



**City of Kingston
Information Report to Council
Report Number 15-227**

To: Mayor and Members of Council
From: Jim Keech, President and CEO, Utilities Kingston
Resource Staff: John Giles, Manager, Solid Waste
Date of Meeting: April 21, 2015
Subject: Waste Recycling Strategy Update

Executive Summary:

In 2010 Council approved the “Waste Recycling Strategy 2010-2013”, a document that created a multi-year plan to increase the capture rate of recyclable materials and to increase the overall waste diversion rate. In 2014 the Strategy was reformatted into a rolling three-year plan.

The Waste Recycling Strategy is a promotion and education planning tool recommended by Waste Diversion Ontario, the completion of which contributes to our Blue Box Best Practice rating and subsequent funding through an annual datacall. It only addresses recycling and not other materials in the solid waste stream or their respective service levels, and is a separate initiative from the waste diversion survey being undertaken.

The Waste Recycling Strategy 2014-2016 included objectives focused on: increasing the capture rate of recyclable materials; improving data collection and systems; increasing resident awareness; and investigating the potential of optimizing Kingston’s material recovery facility into a regional facility.

This information report provides a summary of the accomplishments in 2014, as well as an outline of goals and initiatives for 2015.

Recommendation:

This report is provided for information only.

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Authorizing Signatures:

ORIGINAL SIGNED BY PRESIDENT & CEO, UTILITIES KINGSTON

**Jim Keech, President and CEO,
Utilities Kingston**

ORIGINAL SIGNED BY CHIEF ADMINISTRATIVE OFFICER

Gerard Hunt, Chief Administrative Officer

Consultation with the following Commissioners:

Cynthia Beach, Corporate & Strategic Initiatives	Not required
Lanie Hurdle, Community Services	Not required
Denis Leger, Transportation, Facilities & Emergency Services	Not required
Desiree Kennedy, Chief Financial Officer & City Treasurer	Not required

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Options/Discussion:

In 2010 Council approved the “Waste Recycling Strategy 2010-2013”, a document that created a multi-year plan to increase the capture rate of recyclable materials and to increase the overall waste diversion rate. In 2014 the Strategy was reformatted into a rolling three-year plan. Exhibit A is the Waste Recycling Strategy for 2015-2017.

The 2014-2016 Strategy included objectives focused on: increasing the capture rate of recyclable materials; improving data collection and systems; increasing resident awareness; and investigating the potential of optimizing Kingston’s material recovery facility into a regional facility.

This information report provides an update on the accomplishments in 2014, as well as an outline of goals and initiatives for 2015.

A waste audit of 100 homes (10 homes in 10 neighbourhoods) was conducted over two weeks identifying the weight of recyclable material set out in recycling and garbage streams in order to establish capture rates. Capture rate is the weight of material in the recycling stream as a percentage of the total material set out in both streams.

Summary of 2014 Goals and Initiatives:

- To increase the capture rate of film plastic from 29% in 2013 to 37% using a promotion and education campaign targeting specific materials.
 - Actual was 36%, not quite achieving the goal but a good increase.
 - Statistics from the online advertisements on The Weather Network’s website, mobile site, and smartphone application were very positive.
- To increase the capture rate of aluminum from 66% in 2013 to 75% using a promotion and education campaign targeting specific materials.
 - Actual was 63%, not achieving the goal.
 - The campaign was unsuccessful in increasing the capture of aluminum. This could be attributed to two “outlier” neighbourhoods of the ten in the audit that together accounted for 39% of the aluminum set out in the garbage stream.
- To increase the capture rate of recyclables from 80% in 2013.
 - Actual was 79%, not achieving the goal, but above the 2011 rate of 75%.
- To increase the diversion rate of waste from landfill from 54% in 2012.
 - Actual was 56% for 2013, the last available data from Waste Diversion Ontario.
- To update the multi-residential building database and promotional materials, and benchmark the associated capture and contamination rates.
 - These were completed which has laid the groundwork for the development of a promotion and education plan to increase the capture rates for multi-residential buildings in 2015.
 - Created a 12 page “Apartment and Condominium Waste Sorting Guide”.

