



**City of Kingston
Information Report to Council
Report Number 16-124**

To:	Mayor and Members of Council
From:	Jim Keech, President & CEO, Utilities Kingston
Resource Staff:	Heather Roberts, Manager, Solid Waste Operations
Date of Meeting:	April 5, 2016
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.

It is a recycling specific plan used to measure the effectiveness of the initiatives undertaken the previous year and to formulate goals for the following year. It does not address other materials in the solid waste stream or their respective service levels.

The 2015-2017 Strategy included objectives focused on: increasing the capture rate of recyclable materials; increasing the diversion of waste from landfill; execute a dedicated promotion plan for multi-residential buildings; reduce residue at the Material Recovery Facility; examine the potential for increasing division promotion and education staff resources; and implement the recommendations from the 2015 Regional Material Recovery Facility (rMRF) study.

This information report provides a summary of the accomplishments in 2015, as well as an outline of goals and initiatives for 2016.

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 Members of the Corporate Management Team:

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 2016-2018.

The 2015-2017 Strategy included objectives focused on: increasing the capture rate of recyclable materials; increasing the diversion of waste from landfill; execute a dedicated promotion plan for multi-residential buildings; reduce residue at the Material Recovery Facility; examine the potential for increasing division promotion and education staff resources; and implement the recommendations from the 2015 Regional Material Recovery Facility (rMRF) study.

This information report provides an update on the accomplishments in 2015, as well as an outline of goals and initiatives for 2016.

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 the 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 2015 Goals and Initiatives:

- To increase the capture rate of aluminum from 63 per cent in 2014 to 70 per cent using a promotion and education campaign targeting aluminum.
 - Actual was 62 per cent, below the 63 per cent baseline of 2014.
- To increase the capture rate of HDPE plastic bottles from 74 per cent in 2014 to 80 per cent using a promotion and education campaign targeting HDPE plastic bottles.
 - Actual was 75 per cent, not achieving the goal, but slightly above the 2014 baseline.
 - Staff launched a pilot program known as the waste diversion kit to target HDPE plastic bottles. The kit was provided to 125 households in four separate neighbourhoods. The kit included small blue and grey boxes for gathering waste inside the home, a recycling container that could be attached to a bathroom garbage can and information stickers and pamphlets.
- To increase the capture rate of mixed fine paper from 67 per cent to 75 per cent using a promotion and education campaign targeting mixed fine paper.
 - Actual was 72 per cent, not achieving the goal, but higher than the 2014 baseline.
- Improving recycling habits in multi-residential recycling program.
 - 10,000 in-unit recycling bags were purchased for roll-out of the bags in 2016.

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- Redesign and purchase of new information and promotional tools. Specifically the recycling cart labels were redesign and distributed to multi-residential buildings.
- Improvements to the Material Recovery Facility.
 - Modification to the blue box sorting line at the MRF to decrease the amount of recyclable glass that was ending up in the residue (garbage). A chute was built to allow sorters to manually remove glass from the conveyor belt. This led to a decrease of residue from glass.
 - Modifications to the recycling drop-off depot at KARC. The depot bins were retrofitted with lids, with small holes or slots to prevent customers from leaving large, non-recyclable items in the bins or dumping bags of garbage. This has led to a decrease of garbage from the depot.
 - Recommendations from the 2015 Regional Material Recovery Facility (rMRF) report were not undertaken. Staff concluded in their report to City Council that no action be taken until the implications of the proposed waste legislation are understood.
- Examine the potential for recycling large, durable plastics.
 - Large durable plastics would include lawn furniture, laundry baskets, plastic toys, etc. Staff envisioned collecting these durable plastics via a steel bin at KARC.
 - Staff contacted various companies and brokers that purchase the City's recycled plastic food and beverage containers to determine if they would be interested, or if they had a market for large durable plastics. These companies indicated that they would be interested in only purchasing #2 HDPE and #5 polypropylene durable plastics. The limited types of acceptable durable plastics would make it difficult for staff to enforce the public drop-off bin, as such, it was decided not to proceed with a large durable plastics program at this time.
 - Many of the other companies that previously indicated their desire to collect durable plastics are not in business anymore and do not accept these items.
- Increase division promotion and education resources.
 - Staff workloads and the potential for adding one full-time employee during the 2016 budget process were examined. However, it was decided that this expense be withdrawn before budget submission.

2016 Goals and Initiatives:

- To increase the capture rate of aluminum from 62 per cent to 67 per cent;
- To increase the capture rate of #2 HDPE from 75 per cent to 80 per cent;
- To collect an average of 0.25 pounds of batteries per household via a curbside battery collection event held in the fall of 2016;
- To implement a small to medium household scrap metal drop-off depot at the KARC by the Spring of 2016, and to collect 5,000 kilograms of scrap metal by the end of 2016;
- To reduce customer service requests related to recycling collection by City forces in 2016 by 5 per cent (as compared to 2015 data) through improved communication and training;

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- To distribute 6,000 in-unit recycling bags and information packages to multi-residential buildings by the end of 2016; and
- To determine baseline levels for multi-residential recycling program contamination rates by conducting pre and post outreach waste audits at a select number of sampling buildings in 2016.

Existing Policy/By Law:

Not applicable.

Notice Provisions:

Not applicable.

Accessibility Considerations:

Not applicable.

Financial Considerations:

Not applicable.

