

Multi-residential Recycling: Implementing Best Practices *Region of Peel*



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Acknowledgement:

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This Project has been delivered with the assistance of Waste Diversion Ontario's Continuous Improvement Fund, a fund financed by Ontario municipalities and stewards of blue box waste in Ontario. Notwithstanding this support, the views expressed are the views of the author(s), and Waste Diversion Ontario and Stewardship Ontario accept no responsibility for these views.

For further information regarding this project contact Peter Kalogerakos at the Region of Peel.

Peter Kalogerakos, Region of Peel: 905-791-7800 ext. 4914; peter.kalogerakos@peelregion.ca

1. Executive Summary

This is the final report of a project implemented by the Region of Peel between 2006 and 2011. The project goal was to increase recycling rates by implementing best practices in the municipal multi-residential recycling program. Waste Diversion Ontario - Continuous Improvement Fund (WDO – CIF) provided financial and technical assistance to work with Region of Peel staff in completing the project.

The Region of Peel currently provides blue box recycling to 403,000 households, including 89,000 households in multi-residential buildings. The number of multi-residential buildings provided with municipal recycling service increased from 661 to 675 during this project. This represents a corresponding increase in terms of residential units from 83,000 to 89,000.

The best practices that were implemented during this project included: creating a database of multi-residential properties, measuring recycling performance, changing the type and capacity of recycling containers at buildings and distributing new promotion and education materials to residents and building staff. Additional work described in this report includes: *lobby displays, multiple site visits and onboard weigh scales on collection vehicles*. The Table below provides an overview of the work completed.

Best Practice	Work Completed
Site visits	<ul style="list-style-type: none">Completed at 661 buildings for baseline observations, follow-up visits also completed
Database	<ul style="list-style-type: none">Updated and maintained for all buildingson-board weigh scales were implemented on a pilot basis to provide improved data on building recycling rates
Increase recycling capacity	<ul style="list-style-type: none">1000 front-end bins were added to the program283 buildings were converted to front-end collection from cart based collectionoverall recycling capacity increased more than double, from 20 litres per unit to 55 litre per unit (best practice recommends 50 litres)
Promotion & Education	<ul style="list-style-type: none">New P&E material were developed and distributed to all buildingslobby displays were conducted at 95 buildings

After implementing best practices, the Region began to experience an increase in overall recycling generation, capture and diversion rates. These increases were more pronounced at locations that switched to front-end container recycling collection.

Front-end recycling collection improved the efficiency and effectiveness of the recycling program by reducing the number of wheeled cart recycling containers building staff had to manoeuvre for collection. As a result of this change, recycling areas are also much neater, eliminating the issue of overflowing recycling containers. The Table below provides an overview of the project results and impact on program key performance indicators (KPIs).

KPI	Project Results
Tonnes collected	<ul style="list-style-type: none"> Annual tonnes collected increased from 8,700 in 2008 to 12,000 in 2011
Diversion Rate - all buildings	<ul style="list-style-type: none"> Between 2008 and 2011, the diversion rate, due to Blue Box recycling, increased from 13.5% to 17.5%
Diversion Rate - waste audit buildings	Based on waste audit data before and after the implementation of front-end recycling and other best practices, capture rates for materials such as Cardboard and HDPE experienced increases of 104% and 78%, respectively. Diversion rates increased at these locations from 9% to 16%.
Cost savings	<ul style="list-style-type: none"> By switching to front-end recycling collection, the Region of Peel has reduced their collection costs by 41% at these locations. An overall recycling program cost reduction of 23% was realized.

The cost to complete the project was \$1,186,440. The Region of Peel was approved up to \$600,135 funding from the Continuous Improvement Fund. The estimated return on investment (ROI) of the CIF portion is approximately 3 years. The Region has already realized this ROI.

2. Introduction

Under CIF Project #566.4, the Region of Peel obtained funding to complete site visits, develop a database of multi-residential properties, measure performance, distribute promotion and education (P & E) materials and increase efficiency and effectiveness of its multi-residential recycling program by providing front-end recycling containers to suitable locations. The expenses for the front-end recycling container rollout program fall within the framework of the CIF's Policy on Funding Municipal Projects to Implement Multi-residential Best Practices. Under the CIF Policy, municipalities are approved set funds to complete the work as defined within the policy.

At the beginning of this project in 2006, the Region of Peel had an overall waste diversion rate of 45 percent of waste from landfill. This project is in alignment with the Region's Long Term Resource Management Strategy to achieve 70 per cent diversion of waste from landfill by 2016.

The purposes/goals of the Project were as follows:

- 1) Obtain detailed characteristics of multi-residential properties in the Region: update contact information for building owners, property managers and superintendents;
- 2) Create a customized Multi-Residential Hansen database, to input all the information collected during the outreach project;
- 3) Identify the feasibility of initiating front-end recycling collection on a per building basis;
- 4) Encourage and promote the Region's diversion programs through the distribution of educational materials such as posters, information stickers and reusable woven polyethylene blue recycling bags;
- 5) Implement Front-end Recycling Collection to allow for additional capacity and capture of blue box recyclables at multi-residential properties thereby increasing onsite storage and collection efficiencies.

3. Background: Multi-residential Recycling Program

When this project was initiated, the Region of Peel provided waste collection services for approximately 277,000 single-family households and 83,000 multi-residential units. Multi-residential households accounted for approximately 23 per cent of all households in the Region of Peel. The following streams were included in the waste collection services provided to the 661 multi-residential properties:

- twice per week garbage;
- single-stream recycling;
- white goods; and
- bulky items.

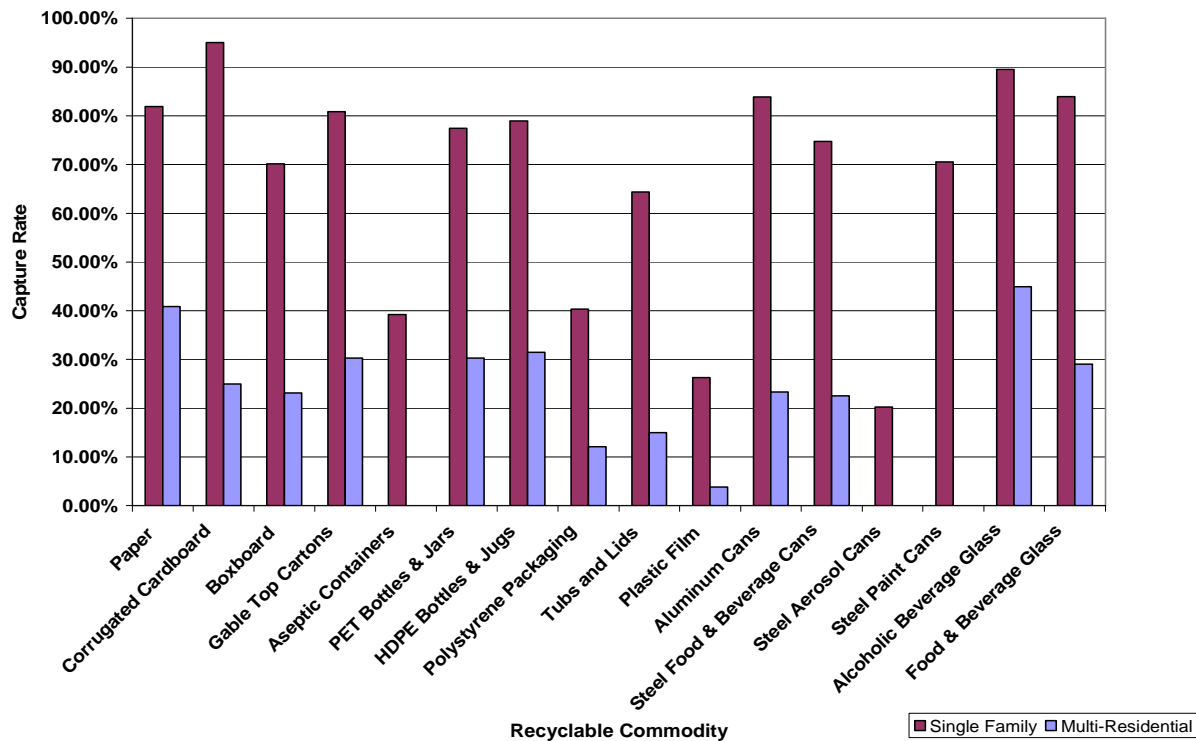
Front-end containers were used for garbage disposal and 95 gallon (360 litre) carts were used for recycling collection at multi-residential buildings, municipal locations and schools. The carts were supplied by the Region at no charge to the customer. The Region supplied 1 cart for every 10 building units. Depending on the size of the building, up to 35 recycling carts may have been required at any one location. Due to the success of the Region's implementation of a single stream recycling program – implemented in April 2006, property managers at the time had expressed that it was becoming time-consuming and somewhat inefficient to wheel a large number of carts to the set-out locations and then return them back after collection.

Based on the results from the 2005/2006 Stewardship Ontario-funded Multi-Family Waste Audit Program, the average diversion rate achieved by multi-residential households in Peel was 13 per cent. This was significantly lower than the diversion rate achieved through recycling in single family households in Peel at the time (approximately 33 per cent). Chart 1 illustrates this disparity between single-family and multi-residential capture of recyclables. The average capture rate of recyclables was found to be 63 per cent for single-family households and 32 per cent for multi-residential households.

Chart 1

Capture Rate by Recyclable Commodity - Single-Family vs Multi-Residential

Source: 2005-2006 Stewardship Ontario Waste Audits



This disparity can be attributed to the fact that multi-residential households are, for the most part, subjected to barriers to recycling. These barriers may include the following:

- a) recycling is not as convenient as garbage disposal;
- b) the capacity for a recycling area in the building may be limited;
- c) building owners/superintendents may not be diligent in promoting recycling to tenants; and/or there is a lack of recycling knowledge due to various factors such as high tenant turnover rates and minimal connection to the recycling program.

In an effort to improve the capture of recyclables and increase participation in the recycling program by multi-residential households, the Region of Peel has undertaken various initiatives and implemented service enhancements. Major initiatives to date include:

- 1) Inventory of multi-residential properties and creation of a multi-residential property database.
- 2) Promotion and education (P&E) Improvements e.g. lobby displays, new

pictorial laminated sorting posters, recycling handbook designed for owners, property managers and superintendents, annual multi-residential waste management guide distribution.

- 3) The implementation of front-end recycling collection to allow for additional capacity at multi-residential properties thereby increasing storage and collection efficiency.
- 4) The use of onboard weigh scales to provide data on waste generation at specific multi-residential buildings.

4. The Project Scope

The project scope included four main components:

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

Each of the components is discussed in the following sections.

5. Component 1: Develop and Maintain a Database of Buildings

In May 2006, a team of three temporary "Assistant Multi-Residential Coordinators" were hired to carry out a multi-faceted grassroots "Blitz" of all multi-residential properties in the Region of Peel. The outreach project was completed in three main phases:

- 1) Training and preparation (2 weeks)
- 2) Outreach and Data Collection (3 months)
- 3) Data Input (3 weeks)

The team visited 661 multi-residential properties in total, representing approximately 83,000 units.

Purpose/Goals

This project was designed to be multi-faceted and multi-purposed. The purposes/goals of the Project were as follows:

- 1) Obtain updated contact information for building owners, property managers and superintendents;
- 2) Identify the feasibility of initiating front-end recycling collection on a per building basis;
- 3) Obtain detailed characteristics of multi-residential properties in the Region;
- 4) Encourage and promote the Region's diversion programs through the distribution of educational materials such as posters, stickers and blue reusable recycling bags;
- 5) Create a customized Multi-Residential Region of Peel (Hansen) database, to input all the information collected during the outreach project;
- 6) Input all the information collected into the customized database.

Scope of Work

The Multi-Residential Outreach Project was targeted to multi-residential stops only, including apartment buildings and townhouse complexes that receive cart-based recycling collection from the Region. Other stops that receive cart-based collection such as Business Improvement Areas (BIAs), Municipal, Institutional, and Schools were not included in this project.

5.1 Methodology

5.1.1 Training

In order to ensure a successful outreach project, proper planning and preparation was required. The "Blitz Team" of three summer staff began work at the Region on May 15, 2006. The team was trained with regards to the Region's waste management programs, in particular the multi-residential waste collection. Team members accompanied by-law enforcement officers to various multi-residential locations. Materials were also provided to the team, giving them a comprehensive background on the issue of multi-residential recycling.

