the 2014 season the depot on McOrmond Drive closed permanently for development of Brighton neighbourhood in the area. The Highway 7 depot is also currently slated for future urban development, though is not anticipated to be required for another five years or more.

The two depots operate every season from mid-April to early November. In 2017, the West Depot was open 7 days a week and the East Depot was open 5 days a week (Thursday to Monday). Both depots were open on statutory holidays.

Photo 6. Logs for Grinding at Compost Depot



In 2017, 52,256 vehicle visits were made to the compost depots, represented by residential (84%), commercial (12%) and City of Saskatoon loads (4%). The graph below illustrates the number of visits made to the compost depots by these three sectors for the past 5 years.



Figure 6. Compost Depot Visitor Loads

For a nominal annual fee, businesses can also access the two depots. In 2017, around 147 commercial vehicle permits were issued to 88 companies at the cost of \$150 which provided unlimited access to the composting sites for the season. Commercial haulers brought in approximately 22% of the materials delivered to the depots.

#### Christmas Tree Drop-Off

Temporary drop-off sites are set-up from December 26 to January 31, to collect natural trees and keep them out of landfills. Trees dropped off at these locations are chipped and either taken to the City compost depot or used as mulch. On average, 5,000 to 6,000 trees are dropped off every year. In 2017, 52 tonnes of material were collected through this program.

## **Other Waste Diversion Programs**

#### Household Hazardous Waste (HHW) Collection

Household hazardous wastes are the discarded, unused or leftover portion of household products containing chemicals that can cause illness or death to people, plants and animals. These products are often labeled CAUTION, WARNING, CORROSIVE, EXPLOSIVE, FLAMMABLE, POISONOUS or TOXIC. Common household hazardous wastes include aerosols, cleaning solvents, oils, paints, pesticides and batteries. These and many other types of hazardous materials should not be put in garbage or recycling bins, dumped on the ground or poured down the drain. The City provides free drop-off events between April and November, for residents to safely discard of household hazardous waste. This program is for residential or household hazardous waste only; hazardous waste from businesses or other organizations will not be accepted.

In 2017, 102 tonnes of hazardous materials were collected from 2,954 participants, setting new benchmarks for both indicators. The overall cost of the program also continues to rise – primarily due to increasing participation in the program – with 2017 program expenses totaling just under \$237,000. The budget for the program in 2018 has been increased to \$220,000 to better match program demands.





Class 2 (compressed gas): aerosols, propane tanks, inhalers, fire extinguishers

Class 3 (flammable liquids): flammable liquids, paint and paint-related materials, adhesives, printing ink

Class 4 (flammable solids): flammable solids

Class 5 (oxidizers): oxidizing solids and liquids, organic peroxide

Class 6 (toxics): toxic liquids, pesticides, pharmaceuticals

Class 8 (corrosives): corrosive liquids and solids, mercury, ammonia solution

Batteries: alkaline, lead-acid, lithium

Non-regulated: oil, oil filters, oil containers, antifreeze, fertilizers, liquid cleaners, non-PCB light ballasts,

fluorescent tubes, CFL bulbs, ink cartridges, lighters, treated railway ties

Other/miscellaneous: PCB light ballasts, sharps, smoke detectors, e-waste, test samples (unknowns)

#### Figure 8. Annual Cost and Participation of the HHW Program





Photo 7. GFL Environmental staff at a Household Hazardous Waste Drop-off Event in 2017

Recycling Opportunities at the Saskatoon Regional Waste Management Centre The Saskatchewan Association for Resource Recovery Corporation (SARRC) manages the industry-led stewardship program at the Landfill's EcoCentre (one of nearly 200 collection facilities across Saskatchewan) for used engine oil, oil filters, oil containers and antifreeze. The City's EcoCentre accepts these materials (up to 500 litres of oil, 100 litres of antifreeze) at no charge to residents (costs are covered under the landfill operating budget). In 2017, the total quantity of used oil collected at the EcoCentre was 81,300 litres.