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- To investigate the potential for Kingston to become a regional Material Recovery Facility.
 - A study is currently underway to assess municipal interest and associated tonnage that might potentially be available for processing, which includes a technical plan comparing various tonnage scenarios in both single stream and dual stream processing configurations.
- To investigate the option of including empty aerosol containers and paint cans in the recycling program.
 - The Household Hazardous Waste program is structured and funded to handle these items. The audit found no paint cans in the garbage or recycling streams indicating that residents are aware of proper disposal methods.
 - Ontario Regulation 347 under the *Environmental Protection Act* designates that aerosols should be managed through hazardous waste programs.
 - It was determined that these items are best handled through the Household Hazardous Waste program.

2015 Goals and Initiatives:

- To increase the capture rate of aluminum from 63% to 70%
- To increase the capture rate of #2 HDPE plastic bottles & jugs from 74% to 80%
- To increase the capture rate of mixed fine paper from 67% to 75%
- To increase tonnage of recyclables collected from multi-residential buildings by 5%
- To reduce the residue from the material recovery facility to less than 5%
- To examine the potential market for recycling large durable plastics
- To examine the potential for increasing our public education and promotion resources
- To implement recommendations in 2015 resulting from the regional Material Recovery Facility study

Existing Policy/By Law:

Not applicable.

Notice Provisions:

Not applicable.

Accessibility Considerations:

This report is available in accessible formats upon request.

Financial Considerations:

Not Applicable.

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Exhibits Attached:

Exhibit A: Waste Recycling Strategy 2015-2017

EXHIBIT A

Waste Recycling Strategy 2015-2017

April 14, 2015



If you require this information in an accessible format call 613-546-0000 or contactus@cityofkingston.ca

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1. Introduction

In 2010, Kingston city council approved the *Waste Recycling Strategy 2010-2013*. This was followed by subsequent staff updates on the strategy (*Waste Recycling Strategy 2010-2013 Volume II & III*). In 2014, the waste recycling strategy was reformatted as a rolling three-year plan (*Waste Recycling Strategy 2014-2016*) to better mirror the City of Kingston's operational and budget planning processes. This document, entitled *Waste Recycling Strategy 2015-2017* will follow the same rolling three-year format as the previous year's strategy.

The purpose of the strategy is to increase the capture rate of recyclables and increase the overall waste diversion rate for the City of Kingston. Contained within the strategy are goals and objectives focused on increasing the capture rate of specific recyclable materials as well as increasing the overall amount of material captured in the recycling program. Updates on these goals and objectives can be found in section 3 of the document.

Six specific initiatives were outlined in the strategy for implementation during 2014. Updates on these initiatives and their effectiveness can be found in section 4 of this document.

Finally, included in this document are updated goals, objectives and initiatives for 2015 (sections 5 & 6) to help increase the capture rate of recyclables and the overall waste diversion rate in Kingston. Strategies and objectives that were outlined in the original *Waste Recycling Strategy 2014-2016* have been updated based on recycling data from 2014.

2. Current situation

Table 1 (on pages 4-5) illustrates the results of a residential waste audit conducted for the City of Kingston by 2cg Consulting in October 2014. Similar audits have been conducted annually since 2010 and data collected from these audits was used for planning the previous waste recycling strategies. The data represents the weight in recyclable material placed at the curb, in either the recycling or garbage streams, for one hundred homes in Kingston (ten homes in ten different neighbourhoods) over a two-week period.

The capture rates in table 1 represent the percentage of recyclables that Kingston is collecting through the recycling program as a percentage of the total recyclables available in the recycling and garbage streams combined, based on kilograms generated per household per year.

Capture rate = $\text{weight of recyclable material in recycling stream} / (\text{weight of recyclable material in the recycling stream} + \text{weight of recyclables in the garbage stream}) \times 100$

Table 1: Kingston recycling capture rates for 2014

Recyclable material	Total material in recycling stream (kg/household/year)	Total material in garbage stream (kg/household/year)	Capture rate (%)
Newspaper	51.64	3.98	93
Corrugated cardboard	20.43	1.84	92
Boxboard & molded pulp	19.48	5.04	79
Mixed fine paper (office paper, magazines & catalogues)	20.51	10.44	67
Polycoat (gable top & aseptic containers) & paper cups	4.64	3.26	59
Film plastic	4.02	7.09	36
Total grey box recyclables	120.72	31.65	79
# 1 PET (clear plastic bottles & jars)	8.62	1.08	89
Steel	6.07	1.28	83
# 2 HDPE (coloured plastic bottles & jugs)	4.07	1.47	74
# 4 LDPE & # 5 PP (tubs & lids)	2.38	0.91	72
# 1 PET (clear plastic containers)	2.92	1.47	67
Aluminum	3.48	2.07	63
# 6 PS rigid (plastic containers)	1.71	1.11	61
# 2- # 7 plastics (rigid plastics)	0.71	0.90	44
# 6 PS expanded (Styrofoam)	1.31	1.74	43
Total blue box recyclables	31.27	12.03	72