5.1.2 Territories and Route Logistics

In order to divide the work more effectively, an informal geographic analysis was undertaken to identify the geographic distribution of multi-residential properties in the Region of Peel. It was determined that there was a relatively even distribution of properties between the following three territories:

- 1) Brampton
- 2) Mississauga East (of Hurontario St.)
- 3) Mississauga West (of Hurontario St.)

A “territory” was designated to each Blitz team member according to the distribution. Some overlap between territories was inevitable due to the location of buildings within collection zones. This was addressed on an ongoing basis throughout the outreach project to avoid reporting duplication.

Once the territories were established, the next step involved identifying the multi-residential properties to be visited. Waste Collections staff provided collection zone route sheets used by the contractor for recycling. The route sheets detailed all the stops made by all the drivers collecting from a cart-based recycling system. The route sheets were divided among the team members, according to their pre-defined territories. Each team member then went through each route list and eliminated stops that were outside the scope of this outreach project. As a result, each team member was able to isolate the multi-residential properties and begin their site visits.

Site visits were conducted in the order that addresses were listed on collection route sheets to make daily visits as efficient as possible. The students dropped in at the sites unannounced as it is extremely difficult and inefficient to set meeting times with building superintendents and property managers. Usually there was a superintendent or property manager on-site at the time of the visit. This allowed the student to obtain the information required to fill in the data collection form and gain access to the garbage and recycling container areas. On occasion, a building representative was not available. This was noted by the student and a return visit was required. Another challenge during site visits was dealing with a variety of personalities and overcoming some resistance from building staff in relation to the site visits themselves and recycling program policies. A list of

addresses where data could not be collected was compiled and follow up visits were conducted after the project timeline ended. This data was later input into the database.

5.1.3 Vehicles and Supplies

In order to carry out such an intensive outreach project, each team member was given a dedicated vehicle over the entire project period: two (2) Waste Planning vehicles were used along with one (1) rental vehicle. Three digital cameras were purchased to allow each team member to capture images of each building and their respective waste and recycling storage areas and characteristics for entry in the customized database. Each team member was required to keep a stock of supplies with them at all times.

These items included the following:

General Supplies:

- Cell phone
- Digital Camera
- Supplies for removal of cart stickers (scraper, rags, spray bottle, hand sanitizer)
- Tape Measure (for measuring waste storage/collection areas)

Regional Waste Program Supplies:

- Recycling Cart Stickers
- Reusable Blue Recycling Bags
- Laminated Recycling Posters
- Single Stream Recycling Posters
- Multi-Residential Waste Management Guides

5.1.4 Data Collection Form

A form was designed to capture all the information collected at each multi-residential property. Each team member was required to fill out the form, as

complete as possible during each visit. The forms were kept and organized by each team member to be input into the customized database at the end of the outreach project. A sample of the data collection form can be found in **Appendix 1**.

5.1.5 Customized Multi-Residential Database

One of the main purposes of the outreach project was to populate a customized database with detailed information from each multi-residential property receiving cart-based recycling collection from the Region. To create such a database, Waste Program Planning staff requested the services of the Asset Information Management Services (AIMS) group in Business and Information Services. Waste Planning staff worked closely with the AIMS group to design the database to allow for the effective input and management of all data collected by the Region for each multi-residential property.

The database was designed to store all the information collected during the outreach project and allow for continual updating and modification. The database was created within the Hansen Technologies database used for tracking customer service calls. This database is based on the Oracle™ platform and a separate section was designated and customized for multi-residential property information. This section was subsequently expanded to include other service addresses such as BIAs, Schools and municipal properties.

5.2 Multi-Residential Outreach Project Results

This section will summarize the data collected during the outreach project. A variety of Qualitative and Quantitative data has been captured mainly to allow for an examination of building characteristics, asset tracking and the identification of potential buildings that are suitable for front-end recycling collection. Data results for Brampton and Mississauga were combined to produce a Regional average where trends appeared to be consistent between the two municipalities. Refer to **Appendix 2** for a General Complex Summary Report generated from the customized multi-residential database.

Qualitative Data Results

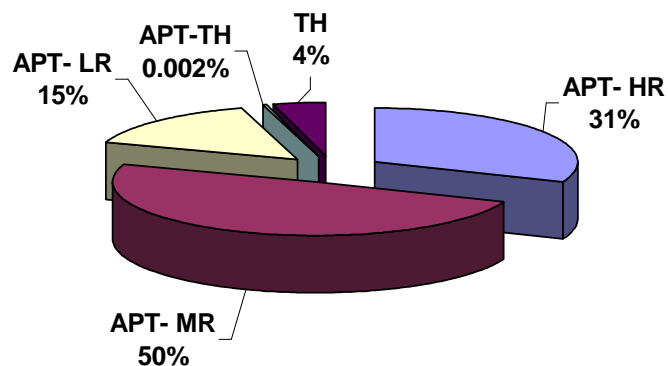
5.2.1 Complex Type

Each multi-residential property visited during the outreach project was classified under one of the following building complex types:

- 1) APT-HR (High-Rise Apartment - 13 or more floors)
- 2) APT-MR (Medium-Rise Apartment – 4 to 12 floors)
- 3) APT-LR (Low-Rise Apartment – 3 floors or less, includes walk-ups)
- 4) APT-TH (Apartment/Townhouse Complex Combination)
- 5) TH (Townhouse Complex)

As illustrated in Figure 1 below, half of the multi-residential properties visited were medium-rise apartments. High-rises comprised almost one third of all complexes and low-rise and townhouse complexes made up the remainder of complexes. Two properties were a combination of apartments and townhouses.

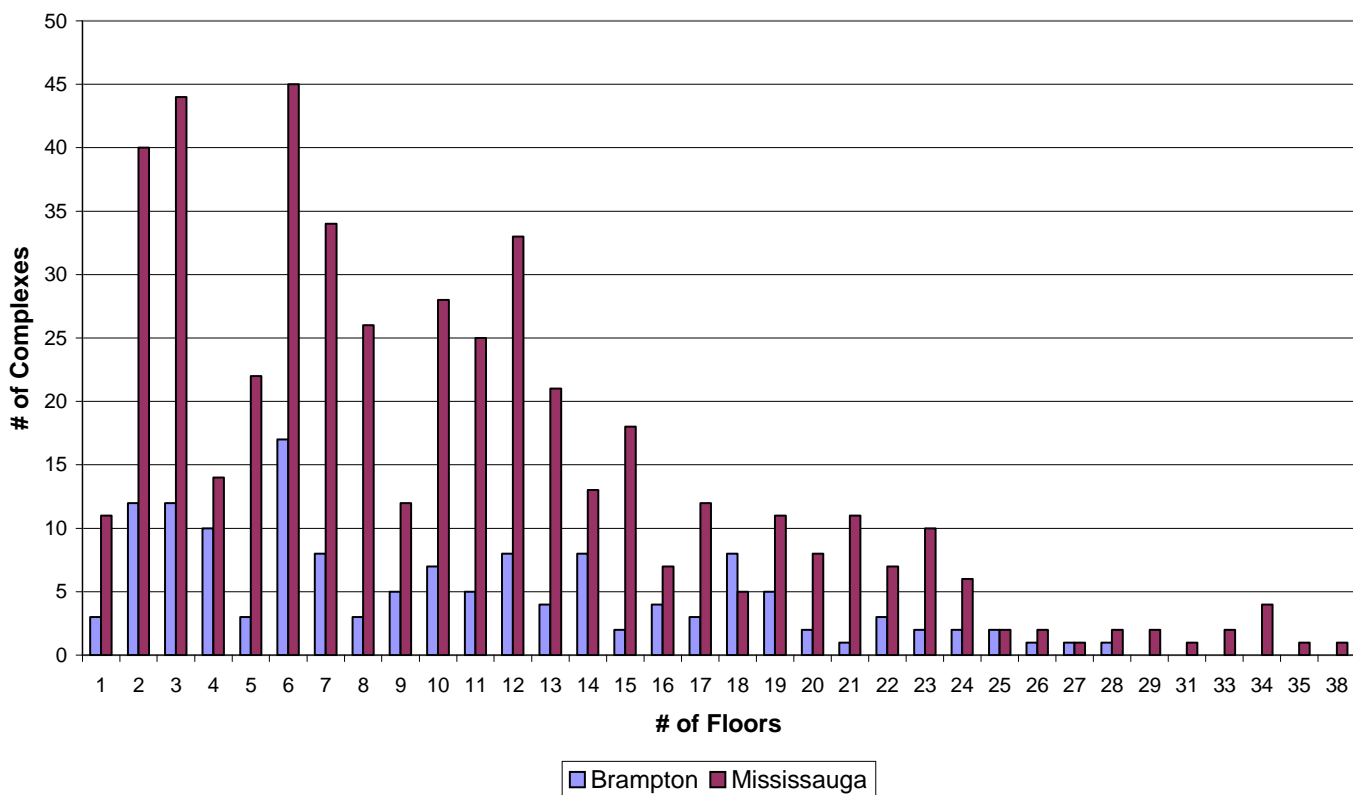
Figure 1 - Complex Types
Region of Peel - Multi-Residential Complexes



5.2.2 Complex Distribution – Number of Floors

Figure 2 illustrates the distribution of complexes by the number of floors at each complex. It can be seen that the majority of complexes are 12 floors and under. As indicated in Figure 1, this is to be expected as 50% of all complexes are classified as medium-rise and 15% are classified as low-rise complexes.

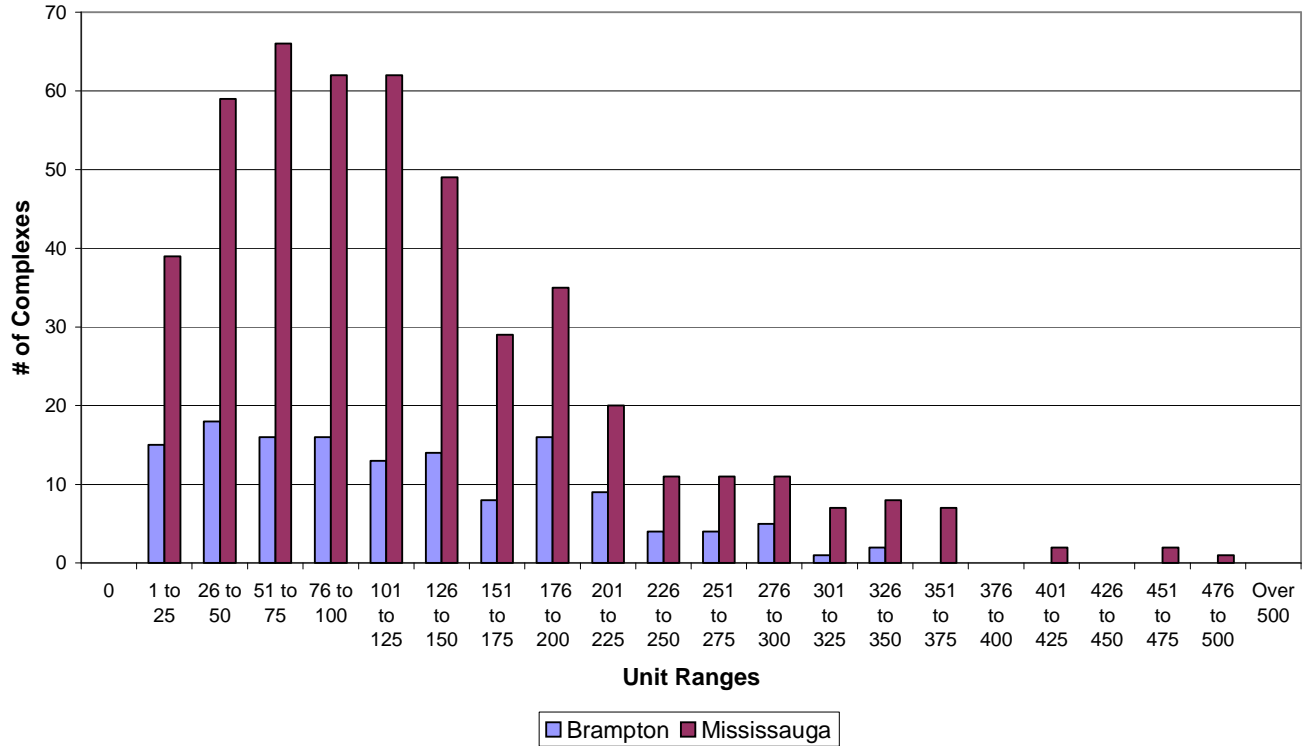
**Figure 2 - Number of Floors - Frequency Distribution
Multi-Residential Complexes - Region Of Peel**



5.2.3 Complex Distribution – Number of Units

Figure 3 illustrates the distribution of complexes by the number of units, classified in ranges of 25 units. The number of units is usually a function of the number of floors at a complex, the trend represented in Figure 3 is similar to the one in Figure 2.