Contacts:

Heather Roberts, Manager, Solid Waste Division, 613-546-4291 ext. 2701

Other City of Kingston Staff Consulted:

Derek Ochej, Public Education & Promotion Coordinator, 613-546-4291, Extension 2703

Jason Hollett, Supervisor, Solid Waste Disposal, 613-546-4291, Extension 2702

Exhibits Attached:

Exhibit A: Waste Recycling Strategy 2016-2018

Waste Recycling Strategy 2016-2018



February 12, 2016

If you require this information in an accessible format call 613-546-0000 or e-mail
ContactUs@CityofKingston.ca

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1. Introduction

In 2010, the City of Kingston solid waste division began producing annual multi-year waste recycling strategies, beginning with the *Waste Recycling Strategy 2010-2013*. Subsequent annual updates on the strategy followed in 2011, 2012, and 2013. In 2014, the document evolved into a rolling three-year plan to better match the City's operational and budget planning processes, producing the *Waste Recycling Strategy 2014-2016* and *Waste Recycling Strategy 2015-2017*, continuing in the same manner with the current document, *Waste Recycling Strategy 2016-2018*.

The purpose of the strategy remains the same as past years: to increase the capture rate of recyclables and increase the overall waste diversion rate for the City of Kingston. Contained within this strategy are goals and objectives focused on achieving an increase capture of recyclables and an increase in overall waste diversion. The goals and objectives from 2015 can be found in section 3 of the document.

Seven specific initiatives were outlined in the strategy for implementation during 2015. Updates on these initiatives, and their effectiveness, can be found in section 4 of this document.

Lastly, in this document are updated goals, objectives and initiatives for the year 2016-2018 (sections 5 & 6) to help increase the capture rate of recyclables and the overall waste diversion rate in Kingston. These strategies and objectives build upon those in the *Waste Recycling Strategy 2015-2017*, updated with the aid of data gathered throughout 2015.

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 2015. 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 100 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 = weight of recyclable material in recycling stream / (weight of recyclable material in the recycling stream + weight of recyclables in the garbage stream) X 100

Table 1: Kingston recycling capture rates for 2015			
Recyclable material	Total material in recycling stream (kg/household/year)	Total material in garbage stream (kg/household/year)	Capture rate (%)
Corrugated cardboard	20.83	1.07	95
Newspaper	51.98	6.35	89
Boxboard & molded pulp	19.19	6.42	75
Mixed fine paper (office paper, magazines & catalogues)	27.51	10.87	72
Polycoat (gable top & aseptic containers) & paper cups	3.96	2.56	61
Film plastic	3.43	8.38	29
Total grey box recyclables	126.9	35.65	78
# 1 PET (clear plastic bottles & jars)	7.37	1.21	86
Steel	5.84	1.26	82
# 2 HDPE (coloured plastic bottles & jugs)	3.86	1.29	75
# 4 LDPE & # 5 PP (tubs & lids)	3.56	1.87	66
# 1 PET (clear plastic containers)	2.53	1.29	66
Aluminum	3.39	2.09	62
# 6 PS rigid (plastic containers)	0.87	0.87	50
# 2- # 7 plastics (rigid plastics)	1.05	1.25	46
# 6 PS expanded (Styrofoam)	0.92	1.24	42
Total blue box recyclables	29.39	12.37	70

Table 1 continued			
Recyclable material	Total material in recycling stream (kg/household/year)	Total material in garbage stream (kg/household/year)	Capture rate (%)
Other glass food bottles & jars	12.64	1.33	91
LCBO beverage glass bottles	2.91	0.66	82
Total glass recyclables	15.55	1.99	89
Total recyclables capture rate	171.84	50.01	78

For a full comparison of capture rates from the 2010 through 2015, please refer to Appendix A on pages 18-19.

3. 2015 objectives update

The *Waste Recycling Strategy 2015-2017* outlined seven specific objectives for the year 2015, which are detailed below in table 2 below:

Table 2: 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 (MRF) from 7 per cent to below 5 per cent.
6. To examine the potential for increasing division public education and promotion resources, which may impact staffing levels in 2016.

Table 2 continued
7. To implement the recommend actions for 2015 for the complete regional MRF study.

Objectives # 1, # 2, and # 3, which were to increase the capture rates of aluminum, # 2 HDPE bottles and jugs, and mixed fine paper captured through the single-family recycling program, were not achieved. Aluminum achieved a capture rate of 62 per cent, below the 70 per cent objective. # 2 HDPE bottles and jugs achieved a capture rate of 75 per cent, below the 80 per cent capture rate objective. Mixed fine paper achieved a capture rate of 72 per cent, below the 75 per cent capture rate objective.

To achieve Objectives # 1, # 2, and # 3, a promotion campaign targeted at # 2 HDPE bottles and jugs was executed, as well as the launch of a pilot program known as the waste diversion kit. A more thorough examination of these campaigns can be found in Section 4.

Objectives # 4, # 6 and # 7 were all influenced by factors outside of the control of City staff, which has led them to be deferred or altered. More information on these objectives can also be found in Section 4.

Work to complete Objective # 5 was undertaken, with some modifications made to the Material Recovery Facility (MRF) to achieve the goal of reducing the amount of recyclable material disposed of as residue.

In addition to the seven specific objectives detailed above, four community and corporate objectives were established in the *Waste Recycling Strategy 2015-2017*. These objectives are longer-term objectives which guide the overall direction of the waste recycling strategy. The table below lists the objectives, followed by brief details on the progress experienced in 2015 for each objective:

Table 3: Community and Corporate Objectives 2015-2017
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 2015 was 78 per cent, down from 79 per cent in 2014. While this is a small decrease, a 78 per cent capture rate still

represents an increase from 73 per cent capture rate recorded in 2010. The changing nature of packaging in North America, with a shift away from heavier, denser packaging (i.e. paper and glass) to lighter-weight packaging (i.e. plastic), does have an impact on capture rates. While a larger volume of recyclables may be collected and processed, it may not be reflected in capture rate calculations, which are based on weight.