Table 1 continued			
Recyclable material	Total material in recycling stream (kg/household/year)	Total material in garbage stream (kg/household/year)	Capture rate (%)
LCBO beverage glass bottles	6.33	0.70	90
Other glass food bottles & jars	11.07	1.46	88
Total glass recyclables	17.4	2.16	89
Total recyclables capture rate			79

For a full comparison of capture rates from the 2010 through 2014, please refer to Appendix A on pages 18-19.

3. 2014 Objectives update

The *Waste Recycling Strategy 2014-2016* outlined six specific objectives for the year 2014, which are detailed below in table 2:

Table 2: 2014 Objectives
1. To increase the capture rate of film plastic captured through the single-family recycling program to 37%.
2. To increase the capture rate of aluminum captured through the single-family recycling program to 75%.
3. To transfer existing information from multi-residential building database to new database program and acquire updated building information.
4. To gather data and establish benchmarking for the capture and contamination rates of recycling in the multi-residential program.
5. To develop a dedicated promotion and education plan for increasing the capture rate of recyclables for multi-residential buildings for execution in 2015.
6. To examine the potential for adding additional staff resources equivalent to a two-thirds full-time employee in 2015 as part of budget planning.

Objectives # 1 and # 2, which were to increase the capture rates of film plastic and aluminum captured through the single-family recycling program, were not achieved. The objective for film plastic was to an increase in capture rate to 37 per cent from 29 per cent; a capture rate of 36 per cent was achieved for 2014, which represents a noticeable increase in capture. As for aluminum, the objective was to increase the capture rate from 66 per cent to 75 per cent; a capture rate of 63 per cent was achieved for 2014, which represents a decrease in overall capture rate from 2013.

To achieve Objectives # 1 and # 2, the Solid Waste Division undertook a communications campaign targeted at the two items in an effort to educate residents on the importance of recycling these items. As the objectives were not achieved it cannot be rationalized that the communications campaign was a success, however, other factors likely contributed to the results. A more thorough examination of the communications campaign can be found in Section 4.

Objectives # 3 and # 4 were achieved as staff transferred existing information on the City of Kingston's multi-residential recycling program to a new database program and conducted in June and November benchmarking and measurement activities focused on the capture and contamination rates for the apartment recycling program.

The completion of Objectives # 3 and # 4 has laid the ground work for the achievement of Objective # 5. By completing the migration of data to the new multi-residential recycling database, as well as gathering crucial program measurables, a specific strategy for improving the multi-residential recycling program in 2015 has been formulated. The initiatives contained within this strategy will be discussed in Section 6 of this document.

Objective # 6, to examine the potential to add additional staff resources, was completed as part of the 2015 budgeting exercise. It was decided to forego this objective in an effort to keep tax increases down.

In addition to the six specific objectives detailed above, four community and corporate objectives were established in the *Waste Recycling Strategy 2014-2016*. These objectives are longer-term objectives which guide the overall direction of the waste recycling strategy. The table on the following page lists the objectives, followed by brief details on the progress experienced in 2014 for each objective:

Table 3: Community and Corporate Objectives 2014-2016

1. To increase the capture rate of recyclable material that is being placed in the garbage.
2. To increase the diversion of waste from landfill.
3. To increase resident knowledge of recyclable items through dedicated promotion and education.
4. To investigate the potential optimization of Kingston's Material Recovery Facility (MRF) as a regional facility.

For Objective # 1 the overall capture rate for recyclable material in 2014 was 79 per cent, down from 80 per cent in 2013. While this is a small decrease, 79 per cent still represents an increase from 73 per cent capture rate recorded in 2010.

Objective # 2 is to increase waste diversion from landfill. Kingston's 2014 waste diversion rate, as determined by the Waste Diversion Ontario (WDO) Datacall program, will not be available until late 2015. However, 2013's waste diversion rate has been confirmed as 56 per cent, an increase from 2012's waste diversion rate of 54 per cent. While the City of Kingston's recycling program plays a role in the calculation of waste diversion, other diversion programs such as green bin composting, hazardous waste, the alcohol container deposit return program (bottles and containers returned to The Beer Store), grasscycling, backyard composting and the leaf and yard waste program are also factors in calculating the City's waste diversion rate. Specifically comparing the year's 2012 and 2013, the City experienced a decrease in recycling (134 tonnes), but an increase in composting (1,148 tonnes) and decrease in garbage sent to landfill (356 tonnes) which contributed to the 2 per cent increase in the waste diversion rate. A detailed breakdown of these components and how they combine to create the City's waste diversion rate can be found in Appendix B on page 20.