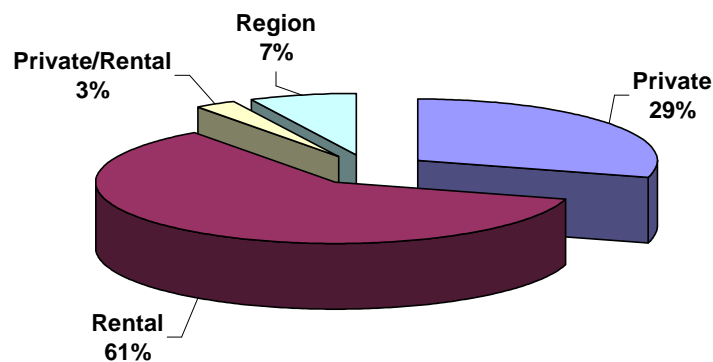
**Figure 3 - Unit Distribution
Multi-Residential Complexes - Region of Peel**



5.2.4 Unit Ownership

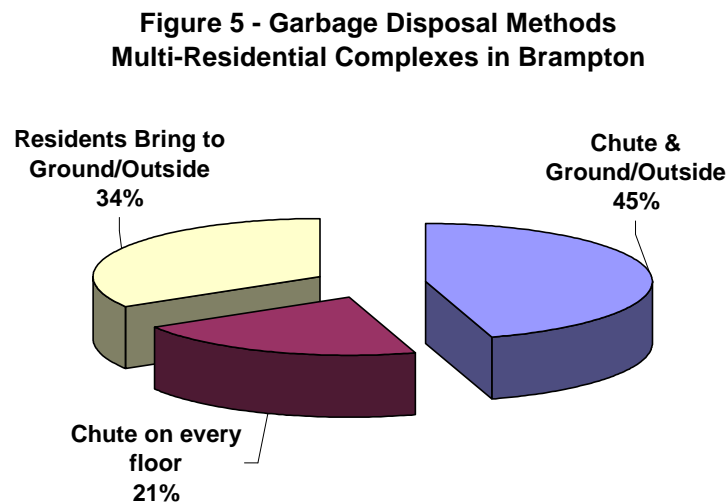
Over 60% of all multi-residential units in the Region are rented and 29% are privately owned. Units classified as Region, are social housing units in Peel Living complexes. These units are primarily rental units, however, for the purposes of the project they have been identified as Region-owned. Refer to Figure 4 below for a representation of all unit ownership in the Region.

Figure 4 - Multi-Residential Unit Ownership - Region of Peel



5.2.5 Garbage Disposal Method – City of Brampton

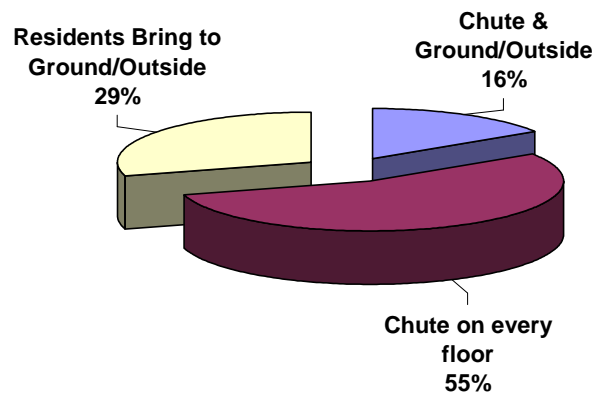
Results from the data collection show that there were three methods for garbage disposal at multi-residential properties in Brampton. Figure 5 shows that 45% of multi-residential properties have the combination of a garbage chute and outdoor garbage bins and 34% require residents to bring their garbage waste to the ground level (outside). The remaining 21% of multi-residential properties exclusively use garbage chutes.



5.2.6 Garbage Disposal Method – City of Mississauga

The same garbage disposal methods described above exist at multi-residential complexes in Mississauga. However, the prevalence of the various methods differed, as represented in Figure 6. Approximately 55% of multi-residential properties in Mississauga use garbage chutes exclusively as opposed to 21% in Brampton. Residents must bring their garbage to ground level (outside) at 29% of multi-residential properties in Mississauga. Residents have the choice to use a garbage chute or bring their garbage to ground level (outside) at 16% of multi-residential properties in Mississauga.

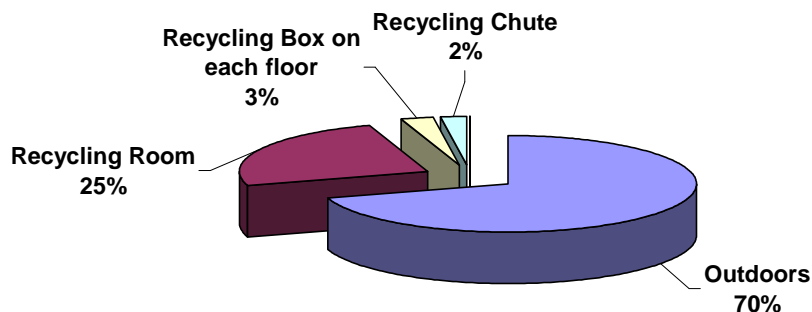
**Figure 6 - Garbage Disposal Methods
Multi-Residential Complexes in Mississauga**



5.2.7 Recycling Method – City of Brampton

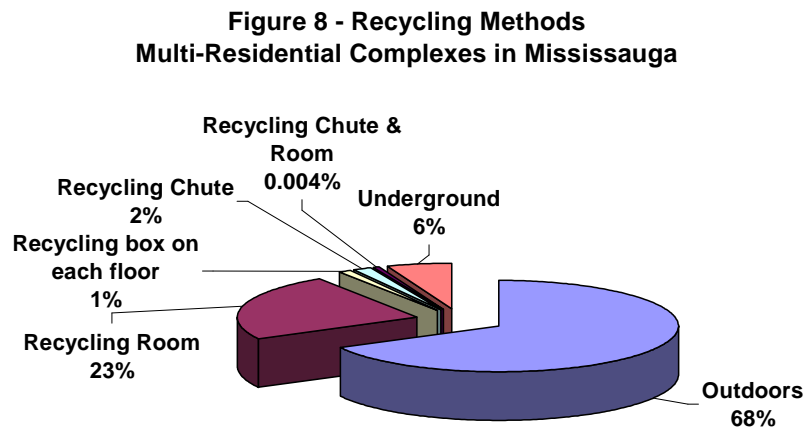
The majority of recycling systems at multi-residential properties in Brampton require residents to take their recyclables to outdoor storage areas. In Figure 7, it can be seen that this type of method accounts for 70% of all multi-residential properties in Brampton. Approximately 25% of multi-residential properties have a recycling room. A small amount of multi-residential properties have recycling boxes on each floor (3%) or recycling chutes (2%).

**Figure 7 - Recycling Methods
Multi-Residential Complexes in Brampton**



5.2.8 Recycling Method – City of Mississauga

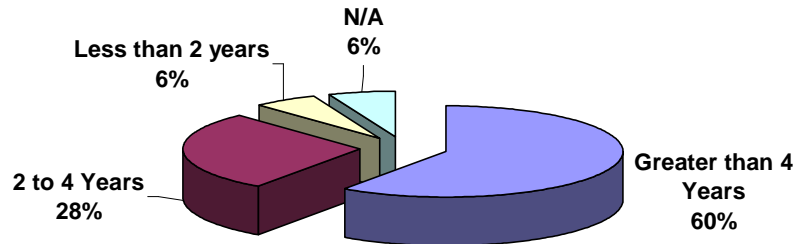
In Mississauga, the two most common recycling systems were almost identical to those in Brampton. Figure 8 illustrates that residents must take their recyclables to outdoor storage areas at 68% of multi-residential properties and 23% of multi-residential properties have a recycling room. Similar to Brampton, there were few properties that had recycling boxes on each floor or had recycling chutes. There were also some unique recycling systems in Mississauga. For example, 6% of multi-residential properties in Mississauga have the recycling area set up in the underground parking garage.



5.2.9 Resident Turnover (Length of Stay)

The length of stay for residents in multi-residential complexes in Brampton and Mississauga has been averaged. Figure 9 shows that an average of 60% of multi-residential properties have residents that stay greater than four (4) years. Residents stay between two (2) to four (4) years at 28% of multi-residential properties in the Region. The minority of multi-residential properties (6%) had a highly transient resident population while 6% of multi-residential properties were unable to comment.

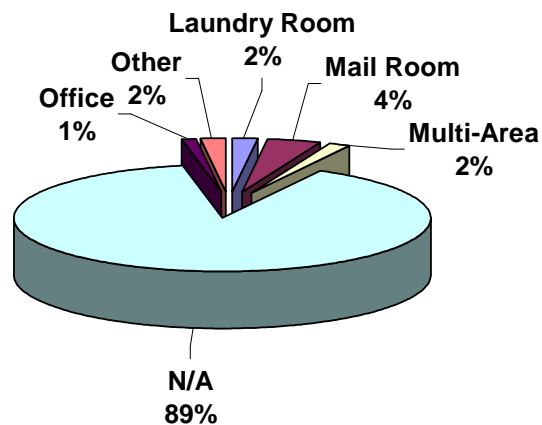
**Figure 9 - Resident Length of Stay
Region of Peel - Multi-Residential Complexes**



5.2.10 Additional Collection Area for Recyclables

The vast majority of multi-residential properties in the Region did not provide any additional collection areas for recyclables. Figure 10 illustrates this overwhelming majority and shows the various additional areas where recyclables are collected in the minority of multi-residential properties.

**Figure 10 - Additional Collection Areas for Recyclables
Region of Peel - Multi-Residential Complexes**



Quantitative Data Results

5.2.11 Front End Recycling Collection Service – Suitability

The outreach team based their assessment of the suitability for front-end recycling collection on the guidelines outlined in the Waste Collection Design Standards Manual (<http://www.peelregion.ca/pw/waste/reports/pdf/wc-design07.pdf>). Candidate complexes would likely have 120 units or more. However, smaller complexes with the storage space for front-end containers were also considered. The priority would likely be with larger complexes. There was a dedicated section on the data collection form (see Appendix 1) for assessing the suitability of providing front-end recycling collection. The customized database tracked whether a complex:

- a) was suitable for front-end recycling collection, and
- b) if there was agreement from property management.

The following is a summary of the total number of complexes identified which meet each of the criteria listed above:

	<u>Brampton</u>	<u>Mississauga</u>
1) Suitable with agreement	32	52
2) Suitable with no agreement	12	89
3) Not Suitable, no agreement	<u>20</u>	<u>61</u>
Total # of Complexes	64	202

As the Region moves forward with implementing front-end collection of recyclables, priority buildings will be identified first. These buildings will likely have 120 units or more. Once all the priority buildings receive front-end containers for recycling, the Region will deliver front-end containers to the remainder of the suitable buildings (those with 120 units or less), pending budget approval. Below is a summary of the total number of suitable buildings in the Region identified during the Outreach Project:

Number Suitable Buildings for front-end Recycling Collection

Brampton:	44	22	
Mississauga:	141	76	
Total:	185	98	283

Therefore, out of the approximately 661 multi-residential properties accounted for by the Region, 283 buildings have been identified as suitable for front end recycling collection. This translated to approximately 42% of all multi-residential properties. The remaining properties may continue to use recycling carts.

5.2.12 Educational Materials Delivered

All materials distributed at each complex were noted on the data collection form and input into the database. The following is a summary of the total amount of materials distributed:

Reusable Blue Bags	12,282
Labels	7,978
Pamphlets	10,761
Posters	1,855

The Blue Bags refer to the woven polyethylene reusable bags that are provided to all multi-residential units, to allow residents to carry their recyclables to their designated recycling area on the property. The Labels refer to the single-stream recycling cart stickers which replaced the obsolete two-stream stickers. The outreach team members removed the old stickers and placed the new single-stream stickers in their place. The Pamphlets refer to the 2006 Waste Management Guides. The Posters refer to the Laminated Recycling Posters, which pictorially demonstrates acceptable single stream materials.