In total, 565 tonnes of recyclables – including mixed metals, propane tanks, batteries and white goods (appliances) – were captured at the Landfill in 2017, contributing 0.5% toward the City's diversion rate of 22.8%.

Photo 8. EcoCentre at the Saskatoon Regional Waste Management Centre



#### Environmental and GHG Implications

Waste diversion results in a net reduction in greenhouse gas (GHG) emissions compared to landfilling the same waste. This means the emission reductions associated with recycling materials exceed the emissions produced in collection and processing activities.

Diversion programs including recycling and composting reduced greenhouse gas emissions from the landfill by an estimated 48,000 tonnes of carbon dioxide equivalents (CO<sub>2</sub>e). This is equivalent to removing 10,300 cars from Saskatoon roadways.

# WASTE DISPOSAL SERVICES

Photo 9. Garbage disposal truck at the Saskatoon Regional Waste Management Centre



#### Saskatoon's Waste Disposal

The amount of garbage that is collected and disposed of is decreasing every year. In 2017:

- 153,850 tonnes of materials were accepted at the Saskatoon Regional Waste Management Centre;
- 94,800 tonnes of garbage were disposed of at the Saskatoon Regional Waste Management Centre from all sources, once recyclable materials and clean fill were removed; and
- Waste collections by the City accounted for 61,800 tonnes. (Note: single-family and multi-unit residential sources make up the majority of waste collected by City trucks; however, some commercial collections are combined with collections from multi-unit residential properties).





## Containers

#### Black Carts

The City of Saskatoon owns and maintains the black roll-out carts provided to streetoriented residential properties. In 2017:

- 69,700 black carts were managed in the field;
- 1185 new carts were delivered to new homes; and
- 650 carts were repaired and 4,281 were replaced.

Carts are replaced when they reach the end of their useful life.

## Multi-Unit Residential Containers

The City of Saskatoon does not provide garbage containers for multi-unit dwellings, but does offer a multi-unit dwelling waste bin grant to offset the costs borne by condominium associations and property managers for the purchase and maintenance of metal waste bins.

The grant provides \$8 per year per residential unit. In 2017, 66% of eligible properties (23,400 units out of 35,700) submitted an application and received the grant payment.





## **Garbage Collections**

Garbage Collections for Single-family Residential Households

Photo 10. Residential Garbage Collection



In 2017, garbage collection services were provided to approximately 69,700 singlefamily households; 52,000 tonnes of residential garbage were collected and there were 2.6 million individual black cart lifts (tips).

Scheduled garbage collection occurs from Monday to Friday, including stat holidays, except Christmas Day and New Year's Day. In 2017, weekly collections were provided from May to September, with the remainder of the year on a bi-weekly collection schedule. A post-Christmas collection was provided for all homes the week following Christmas.

#### Garbage Collection for Multi-unit Residential Properties

The City of Saskatoon provides one collection per week for each multi-unit residential property as part of regular service supported by property taxes. Approximately 78% of multi-unit residential properties take advantage of this by utilizing the City service; the remaining properties contract their garbage collections to private service providers. Additional levels of service may be contracted with the City or through a private waste management company.

A multi-unit residential property may have a black cart or a metal waste bin depending on the configuration of the site. There were approximately 670 multi-unit residential properties that were collected by the City in 2017.

#### Commercial Garbage Collection

Garbage collection is provided to commercial customers, including internal City of Saskatoon customers and residents who contract for additional carts and collections. In 2017, there were approximately 350 external commercial customers and 53 internal City of Saskatoon customers.

## Saskatoon Regional Waste Management Centre

The Saskatoon Regional Waste Management Centre (Landfill) has been in operation since 1955. It is a sophisticated facility that is designed and operated to maximize available space and ensure solid waste is managed in a safe and environmentally sound manner. The Saskatchewan Ministry of Environment currently regulates the operations of the facility under a *Permit to Operate a Waste Disposal Ground*.

