

CIF 212

Multi-residential Recycling: Implementing Best Practices *Niagara Region*



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1. Executive summary

This is the final report of a project implemented by Niagara Region between 2009 and 2013. The project goal was to increase recycling rates by implementing best practices in the regional multi-residential recycling program. Waste Diversion Ontario - Continuous Improvement Fund (WDO – CIF) provided financial and technical assistance and consulting services provided by Entec Consulting were employed to work with Niagara Region staff in completing the project.

Niagara Region currently provides recycling collection to approximately 190,150 households, including approximately 20,700 households in multi-residential buildings. Prior to the implementation of a region-wide multi-residential recycling cart program, the type of service offered to multi-residential buildings varied in terms of recycling provider (Region, local municipality or private), collection frequency (i.e. weekly alternating streams collection vs. weekly both streams collection) and type of service (i.e. Blue/Grey Boxes vs. recycling carts). The project resulted in an increase in the numbers of buildings and residential units that were provided the optimal weekly both streams recycling cart by the Region. The project increased the number of buildings receiving the optimal service from 100 to 488 (388% increase) and the corresponding number of residential units increased from 4,952 to 20,613 (316% increase). In addition, the number of multi-residential buildings using Blue/Grey Boxes, private services and those with no recycling decreased. Additional highlights include:

- The percent of buildings with no recycling decreased from approximately 29% to 4% - at present there are only 23 buildings not recycling, representing only 2% of all units.
- It is estimated that the average capture rate is approximately 106 kg/unit/year based on the data gathered during the post implementation site visits. Site visits were completed one day prior to collection and therefore additional materials could have been placed in the carts after the site visit was completed.
- Over 2,665 95 gallon recycling carts from are serviced by the Region from multi-residential buildings. This represents approximately 47 litres/unit. This is within the best practice range of 45-55 litres/units. Niagara Region is continuing to work with multi-residential buildings to reach increase the recycling capacity.
- Prior to the launch of the region-wide program, only Blue recycling carts were available. During this project, staff swapped Blue Carts that

were being used for fibres and plastic bags for Grey Carts to be consistent with the curbside Blue and Grey Box program – over 190 carts have been swapped to date. Blue carts that were swapped were then made available free of charge to non-profit and social housing multi-residential buildings.

- Staff conducted direct face to face communication including:
 - Conducting four information sessions in December 2010 for superintendents/property managers and owners on the new service levels for multi-residential buildings – over 70 attendees
 - Offered open houses/lobby displays to help educate residents on the recycling program – to date over 69 lobby displays/open houses have been conducted for the recycling program and an additional 49 in conjunction with the launch of the Region's multi-residential Green Cart program.

The best practices that were implemented during this project included: creating a database of multi-residential buildings, evaluating the recycling performance of individual buildings and estimating the overall program recycling rate, increasing the number of recycling containers at buildings and distributing new promotion and education materials to residential and building staff.

The cost to complete the project budget was \$461,359. Niagara Region was approved up to \$249,774 funding from the Continuous Improvement Fund. The estimated return on investment of the CIF portion is 0.6 years.

For more information about Niagara Region's multi-residential recycling project or program, please contact Sherri Tait, Manager, Niagara Region at sherri.tait@niagararegion.ca or 905-685-4225 ext. 3458.

2. Introduction

In 1996, the Region assumed responsibility for waste management jurisdiction from the 12 area municipalities.

The Region's Waste Management Services Division is responsible for the planning, management and operations of the following services:

- Two Regional landfills, a Recycling Centre, a household hazardous waste facility, special hazardous waste days, three material drop-off depots, and special diversion events
- Providing residential and commercial curbside, waste, recycling and organics collection programs
- Perpetual Care of 11 closed landfills

The mission of the Region's Waste Management Division is to provide efficient, cost effective and innovative waste management services to Niagara's residents and businesses.

In preparation for a new collection contract starting in 2011, the Region conducted a Level of Service Study in 2007. A region-wide multi-residential dwelling recycling program was identified in this study, as one of the options to maximize waste diversion and help meet the Regions 65% waste diversion target. This program was needed to standardize service between municipalities and provide consistent diversion services to both the low density and multi-residential sectors.

Following completion of a multi-residential building inventory and service feasibility study, Council approved the implementation of a region-wide program on July 22, 2009.

Currently the Region provides recycling cart collection to 488 multi-residential buildings in Niagara. This represents 20,613 households or approximately 83% of the total multi-residential households in the region.

With the help of CIF project #212, the Region was able to implement a region-wide recycling cart program (weekly both streams), increase the number of residential buildings and household participation and increase promotion and education (P&E) about recycling to this sector.

The Region undertook, and continues, the task of reaching out to the multi-residential sector in an effort to bring on board buildings that are currently not recycling and increase the number of carts to the recommended levels at buildings not at the recommended level of carts. Our efforts included development of P&E materials (in addition to those developed by CIF), site visits, information sessions, open houses/lobby displays, distribution of P&E, proper labelling of recycling carts, distribution of in-unit recycling bags and delivery of 95 gallon recycling carts. To implement recycling at multi-residential buildings that did not respond to our outreach program, the Region is working with the local Ministry of Environment (MOE) Branch.

3. Background: multi-residential recycling program overview

The Region provides recycling cart collection service to multi-residential buildings with 7 or more units. Multi-residential buildings with 2-5 units are eligible for the region's curbside Blue and Grey Box program. The Region has identified 618 multi-residential buildings with 7 or more units (including retirement/nursing homes) or 24,698 households. This represents approximately 13% of the total number of households in the Region. Table 3.1 shows the total number of households in the Region based on type.

Table 3.1: Number of households in Niagara Region

	Households	Percent
Curbside	166,590 ¹	87%
Multi-res	24,698 ²	13%
Total	191,288	100%

¹Based on 2012 year-end Municipal Property Assessment Corporation (MPAC) data

²Based on site visits and data gathered by the Region

Prior to the implementation of a region-wide recycling cart program for the multi-residential sector, the type of service provided by the Region and collection frequency varied. Prior to the new collection contract which

commenced on February 28, 2011, multi-residential buildings could have one of the following types of recycling service

- Curbside Blue and Grey Box provided by the Region
- Weekly alternating stream (i.e. Blue Box material one week and Grey Box material the following week) recycling cart collection
- Weekly both streams recycling cart collection provided by the Region or local municipality
- Private collection with varying service frequencies (i.e. weekly, bi-weekly or monthly)

Curbside Blue and Grey Box and weekly alternating stream recycling cart collection were provided by the Region and considered the basic collection services. Weekly both streams recycling carts were only provided by the Region to local municipalities that requested this service and were considered enhanced collection services. Prior to the implementation of a region-wide program, only three of the 12 local municipalities (City of St. Catharines, City of Welland and Town of Port Colborne) offered this service with one (City of Niagara Falls) offering themselves.

Since the implementation of the all multi-residential buildings are now eligible to receive weekly both streams recycling cart collection. Collection is provided by the Region's collection contractor via 95 gallon carts with the exception of some smaller buildings using the curbside Blue and Grey Box program. Buildings may also place excess bundled cardboard next to carts for collection.

Prior to the implementation of the Region-wide program, building owner/managers were required to purchase the recycling carts from the Region on a full cost recovery basis and no in-unit recycling containers and limited P&E were provided. Through the help of CIF, property owners/managers can now purchase recycling carts for 50% of the total cost (currently \$35 each which includes the labels, delivery and taxes) and in-unit recycling bags (one Blue Bag for containers and one Grey Bag for paper and bundled plastic bags) are provided free of charge. Collection of the recycling carts is at no direct charge to the buildings.

It is recommended that multi-residential buildings purchase 1 Blue Cart for every 20 units and one Grey Cart for every 11 units. To date, the Region is servicing over 2,665 recycling carts. Over 1,770 were added during the implementation of the program.

To date, over 98% of residential units receive recycling collection via our curbside Blue and Grey Box program or recycling cart program. Table 3.2 shows the break down by type of service.

Table 3.2: Number of households with regional recycling program (November 2013)

	Curbside	Multi-res	Total
All households	166,590	24,698	191,288
Households with regional recycling program	166,590	20,613	187,563
% with blue box program	100%	83%	98%

It should be noted that approximately 2,780 units receive recycling collection through a private company. This increases the percentage of multi-residential households who receive recycling collection (regardless of contractor) to 95%. In addition, the multi-residential households with a regional recycling program include nursing and retirement homes.

Table 3.3 shows further details on buildings with and without recycling service.

Table 3.3: Number of multi-residential buildings and units by service type (November 2013)

	Buildings	% of Buildings	Units	% of Units	Average # of units per building
Total	618	100%	24,698	100%	39
Region – Curbside Blue/Grey Boxes	57	9%	627	2%	11
Region – Weekly Recycling Cart Collection	488	79%	20,613	83%	42
Private Service	44	7%	2,846	12%	65
No Recycling	23	4%	436	2%	19
Unknown	6	1%	176	1%	29

Buildings with no recycling are on average smaller (19 units/building) than those that have a recycling cart program (42-65 units). Generally buildings with no recycling do not have maintenance staff to take on the responsibility of placing recycling carts out for collection. In addition, on average larger buildings (65 units) have decided to remain with their private contractor. Buildings that have opted to stay with a private service provider because of long-term contractors, preference for single stream recycling or because the Region cannot provide on-site collection due to safety concerns (i.e. requires the collection contractor to back up a considerable distance or onto a public roadway).

The number of buildings and units receiving the Region's optimal service (weekly both streams) has increased significantly since the implementation of the region-wide program. Table 3.4 shows the number of buildings, units and per cent change before and after the implementation based on type of service.