Asset Tracking Data

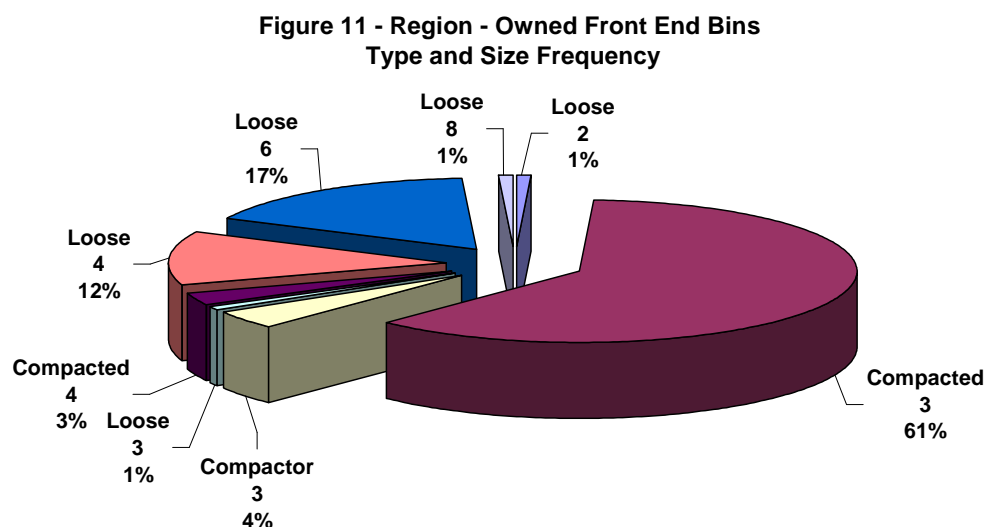
An inventory of all recycling carts and front-end garbage containers was collected by each team member during the outreach project. The following sections detail the results of this inventory.

5.2.13 Inventory of Recycling Carts

Team members tracked the number of recycling carts at each multi-residential complex and distinguished them by colour and location (inside or outside). In summary, a total of 1,139 recycling carts were accounted for in Brampton and 3,533 in Mississauga, totalling 4,672 for all multi-residential complexes in the Region.

5.2.14 Region-Owned Front-end Garbage Containers

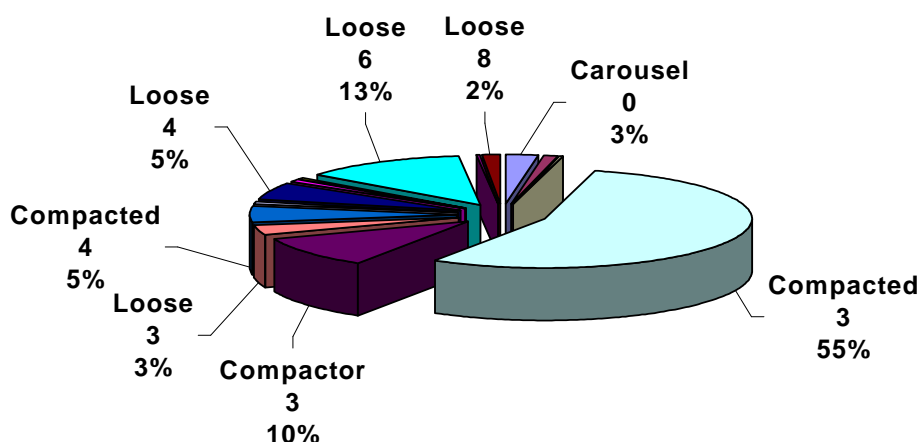
Team members accounted for all the front-end garbage containers located at Peel Living complexes. These bins are owned by the Region and have been designated as such in the database. Figure 11 shows a breakdown of the different types and sizes of front-end containers located at all Peel Living multi-residential complexes visited during the outreach project. It can be seen that the most common type of container is a 3 cubic yard compactor bin, which is being compacted. Containers were divided according to type and size. "Compacted" refers to compactor bins where materials are compacted. "Compactor" refers to compactor bins where materials are not being compacted. "Loose" refers to bins that are not compactor bins; therefore they are not being compacted.



5.2.15 Privately Owned Front-end Garbage Containers

Team members accounted for all privately owned containers. Figure 12 shows a breakdown of the different types and sizes of containers found at multi-residential complexes across the Region. Some bin types have been omitted for display purposes. The most common type of container is a 3 cubic yard compactor bin which is being compacted. The next most common type and size of containers are 6 cubic yard “loose” bins and 3 cubic yard compactor bins which are not compacted.

**Figure 12 - Private Owned Front End Bins
Type and Size Frequency**



5.2.16 Other Containers or Carts

Team members also discovered “other” types of containers in use at multi-residential complexes. These different types of containers were all accounted for in the database. For example, some complexes used a carousel type sorting system in the garbage room. This system used pie-shaped bins for garbage and recyclables. As can be seen in Figure 12 above, these carousel bins make up approximately 3% of all bins in use.

Some complexes also use front-end containers dedicated for cardboard. In these cases, the collection service is provided by the private sector, except for Peel Living complexes where the Region pays for separate collection. One complex uses grey carts for garbage collection (Port Credit BIA Area). This may or may not continue in the future.

5.3 Conclusion

The results from the outreach project are an indication of the wealth of information captured throughout the entire project. Detailed characteristics of each multi-residential property were collected and later input into the customized Hansen database. All project goals were met. The Region's Waste Management Division had created and populated a database customized for multi-residential complexes. It remains a dynamic database that is expanded and updated as needed.

The information collected was an excellent resource for Waste Collection and Planning staff as Best Practices Implementation continued with further projects such as lobby displays, front-end recycling collection, use of on-board weigh scales. In order to provide an efficient and effective collection service, it is important to understand the client base. This is particularly important when there is variability within the client base, as is the case in the multi-residential sector. The Multi-Residential Outreach Project has successfully established a detailed inventory of multi-residential complexes and has assisted in the design of waste management program enhancements such as the implementation of front-end recycling collection and subsequent outreach projects. It is anticipated that the Hansen Multi-residential database will be replaced by a database similar to the CIF database that will be included in the upcoming Radio Frequency Identification (RFID) Waste Collection Reporting System (CIF Project # 328).

6.0 Component 2: Increase Recycling Container Capacity

Adequate 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 any other program improvements are initiated. During the initial site visits in 2006, the baseline container counts 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 front-end recycling containers were feasible and where these containers could be stored and ultimately used.

6.1 Type of Recycling Containers

Recycling storage space is referred to as 'capacity' and is the shared common space recycling containers used by building residents to deposit their recyclables. The Region of Peel has previously provided all multi-residential locations with 95 gallon recycling carts. These containers were provided free of charge to buildings and typically were distributed at new service locations based on 1 cart for every 10 units.

In 2009, the Region began implementing a front-end recycling container collection program. Front-end recycling containers are more durable and therefore have a greater life-cycle than plastic recycling carts. The containers also have lockable lids that can help reduce contamination and litter issues. The larger capacity of front-end containers was expected to encourage increased cardboard recycling among other materials that could take advantage of the increased container size and capacity. Historically larger recyclables such as cardboard ended up in front-end garbage containers rather than the recycling containers on site. As a result of Best Practices identified by CIF, the Region has adopted the distribution of front-end and 95 gallon containers based on 1 cart for every 7 units.

The Region provides three sizes of front-end recycling containers: 3, 4 and 6 cubic yards. The containers were customized to provide a front slot with a 10 inch height to provide resident's with enough clearance to empty their recyclables using the reusable recycling bags provided by the Region. The containers that were initially distributed were navy blue and included a conventional slot that tipped inwards into the container. Due to some concerns about the slot design being a bit cumbersome for residents to use, the Region requested the vendor to redesign the slot and retrofit any

containers that have already been delivered. The new slot design was a “Mail box” style slot that allows residents to pull the slot door down; while the door remains open the residents can freely empty their recyclables through the slot. The colour of the container was also changed to a lighter shade of blue to help distinguish it from existing garbage containers of similar colour. Please see **Appendix 3** for photos of the original and current front-end recycling containers distributed. Also note the sticker on the front of the container, which was also funded under this CIF project. It offers a very graphical representation of what materials should be recycled in the container.

6.2 Front-end Recycling Container Implementation

Of the total 661 multi-residential locations in the Region of Peel, approximately 375 buildings were deemed suitable for front-end recycling based on location, size, site configuration and convenience to residents. One full-time temporary employee was hired to conduct further detailed site assessments to follow up on the work conducted in Component 1 and to coordinate the manufacture and delivery of containers for the duration of the implementation.

The implementation strategy of the first phase at 115 buildings included direct communications with the property managers and superintendents of the designated buildings before the roll-out of the new program to discuss logistics, timing and continuity of service provision. Every effort was made to ensure that the conversion to front-end recycling collection did not result in service disruptions.

In February 2009, the program was implemented at the initial 115 buildings, where 334 front-end recycling containers were used. These buildings were placed on a once a week Thursday or Friday collection schedule. The collection schedules were established such that the recycling collection day was on a day other than the garbage collection day at any particular building to avoid any space constraints in collection areas on collection days.

Even though the containers were of high quality, provided at no cost to the buildings and designed to industry standards and Region of Peel specifications, the program experienced some resistance at some locations. The main concerns were in relation to the swivel castors not having any locking brakes and difficulty with the container slot design which required residents to hold the hinged flap inwards with one hand and place the recyclables in the bin with the other hand. As previously mentioned, the newer modified containers include an open recycling slot hanging outward

which can be locked for collection. They also include brakes on swivel casters which will prevent bins from moving after being placed in the collection areas, thus reducing occupational health and safety concerns.

A second set of approximately 80 buildings were assessed for their container requirements and containers were manufactured. The second phase was completed in May 2009. After that, as part of phase three implementation, approximately 110 buildings were assessed for their container requirements. Phase four consisted of the assessment of approximately 105 buildings. These buildings included approximately 35 buildings with less than 70 units and 70 other potential buildings which needed reassessment for their suitability based on space restrictions and configuration of collection area.

In total, approximately 1,000 front-end recycling containers were distributed during the Front-end Recycling Implementation Initiative at a total cost of approximately \$1.15 million. Currently approximately 60% of the multi-residential locations, representing almost 70% of multi-residential units in Peel receive front-end recycling collection services.

6.3 *Other Initiatives to Increase Recycling*

In addition to the initiatives described in Components 1 and 2, the Region has continued to produce and distribute updated and improved promotion and education material that was incorporated during other projects throughout the past several years since the initial site visits were completed and the multi-residential database was created.

Additional projects included the following:

6.3.1 *Lobby Displays - Summer 2007*

In May 2007, a team of three temporary “Assistant Multi-Residential Coordinators” were hired to provide in-lobby recycling displays at multi-residential locations that appeared to have low diversion based on the number of carts collected on average. The team provided a recycling display at 94 multi-residential buildings from June to August 2007. Approximately 8,000 residents were engaged by staff at the displays. Reusable recycling bags, recycling magnets and recycled PET shoelaces were given out along with other recycling program P&E materials. Observations during this outreach initiative included the following:

1. Lack of Capacity - most buildings visited did not have a sufficient number of carts for recycling
2. Reusable Blue Recycling Bag Use - most residents did not have or used a blue recycling bag; many asked for more than one
3. Language - most residents spoke English; buildings with higher proportion of English as a Second Language (ESL) residents may need targeted outreach such as multi-lingual communications
4. Superintendents - engagement varied; some supers did not educate new tenants nor did they provide a blue bag;
5. Overall Program Knowledge – many residents lacked basic knowledge of recycling programs such as the co-mingled single-stream system and acceptable materials

6.3.2 *Site Visits – Updating Multi-Residential Database and P&E Material Delivery*

In May 2008, a team of two temporary “Assistant Multi-Residential Coordinators” were hired to visit all multi-residential properties to obtain updated site information and input the updated information in the Region’s multi-residential database. Staff hand delivered newly created Recycling Handbooks for Owners, Property Managers and Superintendents along with other P&E material such as cart stickers, recycling bags, posters, etc.

6.3.3 *Onboard Weigh Scale Pilot Project – E&E Project #123*

Starting in December 2008 and ending in April 2009, the Region piloted the use of onboard weigh scales to measure waste generation on a per building basis. The pilot was successful as weights for garbage and recycling were tracked by building and diversion rates were calculated. Due to the success of the pilot, the Region required the installation of onboard scales to the entire front-end collection fleet as part of a new collection contract. The Region is currently working on a custom Radio Frequency Identification (RFID) Integrated Waste Collection Reporting system that will expand on the onboard scale capabilities and address the limitations of such as system.

6.3.4 *Front-End Recycling Efficiency Site Visits*

In early 2010, the Region utilized the resources of six temporary staff members that were redeployed from another short term project, to conduct site visits to assess the efficiency of the front-end recycling containers. At

the time of the visits, the staff members were asked to make observations and fill in a sheet (see **Appendix 4**). The purpose of the visits was to confirm that enough capacity was being provided and observe contamination levels. Some useful observations were made that staff took under consideration for future improvements.