Objective # 2 is to increase waste diversion from landfill. Kingston's 2015 waste diversion rate, as determined by the Waste Diversion Ontario (WDO) Datacall program, will not be available until late 2016. However, 2014's waste diversion rate is estimated at 64 per cent, an increase from 2013's waste diversion rate of 56 per cent. While the City of Kingston's recycling program plays a role in the calculation of waste diversion, the major contributor to the eight percentage point increase in the diversion rate was the composting of yard waste. 2014 saw an increase in the amount yard waste composted in Kingston, from 5,209 tonnes to 11,713 tonnes. Two factors contributed to this increase: first, an ice storm that occurred in late December 2013 resulted in significant damage to local trees, resulting in an increase in brush dropped off by residents at the Kingston Area Recycling Centre in early 2014. Second, the contractor responsible for processing yard waste cleared out a large stockpile of yard waste that was stored on site. Yard waste is only counted as diverted waste once it is shipped to the processing facility to undergo the composting process. Appendix B on page 20 provides a detailed breakdown of the different factors contributing to the calculation of Kingston's waste diversion rate. As a result of this influx of yard waste, staff anticipates Kingston's 2015 waste diversion rate will contract to the high 50s.

In the spring of 2015, Kingston City Council established a new waste diversion goal of 60 per cent by 2018, with a long term goal of 65 per cent. This new goal is a key component of the waste recycling strategy moving forward.

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 # 2 HDPE plastic bottles and jugs, and the launching of the new waste diversion kit program (more detailed information can be found on page 9). Objective # 3 represents an open-ended objective as there is a constant need to inform residents about the recycling program.

As part of efforts to continuously inform residents on Kingston's recycling program, the fall of 2015 saw the launch of a new campaign for the solid waste division, the #WasteNotYGK campaign. The multi-year initiative will see the tagline of #WasteNotYGK incorporated into

promotional material for all solid waste programs, with a large emphasis on social media interaction with residents.

For Objective # 4, the consultant hired to complete the study on the potential for regionalization of Kingston's MRF provided their final report and recommendations. The report concluded the preferred option for MRF optimization would be the construction of a dual-stream facility capable of processing 25,000 tonnes of recyclables per year. This option was preferred by the consultant as it has a lower capital and operating cost and higher revenue projection than other options.

While the report identified the preferred option for optimization, City staff concluded in their report, approved by Kingston City Council, that no action be taken on the report due to the introduction of the Waste Free Ontario Act by the provincial government. The proposed legislation contains clauses that may make the producers of recyclable waste 100 per cent responsible for their costs, which would drastically change the current recycling system in the province. City staff continues to monitor the proposed legislation and will be providing an update to City Council in spring 2016 on how the legislation may impact the MRF optimization study results.

4. 2015 strategies and initiatives update

Below is an update for the seven initiatives listed in the *Waste Recycling Strategy 2015-2017*:

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

In summer 2015, a promotion and education plan was launched targeting recyclable materials generated in household bathrooms. In partnership with Stewardship Ontario, the 'just because its empty doesn't mean its garbage' campaign targeted # 2 HDPE plastic bottles and jugs, along with other plastic containers and paper recyclables often generated in the bathroom. The plan utilized digital advertising (Facebook, the Weather Network website and app, and the Kingston Waste smartphone app), newspaper advertising, social media posts, website updates, and displays at both the Kingston Area Recycling Centre, and special events throughout the City.

In addition to the traditional promotional approach outlined above, staff executed a pilot program known as the waste diversion kit. For this program, 125 households in four separate areas of the Kingston were offered a chance to receive specific items to help them recycle more. Included in the kit were small blue and grey recycling boxes for gathering waste inside the home, a recycling container that could be attached to a bathroom garbage can, and information stickers and pamphlets. The goal of the program was to increase participation in

waste diversion programs, including recycling, and reduce the amount of garbage participating households generated.

Effectiveness: The capture rate for the primary recyclable item targeted in the ‘just because its empty doesn’t mean its garbage’ campaign, # 2 HDPE bottles and jugs, increased from 74 per cent to 75 per cent in 2015, but fell short of the objective of 80 per cent capture.

The waste diversion kit program experienced a participation rate of nine per cent, or 44 households out of 500 possible participants. From the sample of households that did participate, 36 per cent experienced an increase in the volume of recycling set curbside while 27 per cent of participating households experienced a decrease in the volume of garbage set curbside. These numbers are very close to the control group (households in the same neighbourhoods that did not receive waste diversion kits), which experienced similar rates as those listed above. Participating households did also experience a slight increase in the use of green bin participation in comparison to the control group.

Using the experience of the pilot program, along with feedback from participating households, improvements will be made to the waste diversion kit program, with a goal to continue the program in 2016.

Initiative #2: Improving recycling habits in multi-residential recycling program

A key component to this initiative was the redesign and purchasing of new information and promotional tools for the apartment recycling program. Signage and recycling cart labels were updated to reflect changes to the City of Kingston’s recycling program, and in an effort to make information easier to understand, with a balance of pictures and words.

Additionally 10,000 in-unit recycling bags were purchased for distribution to buildings participating in the City’s recycling program. These re-usable bags are designed to encourage the collection and proper separation of recyclables in individual apartment units.