Photo 11. Saskatoon Regional Waste Management Centre



In 2017, approximately 153,850 tonnes of material were accepted at the Saskatoon Regional Waste Management Centre. Of this total, approximately 94,800 tonnes required burial (garbage) and approximately 58,500 tonnes were used for construction purposes or landfill cover (clean fill). As shown in the figure below, City collection trucks were responsible for approximately 61,800 tonnes (65%) of the material landfilled.



#### Figure 11. City Collections Relative to Total Waste Landfilled

The Saskatoon Regional Waste Management Centre is open to the public every day of the year except for Christmas Day and New Year's Day. The site is a secure compound with fencing and security checks after-hours. Six transfer bins are located on site for public waste disposal. In addition, several public drop-off areas are provided for metals, white goods (major appliances), batteries, propane tanks, used oil, oil containers, used oil filters and used antifreeze.

In 2017, a new program was implemented to divert bicycles from the landfill. The City partnered with a local, non-profit organization to collect bicycles that had been delivered to the landfill and to re-use or refurbish them for use in the community. More than 550 bicycles were delivered to the landfill in 2017 and approximately 50% of these were successfully recovered for re-use.

#### Landfill Customers

The number of landfill visits decreased between 2016 (91,400) and 2017 (83,300). Some of the decline, particularly for commercial visitors, may be a result of competition from the Northern Landfill operated by Loraas Disposal, and more recently competition from Green Prairie Environmental (the new owner and operator of the former South Corman Park Landfill). The number of paying vehicles at the Saskatoon Regional Waste Management Centre also decreased between 2016 (74,700) and 2017 (71,750).



Figure 12. Number of Paying Vehicles at the Saskatoon Regional Waste Management Centre

The tonnes of garbage that are hauled to the Saskatoon Regional Waste Management Centre as a result of municipal garbage collections are tracked, but the costs of disposal are not incurred by the operating budget for collections. This is atypical compared to other municipalities. The amount of chargeable tonnes as a percentage of the total tonnes has been declining since 2011. This is a significant financial risk to the sustainability of landfill operations. Of the 153,850 tonnes of material brought to the Landfill in 2017, only 33,550 (22%) were chargeable tonnes. The non-chargeable or "free" tonnes included approximately 58,500 tonnes of clean fill and 61,800 tonnes from City collection vehicles.



Figure 13. Chargeable vs. Non-chargeable Tonnes Accepted at the Saskatoon Regional Waste Management Centre

Tipping fees at the Saskatoon Regional Waste Management Centre are \$105/tonne plus an entry fee of \$15 per vehicle. Loads weighing less than 150 kg are only charged the \$15 entry fee. According to nation-wide benchmarking based on 2016 data, the range of fees for tipping waste among 29 municipal landfills across Canada is \$40 to \$145 per tonne. Saskatoon's 2017 fee of \$105 per tonne falls within this range.





#### **Customer Service**

In 2017, approximately 19,300 waste-related calls and 3,600 emails were addressed by the City's Customer Service Representatives.

A breakdown of the categories are shown below. Requests for new or replacement garbage containers generated the highest number of calls, followed by general inquiries and garbage collection-related calls.





## Environmental and Greenhouse Gas Implications

A number of environmental protection measures are part of the regular operations of the landfill.

**Surface water management** ensures that any storm water that may have come in contact with garbage does not flow off-site. Storm water management infrastructure also helps minimize the creation of leachate (garbage juice) and protects roadways and other customer-serving assets of the site. Improvements to storm water infrastructure are integrated into the capital improvement plan for the site.

**Ground water monitoring** results are reviewed by an independent party each year to ensure the landfill is not impacting the environment beyond its site. In 2017, there were 65 monitoring locations analyzed (groundwater, surface water, and leachate), up from 43 monitoring locations in 2014.