Table 3.4: Multi-residential recycling before and after project (November 2013)

Type of Service	Before project		After project		% change	
	# of buildings	# of units	# of buildings	# of units	Buildings	Units
Region – Curbside Blue/Grey Boxes	79	1,811	57	627	(28%)	(65%)
Region – Weekly Alternating Streams Recycling Cart Collection	26	897	n	0	(100%)	(100%)
Region – Weekly Cart Collection for Both Streams	100	4,952	488	20,613	388%	316%
Municipal Service (City of Niagara Falls) – Partial Program (container stream with intermittent collection of bundles of cardboard)	97	3,492	0	0	(100%)	(100%)
No Recycling	162	3,067	23	436	(86%)	(86%)
Private	84-100	6,142-6,654	44	2,846	(40%-50%)	(47-51%)
Unknown	Incl. in Private	Inc. in Private	6	176		

There is a reduction in the number of multi-residential buildings utilizing curbside Blue/Grey Boxes as these buildings were encouraged to transition to more optimal Recycling Cart collection service as part of the Region's standardized (weekly cart collection for both streams) service.

There is a range for the number of buildings/units receiving private for before the project because the number of buildings using private recycling

cart collection services was based on on-site observation and phone conversations, however, information could not be verified for all buildings during the initial inventory.

There were more multi-residential buildings identified during the implementation of the Region-wide recycling cart program i.e. cooperative housing that were not identified as multi-residential buildings during the initial inventory in 2009 and retirement/nursing homes and mixed use buildings with more than seven (7) units that were added to the multi-residential program during the implementation.

There has been an 86% reduction in the amount of buildings with no recycling and currently only 23 buildings have no recycling. The Region undertook several initiatives to encourage participation in the Region's recycling program which resulted in the significant decrease in the number of buildings with no recycling. These activities included outreach letter, site visits and working with the local MOE branch to enforce Ontario Regulation 103/94. In a subset of buildings where the Region provides curbside garbage (if a property can fit within the Region's 1 bag/can per unit, up to a maximum 12 bags) or front-end garbage collection (enhanced service requested by the City of St. Catharines and City of Niagara Falls), the Region indicated that garbage collection could be suspended if recycling was not implemented as per the Region's Solid Waste By-Law. This proved to be an effective tool in bringing these buildings on board.

Recycling totes from multi-residential buildings are collected on the tote run with commercial stops. The collection contractor has a separate recycling cart route in seven of the 12 municipalities. There are two dedicated trucks that service recycling carts from these municipalities and multi-residential and IC&I properties are collected together on these routes. In the five west-end municipalities the recycling carts from both multi-residential and IC&I recycling carts are collected utilizing the curbside collection trucks.

The Region's collection contractor is required to complete sample weights from multi-residential buildings twice a year. These weights are averaged out and multiplied by 52 to get the tonnes/year collected. The tonnes shown below are from the 2013 audits. At the time of the audit, the Region was servicing 20,252 units with recycling cart collection. This differs from the

calculated kg/unit/year from the data collected during the post implementation site visits which was 106 kg/unit/year. Differences in these numbers are discussed in Section 4.2.3.

Table 3.5: Recycling program performance measures (2013 Sample Weights and 2013 Budget for Recycling Collection Costs)

	Effectiveness	Efficiency
Quantity	1,599 tonnes	\$324,553
Multi-res units	20,252	20,252
Per unit	79 kg	\$16

4. The project scope

The region-wide implementation of multi-residential recycling included four main phases:

- Phase 1: Develop and maintain a database of buildings
- Phase 2: Benchmark recycling performance
- Phase 3: Increase recycling container capacity
- Phase 4: Provide promotion & education materials

Each of the phases is discussed in the following sections.

4.1 Phase 1: Develop and maintain a database of buildings

Creating and maintaining a database of all multi-residential buildings is an important step towards implementing best practices. To obtain the list of multi-residential buildings, there are a number of potential sources of data, including:

- Municipal Property Assessment Corporation (MPAC), municipal and Regional departments such as planning, taxation, or technology

services may be able to identifying properties and provide basic information (addresses, owners, and number of units, etc.)

- Property management or rental associations may have listings of their members' buildings and contact information for owners and property managers.

4.1.1 Sources & collection methodology

Early in the project, Region staff including interns were utilized to complete an inventory of multi-residential buildings in Niagara. The interns were provided with a property listing including owners name and address from MPAC. With this information, they conducted internet searches (i.e. reverse look-ups) for owner phone numbers and for property management companies. In many instances, it was through site visits that much of the contact information was obtained by either For Rent signs, signs outside the buildings indicating site name and management company, the telephone directory or speaking directly to residents.

While some preliminary data can be collected by the methods discussed above, in-person site visits to each building were completed to collect detailed information such as how well the recycling program is currently working, building characteristics that may create recycling challenges or opportunities (e.g., room for recycling bins), contact information for the on-site representative (e.g. superintendent) and the role that the on-site staff play in managing the building's recycling program.

Throughout the project, several site visits were conducted. The first round of site visits were to simply determine the types of recycling service, if any each building was receiving and by whom. The second set of site visits were done in accordance with Best Practices to benchmark recycling performance and to communicate to buildings that a region-wide recycling program was being implemented and to provide further details on what that program would look like and entail. The third set were post-implementation site visits to determine the impact of the activities undertaken as part of the region-wide roll-out and finally a fourth set of site visits was conducted to those that were identified as poor performers in the post-implementation site

visits. The last set of site visits will be on-going to ensure multi-residential buildings have the proper P&E and support in running their programs.

Site visits are conducted in teams of two. Site visits were generally conducted the day before collection day and where possible were conducted with a building representative (e.g. superintendent, property manager or owner). The on-site contact would escort the Region staff to demonstrate the waste and diversion activities at their buildings. This method proved to be very beneficial, as personal contact was established at a majority of buildings, giving the owner/manager or superintendent a face to put to the Regional recycling program and a point of contact. During the site visits staff checked the building layout, recorded current garbage and diversion programs information, noted location of services, distribute P&E, put up posters and re-labeled carts.

In some cases the owner/manager/residents were not trusting or uncooperative. Many times, calls were not returned. This was the case in some of the participating buildings and the majority of the non-participating buildings. In addition, property managers or owners were interested in the program but the on-site contacts were uncooperative and reluctant to share information or want to implement a program. Many times, the blame for any problems was directed to the residents or a program would not work because of issues with residents.

In some cases, the property owners/managers did not want to meet us on-site but gave us permission to conduct a site visit on our own. In these cases as much information was gathered on the phone prior to the site visit.

Another challenge was the high turnover of superintendents and in some cases owners. Contact information quickly becomes out-dated and tracking down the new owners or on-site contact is difficult.

Site visits were conducted in accordance to Best Practices. The Region updated the site visit form to include additional information and performance measures including separate barrier evaluations for signage and labels, stream mixing and contamination since the Region has a two stream system and information related to organics. In addition, during the post

implementation site visits, the previous barrier evaluations were included so staff could see the baseline results for comparison.

After the site visits were completed, staff were responsible for entering the data into the Microsoft Access database which was used to maintain the data. The Program Manager would check the database on a regular basis to ensure the information was complete and all fields were inputted.

4.1.2 Database and completeness of data

As noted above an MS Access database was used to store the data collected from the site visits. The Region initially had developed its own MS Access Database to capture all the information related to this project, however in 2012 the Region imported the data from its database to the CIF developed Multi-Residential Database with the help of Competitive Edge. Competitive Edge was retained to modify the CIF developed database (ex. add organics program information, check box for indemnity agreements, number of containers and fullness at each site visit and addition of additional site visit evaluation criteria).

Below is a summary of the number and overall percent of multi-residential buildings in the database, site visits completed and with complete data. Through additional outreach (i.e. implementation of Green Cart organics and site visits), Region staff will gather any additional or new information on the buildings contained in the database.

Table 4.1: Database summary

Buildings	Total in Region¹	Recycling provided by Region²	Site visits completed³	Data updated⁴
Number of buildings	618	545	600	612
% of all buildings	100%	88%	97%	99%

Notes

¹Total number of buildings of seven or more residential units including retirement/nursing homes and mixed use.

²Includes all buildings receiving recycling cart and curbside Blue/Grey Box collection.

³Site visits were conducted at least once to each building and data updates were completed at all buildings where access was permitted and included those receiving private collection. Site visits were not conducted at the 18 nursing/retirement homes that requested service.

⁴Although site visits were completed at all buildings, recycling participation and contact information could not be determined for six (6) buildings.

Staff completed additional site visits to buildings that were originally identified as multi-residential but upon a site visit, it was determined that they were either commercial or a townhouse/row housing.

Appendix I includes a screen capture of the MS Access database used by the Region to store data related to the multi-residential program.

4.1.3 Data maintenance

After the initial investment to create an up-to-data database it is important to protect this investment by maintaining the database and ensuring a process of keeping it up-to-date.

Region staff (i.e. customer service representatives, On-Road Supervisors and Coordinators, Program Managers and interns) have access to the database and were provided training (and associated PowerPoint) on how to view and update the information in the database.

Information on the waste management programs and/or contact information for a particular property are updated when the property:

- Orders additional carts;
- Reports a collection issue;
- Requests in-unit bags or other P&E materials
- Staff conduct a site visit; or
- Letters (i.e. workshop invites or information on the organics program) are returned as undeliverable

Due to the high turnover in on-site contacts (i.e. superintendents) and property owners/managers, staff will be reviewing the contact information of all buildings by letters and telephone calls next year to ensure the information in the database is correct and up to date.

4.1.4 Summary and recommendation:

The MS Access Database has proved to be an effective tool to store and collect data regarding the Region's multi-residential recycling cart program. The database also allows staff to analyze and search the data and create mailing list efficiently and effectively. Region staff will be updating the database as required.