Objective # 3 was achieved as promotion and education efforts were conducted throughout the year to increase Kingston residents' knowledge of recyclable items, including a dedicated campaign targeted at film plastic and aluminum, which were two recyclable items that were experiencing less than average capture rates. Objective # 3 represents an open-ended objective as there is a constant need to share information with residents on the recycling program.

Work to achieve Objective # 4 continued through late 2013 and early 2014. In December 2013, Kingston city council approved *Report No. 14-025 Regional Material Recovery Facility (MRF) Study*, which authorized the City of Kingston to enter into an agreement with Waste Diversion Ontario and Stewardship Ontario for a grant of 50 per cent of the cost, up to \$ 75,000, to conduct a study on the feasibility of locating a regional material recovery facility (recycling centre) in Kingston. A request for proposals was issued for an engineering firm to conduct the

study, and in *Report No. 14-236*, Kingston city council approved the awarding of the RFP to HDR Corporation. Since the RFP was awarded, solid waste division staff and HDR staff have worked co-operatively on the study.

4. 2014 Strategies and Initiatives Update

Below is an update for the six initiatives listed in the *Waste Recycling Strategy 2014-2016*:

Initiative #1: Promotion and education campaign targeted at specific recyclable materials

Throughout the months of July and August, a promotion and education campaign was executed targeting film plastic and aluminum. These items were chosen as a focus of the campaign as they were relatively low in capture rate compared to other recyclable items. Messaging for film plastic focused on informing residents that film plastics belong in the grey box, not the blue box, which is often a point of resident confusion. Messaging for aluminum focused on the fact that aluminum cans are the most valuable recyclable item in terms of revenue, and that recycling aluminum provides significant energy savings versus the creation of virgin aluminum.

Mediums used to communicate the above messages include newspaper and radio advertisements, information on the City of Kingston website, the Kingston Waste smartphone app and online collection calendar, posts on the City's Twitter and Facebook accounts, and online advertising on Facebook and The Weather Network website and mobile application.

Effectiveness: Film plastic saw an increase in capture rate from 29 per cent to 36 per cent, falling just short of the objective capture rate of 37 per cent. Aluminum saw a decrease in capture rate from 66 per cent to 63 per cent, falling well short of the 75 per cent objective capture rate. A contributing factor to the decrease capture rate for aluminum can be attributed to specific sample areas in the waste audit that placed an inordinate amount of aluminum in their garbage during the audit period. One neighbourhood experienced a six times increase in aluminum placed in the garbage as compared to the previous year, with a second neighbourhood experiencing a four times increase in aluminum placed in the garbage as compared to the previous year. Overall these two neighbourhoods contributed to 39 per cent (3.1 kilograms) of the aluminum placed in garbage out of the entire 10 audit neighbourhoods (8 kilograms).

Although the objective capture rates were not achieved, statistics from the online advertisements were positive. Advertising run on The Weather Network website, mobile site and smartphone application received 300,000 views with a total of 854 residents clicking on the advertisement to find more information about recycling on the City website. This converts to a

click-through rate of 0.3 per cent; the average online advertisement experiences a click-through rate of 0.1 per cent.

Initiative #2: Transfer data from existing multi-residential building recycling database to new database.

Throughout the summer of 2014 staff transferred information from an existing Microsoft Access database, as well as adding new building information from various sources, to a software program designed specifically for apartment waste programs. The new software was obtained in 2012 through a partnership with Waste Diversion Ontario's Continuous Improvement Fund, and until 2014 was used exclusively for tracking the City's apartment green bin program. The new database contains information on all multi-residential buildings in the City of Kingston, whether or not the building participates in city waste programs. In addition to program details, the database contains contact information for buildings (owners and property managers), the number of recycling carts or green bins that the building uses (including serial numbers) and a log of field visits conduct by city staff.