Effectiveness: The roll out of the promotion plan was delayed due to a variety of circumstances. The shipment of in-unit recycling bags was not received until October due to delays on the manufacturer’s part, as well as a domestic labour action that delayed shipment of the bags once they arrived in Canada. A limit on staff time for the team member that was originally responsible for the roll out of the promotion plan led to an additional delay. This issue has been solved as responsibility for the multi-residential recycling program has been shifted to a new staff member, who began planning the distribution of in-unit bags and updated information to buildings in late 2015.

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

A modification was made to the blue box sorting line at the MRF to decrease the amount of recyclable glass that was ending up as residue (i.e. garbage). A chute was built onto the sorting line, which allows for a staff member to pull whole glass bottles and jars off the line, and deposit them in a large tipping bin which could then be re-directed to the proper area for glass sorting, allowing the material to be recycled.

Modifications were also made to the public recycling drop off depot at KARC. Lids with small openings were added to the depot containers for cardboard, papers & plastic bags, and plastic & metal containers. The addition of the lids to the depot containers was done to prevent users from placing non-recyclable material in the depot containers. These materials are often large, bulky plastics (e.g. lawn furniture), non-recyclable glass (e.g. window glass or mirrors), and bagged garbage. Previously the containers had open tops, which made it easy for users to dispose of non-acceptable material.

Effectiveness: For 2015, the amount of residue (i.e. garbage) that was processed in the Kingston Area Recycling Centre MRF was 5.64 per cent of the total amount of material processed. The goal was to reduce the residue rate from 7 per cent to below 5 per cent.

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

Staff contacted various companies and brokers that purchase recycled plastic food and beverage containers from the City. A few did indicate a willingness to purchase larger, durable plastics from the City, but indicated they would only purchase certain types of plastic material, in particular # 2 HDPE and # 5 polypropylene.

When examining the logistics of processing larger plastic material at the MRF, staff noted the following shortcomings: the recycling plant itself is not capable of processing larger plastic in the same manner as plastic containers accepted in the blue box (i.e. most durable plastics are too large); secondly, the MRF's baler is not powerful enough to compress durable plastics. Baling of recyclables helps to reduce shipping costs as compared to shipping recyclables loose.

In addition to the above limitations, staff examined the success of similar programs instituted by other area municipalities and discovered that these municipalities have experienced difficulties in finding purchasers for their materials. The market for large, durable plastics is volatile and subject to great swings in demand and pricing.

Effectiveness: Staff will continue to examine the market for recycling large, durable plastics moving forward.

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

Administrative staff from the Kingston Area Recycling Centre, primarily the manager, began hosting regular morning meetings with collection staff based out of the Creekford Road garage. These meetings had a dual intention: to share information on policy and programs emanating from KARC, and to receive feedback from collections staff on improvements that could be made to policies and programs.

A monthly departmental newsletter began circulation in September, in an effort to increase information sharing between the two separately located groups. Administrative staff is also working with collection staff to determine other avenues for the sharing of information related to promotion & education, policy development, and in-the-field observations.

Effectiveness: While difficult to measure, the inroads that have been made to improving knowledge sharing and communications between staff will only lead to positive results for both staff and residents. Staff will continue to work in 2016 to refine tools and tactics for knowledge sharing amongst staff.

Initiative # 6: 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 2016 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 focused on waste diversion programs and with that a possible increase in recycling capture and waste diversion rates.

Effectiveness: N/A

5. 2016 Goals and Objectives

Table 4 on the next page lists specific goals and objectives for 2016-2018. Some of the objectives for 2016 and 2017 that were listed in the previous *Waste Recycling Strategy 2015-2017* 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: 2016-2018 Objectives
2016 Objectives
1. To increase the capture rate of aluminum from 62 per cent in 2015 to 67 per cent in 2016.
2. To increase the capture rate of # 2 HDPE plastic containers from 75 per cent in 2015 to 80 per cent in 2016.
3. To collect an average of 0.25 pounds of batteries per household via a curbside battery collection held in the fall of 2016.
4. To implement a small scrap metal item drop off at the Kingston Area Recycling Centre by spring 2016, and to collect 5,000 kilograms of scrap metal items by the end of 2016.
5. To reduce customer service requests related to recycling collection by City staff in 2016 by five per cent (as compared to 2015) through improved communications and training.
6. To continue the multi-residential recycling outreach program, distributing 6,000 in-unit recycling bags and information booklets by the end of 2016.
7. To determine baseline levels for multi-residential recycling program contamination rates by conducting pre and post outreach visit waste audits at a select sampling of buildings in 2016.
2017 Objectives
1. To gather quantitative and qualitative data, throughout 2017, in order to produce a promotion and education plan focused on encouraging residents to reduce the amount of recycling they generate.
2. To increase the capture rate of select low-capture, high-value recyclables as determined by the 2016 residential waste audit.
3. To reduce customer service requests related to recycling collection by City staff in 2017 by five per cent (as compared to 2016) through improved communications and training.
4. To investigate potential improvements/retrofits to the Material Recovery Facility in order to reduce the amount of recyclable material lost to residue.
2018 Objectives
1. To reduce customer service requests related to recycling collection by City staff in 2018 by five per cent (as compared to 2017) through improved communications and knowledge sharing.
2. To investigate potential improvements/retrofits to the Material Recovery Facility in order to reduce the amount of recyclable material lost to residue.

The community and corporate objectives for 2016-2018 can be found below. These objectives have been updated from those appearing in the *Waste Recycling Strategy 2015-2017* to better reflect the language utilized in other departmental planning documents:

Table 5: Community and Corporate Objectives 2016-2018
1. To increase the capture rate of recyclable material.
2. To increase the diversion of recyclable material from landfill.
3. To increase resident knowledge of recyclable items, and the benefits of recycling, through the #WasteNotYGK branding initiative
4. To optimize the operations of Kingston's Material Recovery Facility (MRF).