It is recommended that data be entered shortly after it is collected and information updated every time recycling carts are delivered or broken carts are replaced. This will ensure that if there are questions on the data or comments noted during site visits, they can be verified easily by the data collector and that there is a running total of recycling carts being serviced.

It is recommended that if any letters are returned as undeliverable after a mailing, that it is noted in the database and staff try to determine, via phone calls and/or reviewing MPAC, the new contact information for that property.

4.2 Phase 2: Benchmarking recycling performance

A key step in implementing program improvements is to benchmark current performance so that future recycling targets can be established and program improvements can be tangibly measured as you move towards meeting these desired targets.

Evaluating performance is a quantitative assessment that measures the following:

- 1) How much each building is recycling (kg/unit), and
- 2) How much is being recycled by all the buildings collectively.

Performance indicators such as container fullness and contamination were monitored during site visits. Performance data completed during site visits is an estimate only as it is not based on precise weights. However if done consistently research suggests that performance data has been found to be within 10-15% accuracy of actual weights. Obtaining this information from each building was instructive both for flagging low performing buildings and for highlighting top performers. Low performers were flagged for follow-up strategies and top performers provided useful model buildings.

4.2.1 Procedure for estimating recycling rates

The following procedure was used for estimating recycling rates at buildings. Staff completed pre and post implementation site visits for a large percentage of multi-residential buildings with cart-based recycling. Site visits were conducted the day before the building's collection day, therefore represent a 'snap-shot' of the multi-residential program at the time. At each location, carts were checked for fullness, contamination and cross contamination. Fullness was recorded in cart equivalents and by quarters. For example, if a building had two carts and each were half full, the building was recorded on the site visit form as having one full cart.

The Region's collection contractor is required to complete sample weights from multi-residential buildings twice a year. These weights are average out and multiplied by 52 to get the tonnes/year collected. The site visit data was used to evaluate the overall impact of project best practices during post implementation.

4.2.2 Recycling rate estimates

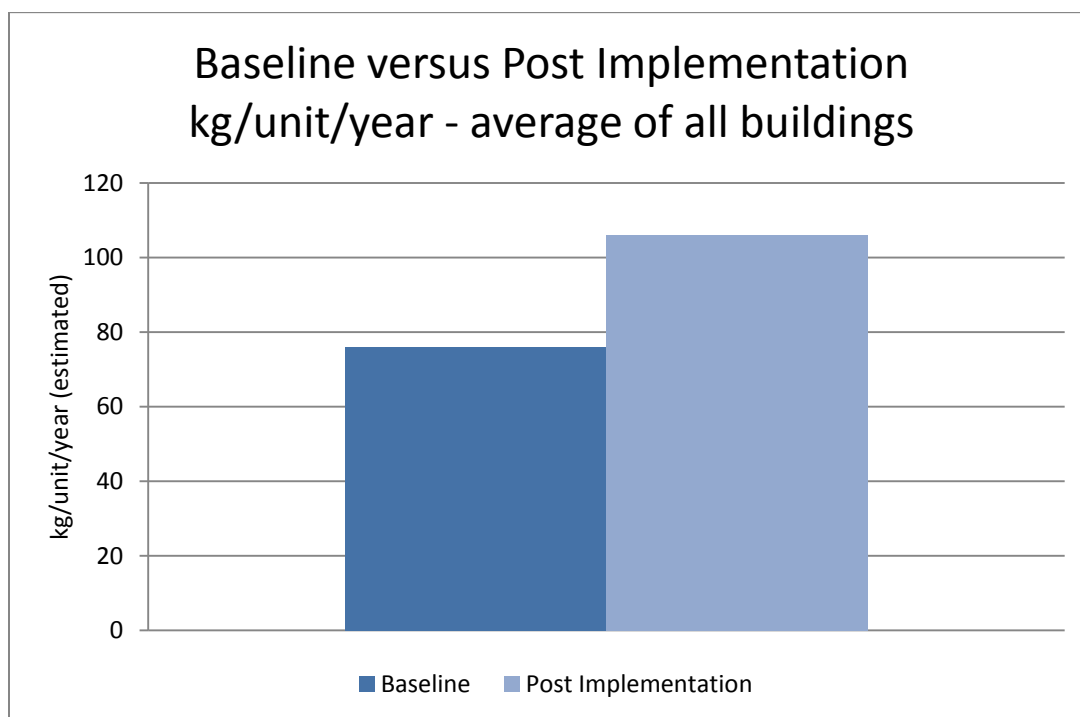
Graph 4.2 shows the distribution of recycling rates (estimated kg/unit/year) based on completed through site visits at 260 buildings during baseline data collection in 2010 and 410 buildings during post implementation site visits.

The average recycling rate, based on the base line site visits was found to be approximately 76 kg/unit/year compared to 106 kg/unit/year during the post-implementation site visits.

Baseline site visits include all buildings regardless of service provider whereas the post implementation site visits only include buildings receiving the Region's recycling cart collection.

Graph 4.2 provides a summary of the baseline and post-implementation recycling rates.

Graph 4.2: Summary of baseline and post-implementation recycling rates



The Region has seen an increase in the estimated capture rate since the implementation of the Region-wide multi-residential recycling cart program. This increase can be contributed to the follow factors:

- Delivery of P&E and swapping of Blue Carts being used for fibre material throughout 2011 to 2012
- Addition of acceptable materials in the Blue Cart. In 2012, the Region started accepting all plastic containers and all rigid plastic packaging

(#1-7 and with no numbers). Previously on plastic packaging marked #1,2,4,5 and 6 were accepted.

- Follow up site visits to poor performers in 2012 and 2013.
- Tailored letters to specific buildings to address contamination issues and remind residents of what is acceptable in the recycling cart program.
- On-going monitoring by the Region's on-road staff.

4.2.3 Sample weight data

As noted in Section 4.2.1, the Region's collection contractor collects recycling cart material from multi-residential buildings along with IC&I properties in eight municipalities on a dedicated cart run. In the remaining five municipalities multi-residential recycling carts are collecting using the curbside recycling truck. To estimate the amount of recyclable material being collected from multi-residential buildings, the contractor is required to collect recycling carts separately from IC&I and the regular curbside route twice a year. These weights and number of units serviced are averaged. Weights are multiplied by 52 to get the tonnes/year collected and divided by the number of units being serviced at the time of the sample weight to determine kg/unit/year.

The Region's collection contractor prior to the implementation of the Region-wide program was not required to complete sample weights, therefore baseline estimated capture rates based on sample weights is not available.

Table 4.2 shows the estimated yearly tonnages based on sample weights and the estimated capture rates.

Table 4.2 Estimated tonnes and capture rate based on sample weights

Year	Estimated Tonnage (kg)	Number of Units Serviced at time of Sample Weights	Estimated kg/unit/year
2011	1,061	17,896	59
2012	1,307	19,221	68
2013	1,599	20,252	79

It can be seen that the estimated kg/unit/year calculated from the sample weights varies from the estimated kg/unit/year calculated from the post implementation site visits. Both methods of calculating the capture rates can expect to have a margin of error as they both are snap shots of the amount be recycled at the time of the sample weight or site visit. The sample weights would not capture the following:

- Buildings that placed out carts late for collection and therefore not collected
- Carts not placed out for collection because they were not full (a few buildings have indicated they follow this practice)
- Carts that were not collected if contamination was seen on top of the carts

These would have been captured during the site visits as staff viewed the carts in the recycling area and not at the collection point.

4.2.4 Barriers to Recycling

During site visits information was collected on the following barriers to recycling:

- OCC (loose beside cart)
- Contamination

- Stream mixing
- Accessibility of recycling
- Loose materials noted
- Overflowing carts
- Cleanliness of area
- Area well lit
- Carts well labeled
- Signage

Buildings were ranked 1-3 for the above barriers with 1 being it requires corrective action and 3 being a high standard 'model building'.

Table 4.3 summarizes the findings of these barriers during the baseline and post implementation site visits. The baseline site visits include all buildings that had recycling at the time of the site visit, whereas the post implementation site visits include buildings that receive the Region's recycling cart collection service and where staff were permitted on-site.

Table 4.3 Barriers to recycling as noted at 455 baseline site visits and 426 post implementation site visits

Barrier to increased recycling	Site Visit	1 - Requires corrective action	% of total	2	% of total	3- Set high standard 'model building'	% of total
OCC managed well	Base Line	153	34%	124	27%	178	39%
	Post	22	5%	54	13%	350	82%
Contamination	Base Line	127	28%	278	61%	50	11%
	Post	47	11%	272	64%	107	25%
Stream Mixing	Base Line	127	28%	272	60%	56	12%
	Post	38	9%	301	71%	87	20%
Access to recycling	Base Line	137	30%	288	63%	30	6%
	Post	33	8%	288	68%	105	25%
Loose materials noted	Base Line	93	20%	221	49%	141	31%
	Post	29	7%	82	19%	315	74%
Containers overflowing	Base Line	72	16%	236	52%	147	32%
	Post	21	5%	132	31%	273	64%
Cleanliness of area	Base Line	78	17%	266	58%	111	24%
	Post	31	7%	204	48%	191	45%
Area well lighted	Base Line	286	63%	126	28%	43	9%
	Post	137	32%	193	45%	96	23%
Well labelled	Base Line	351	77%	93	20%	11	2%
	Post	10	2%	192	45%	224	53%
Well signed	Base Line	361	79%	86	19%	8	2%
	Post	173	41%	122	29%	131	31%

It can be seen that even after the implementation of a Region-wide program and providing extensive P&E material, some buildings were still experiencing issues related to contamination, stream mixing etc.