Effectiveness: Through the merging of multiple sources of program data on the City's multi-residential recycling program into one database, information is now more readily available to staff and allows for improved customer service. The easy-to-use data entry and search capabilities of the database reduces staff time spent searching or updating program information. Staff is also being encouraged to add information whenever possible to the database to ensure that knowledge can be easily shared with colleagues.

Initiative #3: Gather data and establish benchmarks for multi-residential recycling program.

Over a two-week period in June solid waste staff conducted a survey of the majority of buildings participating in the City of Kingston's multi-residential recycling program. As part of the survey staff recorded the number of recycling carts set out for collection, the fullness of the carts and any contamination that was found. The purpose of this survey was to establish a benchmark for the volume of recycling generated by buildings. Similar surveys will be conducted in the future and can be used to determine the success of various initiatives at increasing the tonnage and capture rate of the multi-residential recycling program. Information gathered on contamination was used in the creation of updated multi-residential recycling promotion material (see Initiative # 4 for more details).

In both June and November, waste audits were conducted on recyclables collected through the City's multi-residential recycling program. For the audits staff examined incoming loads at the recycling centre and removed any contamination that was present in the load. Staff then sorted

the contamination into various categories and weighed material. This information was then used in the creation of updated program promotion material, as well as establishing benchmarks for contamination.

Effectiveness: The recycling cart survey determined that the average weight of recycling generated per year per unit in multi-residential buildings in Kingston is 140 kilograms. This included a range of weights per building, from under 30 kilograms per unit per year on the low-end to over 350 kilograms per unit per year on the high-end. This information also informs staff which buildings are underperforming and could be candidates for increased promotion and education.

The contamination waste audits determined that the largest contaminates in the fibres/papers stream in the multi-residential recycling program included: household garbage at 29 per cent, recyclable plastic containers at 13 per cent and plastic bottles at 13 per cent. The largest contaminates in the containers stream in the apartment recycling program included: recyclable paper at 18 per cent, non-recyclable plastic at 16 per cent and recyclable glass at 13 per cent.

The above information will be used as an established benchmark with which to measure the effectiveness of future promotion and education initiatives.

Initiative #4: Update and re-print multi-residential recycling program promotion materials.

In the final quarter of 2014, solid waste staff, working alongside staff in the strategic communications department, created the 12-page *Apartment and Condominium Waste Sorting Guide*. Modelled on the *Waste Sorting Guide* for single-family homes, the apartment and condominium guide provides information on waste diversion programs specifically for multi-residential buildings, including recycling, green bin, hazardous and electronic waste, and garbage. 10,000 guides were ordered in December, with a planned distribution to apartment and condominium buildings throughout 2015.

Using the data gathered through Initiative # 3, staff will work to create updated wall posters and recycling carts labels in 2015.

Effectiveness: The effectiveness of the new promotional materials will be best measured after they have been distributed to a significant number of buildings. Comparing benchmark data gathered in Initiative # 3 with data to be collected in 2015 will allow for refinement of the promotion materials, if required.

Initiative # 5: Examine current staff workloads with respect to program implementation

Solid waste division management, along with management from the public works and engineering departments, examined the potential for adding one full-time employee during the 2015 budgeting process. It was decided to withdraw this expense prior to submitting the draft budget in order to minimize the impact on tax increases. Current staff workloads are manageable without the additional full-time employee, however an additional full-time employee would have allowed for increased focus on waste diversion programs and with that a possible increase in recycling capture and waste diversion rates.

Effectiveness: Not applicable

Initiative # 6: Examine expanding recycling program to include empty aerosol containers and empty paint cans.

The consultant conducting the annual residential waste audit in 2014 included a category for empty aerosol containers and empty paint cans. This was done to determine if residents were disposing of these items improperly in the garbage. Data from the audit showed that no paint cans were placed in the garbage or recycling, while only 2.66 kilograms of aerosol containers were placed in the garbage and 0.14 kilograms placed in the Blue Box. This data would indicate that residents are aware of the manner in which these items can be properly disposed of, via the City's household hazardous waste program.

Information was also received from city staff at a waste-industry meeting that empty aerosol containers should not be collected through blue boxes program as per Ontario Regulation 347 (*the Environmental Protection Act*) which designates that these materials should be collected through hazardous waste programs. Insurance issues could arise from the collection of empty aerosol containers if a recycling facility does not have measures to mitigate possible explosion of the containers during the baling process.

Effectiveness: As a result of the above information, it was determined that at this point it would not be worthwhile to add empty paint cans and empty aerosol containers to Kingston's blue box program as it appears residents are using the current disposal programs for these materials and not disposing of them improperly.