6.3.5 *Front-End Recycling Container Lid Locking Initiative*

In the Summer of 2011, the Region undertook an initiative to distribute locks and keys to all multi-residential locations. Staff initially worked with Peel's Non-Profit Housing Corporation "Peel Living" in a pilot project whereby a student was hired to:

- Conduct site inspections to determine baseline conditions ex. location of recycling containers and posters; visual inspection of containers, provide P&E materials, etc;
- Coordinate recycling training sessions with Peel Living Property Managers and Superintendents;
- Revisit Peel Living locations to assess conditions after the staff training and increased P&E efforts;
- Identify specific waste collection needs of each building and educate building staff on proper waste disposal practices.

Upon completing the initial site inspections, Peel Waste Planning and Collection staff attended Peel Living Property Manager team meetings to provide information to property managers and superintendents on the Region's recycling program and inform them of resources and P&E materials available. Peel waste staff also informed staff at the meeting that locks and keys will be distributed to all sites. The purpose of providing the locks was to reduce the contamination of front-end recycling containers from large non-recyclable items and items placed in large garbage bags. After waste staff presented at all team meetings, locks were distributed to all Peel Living building locations and the remaining private condominium and apartment locations in Peel.

There was some resistance and concerns initially about locking the lids on the front-end recycling containers, however, with time, superintendents managed to get used to the idea. There were still issues, as some residents

continued to leave recyclables on the ground beside the front-end recycling containers, instead of placing the materials inside the containers.

In addition to speaking with building management from Peel Living, 15 lobby displays were provided to select locations that requested further assistance. This gave staff the opportunity to directly provide recycling promotion and education material to residents.

Specific P&E material was created for this initiative. An 8.5 x 11 poster was created for building management to post around the building to deter the use of grocery and garbage bags for recycling. These bags are not sorted at the Regions MRF and pass through as residue. See **Appendix 5** for a sample of the poster.

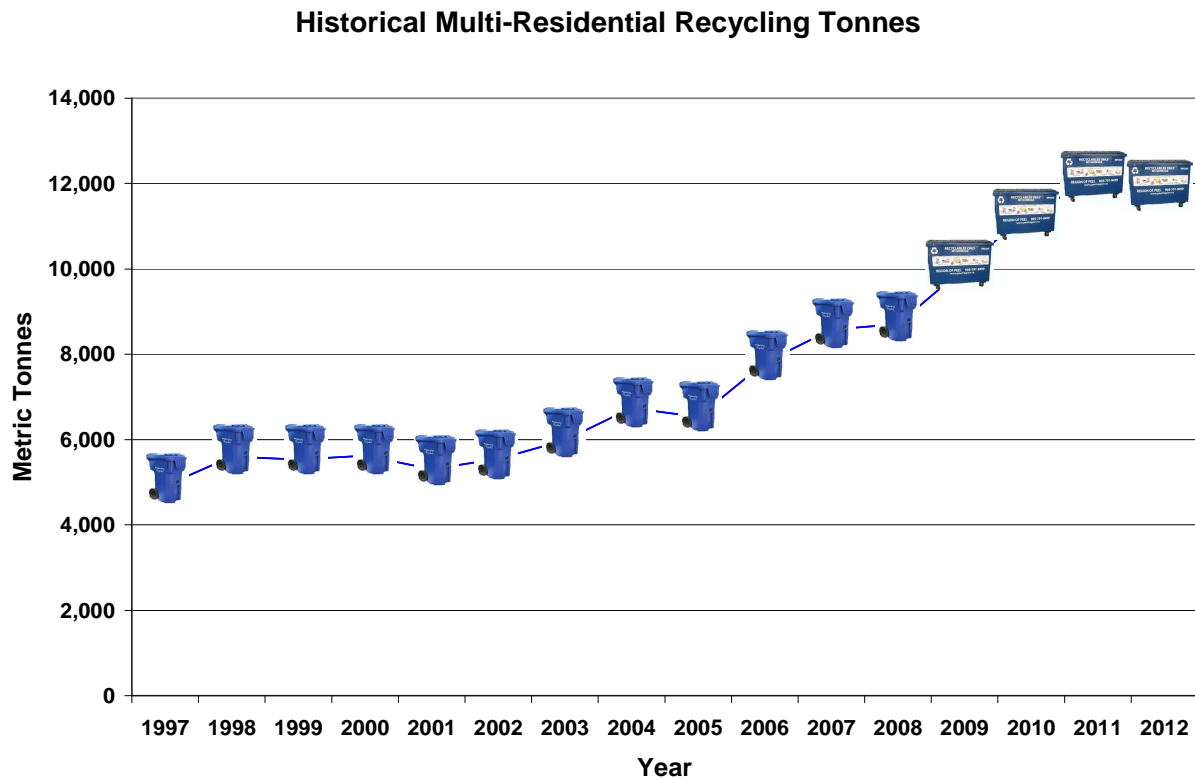
7.0 Component 3: Measuring Recycling Performance

The ultimate goal of implementing Best Practices in multi-residential recycling programs is to increase efficiency and effectiveness. This can more specifically be measured to evaluate cost savings and increase in program awareness and participation which leads to an increased capture of recyclables. In the following sections, several key performance indicators will be summarized in relation to the implementation of the Best Practices Project detailed in this report.

7.1 Recycling Tonnage

Since the early 2000s multi-residential recycling tonnages have been on a gradual rise. Beginning in 2006, the Region experienced a more substantial increase in tonnage. In 2009, there was another spike in recycling tonnage as can be seen in Chart 2 below. This is the time when front-end recycling was implemented. Since then the Region has seen a progressive increase in recycling tonnage from this sector.

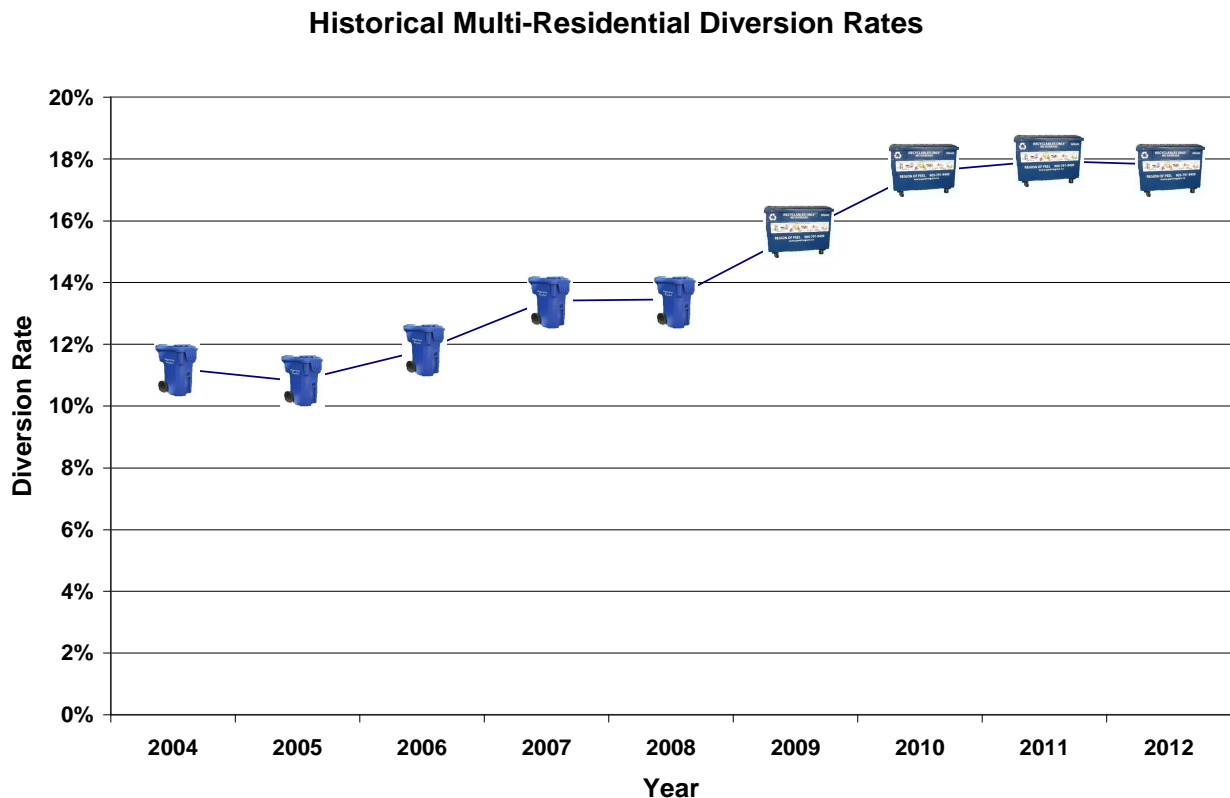
Chart 2



7.2 Diversion Rates

Similar to the trend of increasing recycling tonnage seen in Chart 2, Diversion Rates experienced substantial increases during the same time periods as shown in Chart 3 below. In 2006, the multi-residential diversion rate was 12%. The diversion rate has increased to approximately 18%, where it has remained in 2011 and 2012.

Chart 3



7.3 Waste Audit Data

Another key performance indicator that can measure program effectiveness is the Capture Rate, also referred to as Recovery Rate. The Region of Peel conducted Multi-residential waste audits in 2005 and 2006 as part of Stewardship Ontario's Waste Audit Program. Data from these audits can serve as a baseline, before Best Practices were initiated. In 2010 and 2011, the Region conducted multi-residential audits using the same methodology established by Stewardship Ontario. This data can provide some information on waste generation and capture rates after the implementation of Best Practices such as site visits, improved P&E and front-end recycling collection.

7.3.1 Recycling Generation

Based on the comparison between the 2005/2006 and 2010/2011 Multi-residential audits, the generation rate (kg/unit/week) has increase slightly in the period between audit periods. In 2005/2006 the average generation in

the recycling stream was 1.82 kg/unit/week. This increased by 4% to 1.90 kg/unit/week in 2010/2011.

A more striking increase in recycling generation can be seen when comparing buildings that have been switched to front-end recycling. Out of the 10 sample buildings used in both audit periods, four have been switched to front-end recycling. Table 1 below illustrates that recycling generation rates have substantially increased at these locations. According to the audit data from 2005/2006 and 2010/2011, recycling generation increased from 1.67 to 2.02 kg/unit/week (86.58 to 105.17 kg/unit/year) at these buildings. This represents a 25% increase.

Table 1

Waste Generation - Pre and Post Front End Recycling Implementation

		35 Front St. S.	1750 Bloor St.	3 Lisa St.	12 Laurelcrest St.	Average
# of Units		191	152	178	146	167
2005/2006	kg/unit/week	1.59	1.04	2.48	1.55	1.67
	kg/unit/year	82.68	54.08	128.96	80.6	86.58
2010/2011	kg/unit/week	1.9	1.39	2.66	2.14	2.02
	kg/unit/year	98.8	72.28	138.32	111.28	105.17
% increase		19%	34%	7%	38%	25%