Staff conducted a third round of site visits to those poor performers (over 100 buildings were visited) to ensure they had the required P&E materials and to review the recycling program with the on-site contact and or manager/owner. In many cases the on-site contact was new or additional

P&E was required, especially posters. As a result of the additional site visits over 2,600 units received letters directed to their residents tailored to address specific issues seen during the site visit. These were either mailed, hand delivered by staff or delivered by the on-site contact and/or property manager/owner. Region staff also developed a flyer to go with the letters to remind residents of what is acceptable in our programs. In addition, posters were often removed or needed to be replaced or were not placed up by on-site contacts (if requested the Region leave poste

It can be seen in the table above that there is still a fair number of buildings that were not rated as a '3' for signage. This is a result of many of the buildings in Niagara region have outside recycling areas where there is no place to put up above the cart signage. In these cases, the Region does recommend putting the signage up in common areas like laundry rooms to remind residents of proper preparation and acceptable materials. In addition, posters were offended removed or not placed up if the on-site contact requested posters just be left with them. It is recommended that buildings are followed up on once a year or more if resources allow ensuring posters remain in good condition and placed up in recycling areas or other common areas.

4.2.5 Featured buildings

45 Pelham Square, Fonthill

One organization that has embraced the Region's recycling and organics collection program for multi-residential buildings is the Pelham Non-Profit Housing Corporation. Located in Fonthill (in Pelham), the complex has 64 residential units for residents aged 55 and older. Through the recycling efforts of staff and residents, it is estimated that the complex recycles more than seven tonnes of materials per year. That's an average of 109 kg/unit/year.

The Pelham Non-Profit Housing Corporation manages to put out only eight bags of garbage per week between its 64 units. Their remarkable performance comes through the cooperative steps taken by both building staff and residents in pursuit of a common goal of diverting materials away from landfills.

Residents and building staff work together to educate each other about modern recycling practices, and staff make it easy for residents to put those practices into action. For example, some residents chose to bring their recyclables down in plastic grocery bags. Once residents empty the grocery bags, the bags are then recycled. These bags are placed in a common receptacle, tied, and placed in the Grey Cart on collection day.

Building staff also routinely check recycling carts, removing contaminants and misplaced material. Residents also engage in a number of other waste diversion activities that help reduce the waste they put to the curb. They collect light bulbs and batteries for separate disposal. If a tenant passes away, building staff works with the family to donate much of the resulting furniture and other useable items to Open Arms Mission in Welland.

Figure 1: Full Carts at 45 Pelham Square, Fonhill



198 Scott Street, St. Catharines

Another building that has embraced the Region's recycling and organics collection program is 198 Scott Street in St. Catharines. This building has 101 units and 19 recycling carts and 4 Green Carts. This building provides recycling capacity well over CIF Best Practices at 67 litres per unit.

This building was not always one of the Region's top performers. In 2011, this building had extensive contamination issues in their recycling carts.

Property managers took steps to correct the problem including:

- posting signs of specifically targeting typical contamination material;
- communicating issues and providing directions to residents;
- providing a garbage can in the recycling area for non-recyclables; and
- regularly monitoring areas.

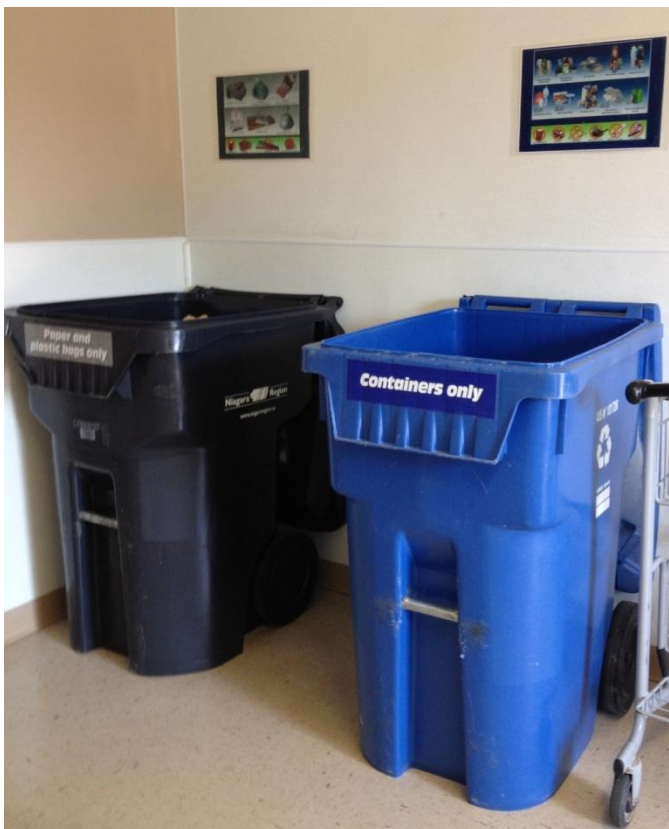
In addition, the property managers have created easily accessible and convenient areas for recycling collection. Extra carts are stored indoors in a separate area and as recycling carts become full, the property managers switch the full ones for empty carts.

Since these property managers have taken the above steps, there have been no further contamination issues at this property.

Figure 2: Empty Carts being stored in separate area at 198 Scott St., St. Catharines



Figure 3: Recycling area at 198 Scott St., St. Catharines



These buildings were featured as success stories at the Superintendent, Property Owner/Manager Workshop held in September (see Section 4.4.1) and 45 Pelham Square, Fonthill was featured in the Region's Public Works newsletter, the Green Scene that is mailed out to all low-density and multi-residential households.

4.3 Phase 3: Increase recycling container capacity

Having enough storage space for recyclables is one of the most critical factors in a successful recycling program and it is important to address this first before other program improvements are put in place. During Phase 2 site visits the baseline container quantities were recorded and information was collected about where containers could be relocated within the building to provide more convenience to residents. Site visits also provided the opportunity to determine if additional containers are required and where additional containers would be stored and ultimately used.

4.3.1 Type of recycling containers

Recycling storage space is referred to as 'capacity' and is the shared recycling containers used by building residents to deposit their recyclables.

Through a study completed by Entec in preparation for the implementation of a Region-wide multi-residential recycling cart program, it was determined that the recommended number of carts is 1 Blue Cart (95 gallon) for every 20 units and 1 Grey Cart (95 gallon) for every 11 units. This was based on a 65% recovery rate which is slightly higher than the CIF Best Practices of 1 cart for every 7 units based on a 60% recovery rate. The Region recommends buildings start out with the number of carts based on the ratio above and if they find their carts are full prior to collection day to purchase additional carts.

As stated in Section 3, prior to the implementation of the Region-wide program, building owner/managers were required to purchase the recycling carts from the Region on a full cost recovery basis and no in-unit recycling containers and limited P&E were provided. Through the help of CIF, property owners/managers can now purchase recycling carts for 50% of the total cost

(currently \$35 each which includes the labels, delivery and taxes) and in-unit recycling bags are provided free of charge.

As well, prior to implementation of the Region wide program, only Blue Carts were provided and were labelled for either Containers or Fibre and Plastic Bags. During the implementation of this program, staff swapped Blue Carts being used for fibre materials for Grey Carts so they mimicked the curbside residential program. Over 190 Blue Carts were swapped for Grey Carts. The used Blue Carts were then redeployed to non-profit or cooperative housing free of charge.

4.3.2 How much recycling capacity is being provided?

Based on the provincial target of recycling 70% of all recyclables it is recommended that each residential unit be provided with a minimum of 50 litres of storage capacity. This is equivalent in size to a standard 14 gallon Blue Box. In terms of multi-residential containers, the following guidelines are recommended by CIF and are considered best practices:

- 360 litre carts – one cart for every 7 residential units

Niagara Region is a dual stream recycling system; therefore, it was recommended that one Blue Cart for every 20 units and one Grey Cart for every 11 units.

Continuous Improvement Funding is provided on the basis that municipalities implement these best practice ratios. The guidelines represent average requirements and it is assumed that at the building level there will be ranges depending on the demographics.

Cart delivery began in January 2011. During baseline data collection, the Region's multi-residential recycling capacity was 34 litres per unit. Post-implementation monitoring shows an increase in recycling capacity to 47 litres per unit. This is within the best practice range of 45-55 litres per unit. The post-implementation only includes those receiving the Region's recycling cart collection (excludes those receiving private collection).

It should be noted that the Region does allow for cardboard to be bundled and placed beside the recycling carts. This would not be captured in the litres capacity per unit.

Table 4.4: Total number of recycling containers

	Baseline 2010 ¹	Post implementation 2013 ³
Units with recycling cart service	12,396	20,517
95 gallon carts	1,183	2,667
Total program capacity in litres	425,880	960,120
Capacity per unit (l/unit)	34 ²	47

¹Includes all buildings receiving recycling cart collection including from a private contractor.

² Some buildings in baseline only received alternate weekly, bi weekly or monthly service.

³Includes only buildings' receiving the Region's recycling cart collection.

During the implementation, some buildings were hesitant to purchase the recommended number of carts because they didn't believe they required that many or they did not have enough storage space for the recommended number of carts. Having enough storage space for carts is an important factor in a successful recycling program. During site visits, suggestions were made regarding cart locations as well as storing empty carts in a separate location and as carts became full in the recycling area to swap out full carts for empty carts.

Some buildings requested an additional weekly collection; however the current collection contract specifies one collection per week for recycling carts. This presents a barrier to some buildings in purchasing additional carts and is a barrier that cannot be immediately rectified but may be considered in the development of the next collection contract in 2018.

One mechanism the Region utilized to motivate buildings to increase the number of the recycling carts to the recommended amount and to implement a recycling cart program was to advise buildings the cost of carts were going to increase and provided a deadline to purchase carts at the

reduced rate. Letters were tailored to each building indicating how many carts/additional carts were recommended. The cost of the carts increased to include costs of the labels and staff delivery time. As a result of these letters, 325 carts were added to the Region's program.