5. 2015 Goals and Objectives

Table 4 on the following page lists specific goals and objectives for the next three year period (2015-2017) covered by the waste recycling strategy. Some of the objectives for 2015 and 2016 that were

listed in the previous *Waste Recycling Strategy 2014-2016* remain or have been modified; in some cases entirely new objectives have been created based on changes to departmental needs or updated data.

Table 4: 2015-2017 Objectives
2015 Objectives
1. To increase the capture rate of aluminum captured through the single-family recycling program from 63 per cent to 70 per cent.
2. To increase the capture rate of # 2 HDPE plastic bottles and jugs captured through the single-family recycling program from 74 per cent to 80 per cent.
3. To increase the capture rate of mixed fine paper (e.g. office paper, magazines, and junk mail) captured through the single-family recycling program from 67 per cent to 75 per cent.
4. To execute a dedicated promotion and outreach plan to increase the tonnage of recyclables collected from multi-residential buildings by 5 per cent.
5. To reduce the amount of residue (i.e. garbage) processed in the Kingston Area Recycling Centre's Material Recovery Facility from 7 per cent to below 5 per cent.
6. To examine the potential for increasing our public education and promotion resources which may impact staffing levels in 2016.
7. To implement the recommended actions for 2015 of the completed regional MRF study.
2016 Objectives
1. To increase the capture rate of low performing, high-value recyclables captured through the single-family recycling program as determined by the 2015 residential waste audit.
2. To execute a dedicated promotion and education plan to increase the capture rate of recyclables in the multi-residential recycling program by 5 per cent.
3. To implement the recommended actions for 2016 of the completed regional MRF study.
2017 Objectives
1. To increase the capture rate of low performing, high-value recyclables captured through the single-family recycling program as determined by the 2016 residential waste audit.
2. To implement the recommended actions for 2017 of the completed regional MRF study.

The Community and Corporate Objectives for 2015-2017 remain the same as those established in the *Waste Recycling Strategy 2014-2016* and can be found on page 7 of this document.

6. 2015 Strategies and Initiatives

Staff reviewed a number of options when considering initiatives for inclusion in the *Waste Recycling Strategy 2015-2017*. When staff considered the initiatives, several questions were asked, including:

- Will the initiative increase the capture rate of recyclable material?
- Is the initiative an industry-recognized best practice?
- Is the initiative cost-effective?
- Will the initiative be accepted & understood by the public?
- Can the initiative be easily implemented with existing programs?

Taking into a balance all of the above questions, the seven initiatives below were determined to be have the greatest potential impact on the goals and objectives of the waste recycling strategy:

Initiative # 1: Dedicated promotion and education plan for low-capture, high-value recyclables.

Overview: Promotion and education campaigns for 2015 will focus on aluminum cans, # 2 HDPE plastic bottles and jugs (commonly laundry detergent, shampoo bottles, and soap bottles) and mixed fine paper (commonly office paper, magazines, and junk mail). Data from the 2014 residential waste audit showed these recyclables experienced less than optimal capture rates. Additionally these recyclables are higher revenue generators than most recyclables, therefore making them appropriate candidates for dedicated promotion and education campaigns. Each campaign will use a variety of methods to inform the public of the importance of capturing these recyclables in the blue and grey box programs.

Implementation: Promotion and education efforts will take place throughout the months of June, July, August, and November 2015.

Cost: \$ 12,500 as part of the waste recycling strategy promotion and education budget.

Monitoring: Results from the annual curbside waste audit, conducted each fall, will be analyzed to determine if the objective capture rate for the targeted recyclables has been achieved.

Initiative # 2: Promotion plan dedicated to improving recycling habits in the multi-residential recycling program.

Overview: Using data collected on the multi-residential recycling program as part *Waste Recycling Strategy 2014-2016* initiatives, staff has developed a multi-component plan to increase the amount of recyclables captured in multi-residential buildings. Aspects of this plan include the distribution of a 12-page *Apartment and Condominium Waste Sorting Guide*, the re-design and distribution of recycling cart labels and signage to match the waste sorting guide, the creation of instruction specific labels for recycling carts (i.e. no glass in containers cart, unbag plastic and metal containers, etc.) and the creation of new information tags to be used by collection staff when recycling carts are not collected due to contamination or other problems. Additionally, staff will order 10,000 in-unit recycling bags that residents will use to collect recyclables in their apartments and transport them to the common recycling carts for their building. These bags will be distributed to buildings alongside updated recycling information for residents. This distribution will also allow staff to continue to build contacts with staff in specific multi-residential buildings.