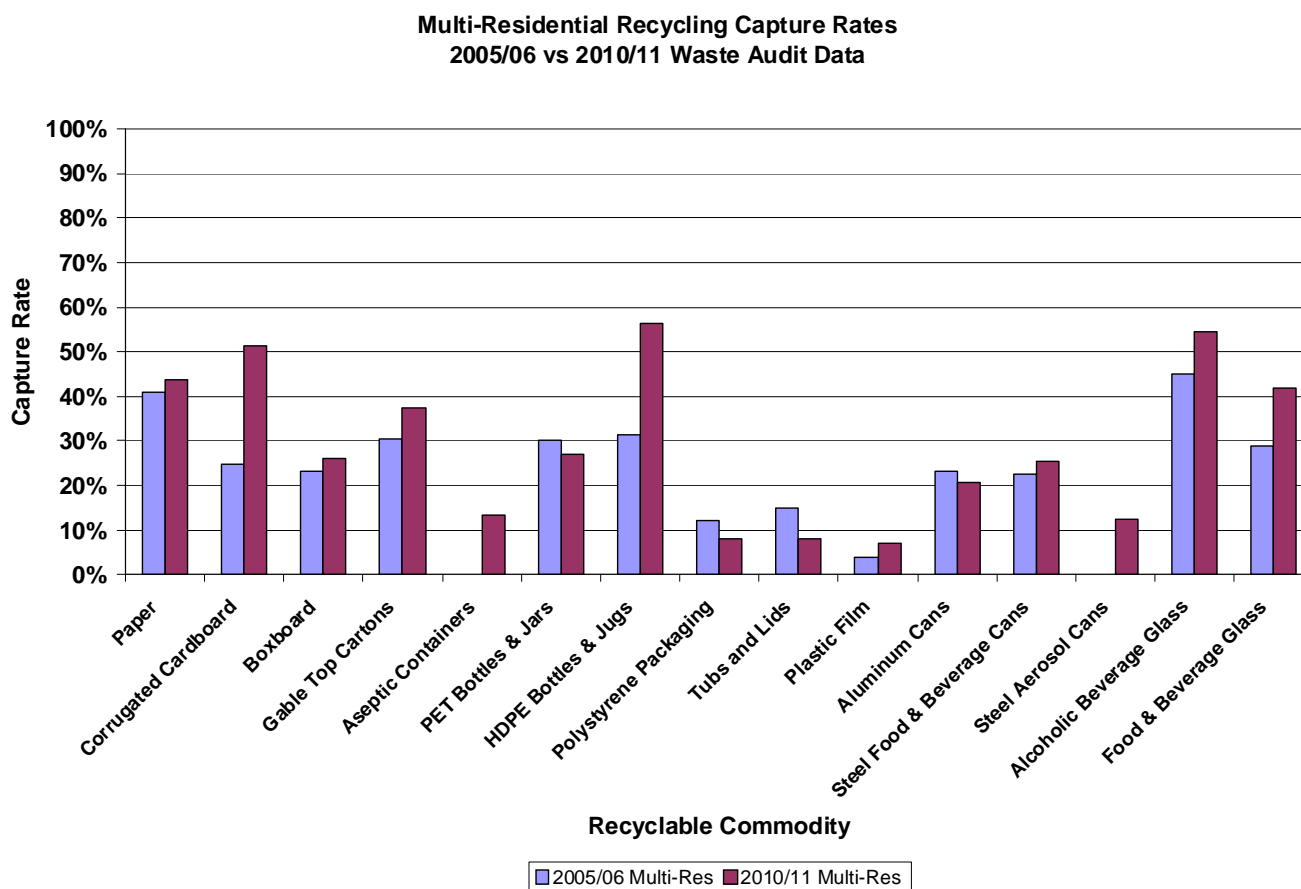
7.3.2 Recycling Capture Rates

Perhaps one of the most important performance indicators for recycling performance is the capture or recovery rate. The capture rate is a measure of how much of total recyclables generated are actually recycled or placed in the recycling stream. This is calculated by taking the total kilograms of recyclables in the recycling stream and dividing that value by the total kilograms of recyclables in both the garbage and recycling streams or all streams, if applicable.

Based on the waste audits results from 2005/2006 and 2010/2011, the overall capture rate for recycling increased from 31% to 37%. As diversion

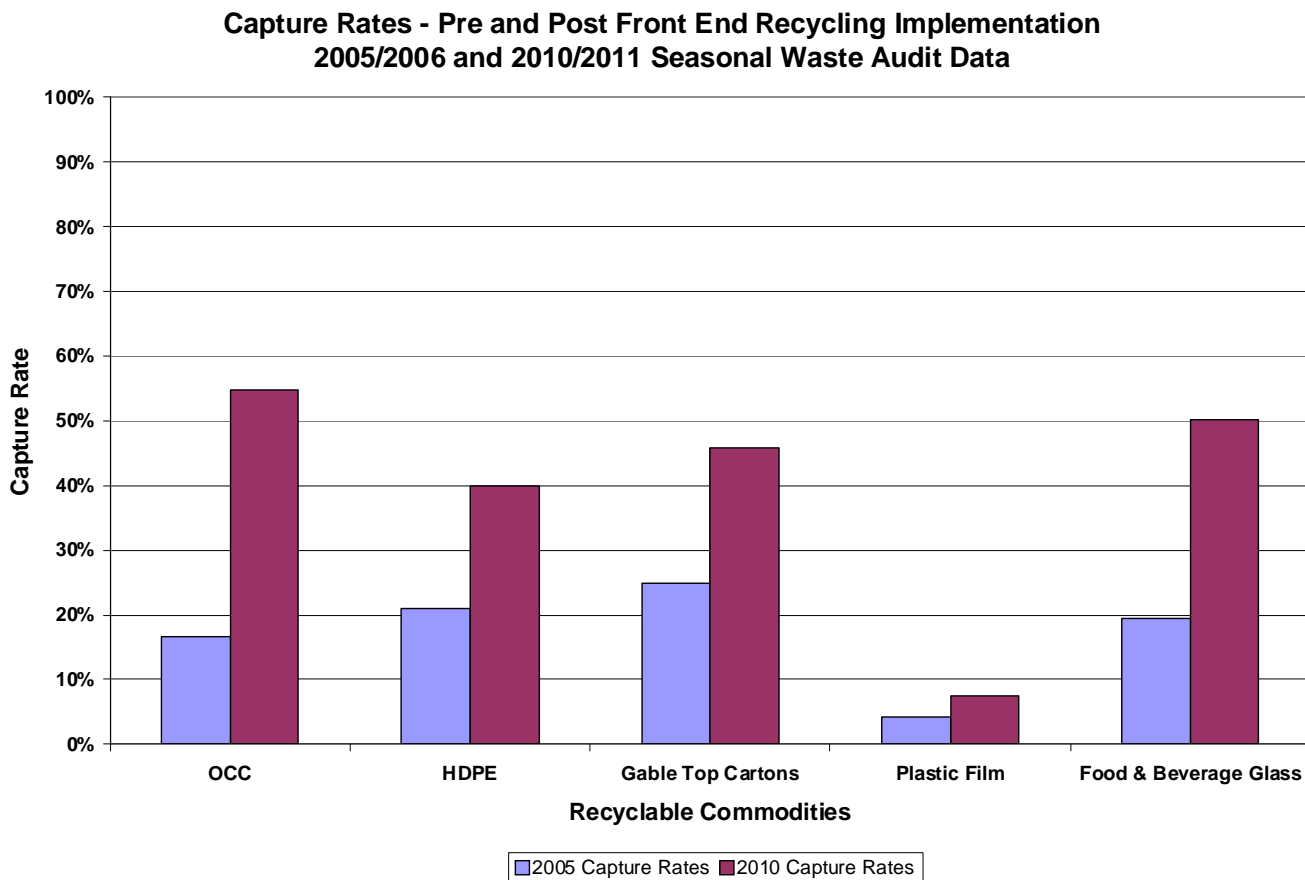
rates have gradually increased in the period since the 2005/2006 audits, capture rates have also slightly improved, although they still remain relatively low. Chart 4 below illustrates the change in Capture Rates for the different recyclable materials collected in the Region over the two waste audit periods.

Chart 4



Of particular note in Chart 4 is the increase of capture rates for corrugated cardboard and HDPE bottles and jugs. Overall, captures rates increased from 25% to 51% for corrugated cardboard and 32% to 57% for HDPE. This represents increases of 104% and 78%, respectively. One of the goals of implementing front-end recycling collection was to increase the capture of cardboard. Taking a closer look at the four locations that were audited and switched to front-end recycling, it can be seen that there were substantial increases in capture rates for several recyclables. Some of the more substantial increases are displayed in Chart 5.

Chart 5



The average capture rate for corrugated cardboard (OCC), at the four locations, increased from 17% before implementing front-end recycling to 55% after the implementation. This represents a 223% increase in the capture of OCC at these locations that switched to front-end recycling. Other materials such as HDPE, Gable Top Cartons and Glass also experienced substantial increases in capture rates.

7.3.3 Diversion Rates

Based on the waste audit data from both audit periods, the diversion rate for the multi-residential sector has not changed much. In 2005/2006 it was calculated to be 13% and in 2010/2011 it was 14%. This appears to be lower than what was indicated in Chart 3, which was tonnage based data. However, based on staff estimates, the audit data makes sense as the recycling tonnage data includes schools and municipal facility locations.

When the multi-residential stops are portioned out, the diversion rate is closer to 14% in 2010/2011.

As in previous sections in this report, when the four locations that were audited and have switched to front-end recycling are analyzed, there is a substantial increase in diversion rates from the 2005/2006 to the 2010/2011 waste audit data. The four locations averaged a diversion rate of 9% in 2005/2006. The average diversion rate increased to 16% in 2010/2011. This represents a 78% increase. This increase can likely be linked to the increased capture of heavier recyclables such as OCC, HDPE and Glass at these locations.

7.4 Collection Efficiency and Cost Efficiency

One of the major benefits of switching from a cart-based recycling collection system to a front-end container recycling collection system is the efficiencies that can be realized in collection and cost reductions. Providing front-end recycling collection reduces the time required for the superintendent to move and position a multitude of carts for collection. Photo 1 illustrates a location that used to use 95 gallon carts. In this case the superintendent had to wheel all the carts outside and line them up for the collection truck. With the introduction of front-end recycling collection at this location, the superintendent is only required to wheel a few bins in place for collection.

Photo 1



For example, all the carts (27) that can be seen in Photo 1 were replaced by three to four wheeled 4 yd³ front-end recycling containers. Not only is time saved for the superintendent, but the actual collection service is much more efficient when using a front-loading truck to collect recycling as the driver does not have to exit the truck to attach the carts to a tipper.

As front-end recycling collection is a more efficient method, it is also more cost effective. By switching to front-end recycling collection, the Region of Peel has reduced their collection costs by 41% at these locations. An overall cost reduction of 23% was realized by providing 60% of multi-residential locations with front-end recycling collection while the remaining 40% continues with cart recycling collection.

7.5 Aesthetics and Improved Site Conditions

One issue that is often found with cart based recycling collection at multi-residential locations is that they are often below capacity and because of this, recyclables tend to overflow inside the carts leading to a very messy recycling area and contributing to windblown litter around the building. This problem can be effectively solved or mitigated by providing front-end recycling containers. The Region of Peel has seen a vast improvement in site conditions around recycling areas. Photo 2 illustrates the type of improvement that has been experienced at many multi-residential locations across the Region.

Photo 2



8.0 Component 4: Provide Promotion & Education Materials

8.1 Print Materials

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.

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 properties, and
- Applying labels to recycling containers.

Wherever possible, the Region of Peel followed these Best Practices principles, when distributing materials. During the site visits conducted in 2006, staff hand delivered Waste Management Guides to superintendents, labelled all recycling carts (2 stickers per cart: top of lid and underneath lid), laminated posters and reusable blue recycling bags. Quantities of these materials distributed were previously listed in section 5.2.11.

The Region provides an annual Waste Management Guide dedicated to multi-residential residents, which is mailed out via Canada Post each Spring. See **Appendix 6** to view the 2013/2014 Edition. Laminated Posters (18"x 26") are also provided, either by request or during site visits. See **Appendix 7** to view the laminated poster.

8.2 Outreach Activities and Other Promotional Materials

8.2.1 Lobby Displays

One year after the initial site visits were conducted and the multi-residential database was created, a team of 3 students were hired to provide lobby displays at locations that were thought to have low diversion performance, based on data from the database such as recycling capacity and other building characteristics. Some results of this initiative have already been summarized in this report.

A variety of promotion and education material was used to provide an engaging display at each location. The Region requested sample materials made from recycled plastic from organizations such as NAPCOR and CPIA

(EPIC). These organizations were generous in providing the following materials:

- Plastic bottle preforms, with plastic pellets, flakes, fluff and a float sink display
- Plastic Lumber
- Carpet fibre sample
- T-Shirts and fleece sweaters made from #1 PET

The Region also purchased shoelaces made from recycled PET. Recycling magnets were produced and handed out at the display. Samples of recyclable material were part of the display along with a flip chart showing the process recyclables go through at the Region's Material Recovery Facility (MRF). A roll-up banner was also used to provide a message regarding recycling. Refer to **Appendix 8** for photos of the displays. In total, 3 display sets were put together, one for each student. It was effective to have some hands-on materials to show what products can be made from recycled materials and also show what happens to recyclables after they are collected from the building.

8.2.2 Follow up Site Visits

One year after the lobby display initiative and two years after the initial site visits were conducted, the Region hired two students to visit each building to update information for the database and also hand deliver updated promotion and education material including a laminated poster and a Recycling Handbook for Owners, Property Managers and Superintendents (see **Appendix 9** for latest version). The recycling handbooks were also mailed to all property managers, however it was important to hand deliver the handbooks to superintendents as they are the individuals who are responsible for the day to day operation of the building and recycling program. Since that time, the recycling handbook has been revised and was mailed out to all superintendents and property managers.