Some of the reasons why some buildings did not need the recommended number of recycling carts were because of the demographic of the buildings (i.e. seniors or low-income). The median age of Niagara's population was 42.1 years old in 2006. This was the second highest in Ontario. Niagara's median household income was \$53,057 in 2006. This was slightly lower than the Canadian median.

Buildings with many seniors tend to have a lower number of residents per residential unit and therefore generating less waste. As well as lower income families tend not to generate as much waste due to economic constraints.

There are buildings that have exceeded the recommended number of carts (approximately 95 buildings). Many of these buildings are larger buildings and majority (73%) were receiving recycling cart collection prior to 2011 and had been recycling for many years.

Table 4.5 summarizes the recycling capacity for baseline and post implementation site visits.

Table 4.5: Recycling capacity and recycling rate, baseline and post-implementation

Capacity range	Baseline		Post-implementation	
	Number of Buildings	Kg/unit	Number of Buildings	Kg/unit
Best practice range: 45 to 55 litres/unit	28	85	64	90
Low: less than 45 litres/unit	138	46	138	65
High: more than 55 litres/unit	94	115	217	138

4.4 Phase 4: Provide promotion & education materials

4.4.1 On-Site and Face to Face Outreach

Direct face to face communication is considered the best outreach mechanism. The following is a highlight of the work completed by the Region.

Information Sessions for Superintendents/Property Managers and Owners

The Region conducted four information sessions in December 2010 for superintendents/property managers and owners on the new service levels for multi-residential buildings including new garbage limits and the implementation of the Region-wide recycling cart collection program. There were over 70 attendees at the information sessions. Many of the participants were property managers/owners that represented multiple buildings within the region.

In addition to staff presenting information on the programs available to multi-residential buildings, samples of the recycling carts, in-unit recycling bags and P&E materials were shown. Buildings also had the ability to purchase recycling carts at the information session.

Open Houses/Lobby Displays

The Region offered open houses/lobby displays to help educate residents at multi-residential buildings on the recycling program. The Region was flexible in the type of open house/lobby display offered to the building as each building was unique. Some buildings had formal PowerPoint presentations if they had a designated room to accommodate a presentation and others had staffed lobby displays that were generally held between 3 p.m. and 6 p.m. to try to speak to as many residents as they returned home from work and/or school. The Region also offered unstaffed displays where promotional material and poster boards were left up for approximately four days.

A total of 69 open houses/lobby displays were held for the recycling cart program with an additional 49 open houses completed in conjunction with the launch of the Green Cart program.

Participation in the open houses/lobby displays varied with some being very successful and others only having a few residents attend. Although some had poor turnouts the residents that did attend asked a lot of questions and were very interested in learning more about the Region's programs.

It is recommended that open houses/lobby displays are mandatory and are advertised three to five days before. If the building is new to recycling, it is recommended that the open house/lobby display occurs on the same day as delivery of the recycling carts and in-unit tenant packages. The Region took this approach when implementing the Green Cart program

Figure 4: Unstaffed Lobby Display



Waste Reduction Workshop

The Region held a multi-residential waste reduction workshop resulting in attendance by 20 participants. Four of the 20 participants were property managers that represented multiple buildings within Niagara, and as such are now able to apply the lessons learned to each of the many buildings they are directly responsible for. The workshop supplemented other program support mechanisms and outreach activities conducted by the Region.

Region staff considered the workshop a means to open a greater dialogue between Region staff, building owners/superintendents and property managers. The utilization of a facilitator trained in adult learning principles assisted in the clear communication of the workshop information as well as the application of unique learning techniques to aid in the retention of the workshop information. Betty Muise, a trained adult learning educator, was retained to facilitate the workshop.

More information on the workshop can be found under CIF Project #434.

Figure 5: Display at September workshop



Figure 6: Sorting Exercise at Workshop



4.4.2 Multi-Residential Recycling Promotion Material

A project goal was to distribute new print materials to promote recycling and educate building residents and staff about what can and cannot be recycled. Municipalities have access to print templates (resident flyers, posters and signs for buildings, container labels and a guidebook for superintendents, property managers and building owners) through the CIF website. The template materials were customized with Region specific information. In addition, to the previously designed CIF print materials, Region staff developed supplementary communication and promotional material for residents and superintendents/property managers and owners as part of the program launch.

The *CIF Best Practice Guidelines* recommends strategies for distribution of print materials which include that municipalities take responsibility for:

- Distributing print materials directly to residents,
- Distributing and displaying posters at multi-residential buildings, and
- Applying labels to recycling containers.

If time permits, a good practice is to handout the superintendents' handbook and display posters and signs at the time when recycling containers are being delivered to the building.

The following sections provide more details on the P&E materials distributed.

Launch Packages for Residents

Residents were provided in-unit packages for the launch of the multi-residential recycling program. Additional packages were also provided to buildings on a request basis after the launch of the program for new residents. The packages contained the following:

- Introduction letter for the Region's recycling program which included information on the contents of the launch package.
- One blue and one grey in-unit recycling bag for residents with screened photographs on each bag to clearly illustrate acceptable and unacceptable materials in the program. These recycling bags help

residents to properly sort, store and transport recyclable materials to the recycling carts.

- Multi-Residential Guide to Recycling Brochure* containing detailed information on what is acceptable and unacceptable in the recycling program and how to properly prepare and separate acceptable materials.
- Guide to Household Hazardous Waste (HHW) Disposal containing information on the proper disposal of HHW, HHW depot days and times, locations and acceptable materials.
- Guide to Electronic Recycling containing information on Niagara Region drop-off locations, acceptable materials and information on how to find local retail locations that accept old electronics for recycling.

Supplementary Promotion and Education Materials

In addition to the tenant packages, the Region also used additional P&E materials that included the following:

- Superintendent/Property Manager and Owners Recycling Handbook* containing information on the provincial 3Rs legislation as it relates to recycling in multi-residential buildings, practical information about how to set up and maintain a successful program, and information describing how the recycling program operates and the services provided by Niagara Region.
- Directional Posters indicating location of recycling carts*.
- Recycling Posters placed above the carts to provide visual guidance to residents for proper separation of materials.
- Recycling Cart Labels with photographs of recyclable materials as reminders to residents as to what is acceptable in the program (matches with the photographs and labels on the in-unit recycling bags)
- Recycling Cart Labels for the front of the carts indicating the material stream to be placed in the cart (i.e. Containers Only or Paper and Plastic Bags Only).
- Roll-Up Banners with photographs and labels of acceptable materials used at various venues to illustrate the comprehensive list of recyclables accepted in the Region's program.

- 'Did You Know?' Poster Boards used at open houses and lobby displays to motivate tenant participation by showing the benefits of recycling and what new products are manufactured from recyclables.
- Additional recycling cart labels to be placed on carts with in-mold labels that indicated all rigid plastic packaging was now acceptable in the Blue Carts. The Region started accepting additional materials in 2012.
- Questions and Answers on recycling sheet for both residents and superintendents/property managers and owners outlining the importance of recycling, details of the program and how to operate a successful program.

*The print material developed by CIF and customized by the Region.

Examples of the above P&E materials are shown in Appendix II.

Other Social Marketing and Outreach

In addition to the above, the Region also completed the following additional outreach:

- Multi-Residential Recycling Program content on the Regional website.
- Targeted letters to residents of buildings with contamination and stream-mixing to remind them of acceptable and unacceptable materials in the program and to stress the importance of proper sorting of material. These letters included a one page multi-residential sorting guide with pictures of acceptable materials.
- Targeted letters to non-participating buildings encouraging participation by:
 - Continuing to offer recycling carts at a 50% subsidy;
 - Identifying the program as mandatory as per the Waste Management Services By-Law and that Regional waste collection service may be terminated due to lack of compliance; and
 - Providing a reminder that a recycling program is required under Ontario Regulation 103/94, with copy to the responsible MOE branch

Table 4.6: Summary of Promotion & Education materials used

Promotion & Education component	Number distributed	Method of distribution
In-Unit Tenant Bags	30,000 2 per unit	By Region staff to each unit (where permitted) and extras left with on-site contact
Posters	Approx. 1,500 A minimum of one poster for every two carts	Posted by Regional staff (where permitted), extras left with on-site contact. Some buildings that had uncovered outside recycling areas had posters placed in common areas
Directional Signs	Approx. 500 2 per buildings – one for each stream	By Region staff
Cart Labels (with pictures of acceptable materials)	Carts provided under CIF contained in-mold labels, an additional 1,000 were placed on existing carts	By Region staff
Cart Labels (i.e. Containers Only or Paper and Plastic Bags Only)	Approx. 2,000	By Region staff
Cart Labels indicating all rigid plastic packaging now accepted	1,000	Placed on carts prior to delivery
Recycling guidebook	730 For each superintendent, property manager and property owners	By mail or provided during site visits, information sessions/workshops
Targeted Letters to buildings with contamination	2,600	By mail or delivered by staff to each unit or by on-site contact

4.4.3 Multi-Residential Survey

In December 2012, the Region conducted a survey targeted at residents of multi-residential buildings to seek feedback on the multi-residential recycling cart program.

Region staff explored several options to conduct a user feedback survey including mailing the survey with return envelope via addressed mail, addressed ad mail directing residents to an online survey and door hangers advertising the survey.

The Region chose to hand deliver door hangers that not only advertised the survey on one side but also contained recycling tips, on the opposite side, that focused on problem materials in the Region's recycling cart program. It was felt that residents would most likely read the door hangers if placed directly on their door. Residents could complete the survey on-line or by telephone by calling the Region's Waste Info-Line.