6. 2016 Strategies and Initiatives

Staff reviewed a number of options when considering initiatives for inclusion in the *Waste Recycling Strategy 2016-2018*. 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 six initiatives below were determined to have the greatest potential impact on the goals and objectives of the waste recycling strategy:

Initiative # 1: Promotion & education campaign targeting aluminum and # 2 HDPE plastic containers

Overview: As in previous waste recycling strategy documents, recyclable items with a low capture rate and high monetary value, in this case aluminum and # 2 HDPE plastic containers will be targeted for increased recycling through a promotion and education campaign. Using a variety of media, the campaign will not only focus on the fact that these recyclables are often placed in the garbage, but that recycling these items generates revenue for the City, and recycling them results in energy savings, thereby reducing the impact of climate change.

This campaign will be included in the #WasteNotYGK branding campaign, which will be utilized in all division promotion and education efforts throughout 2016.

Implementation: Components of the promotion and education campaign will be executed between the months of July and September 2016.

Cost: \$ 7,000 has been budgeted for the promotion and education campaign.

Monitoring: The results of the annual fall curbside waste audit will indicate if residents are placing less aluminum and # 2 HDPE plastic containers in the garbage. Metrics from various communications media will be used to determine the success of messaging and media used.

Initiative # 2: Implement curbside battery collection program

Overview: The City will partner with Raw Materials Corporation, a private battery recycler, to implement a one-week curbside collection of batteries from Kingston residents. Residents will receive a plastic bag in which to place their batteries, and during a specified week these bags will be placed curbside to be collected alongside garbage and green bin waste on the residents' normal waste collection day.

Raw Materials Corporation has run similar curbside battery collection programs throughout Ontario with great success and will assist the City in the planning and execution of the collection program.

Implementation: Promotion for the battery collection program, including the distribution of the collection bags, will take place in late October and early November. Collection of the batteries will take place during residents' garbage/green bin collection during a to-be-determined week in November 2016.

Cost: Estimated cost to run the collection program is between \$ 10,000 and \$ 15,000. Variables that will impact the final cost include: the amount of batteries collected (Raw Materials Corporation provides a monetary rebate to its partners dependent on the weight of batteries collected) and the possibility of sponsorship deals with outside partners.

Monitoring: Raw Materials Corporation will provide the total weight of batteries collected in the program.

Initiative # 3: Implement small scrap metal item drop off at Kingston Area Recycling Centre (KARC)

Overview: As a result of the waste diversion options survey conducted in spring 2015, City staff was directed by the Environment, Infrastructure and Transportation Policies committee to determine the feasibility of a curbside scrap metal collection program. While staff deemed it not feasible to institute a curbside scrap metal collection program due to monetary and staffing

restrictions, staff did offer, and City Council approved, the creation of a small scrap metal item drop off at KARC.

In addition to the current residential recycling depot where users can drop off blue and grey box recyclables at no charge, users will also be able to drop off small scrap metal items, such as pots and pans, coat hangers, and small kitchen appliances, for recycling. Larger scrap metal items, as well as Freon-containing appliances, will not be accepted.

Implementation: The small item scrap metal depot will be added to the current residential recycling depot in the spring of 2016.

Cost: Kimco Steel will be providing a container for the collection of material at no charge, as well as purchasing the scrap metal on a weight-based market value. \$ 500 has been budgeted for the cost of updating signage at the recycling depot.

Monitoring: Kimco Steel will provide the weight of outgoing material after collection.

Initiative # 4: Continue multi-residential recycling outreach program

Overview: City staff will continue to work with the staff and owners of multi-residential buildings (apartments and condominiums) to improve the multi-residential recycling program. City staff will be distributing in-unit bags for the collection of recyclables, as well as updated information booklets, beginning with the larger property management companies in Kingston. The distribution of reusable collection bags for recyclables and updated information is an industry recognized best practice for both increasing the capture of recyclables and decreasing contamination found in recycling.

Additionally, staff will continue to update the information database for the multi-residential recycling program, including building contact information, the number and types of recycling carts at the building, and when information tools are distributed.

Throughout 2016 staff will gather baseline data on the performance of the recycling program at the buildings that will be receiving the in-unit bags and updated program information. Building on data collected in 2014, information on the amount of recyclable material generated, as well as any contamination within the recycling, will be recorded.

Implementation: The gathering of baseline data and the distribution of in-unit bags and program information will take place throughout 2016, with data gathered first at select buildings before distribution of in-unit bags and updated information.

Cost: Staff time only, as in-unit bags and information tools were purchased in 2015.

Monitoring: Staff will compare data gathered on volume, and contamination, of recycling after the distribution of in-unit bags and updated information to baseline data gathered in 2014 and early 2016.

Initiative # 5: Conduct educational reviews for City recycling collection staff

Overview: To improve the resident experience with curbside recycling collection, City recycling collection staff will participate in a series of educational reviews focused on the following topics: the solid waste by-law, accepted and non-accepted recyclable material, customer service expectations, and the operation of the material recovery facility. Through reviewing with staff these important topics, they will be better able to perform their duties and provide a better curbside experience to residents as fewer errors will occur with collection.

In addition to reviewing information with collection staff, administrative staff will solicit feedback from recycling collectors on the most frequent resident problems with curbside collection. This information will be used to create a series of public service announcement-style videos, to be shared with the public, on how residents can prepare their recycling so as to comply with the solid waste by-law and collection policies.

Implementation: The educational review with recycling collection staff will be ongoing throughout 2016, with a heavy-emphasis on building base knowledge in the first half of the year. Collection staff feedback to inform the videos will be gathered by the spring of 2016, with a goal of producing the videos in summer 2016, for release to the public in fall 2016.