9. Project Budget and Schedule

Table 2: Project Budget, Planned and Actual

Description	Unit	Quantity (est.)	Unit Cost (est.)	CIF Approved (upset limit)	Quantity (actual)	Unit Cost	Cost
Staff support for Site Visits and Input of Data into Database	Buildings	661	\$35	23,135	661	\$52	\$34,440
Increase capacity, provide Front-end recycling containers	Specify container (add rows for more than one type)	1,010	\$1,000	\$575,000	1,010	\$1,000	\$1,150,000
Final report	Report	1	\$2,000	\$2,000	1	\$2,000	\$2,000
Total				\$600,135			\$1,186,440

Note: This project funding varies from other municipal multi-residential projects as the Region of Peel began implementing Best Practices before the Best Practice Guidelines were developed. Additional initiatives detailed in the report reflect best practices followed by the Region, however, funding for this project was specifically granted for conducting site visits, creating a multi-residential database and increasing recycling capacity through the provision of front-end recycling containers to all suitable buildings.

Table 3: Project Schedule, Planned and Actual

Project Deliverables	Approved Payment (upset limit)	Percent	Expected Completion Date	Completion Date
Site Visits and Database	\$23,135	4%	Oct-10	Oct-10
Increasing Recycling Capacity	\$434,785	71%	Feb-11	Feb-11
Submit final report	\$152,640	25%	Jun-11	Apr-13
CIF Funds Requested	\$610,560	100%		

10. Concluding Remarks

The Region of Peel views the multi-residential sector as an important part of its Long Term Waste Management Strategy. This sector requires special attention as residents experience barriers to recycling and thus capture and diversion rates remain relatively low compared to other sectors of the community in Peel.

Since 2006, and even earlier to some extent, the Region has concentrated on implementing best practices such as:

- conducting site visits;
- creating a dedicated multi-residential database;
- providing P&E material to residents and building management;
- increasing recycling capacity by implementing front-end recycling collection; and
- measuring recycling performance

The Region has since experienced an improvement in recycling rates, particularly at those locations that receive front-end recycling collection. However, there is much room for improvement and continued attention to this sector is required to increase and maintain recycling performance. Promotion and education efforts will continue.

The Region is implementing an RFID Integrated Waste Collection Reporting System in 2013 (partially funded by the CIF under Project #328). This system will allow the Region to track, analyze and report on waste collection at each multi-residential location. The system will be capable of generating a "Report Card" that can be sent to each building which will summarize the collection services provided and recycling performance. The intent is to provide more transparency to building owners and managers, regarding the waste management services provided. With increased awareness of their recycling performance, it is hoped that building staff will become more engaged and work with residents more to increase recycling rates. The system will also have the capability to integrate with a billing system should this direction be deemed desirable in the future.

The implementation of best practices has helped the Region realize substantial improvements in the efficiency and effectiveness of its multi-residential recycling program. Substantial collection efficiency has been realized by switching to front-end recycling collection, which has translated into a substantial cost savings to the Region with a short return on investment period of 3 years for the funding amount and approximately 5 years for the total cost of the front-end recycling implementation.

The Region is committed to continuing to support the efforts of residents to recycle at multi-residential locations by providing the necessary information, tools and support. In the future, the Region will be seeking the support of building management and stakeholders to act as partners in encouraging residents to recycle as much as possible. It is only with this cooperation that an acceptable level of recycling can be realized in the multi-residential sector.

11. Appendices

Appendix 1 - 2006 Site Visit Data Collection Form

Appendix 2 - 2006 General Complex Summary Database Report

Appendix 3 - Photos of Front-End Recycling Bins (Original & Modified)

Appendix 4 - Front-end Recycling Efficiency Data Collection Form

Appendix 5 - Sample Poster re: use of grocery and garbage bags

Appendix 6 - 2013/2014 Multi-Residential Waste Management Guide

Appendix 7 - Laminated Recycling Poster

Appendix 8 - Lobby Display Photos

Appendix 9 - Recycling Handbook for Owners, Property Managers and Superintendents

2006 Multi-Residential Data Collection Form

Date: _____ Zone: _____ Address: _____

City: _____ Type: _____ Units: _____ Floors: _____

Superintendent

Name: _____

Phone #: _____

Cell/Pager #: _____

E-Mail: _____

Address: _____

Property Manager

Name: _____

Phone #: _____

Cell/Pager #: _____

E-Mail: _____

Address: _____

Front-End Information

Qty	Size (Cu. Yd.)						Compactor Bins		Being compacted?	
	2	3	4	6	8	___	Y	N	Y	N
	2	3	4	6	8	___	Y	N	Y	N
	2	3	4	6	8	___	Y	N	Y	N
	2	3	4	6	8	___	Y	N	Y	N

Recycling Carts

Blue	___In	___Out
Grey	___In	___Out
Total	___In	___Out

Deliveries

Posters	
Pamphlets	
Blue Bags	
Labels	

Bulk Recycling Information

1a.	Is there a garbage chute in the building?	Yes	9
		No	9
1b.	If Yes, are there additional systems in place to make recycling AS CONVENIENT as the disposal of garbage?	Yes – Specify:	9
		No	9
1c.	Is there a garbage compactor in the building?	Yes	9
		No	9
2a.	Is there a centralized, indoor recycling room accessible to residents?	Yes	9
		No	9
2b.	If No, where do residents bring their recyclables?		
2c.	If Yes, indicate the dimensions and area of this room. Indicate the width of all access doors.		
2d.	If Yes, based on the criteria in the WCDSM, would it be practical to use front-end bins for recyclable materials?	Yes	9
		No	9
3.	For buildings with outdoor storage of garbage and recyclable materials, based on the WCDSM requirements, is there sufficient space in the storage/collection area for placement of the required number of front-end bins for recyclable materials?	Yes	9
		No	9

4.	Taking the above criteria into consideration, would implementing front-end recycling at this location make it LESS CONVENIENT for residents to recycle?	Yes	👍
		No	👎
5.	Are there any identifiable waste collection issues at the site that could aggravate the implementation of a front-end recycling collection program?	Yes – Specify:	👍
		No	👎
6.	Is there agreement from property management to implement front-end recycling at a future date?	Yes	👍
		No	👎

Survey

1.	Are the units in your building privately owned or rented?	Privately Owned	👍
		Rented	👎
2.	Is your building a retirement home?	Yes	👍
		No	👎
3.	How do residents of your building currently dispose of their garbage?	Chute on every floor	👍
		Residents bring to ground level	👍
		Turnstile	👍
		Other - Specify:	👍
4.	How is garbage collected from the building?	Front-end collection	👍
		Other – Specify:	👍
5.	How do residents of your building currently recycle?	Residents bring to ground level	👍
		Recycling chute on each level	👍
		Other - Specify:	👍
6.	Are recyclables collected in any other areas in your building?	YES (e.g. lobby, laundry room, mailboxes)	👍
		No	👍
		If YES, please Specify:	
7.	How long do residents stay?	Stay greater than 4 years	👍
		Stay 2 – 4 years	👍
		Stay less than 2 years	👍
8.	In your opinion, what components of the current recycling program are working well in your building?		
9.	In your opinion, what components of the current recycling program are not working well in your building?		
10.	In your opinion, what is the most significant barrier to recycling in your building?		
11.	In your opinion, how can the current program be improved?		

Comments:

General Complex Summary

Brampton

<u>Complex Type</u>	<u># Cplx</u>
APT-HR	47
APT-LR	20
APT-MR	66
TH	7
Total # Units:	17,466

<u>Ownership</u>	<u># Cplx</u>
PRIVATE	29
PRIVATE / RENTAL	2
REGION OF PEEL	14
RENTAL	94

<u>Disposal Method</u>	<u># Cplx</u>
CHUTE AND GROUND	62
CHUTE ON EVERY FLOOR	29
RESIDENTS BRING TO GRD/OUTSIDE	46

<u>Recycling Method</u>	<u># Cplx</u>
OUTDOORS	97
RECYCLING BOX ON EACH FLOOR	4
RECYCLING CHUTE	3
RECYCLING ROOM	34

<u>Resident Turnover</u>	<u># Cplx</u>
2 TO 4 YEARS	25
GREATER THAN 4 YEARS	96
LESS THAN 2 YEARS	10
NOT AVAILABLE	7

<u>Delivery Item</u>	<u>Qty</u>
BLUE BAGS	3,751
LABELS	2,242
PAMPLETS	2,646
POSTERS	326

<u>Recy. Cart</u>	<u>Loc.</u>	<u>Qty</u>
BLUE	In	384
BLUE	Out	638
GREY	In	48
GREY	Out	69

<u>All Front End Garbage Bins</u>		
<u>Size (cu. yd)</u>	<u>Bin Type</u>	<u>Qty</u>
0	Compacted	13
0	Loose	9
2	Loose	1
3	Compacted	242
3	Compactor	41
3	Loose	3
4	Compacted	25
4	Loose	36
6	Compacted	2
6	Loose	102
8	Loose	8

<u>Region's Front End Garbage Bins</u>		
<u>Size (cu. yd)</u>	<u>Bin Type</u>	<u>Qty</u>
3	Compacted	23
3	Compactor	3
4	Compacted	2
4	Loose	14
6	Loose	13
8	Loose	1

<u>Add. Recycling Area</u>	<u># Cplx</u>
LAUNDRY ROOM	11
MAIL ROOM	14
MULTI AREA	5
NOT AVAILABLE	100
OFFICE	4
OTHER	4

General Complex Summary

Mississauga

<u>Complex Type</u>	<u># Cplx</u>
APT-HR	147
APT-LR	74
APT-MR	239
APT-TH	2
TH	19
Total # Units:	60,545

<u>Ownership</u>	<u># Cplx</u>
PRIVATE	151
PRIVATE / RENTAL	14
REGION OF PEEL	34
RENTAL	279

<u>Disposal Method</u>	<u># Cplx</u>
CHUTE AND GROUND	86
CHUTE ON EVERY FLOOR	255
RESIDENTS BRING TO GRD/OUTSIDE	139

<u>Recycling Method</u>	<u># Cplx</u>
OUTDOORS	326
RECYCLING BOX ON EACH FLOOR	5
RECYCLING CHUTE	8
RECYCLING CHUTE AND ROOM	2
RECYCLING ROOM	110
RECYCLING UNDERGROUND	27

<u>Resident Turnover</u>	<u># Cplx</u>
2 TO 4 YEARS	147
GREATER THAN 4 YEARS	269
LESS THAN 2 YEARS	29
NOT AVAILABLE	36

<u>Delivery Item</u>	<u>Qty</u>
BLUE BAGS	9,106
LABELS	6,018
PAMPLETS	8,500
POSTERS	1,610

<u>Recy. Cart</u>	<u>Loc.</u>	<u>Qty</u>
BLUE	In	1,338
BLUE	Out	1,880
GREY	In	229
GREY	Out	260

<u>All Front End Garbage Bins</u>		
<u>Size (cu. yd)</u>	<u>Bin Type</u>	<u>Qty</u>
0	Compacted	12
2	Compacted	24
2	Loose	5
3	Compacted	925
3	Compactor	166
3	Loose	77
4	Compacted	92
4	Compactor	15
4	Loose	77
6	Compacted	15
6	Compactor	15
6	Loose	168
8	Compactor	1
8	Loose	23

<u>Region's Front End Garbage Bins</u>		
<u>Size (cu. yd)</u>	<u>Bin Type</u>	<u>Qty</u>
2	Loose	1
3	Compacted	72
3	Compactor	3
3	Loose	1
4	Compacted	4
4	Loose	3
6	Loose	13

<u>Add. Recycling Area</u>	<u># Cplx</u>
LAUNDRY ROOM	1
MAIL ROOM	12
MULTI AREA	5
NOT AVAILABLE	451
OFFICE	2
OTHER	8



Original Container Design



**Newer Container Design with drop down slot door;
lighter blue colour used on newer containers
(see bottom right image)**

Front End Recycling Efficiency Audit Sheet

Date: _____

Address: _____

of Units: _____

of Floors _____

Superintendent

Name: _____

Phone #: _____

Cell/Pager #: _____

E-Mail: _____

Address: _____

Preferred Contact Method: Postal Mail ☐ Email ☐

Property Manager/Owner

Name: _____

Phone #: _____

Cell/Pager #: _____

E-Mail: _____

Address: _____

Location of Recycling Front End Bins: ☐ Outside ☐ Indoors ☐ Both

Number and Size of Front End Bins: # _____ Size: ☐ 3 yd ☐ 4 yd ☐ 6yd

_____ Size: ☐ 3 yd ☐ 4 yd ☐ 6yd

Observations:

Bin Lid Locked? ☐ Yes ☐ No Bin Lid Left Open? ☐ Yes ☐ No

Bin Condition: _____

Bin Fullness: _____

(How full are each of the bins)

Contamination: _____

Bin Contents (comment on general composition; are there cardboard boxes not broken down?; amount or degree of contamination)

Superintendent's / Building Representative's Comments:

Audit Observation Checklist:

- Check if bin lid is locked and/or left open; recommend the use of locks if bins are kept outside or if they have contamination issues or un-flattened cardboard in the bins
- Ask if they have a room where the recycling bins can be located, if they are currently being used outdoors (some buildings have room available and have opted to move the bins outside) – recommend creating recycling locations indoors
- Check bin contents, note any non-recyclable materials present and cardboard that has not been flattened
- Check garbage bins, if possible, often when recycling bins are full, garbage bins are the repository of additional recyclables, particularly if boxes are not flattened
- Check position of bins, if set out for collection: recycling bins should not be placed in front of garbage bins and vice versa and front of bins should face approach of truck
- If bins seem to be filling up quickly, comment on the need to flatten cardboard and push materials to the back of the bin or even out the materials in the bin (supers can use a broom, shovel or stick)
- Buildings with front-end recycling bins will not be switched back to carts; front-end recycling is the best system that increases storage and collection efficiency, keeps recycling location cleaner, and provides more capacity to increase recycling; more and more municipalities are switching over front end bin service for recycling
- Ask building staff if they have the Recycling handbook and other materials such as laminated posters and provide with the new posters promoting the use of the front-end recycling bins

Completed By: _____

MAKE SURE YOUR RECYCLING EFFORTS COUNT!