In total, 2,200 door hangers were delivered to various multi-residential buildings that received the Region's recycling cart service. The majority were hand delivered to each unit by staff (75% of total units). Buildings were selected based on location, size and type of buildings (i.e. rental or condominium). Staff selected more buildings in municipalities that had the greatest number of multi-residential buildings and if a municipality had more buildings with 7-20 units than 100 or more for example more buildings in the 7-20 range received door hangers. Staff also ensured there was a mix of good performing buildings and poor performers as identified in the site visits.

To provide incentive to go on-line or call the Region's Waste Info-Line to complete the survey, the Region offered the chance to win a \$100 pre-paid Visa card by completing the survey. In an effort to try to get more feedback the Region also called residents who did not receive a door hanger to complete the survey. Even with the incentive and telephone calls, only 66 surveys were fully completed.

Majority of respondents lived in rental buildings (59%) and in buildings with 5 or more stories (58%). The majority of households consisted of two people (54.5%) followed by one person households (38%).

All (100%) of the respondents indicated they used the recycling program.

Majority of respondents bring their recyclables to a recycling area with Blue and Grey carts and/or Blue and Grey boxes within their building (54.5%) followed closely by those that go outside to place their recyclables in the Blue and Grey Carts (44%). Only one respondent indicated their building had dedicated chutes for recycling. In addition 75% of those that indicated they had a recycling area within their building were 5 or more stories.

The distance to the recycling area from the respondent's units varied. Of those that responded, 3% responded greater than 10 storeys, 18% responded 5-10 storeys, 29% responded 2-4 storeys, 30% responded 1 storey and 20% responded on the same floor.

Only 10.5% of respondents believed their recycling area was too far. Of those, 29% responded that their recycling area was 5-10 storeys from their unit, 29% responded 2-4 storeys, 29% responded 1 storey and 13% responded on the same floor.

Majority of the respondents strongly agreed or agreed the Blue and Grey recycling carts, recycling area or recycling chutes in their building are easily accessible (91%). Of the small percentage that disagreed with this statement (6%), 75% indicated they bring my recyclables directly to the Blue and Grey carts located outside their building.

Respondents believed that there are an adequate number of carts for recycling at their buildings with 74% strongly agreeing or agreeing with this statement and 11% responded as neutral.

Overall the respondents were happy with the P&E material provided to them in support of the recycling program. 78% indicated they strongly agreed or agreed that the recycling signs, posters and brochures provided are informative and helpful and an additional 11% provided a neutral response. Majority of the 9% that indicated the above was not informative and helpful indicated they did not receive the reusable recycling bags that contained the brochures.

The respondents also provided positive feedback on recycling bags, cart labels and posters. Majority of respondents indicated these materials helped

inform them of what materials were accepted in the program. 80% and 85% of respondents indicated the recycling bags and labels on the carts helped them determine what was acceptable in the recycling program respectively. Feedback received on the labels and posters indicated, they were clear, they make recycling easy, they are easy enough for kids to understand and they help them properly separate the material. Of those that did not believe the recycling bags were informative, 73% indicated they did not receive them. Majority of those that did not find the labels or posters helpful indicated they have not seen them or the lids were always open on the carts. Majority of those that did not have posters (64%), had outdoor recycling areas where posters were not placed due to exposure to the elements.

Staff followed up with buildings where residents indicated they had not received in-unit tenant packages or other P&E materials.

The complete results of the survey are found in Appendix III.

4.4.4 Timing of Promotion & Education campaign

The Region's promotion and education campaign started in early 2010 with letters to all multi-residential buildings indicating the Region's Council approved the implementation of the Region-wide recycling cart program in addition to changes to garbage limits starting in February 2011. Promotion and education is still on-going as the Region continues to conduct open houses/lobby displays, complete site visits to buildings that experience issues and deliver P&E materials.

5. Project budget and schedule

The project budget and actual costs are outlined below in Table 5.1. There were additional multi-residential buildings (i.e. cooperative housing) that the Region was unaware of in the planning stages that required carts or existing carts that needed to be replaced due to damage that prevented continued use.

The Region was able to participate in the joint CIF tender for the recycling carts which helped reduced the cost/unit significantly from the budget

estimated. In addition, CIF was able to help the Region purchase in-unit bags at a lower price than anticipated by arranging for the Region to piggy back on the Region of Waterloo tender.

The Region was also able to use the in-house Graphic Design team to develop the additional P&E material required outside the CIF developed material. This reduced the design costs significantly for the table top displays, labels, stickers and roll-up banners.

Table 5.1 Project budget, planned and actual

Description	Unit	Quantity (est.)	Unit Cost (est.)	CIF Approved (upset limit)	Quantity (actual)	Unit Cost	Cost
Project Feasibility Study	Report	1	\$29,000	\$29,000	1	\$28,836	\$28,836
Program Support		1	\$94,000	\$94,000	1	\$95,204.14	\$95,204.14
Recycling Carts	96 gallon	2,839	\$98 (incl. labeling)	\$278,222	5,032	\$51.75 - \$56.71	\$270,614
Recycling Cart Labels	Label for older carts				1,450	\$3.25-\$4.20	\$5,380
Recycling Cart Labels with updated information	Label indicating all rigid plastic packaging accepted				1,000	\$2.31	\$2,310
Now Accepting All Rigid Plastic Packaging Stickers	Label for carts with IML labels				1,000	\$1.42	\$1425
Containers Only and Paper and Plastic Bags Only Stickers	Label				2,500	\$0.52	\$1,300
Final report	Report	1	\$10,000	\$10,000	1	\$5,000	\$5,000
In-unit containers	Blue and Grey Bags	21,000 of each	\$3 (for two)	\$69,875	60,000	\$0.78	\$46,800
Introduction to Program Communication Piece	Letter (originally door hanger/post card)	21,500	\$0.30	\$6,450	30,000	\$0.03	\$765
Consultant Design	Table Top/Roll-Up Banners	1	\$4,000	\$4,000	1	\$1,447.75	\$1,447.75
Production	Table Tops/Roll-Up Banners	1	\$8,000	\$8,000	1	\$2,276.72	\$2,276.72
Total				\$499,547			\$461,359

The planned project schedule versus actual project schedule is provided below.

Phase 3 and 4 included the third round of site visits to poor performers, which extended the timeframe for these phases.

Table 5.2 Project schedule, planned and actual

Project Deliverables	Approved Payment (upset limit)	Percent	Expected Completion Date	Completion Date
Phase 1 and 2	\$123,000	25%	Nov-10	Oct-10
Phase 3 and 4	\$366,547	73%	May-11	Nov-12
Submit final report	\$10,000	2%	Jul-11	Dec-13
CIF Funds Requested	\$499,547	100%		

6. Concluding comments

This project provided an opportunity for the Region to launch the region-wide multi-residential recycling program with proper resources and P&E material as well as to gauge the success of the implementation.

Site visits provided valuable information on which buildings required recycling, additional carts, open houses/lobby displays, guidance on proper recycling practices and how to best set up recycling at each building to ensure success. Site visits also highlighted the challenges of recycling in some buildings as well as creative solutions to increase recycling that could be shared with others.

Although, the Region had some buildings participating in recycling previous the region-wide campaign, there was limited outreach and P&E available to these buildings. The CIF project funding helped provide the much needed resources to multi-residential buildings. The implementation of a region-wide

program along with other service changes has helped the Region increase its diversion rate from 42% prior to the service levels changes to 52% in 2012.

The work completed under this project has provided the Region with many best practices that can be used when exploring further multi-residential waste diversion opportunities in the future.

Next Steps

Using the lessons learned from this project and the P&E materials developed (with some modifications), the Region will be focusing on mixed-use buildings (commercial with a residential component) to ensure residents of these buildings have the same tools and resources as the multi-residential sector.

7. Appendices

Appendix I – Screen Capture of MS Access Database

Appendix II – Promotion and Education Material

Appendix III – Multi-Residential Feedback Survey

Appendix I – Screen Capture of MS Access Database

Multi Residential Management System

File Home Add-Ins

Clipboard Sort & Filter Records Find Window Text Formatting

Property Find

Building Name
Civic#
Street Name
Property Type
Contact First Name
Contact Last Name
Contact Company Name

Clear All Search

Building Name	Civic#	Street Name	Property Type	City	First Name	Last Name	Company Name	Contact Type
People's Choice Co-op	64	Louth St	341	St. Catharines			2313981 ONTARIO INC	Mailing Address
People's Choice Co-op	64	Louth St	341	St. Catharines			2313981 ONTARIO INC	Owner
Roehampton Place	64	Roehampton Ave	340	St. Catharines	Roger			On-site Contact
Roehampton Place	64	Roehampton Ave	340	St. Catharines	Michelle	Williams	Timbercreek Asset Management	Property Manager
Roehampton Place	64	Roehampton Ave	340	St. Catharines	Vivian	Mathews		On-site Contact
Roehampton Place	64	Roehampton Ave	340	St. Catharines			2057458 Ontario Inc	Mailing Address
Roehampton Place	64	Roehampton Ave	340	St. Catharines			2057458 Ontario Inc	Owner
Landsdowne St. Lawrence Village	64	Windward St	340	St. Catharines			St Lawrence Village Corp	Mailing Address
Landsdowne St. Lawrence Village	64	Windward St	340	St. Catharines	Lydia	Atienza		On-site Contact
Landsdowne St. Lawrence Village	64	Windward St	340	St. Catharines	Marilyn and R	Pigeon		Property Manager
Landsdowne St. Lawrence Village	64	Windward St	340	St. Catharines			St Lawrence Village Corp	Owner
	66	Elm St	340	Port Colborne	John	Butt	Marie and John Butt	Owner
	66	Elm St	340	Port Colborne	John	Butt		Mailing Address
Dexter Arms 67-69 East Main St.	67	East Main St	472	Welland	Mohan	Narain		Owner
Dexter Arms 67-69 East Main St.	67	East Main St	472	Welland	Mike			On-site Contact
Address is filed as 67-73 Hagey A	67	Hagey Ave.	370	Fort Erie	Lisa	Scalzi	Malletta Dental	Owner
Address is filed as 67-73 Hagey A	67	Hagey Ave.	370	Fort Erie	Charles	Nunn		On-site Contact
Westland Apartments	69	Permilla St	340	St. Catharines			1882928 ONTARIO INC	Owner
Westland Apartments	69	Permilla St	340	St. Catharines	Lionell	Parliament		On-site Contact
	70	Main St	370	St. Catharines	Barbara	Snell		Mailing Address