Implementation: The in-unit bags will be ordered in the second quarter of 2015, with distribution to happen throughout 2015. New cart labels and signage will also be designed and ordered in the first quarter of 2015 for distribution through the year. The 12-page waste sorting guide was ordered in late 2014 and is available for distribution.

Cost: \$ 10,000 has been budgeted in the 2015 capital budget for the purchase of the in-unit recycling bags with carts labels and signage costs being covered by the annual operating budget.

Monitoring: Staff will compare recycling tonnages generated from the multi-residential recycling collection truck between August-December 2015 with tonnages from the same time period in previous years to determine if the dedicated promotion plan has increased the tonnage of recyclable material collected.

Initiative # 3: Improvements to Material Recovery Facility (MRF).

Overview: Physical improvements can be made to reduce the amount of recyclable material lost as part of the residue (i.e. garbage) stream in the MRF. These improvements include the installation of a chute to remove recyclable glass more easily from the blue box sorting line. At curbside recyclable glass is sorted into an area of the recycling truck separate from plastic and metal containers and processed in a separate area at the MRF; it is not processed on the blue box sorting line. When recyclable glass does end up on the blue box sorting line, staff will attempt to remove the glass by hand into storage boxes in the sorting room, however this is

inefficient and results in much recyclable glass ending up in the garbage. The installation of a chute on the sorting line will allow sorting line staff to more efficiently remove recyclable glass from the line and reduce the amount of glass going into the garbage.

Additional improvements will also be examined that will allow for easier storage and transportation of cross-mixed material (i.e. grey box material on the blue box sorting line and vice versa) to its proper sorting line. Under the current system sorting line staff attempts to retrieve by hand as much cross-mixed material from the line, but they are restricted to the amount they can remove due to space limitations; as a result, some cross-mixed material that could be recycled ends up in the garbage.

Implementation: The installation of the glass chute is scheduled for the first quarter of 2015, with other improvements to be examined and implemented thereafter, if feasible.

Cost: Less than \$ 1,000 for the purchase of materials for the creation of the chute from the 2015 operating budget. Recycling centre staff is fabricating the chute at a cost of only staff time.

Monitoring: An audit of the garbage stream on the blue box line will take place to see if more glass is being diverted from the garbage as a result of the chute. An audit conducted in 2014 showed that 30 per cent of the residue from the blue box line was recyclable glass.

Initiative # 4: Examine the potential market for recycling large, durable plastics.

Overview: For plastics, the City of Kingston currently accepts only rigid plastic food & beverage containers and rigid plastic packaging (i.e. blister packaging). Large, durable plastics such as laundry baskets, storage containers or lawn furniture are considered garbage. Staff has learned that certain Ontario municipalities have begun accepting these large, durable plastic items for recycling via depot programs and that some companies are willing to purchase this type of plastic. As a result of this new information, City staff will examine the potential to run a pilot program for the recycling of large, durable plastics via a drop off program at Kingston Area Recycling Centre (KARC). Staff will assess the market for the purchase of these materials as well as examine how a drop off program may be integrated into the current set up of KARC's public recycling depot and Material Recovery Facility.

Implementation: Staff will conduct research of the recycling market and assess the infrastructure required for a drop-off program in the first half of 2015, with a goal to implement a drop-off program, if feasible, in the second half of 2015.

Cost: Staff time only.

Monitoring: If a pilot program is feasible, staff will track tonnages of material collected and revenue generated from the sale of material to determine if the program is worth implementing permanently.

Initiative # 5: Development of formal information sharing groups with recycling collection staff.

Overview: In order to improve information sharing between the recycling collectors (both City staff and contracted staff) and solid waste administration staff, quarterly meetings will be established in which each group can share information related to changes in the recycling program. As these groups work out of different locations and at different times, it is often difficult to share information with respect to the City's recycling program. These meetings will provide an opportunity for collection staff to share information from an operational perspective and will give administrative staff an opportunity to provide update-to-date program information.

Implementation: Meetings will be set quarterly throughout 2015.

Cost: Staff time only.

Monitoring: The effectiveness of the meetings will be evaluated at the end of 2015 and reported in the *Waste Recycling Strategy 2016-2018*.