**Fire prevention and suppression** is critical. Materials within the mound have the potential to burn for prolonged periods and to release toxins into the atmosphere. Landfill staff are trained in fire prevention and suppression and operate a water truck on-site to respond to incidents in a timely manner. A strong relationship with the Saskatoon Fire Department has also been developed as landfill fires pose a unique challenge.

**The Landfill Gas Collection and Power Generation Facility** operated full-time in 2017, extracting a total of approximately 200,426,000 standard cubic feet (scf) of landfill gas (LFG). Of this quantity, approximately 168,595,000 scf was utilized for electricity generation and 31,831,000 scf was destroyed within the facility's enclosed flare. The destruction of LFG in 2017 resulted in approximate greenhouse gas emissions

reductions of 52,423 tonnes carbon dioxide equivalents (CO<sub>2</sub>e) from the landfill. A total of 8,478 MWh of electricity was produced in 2017 as a result of power generation from landfill gas.

Detailed design work was started in 2017 on the next phase of LFG wellfield expansion, to be constructed in 2018. The expanded wellfield will include 11 new vertical LFG wells (for a total of 40 vertical LFG collection wells) and two horizontal LFG collectors installed in the current filling cell. The anticipated emissions reductions from operation of the expanded portion of the LFG wellfield are estimated at 41,000 tonnes CO<sub>2</sub>e per year, resulting in new annual emissions reduction of approximately 93,000 tonnes CO<sub>2</sub>e per year, or the equivalent of removing approximately 20,000 vehicles from our roadways.

Photo 12. Landfill Gas Collection and Power Generation Facility



**Greenhouse gas emissions reduction** efforts occur at two levels at the landfill. The production of landfill gases, which is primarily methane (a greenhouse gas 25 times more potent than carbon dioxide), is addressed through landfill gas management. As equipment is replaced, Tier IV emissions-compliant equipment is being selected to significantly reduce the impacts of fuel used for on-site transportation.

A separate GHG emissions reduction initiative located at the Landfill Gas Power Generation Facility is the Solar Power Demonstration Site. The site consists of four ground-mount arrays, with a total of 92 solar panels, and 30.66 kW generation capacity. Electricity generated by the solar panels will provide 40% of the electricity needed to run the Landfill Gas Power Generation Facility, such as cooling and exhaust fans, lights, computers, and other equipment needed to run the facility. This project is a collaboration between Saskatoon Light & Power, SES Solar Co-operative, Saskatchewan Polytechnic and the Saskatchewan Environmental Society.

## **EDUCATION AND ENGAGEMENT SERVICES**

Photo 13. Rolling Education Unit



#### 2017 Waste Awareness & Behaviour Survey

In 2017, the City conducted a quantitative study with its residents to understand waste collection-related behaviour. Respondents were asked questions aimed at assessing their awareness, knowledge and motivations as related to Saskatoon's recycling programs, in addition to satisfaction with the program. Further, they were asked additional questions about other waste collection programs offered and potential future waste program options. In total, 1,004 Saskatoon residents participated in the study online and by telephone between July 12 and August 15, 2017.

#### Recycling

A strong majority (80%) claim to recycle all or most of their recyclable items. Those with an individual blue cart are more likely to say they recycle a higher proportion of their recyclable items than those who use a communal metal bin. Of those who identify themselves as an owner or key decision maker within a local business, three quarters report their organization recycles most or all of their business's recyclable items.



Recycling knowledge holds generally steady with 2015, with knowledge seen as weakest for recycling of hard plastics, plastic grocery bags, Styrofoam, plastic toys and foil. More are aware of foil recycling than in 2015.

Satisfaction with the curbside and multi-unit dwelling recycling programs is generally high. Satisfaction is highest for program convenience, the amount of room in respondents' carts/bins and frequency of pick up. Education and being informed about what can and cannot be placed in the blue carts/bins are comparative areas of lower satisfaction. Improvement in satisfaction is noted in many areas this year.