Appendix III – Promotional and Educational Material

In-Unit Recycling Bags



Multi-Residential Guide to Recycling Brochure (developed by CIF)

Do not recycle

PLASTIC

- Toys
- Caulking tubes
- Plastic food wrap
- Needles/syringes
- Plastic lawn edging
- Plastic strapping
- Plastic blister packs
- Solar blankets & tarps
- Lawn chairs
- Garden hoses

GLASS

- Drinking glasses, dishes
- Cups, crystal
- Window glass

Light bulbs

- Monitors
- Pottery
- Ceramics

METAL

- Food-contaminated foil
- Coat hangers
- Batteries
- Scrap steel
- Propane tanks
- Appliances
- Pots and Pans
- Auto Parts
- Electronics
- Tools

PAPER/FIBRE

- Tissues
- Waxed paper
- Waxed cardboard
- Ice cream cartons
- Chip bags
- Gift wrap
- Coated paper bags (i.e., pet food bags)
- Paper coffee cups
- Paper & take out trays
- Paper egg cartons
- Frozen food packaging
- Foil lined lids
- Greeting cards
- Butter or cigarette wrappings
- Wood

DROP EVERYTHING!

All that stuff that isn't garbage, and doesn't go in your recycling cart, can now be dropped off at convenient collection depots, for reuse, recycling or responsible disposal:

- Leftover paint and solvents, empty oil containers and used oil filters, antifreeze, propane tanks, fertilizers and pesticides, non-rechargeable batteries, televisions, computers and peripherals, fax machines and printers.

Do your bit to keep our communities livable. Learn more at the website hosted by Stewardship Ontario and Ontario Electronic Stewardship:

dowhatyoucan.ca

RECYCLING MOMENTS: A CHANCE Encounter

RECYCLE OFTEN

Your Guide To Recycling

Take a moment to sort and recycle. Every time you place materials in your recycling container you accomplish at least three good deeds for the day. First, you are diverting waste from the landfill, and thus extending its life. Second, you are ensuring materials such as aluminum and paper that have many lives, can be used and reused to their fullest. And third, you are helping to save money.

THINK BLUE LIVE GREEN

Niagara Region

This project has been delivered with the assistance of Waste Diversion Ontario's Continuous Improvement Fund, financed by Ontario municipalities and stewards of blue box waste in Ontario.

Printed on 100% recycled paper.

Niagara Region's Recycling Guide

Paper, Cardboard and Plastic Bags Only

- Boxboard – cereal, pop, cookie, tissue, detergent, cracker, shoe and gift boxes (remove liners, flatten and stuff smaller boxes tightly into larger ones)
- Corrugated cardboard and pizza boxes (flatten)
- Plastic bags – retail, milk and bread bags, dry cleaning bags, clean bubble wrap, and the plastic outer covering from toilet tissue paper and pop cases (remove receipts and stuff all plastic bags into one bag and tie handles)
- Paper – flyers, envelopes, paperbacks, phone books, magazines, hardcover books (remove cover and discard)
- Shredded paper (placed inside a firmly tied clear plastic bag)



Containers and Rigid Plastic Packaging Only

- Plastic bottles, jars, clamshells, flower pots, trays, tubs and lids
- Plastic pails – 5 gallons in size or smaller (remove and discard steel handles)
- Spiral wound containers – cardboard cans with metal bottoms, e.g., frozen juice cans, potato chip containers, baby formula containers
- Aluminum & metal food cans and trays
- Empty paint and aerosol cans (lids must be removed from paint cans and recycled with cans, plastic lids from aerosol cans must be removed and discarded)
- Glass jars and bottles (remove and recycle caps and lids)
- Beverage cartons, e.g., milk and juice cartons



* Empty and rinse food residue from all recyclables

Niagara Region

Need More Information?

Call Waste Info Line at 1-800-594-5542 or 905-356-4141. Visit www.niagararegion.ca

Directional Poster (developed by CIF)



**RECYCLE
MORE**

Make recycling a part of your life. Take a moment to sort and recycle.

Every time you place materials in your bag you are helping the environment. For more information on recycling, please visit www.niagararegion.ca

Niagara Region

Recycling carts are located at _____

Roll Up Banners and Poster Boards



Recycle!



Niagara  Region
www.niagararegion.ca

Did you know?



5 plastic water bottles



yield enough fibre to
make **1** t-shirt

Did you know?



Recycling **1** aluminum can saves enough energy to run a television set for **2** hours



Containers and Rigid Plastic Packaging Only

Please Empty and Rinse



Glass jars/bottles
(remove lids)



Metal food and
beverage cans



Foil containers



Spiral wound containers



Empty aerosol cans



Plastic bottles and jars



Plastic tubs and lids



Beverage cartons



Protective packaging, clear
and foam containers



Empty metal and plastic
paint cans and lids



Paper beverage cup



Plastic toys



Coat hangers



Dishes and cookware



Needles and syringes



Small appliances

Niagara  Region
www.niagararegion.ca

Paper and Plastic Bags Only



Newspapers, magazines and catalogues



Plastic bags
(Stuff into one bag and tie closed)



Boxboard
(Flatten and stuff tightly into larger box)



Paper and soft cover books



Corrugated cardboard



Shredded paper
(Place in clear plastic bag and tie closed)



Paper beverage cup



Greeting cards



Wrapping paper



Wax coated frozen food packaging

Niagara  Region
www.niagararegion.ca

Recycling Cart Labels

Containers and Rigid Plastic Packaging Only *Empty and Rinse*



Paper and Plastic Bags Only



Newspapers, magazines
and catalogues



Plastic bags
(Stuff bags into one and tie closed)



Boxboard
(Flatten and stuff tightly into larger box)



Paper and soft cover books



Corrugated cardboard



Shredded paper
(Place in clear plastic bag and tie closed)

Multi-Residential Sorting Guide



Multi-Residential Feedback Survey Door Hanger



Your chance to win a
\$100
PRE-PAID VISA CARD

The Niagara Region wants to hear from you. Let us know what you think about recycling in your building. Complete our survey and you will be entered to win a \$100 pre-paid Visa card.

To complete the survey visit
www.niagararegion.ca/survey before Dec. 11, 2012.
Residents who are not able to complete the survey online may complete it by calling the
Region's Waste-Info Line at 905-356-4141 or
1-800-594-5542 Monday-Friday, 8:30 a.m.-4:30 p.m.

Thank you for participating in your Blue and Grey Cart recycling program. Your efforts to recycle have helped increase recycling and reduce garbage, saving valuable landfill space.

Top Three Recycling Tips

In: Grey Cart
Plastic bags



In: Blue Cart
Beverage cartons



Out:
Paper cups



Visit the Region's website
www.niagararegion.ca
or check the 'Your Guide to Recycling'
brochure for more information on what items
are acceptable further details on the Blue and
Grey Cart recycling program.

More Recycling
Less Waste
**Rethink
YOUR
Waste**

Niagara  Region
www.niagararegion.ca

Appendix III – Multi-Residential Feedback Survey Results

1. Which of the following building types best describes your building?

- 59% of respondents lived in an apartment and 41% lived in condominium apartments

2. How many storeys are in your building?

- 58% of respondents lived in a building with 5 or more stories and 42% lived in buildings with less than 5 stories (6% did not answer this question)

3. How many people live in your household?

- 38% of respondents lived in one person households
- 54.5% of respondents lived in two person households
- 6% of respondents lived in 3-4 person households
- 1.5% of respondents lived in 5 or more person households

4. Does your building have a recycling program whereby you take your recyclables and place them in large Blue and Grey Carts?

- 100% of respondents answered 'Yes'.

5. Does your building have a recycling program whereby you take your recyclables and place them in large Blue and Grey Carts?

- 65% of respondents answered 'Yes'.
- 35% of respondents answered 'No'.
- Of the 35% that answered 'No', 74% lived in apartments and 26% lived in condominium apartments and only 35% (or 8) of those that answered 'No' lived in buildings with 5 or more stories.

6. How do you participate in your buildings recycling program?

- 44% of respondents bring their recyclables directly to the Blue and Grey Carts located outside their building.
- 1.5% bring their recyclables to a dedicated chute for recycling (condominium apartment).
- 54.5% bring their recyclables to a recycling area with Blue and Grey carts and/or Blue and Grey boxes within their building.

- 76% of those that bring their recyclables to Blue and Grey Carts located outside their building are apartment buildings.
- 56% of those that bring recyclables to a recycling area within their buildings are condominium apartments.
- 75% of those that bring recyclables to a recycling area within their buildings are 5 or more stories

7. What are your reasons for not recycling?

- None of the respondents indicated they did not recycle.