Cost: Staff time only for educational review, with \$ 10,000 budgeted for the production and promotion of videos.

Monitoring: The success of the training of recycling collection staff will be determined by using data from the City of Kingston's customer service centre, specifically regarding recycling collection complaints.

Initiative # 6: Research improvements/retrofits for Material Recovery Facility

Overview: Staff will continue work begun in 2015 to examine potential improvements or retrofits that can be made to reduce the amount of recyclable material that is lost to residue (i.e. garbage) in the Material Recovery Facility. Possible improvements or retrofits include: the installation of a glass breaker (to mechanically remove glass from the blue box sorting line); the installation of a bag breaker (to mechanically open plastic bags of paper on the grey box sorting line); the installation of residue clean up lines (to move improperly sorted blue box materials from the grey box sorting line and vice versa); and expanding tipping floors (to ensure pre-

sorted blue and grey box recyclables are stored inside the Material Recovery Facility and not outside).

Implementation: Staff will research potential improvements or retrofits throughout the year. Implementation of potential improvements or retrofits may occur at any time during the year, dependent on budget availability, and other factors.

Cost: Staff time only

Monitoring: Staff will report back on any improvements made to the Material Recovery Facility in the *Waste Recycling Strategy 2017-2019*.

7. Conclusion

For the *Waste Recycling Strategy 2016-2018*, the corporate and community objectives have been updated to focus on increasing the capture of recyclable material, reducing the amount of recyclable material that is disposed of in landfill, continuing to inform Kingston residents on the recycling program through the #WasteNotYGK branding initiative, and to optimize the operations of the Material Recovery Facility.

Specific objectives for the years 2016 through 2018 have been established, with a focus on increasing the capture rate of low-capture, high-value recyclable items, creating new opportunities for residents to divert non blue box recyclable material, improving the performance of the multi-residential recycling program, and improving residents' experience with the curbside recycling program.

To achieve these objectives, a variety of initiatives will be undertaken in 2016, including: executing promotion and education campaigns, implementing a curbside battery collection program, creating a small scrap metal item drop off at the Kingston Area Recycling Centre, continuing outreach and data gathering for the multi-residential recycling program, and improving internal education programs for collection staff. Each of these initiatives will also contribute to the goals outlined in the corporate and community objectives for the Waste Recycling Strategy.

As the *Waste Recycling Strategy 2016-2018* is a living document based on a continuously rolling three-year window, monitoring and reporting on the success of the above initiatives is crucial. Tonnage reports, the annual curbside residential waste audit, data gathered from the City's customer service centre, and data gathered from field visits to multi-residential buildings will all be used to report on the successes and improvements for the 2016 initiatives.

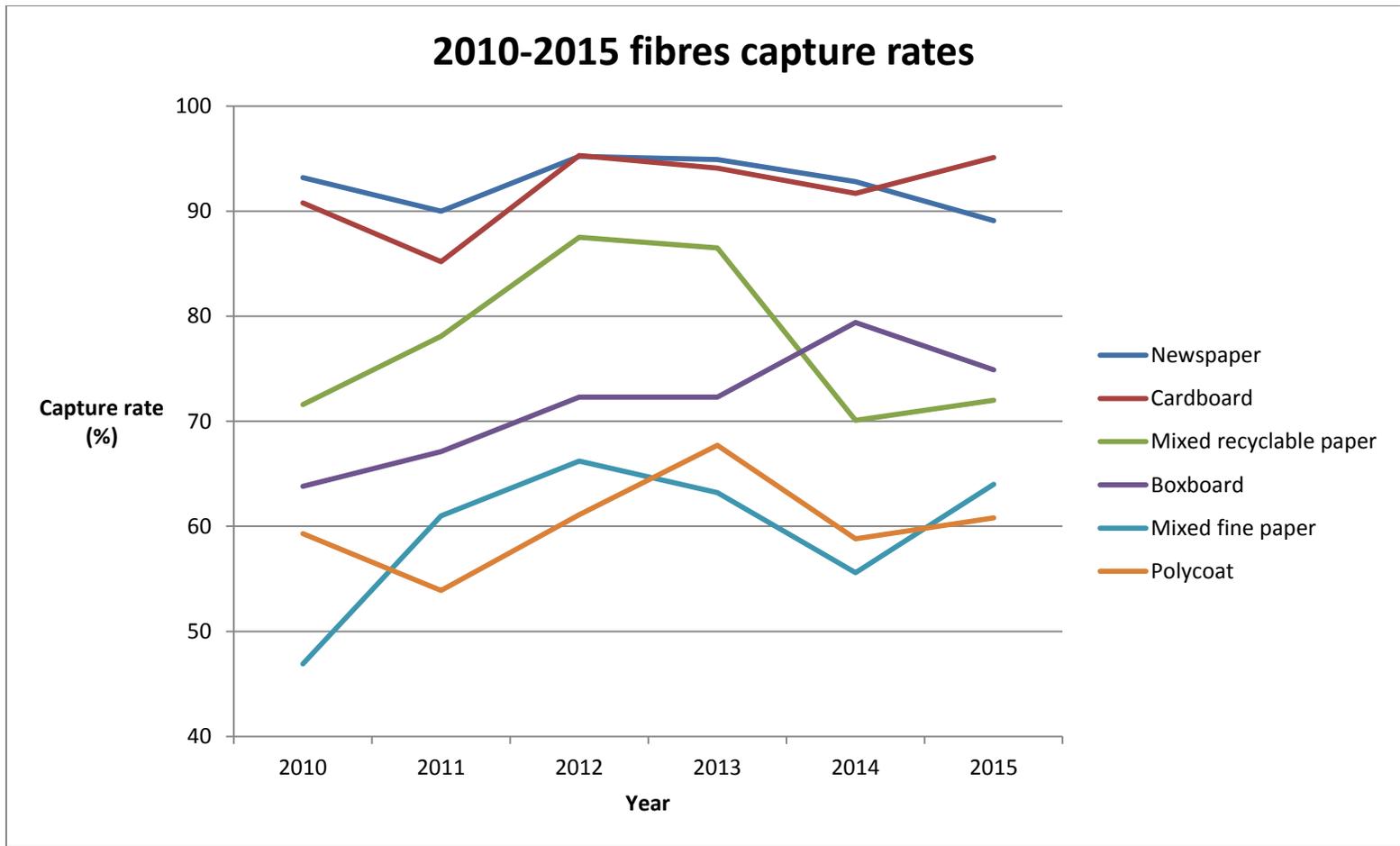
Since 2010 the solid waste division has committed itself to a process of continuous improvement in order to fulfill its role of providing Kingston residents with programs to reduce their amount of waste sent to landfill. Kingston City Council's goal of 60 per cent waste diversion by 2018 requires division staff to maintain, improve, and create new waste diversion programs for Kingston residents, and provides a focus for the creation of the waste recycling strategy documents.