Initiative # 6: Examine current staff workloads with respect to program implementation.

Overview: Carrying over from *Waste Recycling Strategy 2014-2016*, as the Solid Waste Division looks to improve both single-family and multi-residential waste diversion programs it may be necessary to channel additional resources to aid in the maintenance of current programs as well as the implementation of new programs.

Implementation: During 2016 budget planning, staff will review the potential for increasing our public education and promotion budget.

Cost: Staff time only.

Monitoring: The results of the budget planning will be reported in the *Waste Recycling Strategy 2016-2018* document.

7. Conclusion

For the *Waste Recycling Strategy 2015-2017*, the corporate and community goals of increasing the capture rate of recyclable material and increasing the overall waste diversion rate remain the main drivers behind the strategy.

Specific objectives for the year 2015 have been refined and established, with a focus on increasing the capture-rate of low-capture, high-value recyclable items, increasing the tonnage of recycling captured from the multi-residential recycling program, and reducing the amount of residue processed at the Material Recovery Facility (MRF).

Through activities completed as part of the *Waste Recycling Strategy 2014-2016*, baseline data was established with respect to the City's multi-residential recycling program. Using this data staff will implement a program plan aimed at increasing the amount of recyclable material captured through the program. Promotion and education plans will be executed, aimed at increasing the capture rates for aluminum cans, # 2 HDPE plastic bottles and jugs, and mixed fine paper. Other initiatives include upgrades to the MRF, examining the potential for increasing the types of plastics recycled in Kingston and the feasibility of adding public education and promotion resources to improve program service levels.

The *Waste Recycling Strategy 2015-2017* is a living-document, based on a continuously rolling 3-year window, and as such, monitoring and reporting on the initiatives contained within is crucial. The evaluation tools that will be used to measure the success of these initiatives include conducting curbside residential waste audits, examining tonnage reports and data gathered from staff field visits, and monitoring inquiries to the City's customer service centre.

Through the planning and execution of multiple waste recycling strategies, the solid waste division is committing itself to a process of continuous improvement in order to fulfill our role as stewards to the environment. With Kingston city council setting a new goal of 60 per cent waste diversion by 2018, a continued focus on maintaining, improving and creating new waste diversion programs for residents of Kingston has become, and will continue to be, a major factor in the creation of the waste recycling strategy.

Appendix A: Kingston residential recycling capture rates 2010 - 2014

Grey Box Recyclables					
Recyclable material	2010 capture rate (%)	2011 capture rate (%)	2012 capture rate (%)	2013 capture rate (%)	2014 capture rate (%)
Newspaper	93	90	95	95	93
Corrugated cardboard	91	85	95	94	92
Boxboard & molded pulp	64	67	72	72	79
Mixed fine paper (office paper, magazines & catalogues)	61	71	78	76	67
Polycoat (gable top & aseptic containers) & paper cups	59	54	61	68	59
Film plastic	17	25	33	29	36
Blue Box Recyclables					
Recyclable material	2010 capture rate (%)	2011 capture rate (%)	2012 capture rate (%)	2013 capture rate (%)	2014 capture rate (%)
# 1 PET (clear plastic bottles & jars)	65	73	84	81	89
Steel	75	66	72	71	83
# 2 HDPE (coloured plastic bottles & jugs)	50	68	86	79	74
# 4 LDPE & # 5 PP (tubs & lids)	47	60	69	72	72
# 1 PET (clear plastic containers)	N/A	63	72	66	67
Aluminum	69	73	82	66	63
# 6 PS rigid (plastic containers)	23	36	59	52	61
# 2- # 7 plastics (rigid recyclable plastics)	N/A	51	52	62	44
# 6 PS expanded (Styrofoam)	33	35	64	41	43

Glass Recyclables

Recyclable material	2010 capture rate (%)	2011 capture rate (%)	2012 capture rate (%)	2013 capture rate (%)	2014 capture rate (%)
LCBO glass beverage bottles	63	65	49	93	90
Other glass food bottles & jars	77	80	90	87	88
Total recyclables capture rate	73	75	82	80	79

Appendix B: Waste Diversion Rate Components 2010-2013

Year	Recycling (tonnes)	Organics-food scraps and yard waste (tonnes)	Diversion rate (%)	Garbage (tonnes)
2010	8,922	11,215	55	19,231
2011	9,749	7,826	52	19,674
2012	10,166	7,766	54	18,374
2013	10,032	8,914	56	18,108