Figure 17. Satisfaction with Recycling Programs

Satisfaction with the recycling services received among all users has risen since 2015, especially with respect to room in the cart/bin, frequency, knowing what can/cannot enter the system and educational materials (the latter two representing comparatively weaker areas of satisfaction). Satisfaction with Recycling Programs - Trended\* % Very Satisfied & Somewhat Satisfied 2015 ← 2017 93% 94% 93%▲ 90%▲ 84%▲ 93% 76% 76% 91% 88%▼ 86%▼ 79%▼ 72%▼ 71% Program convenience The amount of room Frequency of pick up Being informed about Response to your Educational and Overall quality of in your cart/bin what can and cannot phone calls or emails informational service received be put in the materials recycling cart/bin 13. How satisfied are you with the following aspects of the curbside recycling program? 14. How satisfied are you with the following aspects of the multi-unit recycling program? Base: All respondents excluding "not applicable", 2015: n=395 - 1,003, 2017: n=378 to 1,004. \*Note: Question 11 and 12 in 2015, select program areas omitted from question in 2017. City of Saskatoon insightrix® 26

#### Organics

Most residents (74%) continue to dispose of kitchen scraps in their garbage, although this proportion has decreased since 2015; one third are currently composting this waste. Over one half indicate they are composting their yard waste, while one third continue to put it in the garbage. Those with blue carts are more likely to compost food and yard waste than are those with communal metal bins.



Figure 18. Disposal of Organics

Saskatoon

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The majority continue to be supportive of a city-wide food and yard waste collection program (79%), with favourable opinions rising slightly since 2015. The 18 to 34 year-old age range tends to be more supportive.



Figure 19. Support and Opposition for City-wide Organics Collection Program

#### Utility

Just over one third (35%) of residents are supportive of having garbage collection costs charged on utility bills, similar to how the cost of recycling is charged now. The remaining 65% of respondents either oppose (48%) or are neutral (17%) to having garbage collection costs charged on utility bills.

Opinions are also somewhat divided with respect to whether or not residents should pay varying amounts based on the amount of garbage in their black cart. Those with larger amounts of garbage are less likely to be supportive of this idea.



29. Presently, garbage collection is funded through property taxes. Would you support or oppose having this cost charged on your utility bill, similar to how the cost for recycling is charged now? Base: All respondents, n=1,004.



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#### **Garbage Collections**

Opinions are divided with respect to the idea of implementing garbage collection every two weeks on a year-round basis. This may be due, in part, to the fact that during biweekly collection, four in ten say their black cart is either full or overflowing.



Figure 21. Support and Opposition for Garbage Collection Every Two Weeks Year-Round

divert yard and food waste from their black cart during the spring, summer and fall months.

#### Material Bans

Roughly seven in ten residents are supportive of banning recyclables from both residential and business garbage. Similar proportions of residents are in support of the City banning organics from residential and business garbage, provided that options for composting, such as a city-wide green cart program, are in place.

#### **Collection Calendar**

The majority of residents (70%) who receive service in an individual blue cart, support the discontinuation of distributing a printed version of the calendar, knowing it could save the City an estimated \$100,000 per year. There is strong opposition to ceasing distribution of the printed calendar among those without internet access (9% of respondents within this study). Note that at the time of the survey, no changes to waste

collection programs (such as an organics program or variable rate waste utility) were being discussed.

#### **Recycling Depots**

Over seven in ten residents never use the City of Saskatoon Recycling Depots. Lawson Heights and Lakewood depots are the most utilized by residents with almost one quarter dropping off waste at these locations at least once per year.

#### Public Space Recycling

Satisfaction with recycling options within City-owned facilities, commercial areas, City parks and along the Meewasin trail is moderately high, although many are unsure of what is actually available in these locations. Suggestions for improvement commonly include increasing the number of bins and providing easier access.