Appendix A: Kingston residential recycling capture rates 2011 - 2015

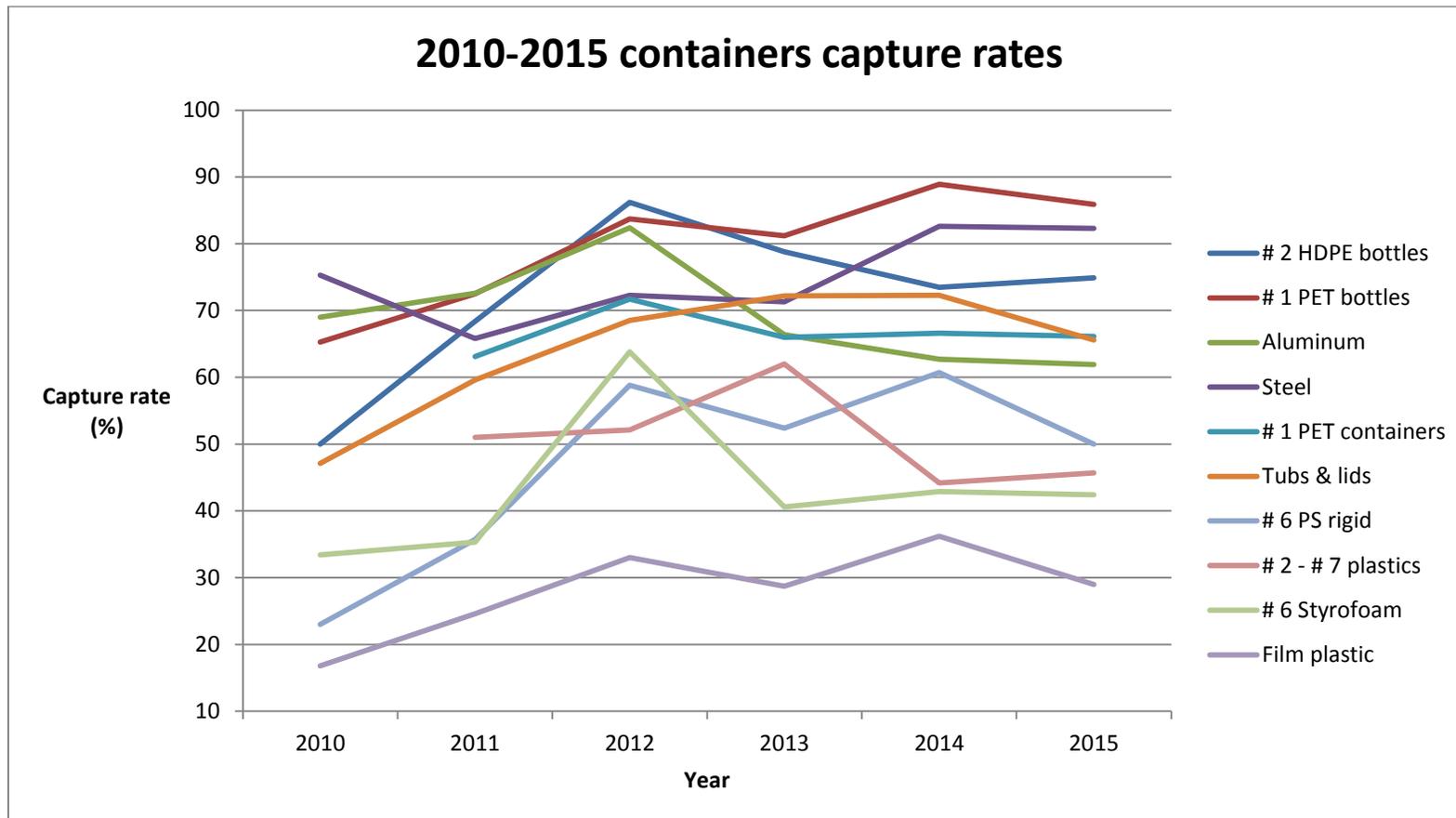
Grey box recyclables					
Recyclable material	2011 capture rate (%)	2012 capture rate (%)	2013 capture rate (%)	2014 capture rate (%)	2015 capture rate (%)
Newspaper	90	95	95	93	89
Corrugated cardboard	85	95	94	92	92
Boxboard & molded pulp	67	72	72	79	75
Mixed fine paper (office paper, magazines & catalogues)	71	78	76	67	72
Polycoat (gable top & aseptic containers) & paper cups	54	61	68	59	61
Film plastic	25	33	29	36	29
Blue box recyclables					
Recyclable material	2011 capture rate (%)	2012 capture rate (%)	2013 capture rate (%)	2014 capture rate (%)	2015 capture rate (%)
# 1 PET (clear plastic bottles & jars)	73	84	81	89	86
Steel	66	72	71	83	82
# 2 HDPE (coloured plastic bottles & jugs)	68	86	79	74	75
# 4 LDPE & # 5 PP (tubs & lids)	60	69	72	72	66
# 1 PET (clear plastic containers)	63	72	66	67	66
Aluminum	73	82	66	63	62
# 6 PS rigid (plastic containers)	36	59	52	61	50
# 2- # 7 plastics (rigid recyclable plastics)	51	52	62	44	46
# 6 PS expanded (Styrofoam)	35	64	41	43	42