8. How far is your recycling area (i.e. number of floors) from your apartment/condo unit?

- 3% responded Greater than 10 storeys
- 18% responded 5-10 storeys
- 29% responded 2-4 storeys
- 30% responded 1 storey
- 20% responded on the same floor

9. Respondents were asked to rate the effectiveness of the following aspects of their building's recycling program.

Distance to Recycling Area

- 6% strongly disagree that the distance from their apartment/condo unit to the recycling area is not too far
- 4.5% disagree that the distance from their apartment/condo unit to the recycling area is not too far
- 6% responded neutral for the distance from their apartment/condo unit to the recycling area is not too far
- 56% strongly agree the distance from their apartment/condo unit to the recycling area is not too far
- 26% agree that the distance from their apartment/condo unit to the recycling area is not too far
- 1.5% did not respond
- Of those that strongly disagree or disagree that the recycling area is not too far, 29% responded that their recycling area was 5-10 storeys from their unit, 29% responded 2-4 storeys, 29% responded 1 storey and 13% responded on the same floor.

Accessibility

- 3% strongly disagree the Blue and Grey recycling carts, recycling area or recycling chutes in my building are easily accessible
- 3% disagree the Blue and Grey recycling carts, recycling area or recycling chutes in their building are easily accessible
- 1.5% responded neutral for the Blue and Grey recycling carts, recycling area or recycling chutes in their building are easily accessible
- 62% strongly agree the Blue and Grey recycling carts, recycling area or recycling chutes in my building are easily accessible
- 29% agree the Blue and Grey recycling carts, recycling area or recycling chutes in their building are easily accessible
- 1.5% did not respond
- Of those that strongly disagree or disagree that the Blue and Grey recycling carts, recycling area or recycling chutes in their building are easily accessible, 75% indicated they bring my recyclables directly to the Blue and Grey carts located outside my building and the distance to their recycling area ranges from 1-10 storeys.

Recycling Drop-Off Routine

- 14% strongly disagree they can drop-off their recycling and access the recycling facilities as I exit the building and do not need to make a special trip
- 9% disagree they can drop-off their recycling and access the recycling facilities as they exit the building and do not need to make a special trip
- 14% responded neutral that they can drop-off their recycling and access the recycling facilities as they exit the building and do not need to make a special trip
- 48.5% strongly agree they can drop-off their recycling and access the recycling facilities as they exit the building and do not need to make a special trip
- 14% agree they can drop-off their recycling and access the recycling facilities as they exit the building and do not need to make a special trip
- 1.5% did not respond
- Of those that strongly disagree or disagree that they can drop-off their recycling and access the recycling facilities as they exit the building and do not need to make a special trip, 60% bring their recyclables to a recycling area outside their building and 20% indicated strongly disagree or disagree that the distance to their recycling area is not too far from their unit.

Adequate Number of Recycling Cart

- 6% strongly disagree there are an adequate number of recycling carts available for their use
- 6% disagree there are an adequate number of recycling carts available for their use
- 11% responded neutral for there are an adequate number of recycling carts available for their use
- 51% strongly agree there are an adequate number of recycling carts available for their use
- 23% agree there are an adequate number of recycling carts available for their use
- 3% did not respond

Promotion and Education Material

- 4.5% strongly disagree the recycling signs, posters and brochures provided are informative and helpful
- 4.5% disagree the recycling signs, posters and brochures provided are informative and helpful
- 11% responded neutral for the recycling signs, posters and brochures provided are informative and helpful
- 55% strongly agree the recycling signs, posters and brochures provided are informative and helpful
- 23% agree the recycling signs, posters and brochures provided are informative and helpful
- 2% did not respond.
- Of those that strongly disagreed or disagreed that the P&E material was informative and helpful majority indicated they did not receive the reusable recycling bags which included pictures of what is acceptable in each recycling cart and the brochures.

Reusable Recycling Bags

- 6% strongly disagree the in-unit Blue and Grey reusable recycling bags (the bags with photos of acceptable materials provided by the Region) provided were effective for storing and transporting their recyclables
- 4% disagree the in-unit Blue and Grey reusable recycling bags (the bags with photos of acceptable materials provided by the Region) provided were effective for storing and transporting their recyclables
- 17% responded neutral for the in-unit Blue and Grey reusable recycling bags (the bags with photos of acceptable materials provided

by the Region) provided were effective for storing and transporting their recyclables

- 53% strongly agree the in-unit Blue and Grey reusable recycling bags (the bags with photos of acceptable materials provided by the Region) provided were effective for storing and transporting their recyclables
- 18% agree the in-unit Blue and Grey reusable recycling bags (the bags with photos of acceptable materials provided by the Region) provided were effective for storing and transporting their recyclables
- 2% did not respond

Overall Recycling Program

- 1% strongly disagree the overall recycling program in their building is effective and helps reduce the amount of garbage
- 9% disagree the overall recycling program in their building is effective and helps reduce the amount of garbage
- 6% responded neutral for the overall recycling program in their building is effective and helps reduce the amount of garbage
- 53% strongly agree the overall recycling program in their building is effective and helps reduce the amount of garbage
- 29% agree the overall recycling program in their building is effective and helps reduce the amount of garbage
- 2% did not respond

10. Respondents were asked to rate their level of agreement with the following statements:

I believe recycling is important to Niagara Region's environmental future.

- 89% - Strongly Agree
- 9% - Agree
- 2% - did not respond

Recycling is as convenient as disposing of my garbage

- 1% - Strongly Disagree
- 1% - Disagree
- 11% - Neutral
- 65% - Strongly Agree
- 20% - Agree
- 2% did not respond

I am well informed about what materials I can recycle

- 1.5% - Strongly Disagree
- 6% - Neutral
- 58% - Strongly Agree
- 33% - Agree
- 1.5% - did not respond

I am well informed on how to prepare materials for recycling

- 3% - Disagree
- 6% - Neutral
- 53% - Strongly Agree
- 35% - Agree
- 3% did not respond

I am well informed on what happens to my recyclables after they are collected

- 27% - Agree
- 17% - Disagree
- 24% - Neutral
- 24% - Strongly Agree
- 5% - Strongly Disagree
- 3% - did not respond

I am well informed on the benefits of recycling

- 1.5% - Disagree
- 3% - Neutral
- 59% - Strongly Agree
- 35% - Agree
- 1.5% - did not respond

The members of my household are eager to recycle and regularly participate

- 1.5% - Disagree
- 5% - Neutral
- 62% - Strongly Agree
- 30% - Agree
- 1.5% - did not respond

11. Do you use your Blue and Grey reusable recycling bags that have pictures of acceptable materials and were provided by the Region to separate your recycling and bring your recyclables to the recycling carts or chutes?

- 67% responded 'Yes'.
- 1.5% responded 'Yes' but prefer bins
- 1.5% responded I take my compostables elsewhere, as they are not accepted separately in the building.
- 1.5% indicated they only use one of the bags and separate the material at the recycling carts
- 1.5% indicated that the bags disintegrated
- 1.5% indicated they using plastic bags
- 1.5% indicated they use a plastic container
- 1.5% indicated they ' Separate them when at the carts'
- 18% indicated they did not receive the Region's reusable recycling bags and either use plastic bags or other plastic containers
- 4.5% did not provide a response

12. Do the following items help to inform you of what materials are accepted in the recycling program?

The photos and descriptions on the reusable Blue and Grey recycling bags

- 80% -Yes
- 17% - No
- 3% - did not respond
- 73% of those who indicated the photos and descriptions on the reusable recycling bags did not help inform them of what is acceptable in the recycling program also indicated they did not receive them. One other respondent indicated they never looked at bags and another indicated the bags disintegrated.

Labels on carts

- 85% - Yes
- 12% - No
- 3% – did not respond
- Of those that indicated no ,four respondents indicated the carts had no labels, two indicated the lids are always left open, one indicated they never look at them and one person indicated there were better signs on the bins.

- Of those that indicated yes, they provided positive feedback on the labels including, clear, helps them separate and makes recycling easy.

Recycling posters in your building

- 64% - Yes
- 17% - No
- Of those that indicated no, 91% did not have posters in their buildings. Majority 64% of these buildings have outdoor recycling drop-off depots. 9% (or 1 building) indicated that no one reads the posters.
- Of those that indicated yes, they provided positive feedback on the posters including they liked the visual graphics, they provided a reminder, they are self explanatory and clear and easy enough for kids to understand.

13. Niagara Region's recycling, Green Bin, and other diversion programs divert approximately 50% of household waste from our landfills. Do you support Niagara Region's goal to increase the diversion rate to 65%?

- 85% responded Yes
- 4.5% did not provide an answer
- 10.5% did not disagree but rather indicated they did not have the Green Bin program available to them or they would not participate in the Green Bin program

14. The following list contains actions that could be taken to encourage apartment/condo households to increase diversion efforts that will bring us closer to the 65% diversion target. For each option, please identify your support or opposition:

Close off garbage chutes in multi-residential buildings (to make garbage disposal less convenient)

- 18% - Don't Know
- 55% - Oppose
- 21% - Support
- 6% - did not respond

Increase promotion and education of recycling and organic programs

- 4.5% - Don't Know
- 1.5% - Oppose
- 91% - Support
- 3% - did not respond

Increase enforcement of the Solid Waste By-Law to ensure garbage and household hazardous waste is not placed in the garbage

- 21% - Don't Know
- 9% - Oppose
- 67% - Support
- 3% - did not respond

15. Gender

- 71% of respondents were female
- 24% of respondents were male
- 5% did not respond

16. Age Group

- 3% were 21 years of age or under
- 17% were 21-30 years of age
- 4.5% were 31-40 years of age
- 4.5% were 41-50 years of age
- 20% were 51-60 years of age
- 29% were 61-70 years of age
- 18% were 71 years of age or over
- 3% did not respond

17. Combined annual wage of the residents in your household

- 32% responded less than \$30,000
- 24% responded \$30,000 to \$49,999
- 9% responded \$50,000 to \$69,999
- 6% responded \$70,000 to \$89,999
- 24% refused to respond

- 5% did not respond