#### Webpage and Online Engagement

Information about the City's waste, recycling, compost and other waste diversion programs are available online through the City's website (Saskatoon.ca); Facebook, Twitter, and Instagram accounts (@cityofsaskatoon); and the Saskatoon Recycle and Waste app.

Visitors to the City's website (Saskatoon.ca) access up-to-date information on anything they need to know to manage their waste including:

- Collection schedules;
- Cart collections;
- Materials accepted in their blue, black and green carts;
- Search dates for the monthly household hazardous waste days and the annual Saskatoon Curbside Swap event;
- Landfill rates and hours; and
- Other tips on reducing or diverting waste.

In 2016, there were 310,535 visits to the Waste & Recycling webpages. The Collection Calendar was the most visited waste-related webpage with 123,786 hits. The Waste Wizard, introduced in 2016, continues to help residents figure out how to properly dispose of or recycle their waste materials. Residents simply type in any item and the tool tells them how to best manage it through a City or non-City program. To date, 42,176 materials were searched on the Waste Wizard with Styrofoam, plastic bags and batteries being the top three searched materials.

#### Figure 22. Waste Wizard Search Results

Waste Wizard	⑦ Need help?
A / Search Results / Light bulbs	
Light bulbs	
There is no curbside collection for this item.	
Household Hazardous Waste Days	
You can drop this item off at one of the City of Saskatoon's Household Hazardous Waste Days. For upcomir dates, times and location, visit our website.	ig event
Special Instructions	
The Saskatchewan Waste Reduction Council's recycling database lists drop off locations for many reusable recyclable items. For more information on how to dispose of this item, visit http://www.saskwastereduction.ca/recycle/db?location=Saskatoon&materials=Light+Bulbs&keywords=	e and
< Back	
List of Materials Powe	ered by ReCollect

The public can also find out about other local recycling opportunities through the Saskatchewan Waste Reduction Council's province-wide online database of information on where to recycle a variety of materials. The City of Saskatoon partners with the Council in promoting this online tool: <u>http://www.saskwastereduction.ca/</u>

#### 2017 Collection Calendar and App

Figure 23. Collection Schedule Look-up

Each single-family household received a personalized print calendar indicating the garbage (Black Cart), recycling (Blue Cart), curbside organics (Green Cart) and household hazardous waste event collection schedules. The calendar also included information on what items are accepted by each program, information on how to use carts to ensure successful collections, and customer service contact information. 71,100 calendars were distributed by mail in 2017, in 2018 there will be no print calendar mailed to households.

Collection Schedules and Reminders	⑦ Need help?
Please type your home address:	Rearch
Example: 222 - 3rd Avenue North, Saskatoon	Search
	Powered by ReColle

Residents can also:

- View their calendar online;
- Download a PDF calendar from the website;
- Sign up for collection reminders by e-mail, phone, or twitter;
- Add their schedule to their own online calendar; or
- Download a waste and recycling mobile app.

At the end of 2017, there were a total of 19,783 active collection reminder users via email, phone, twitter or the app. In addition, there have been a total of 55,459 address searches and 17,282 print downloads since the online reminder and calendar options have been available to residents.

In December 2017, the Saskatoon Recycle and Waste App was launched. It offers a personalized collection calendar, the waste wizard and information on drop off options. At the end of 2017, there were 359 Android and 693 iOS (Apple) active reminder users.

Figure 24. Recycle and Waste App



## **Education and Communications**

Recycling education and communications work to build awareness of, generate enthusiasm for, and ensure that participants have the information they need to confidently and correctly participate in the City's Curbside Recycling Programs.

#### 30-Day Waste Challenge

The 30-Day Waste Challenge took place in October 2017, with the purpose of raising awareness of the importance of waste diversion and reduction. Participants pledged to take the challenge and received a series of automated educational emails on the topics of recycling, composting, reduction and diversion. There were 772 participants that took the challenge and 5,443 visits to the campaign webpage. There was a campaign reach of 87,634 and a total of 1.64 million campaign impressions.