Glass recyclables					
Recyclable material	2011 capture rate (%)	2012 capture rate (%)	2013 capture rate (%)	2014 capture rate (%)	2015 capture rate (%)
LCBO glass beverage bottles	65	49	93	90	82
Other glass food bottles & jars	80	90	87	88	91
Total recyclables capture rate	75	82	80	79	78

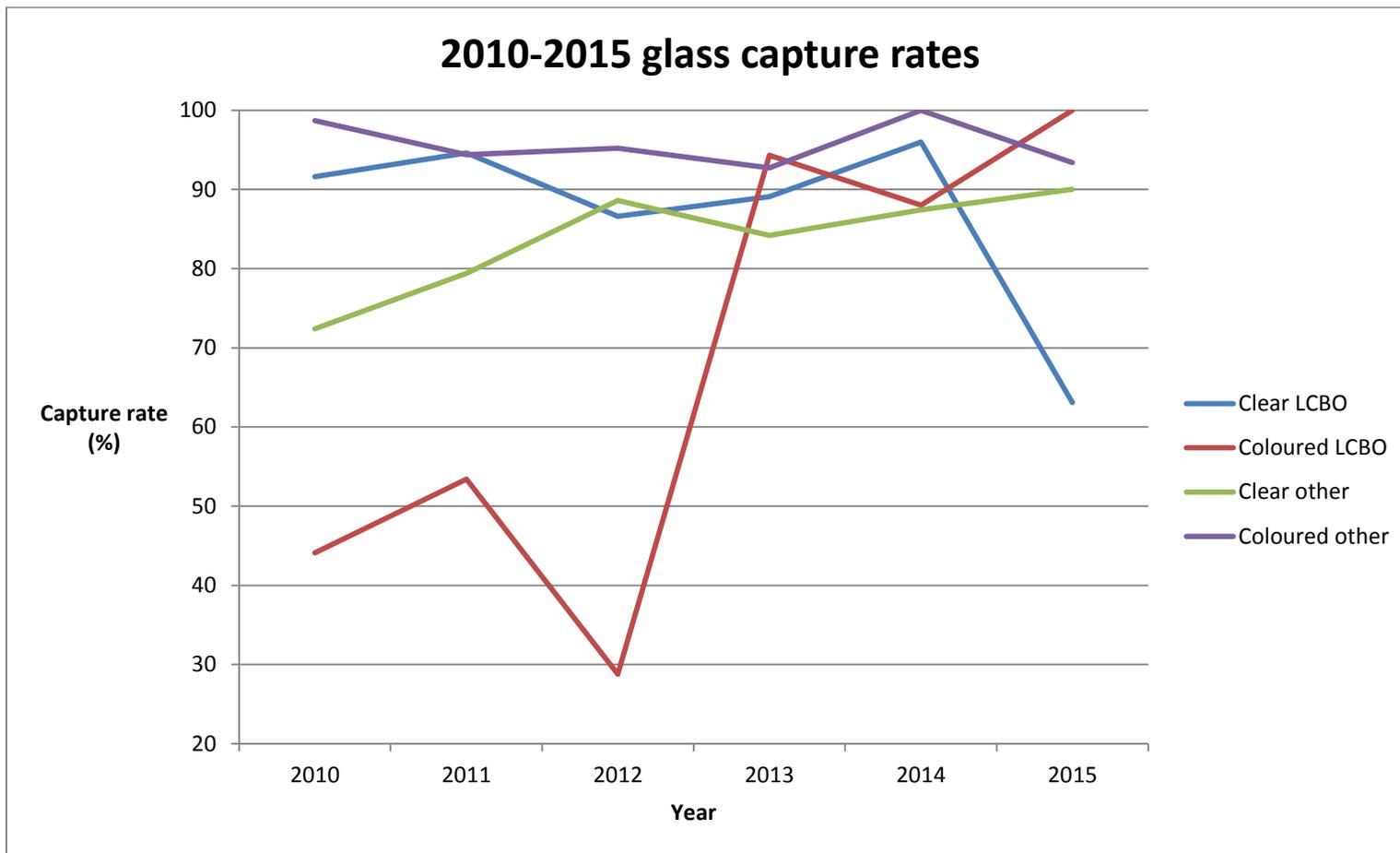
Appendix B: 2010-2015 fibres recycling capture rate chart



Appendix C: 2010-2015 containers recycling capture rates chart



Appendix D: 2010-2015 glass recycling capture rates chart



Appendix E: Waste diversion rate components 2010-2014

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
2014	9,596	16,776	64	17,133