Figure 25. 30-Day Waste Challenge Communications



#### **Recycling Marketing Campaigns**

Two marketing campaigns were used to increase recycling awareness in 2017 '100% Recyclable' and 'Make Memories, Not Garbage' were promoted through social media, bill boards, the web-site, and media relations.

Figure 26. Advertising Material for the 2017 Marketing Campaign



The impact of the marketing campaigns:

- 3,653,012 billboard impressions from 40 billboards;
- 32,238 views of recycling web pages;
- Over 13,560 interactions with residents at community events; and
- 4,020 Trash Talk flyers, tattoos and T-shirts distributed.

#### Student Programs – Recycling Education Centres

Loraas Recycle provides recycling education for Saskatoon students in Grades 4 to 7.

2,678 elementary students visited the Education room at the Loraas facility in 2017, to learn how material is processed at the material recovery facility (MRF), to increase awareness on how and why to recycle, and to emphasize the importance of waste diversion and environmental stewardship.

<u>Cosmopolitan Industries</u> launched its Education Centre in 2017, providing information on the benefits of recycling including the opportunities that recycling provides in the community to adults with intellectual disabilities. Guided group tours were provided to 435 students (Grade 4/5) and adults, giving visitors a glimpse of Cosmo's various programs.

#### Curbside Recycling Cart Blitzes

In 2017, Loraas conducted cart blitzes in 5 neighbourhoods to reduce contamination rates in recycling carts. The chart below shows the active contamination rates for each neighbourhood over the course of the program. College Park improved most notably, as they had a net decrease of 21% in active contamination – the largest improvement among the five neighbourhoods. Dundonald, Lawson Heights and Silverspring all showed net improvements as well. Massey Place regressed slightly over the course of the program as they started out with an 8% contamination rate and ended with an 8.7% contamination rate.



Figure 27. Recycling Contamination Rates by Neighbourhood

#### Newcomer Workshops

Using recycling awareness as the subject for English as an Additional Language training, new Canadians were provided both language training and information about their recycling program during eight workshops with 170 students.

#### Multi-Unit Residential Recycling (MURR) Program Awareness

The City of Saskatoon and Cosmopolitan Industries worked together on education and communications specifically for the multi-unit recycling program to inform building owners and managers on how the program works and encouraging them to work with their tenants and condo residents. In 2017, door knockers were once again distributed to every household. Additionally, barbeques were held in conjunction with the Rolling Education Unit, and Cosmo continued to provide outreach to building managers.

Figure 28. Door Hanger Distributed to Multi-unit Residences



The impact of the education program in 2017 included:

- 48,341 door hangers placed in buildings;
- 143 building managers participated in presentations and meetings; and
- 755 residents participated in Multi-Unit Residential Recycling barbeques.

#### Rolling Education Unit and the Let's Roll Recycling Team

In 2017, the Saskatchewan Waste Reduction Council (SWRC) coordinated with the City of Saskatoon to provide Waste and Recycling education to Saskatoon through the City's mobile education trailer, the Rolling Education Unit (REU). Four students were hired for 16 weeks to be the Let's Roll Team.



Photo 14. Rolling Education Unit in Action!

The Let's Roll Recycling Team attended 51 events in 2017, where they encouraged children and adults to learn about waste management through interactive activities. Citizens were engaged at events using the "Spin and Sort" and "Yep, Nope" sorting game. The team kept track of interactions with the public. They estimate that they made contact with a total of 13,560 people over the summer.

#### Home Composting Education

The City provides composting education through a partnership with the Saskatchewan Waste Reduction Council (SWRC). The SWRC has been running composting education programs since 1993 and in partnership with the City since 1995. In partnership with SWRC, the City offers a number of composting programs and services:

- \$20 rebates on compost bins;
- Free home visits for residents seeking one-on-one composting support;
- 'What's your Composting Style?' quiz;
- Educational materials; and
- Composting workshop and presentations.

New Master Composters are trained each year and in turn engage the community through volunteer work such as outreach and education at events, presentations, workshops and home visits. Compost education, research and incentives provided in 2017 in partnership with the SWRC included:

- 7 new volunteers were trained;
- 71 compost coaches were on the list as of December 31, 2017;
- 35 compost coaches volunteered their time in some capacity;
- Compost coaches attended 10 community events and facilitated 22 workshops;
- 49 compost bin rebates of \$20;
- 44 home visits; and
- 108 compost inquiries answered.

#### Green Cart Program Education and Marketing

In 2017, the number of Green Cart subscribers reached an all-time high of 7,500. Promotional efforts focused on encouraging additional subscribers using on-line and social media. The Green Cart program is also promoted through a number of other Cityled education efforts, including the Rolling Education Unit and the 'Healthy Yards' program.

The impact of the program's education and marketing program in 2017 included:

- 71,182 households through the Waste and Recycling Collection calendar;
- 3 Renewal mailings to 2016 subscribers (4,954 email/803 mail);
- 1 email to 2017 subscribers regarding the free compost initiative (7,086 email); and
- Recollect 4 campaigns went to all Recollect subscribers with information about the green cart program.

#### Dig-Your-Own Compost Pilot Program

In the fall of 2017, the Dig-Your-Own compost pilot program was established to make finished compost and mulch available to residents at no-charge. Interested residents were able to visit the West (Highway 7) compost depot during regular hours and access up to 1 cubic yard of compost from the public self-loading area. During the seven weeks the program ran, a total of 1,950 residents participated in the program and obtained more than 1,200 cubic yards of materials from the compost depot.

The Dig-Your-Own compost pilot program significantly reduced costs associated with staffing and cash handling requirements of a public compost sale, while still providing residents with the opportunity to benefit from the community compost inventory. The removal of finished materials also helped provide additional space to accept new materials in 2018.

#### Saskatoon Curbside Swap

The purpose of the Saskatoon Curbside Swap is to encourage residents to pass on reusable household items, to raise awareness on the importance of reuse, build a sense of community and reduce the number of items ending up in the landfill. The City provides information and guidelines on its website to help plan a Curbside Swap, and provides customizable materials such as a poster or postcard to help promote an event.

In 2017, the City-wide Curbside Swap was held on September 9. There were 8,509 visits for the Saskatoon Curbside Swap webpage on the City's website. Participation of the City-wide event was evident by:

- Approximately 50 homes visited by the City of Saskatoon;
- 206 distinct listings for September 9/17 on the new online maps; and
- Total reach of advertising/social content was 271,818.

#### Waste Bylaw Enforcement

The role of waste bylaw enforcement is to provide education and enforcement to ensure garbage and recycling are managed by the community in a way that is safe for people and the environment.

The City's Environmental Protection Officers (EPOs) focus on issues in the community related to The Waste Bylaw 8310. In addition to enforcing the Waste Bylaw, EPOs are also responsible for responding to hydraulic spills, illegal dumping and waste and recycling container complaints, as well as conducting bylaw related education initiatives for the general public.

The Waste Bylaw specifies that carts must be removed from the public right-of-way within 24 hours of collection, to reduce the potential for illegal dumping, theft, damage, scavenging, misuse, unsightliness, and congestion for residents and collection trucks. In 2017, EPOs conducted neighbourhood cart blitzes in neighbourhoods that had not been inspected in prior years, to educate and enforce this requirement.

Neighbourhood cart blitzes consist of three phases including initial inspections and an education letter to non-compliant homeowners; a follow up inspection and warning letter; and ultimately a final inspection with a Notice of Violation including a \$100 ticket. Neighbourhood inspections, although resource intensive, show a significant decline in the number of carts that remain in the public right-of-way.

In 2017, a total of 1,705 education and warning notices were delivered and 29 tickets were issued. The results of the three neighbourhood inspections conducted in Eastview, Queen Elizabeth and Avalon are shown below.