YES



**Please use your reusable blue recycling bag*
and place recyclables loose in the recycling container**

*Recycling bags are **FREE**. If you do not have one, please contact your property manager or superintendent.

NO



**Recyclables placed in plastic shopping bags
or garbage bags cannot be recycled**

QUESTIONS?

Call the Region of Peel at **905-791-9499** or visit peelregion.ca/waste.

Not sure what is recyclable? Visit wheredoesitgo.ca

REDUCE AND REUSE

The Region of Peel manages approximately 500,000 tonnes of waste (garbage, recyclables and hazardous waste) annually from more than 400,000 households in Brampton, Mississauga and Caledon. That's enough waste to fill approximately 62,000 curbside garbage trucks.

Reducing the amount of waste we generate and reusing items instead of discarding them helps save natural resources, conserve energy and decrease our need for landfill.

- Reduce waste by buying items with less packaging and buying fewer single-use items
- Reuse materials before recycling or discarding them, and donate gently used items

To learn more about how to reduce and reuse your waste, visit peelregion.ca/waste.

ELECTRONICS RECYCLING

The following items are NOT collected from buildings. You may drop off dedicated loads of electronics at Community Recycling Centres, free of charge.

- | | | |
|------------------------------|-------------------------------|--------------------------------------|
| ➢ Desktop computers | ➢ Cellular phones | ➢ Speakers |
| ➢ Laptop computers | ➢ PDAs and pagers | ➢ Tuners |
| ➢ Computer peripherals | ➢ Audio and video players | ➢ Turntables |
| ➢ Monitors | ➢ Cameras | ➢ Video game systems and accessories |
| ➢ Televisions | ➢ Equalizers, (pre)amplifiers | ➢ Video players/projectors |
| ➢ Printing devices | ➢ Radios | ➢ Video recorders |
| ➢ Telephones and accessories | ➢ Receivers | ➢ Personal handheld computers |

Select electronics may also be taken to participating retailers. Visit recycleyourelectronics.ca to search for the nearest collection site by municipality, postal code or material type.



Note – Your building may provide its own electronics collection service. Check with your building's management for information.

SPECIALTY COLLECTION SERVICES

Christmas trees

- Christmas trees will be collected during the week of Jan. 13, 2014
- Place Christmas trees at the curb by the entrance of your building without obstructing the road or sidewalk
- Remove all tinsel, ornaments, plastic bags and tree stands
- Christmas trees buried in snowbanks will not be collected
- Christmas trees must not exceed 3m (10 ft.) in length.

Furniture and large items

Place furniture and large items in your designated waste collection area for pick-up (no appointment required). Do not place furniture and large items in your building's garbage containers.



Items accepted for collection

- barbecues (propane tanks must be removed and taken to a Community Recycling Centre)
- microwave ovens
- furniture – e.g. sofas, tables, chairs and mattresses
- carpets [tied in bundles no larger than 1.2 m (4 ft.) in length and 76 cm (2.5 ft.) in width]
- small appliances
- toilets (detach the tank from the bowl)

Large metal appliances and metal fixtures

- These items are collected by appointment only. Residents are required to pay \$15 for the first item and \$10 for each additional item collected on the same day. Call the Region at **905-791-9499** or visit peelregion.ca/waste to schedule an appointment for pick-up prior to setting out your items*
- Payment methods: credit card over the phone; debit card, cash or cheque at Access Peel, located at 10 Peel Centre Dr., Suite B in Brampton and 7120 Hurontario St. in Mississauga; online at peelregion.ca/waste. Cheques payable to the Region of Peel are also accepted at Brampton and Mississauga City Halls and at the Caledon Town Hall
- For safety reasons, please remove all appliance doors and place them beside the appliance for collection. Appliances must be empty of all food and waste
- Large metal appliances and fixtures can be dropped off, free of charge, at Peel's Community Recycling Centres



* To cancel an appointment, call **905-791-9499** before **2 p.m.** on the business day prior to your scheduled collection. **Allow a minimum of seven days for pick-up.**

COMMUNITY RECYCLING CENTRES

The reuse, recycling and disposal services offered at Community Recycling Centres (CRCs) supplement Peel's curbside and apartment collection programs.



Peel's CRCs are for use by Peel residents and small businesses only, and proper identification is required. Proper identification includes:

- Residents – identification with a current Peel address or current Peel tax or utility bill
- Small businesses – an original signed letter on company letterhead
- Contractors – a signed contract or work order with a Peel address referencing the vehicle

Items Accepted at CRCs

- **household hazardous waste** – e.g. paint, batteries, motor oil. Sharps (needles, syringes and lancets) are accepted in biohazard containers that can be picked up for free at CRCs
- **recyclable material** – e.g. blue box items, scrap metal, wood*, passenger or light truck tires
- **other items*** – e.g. rubble, garbage, construction and demolition material
- **reusable goods** – e.g. books, home furnishings, toys, clothing. *Items in poor condition will not be accepted for reuse and a disposal fee may apply*

➢ **electronics** – all household electronics are accepted

For a complete list of acceptable items, visit peelregion.ca/waste.

*Drop-off fees apply.

Items Not Accepted at CRCs

- asbestos
- heavy equipment tires
- institutional, commercial and industrial waste
- biomedical waste (e.g. items soiled with bodily fluids)
- heavy truck and tractor trailer tires
- PCB-contaminated waste
- flares, fireworks and ammunition**
- tires from businesses
- radioactive waste
- food waste
- smoke detectors

** Call your local police department for disposal. In Brampton and Mississauga call 905-453-3311. In Caledon call 905-584-2241.

COMMUNITY RECYCLING CENTRES

Drop-off free of charge if items separated:

Items must be separated for disposal into individual containers

- household hazardous waste
- reusable goods
- dedicated loads of:
 - blue box materials
 - large metal appliances and fixtures (residential customers only)
 - select electronics
 - passenger or light truck tires
 - scrap metal

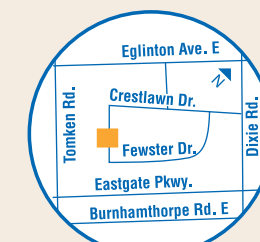
Drop-off Fees

Weight of load*	Drop-off fee
Up to and including 50 kg (110 lbs.)	\$5 flat rate
Greater than 50 kg (110 lbs.)	10¢ per kg

*Up to a maximum load weight of 750 kg (1,653 lbs.)

Methods of payment: cash, debit, Visa, MasterCard

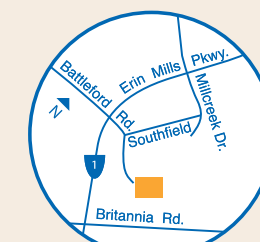
Note – Fees subject to change.



Fewster Community Recycling Centre

1126 Fewster Dr.
Mississauga L4W 2A4

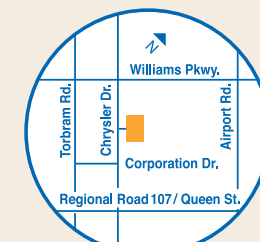
Hours: Mon. to Sun.,
8:30 a.m. - 4:30 p.m.
Evening hours every Thursday
until 8 p.m. (May 1 to Sept. 30 only)



Battleford Community Recycling Centre

2255 Battleford Rd.
Mississauga L5N 8P6

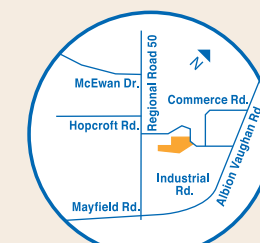
Hours: Mon. to Sun.,
8:30 a.m. - 4:30 p.m.
Evening hours every Thursday
until 8 p.m. (May 1 to Sept. 30 only)



Brampton Community Recycling Centre

395 Chrysler Dr.
Brampton L6S 6G3

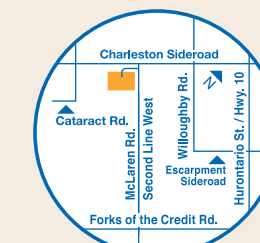
Hours: Mon. to Sun.,
8:30 a.m. - 4:30 p.m.
Evening hours every Thursday
until 8 p.m. (May 1 to Sept. 30 only)



Bolton Community Recycling Centre

109 Industrial Rd.
Bolton, L7E 1K5

Hours: Tues. to Sat.,
8:30 a.m. - 4:30 p.m.



Caledon Community Recycling Centre

1795 Quarry Dr.
Caledon L7K 1R9

Hours: Mon. to Sat.,
9 a.m. - 4:30 p.m.

Reuse stores and drop-off centres are operated in partnership with Goodwill and Caledon Community Services.

FOR APARTMENTS AND CONDOMINIUMS

WASTE 2013/2014 MANAGEMENT guide



Region of Peel
Working for you

USE YOUR RECYCLING BAG

Available from your property manager or superintendent

Apartments and condominiums make up a significant portion of our community and we want to make sure that recycling is easy and convenient for you.

The Region of Peel's reusable blue bags are designed to help you store your recyclable material and transport it to your building's recycling area.



Colour graphics remind you what items are accepted in the recycling program. They also include a reminder to visit **wheredoesitgo.ca** if you're unsure how to dispose of any item.

Blue bags are available for free.

If you do not have one, please contact your property manager or superintendent.

Help us by:

- using your reusable blue bag to store and transport recyclable items



- placing recyclable items loose in your building's containers – **do NOT tie them in plastic grocery or garbage bags** (except for plastic bags, which must be tied in one plastic bag)



Refer to the Recycling Guide in this brochure to ensure you are placing only accepted recyclable material in your building's recycling containers.

RECYCLING GUIDE

Recycling is **mandatory** in the Region of Peel

Securely place only these items in your recycling bag or container. Please make sure all food and drink containers are empty and rinsed.



Beverage cartons and boxes



Flattened cardboard boxes – not to exceed 90 cm x 90 cm (36 in. x 36 in.)
Remove plastic wrapping



Cardboard cartons
Remove liners, empty and flatten



Empty aerosol and metal paint cans
Remove paint can lids and place in recycling container. Remove aerosol caps and place in garbage



Aluminum foil plates and trays
No foil wrap



Glass bottles and jars
Place caps in garbage



Metal food and beverage containers
Do not flatten cans



Plastic bags
Place all plastic bags in one tied plastic bag



Plastic bottles, jugs and jars
Place caps and lids in garbage



Plastic tubs and lids
Remove lids and place both tubs and lids in recycling container



Printed paper
No shredded paper – place in garbage



Polystyrene foam packaging

ITEMS NOT ACCEPTED FOR RECYCLING



Household hazardous waste (HHW)



Home health care waste
Plastic tubing for IV bags or dialysis and needles



Shredded paper



Shoes and textiles
Clothes, towels, shoes and linens



Dishes and cookware
Pots/pans, plastic cups, drinking glasses, ceramics, plastic and metal utensils, food wrapping and reusable containers



Garbage
Plastic egg cartons, clamshell and blister packaging, takeout cups and containers, cookie/chip bags, coat hangers and plant trays



Electronics
See Electronics Recycling section for complete list

For more information, call 905-791-9499 or visit peelregion.ca/waste. In Caledon, call 905-584-2216, free of charge.

REDUCE CONTAMINATION

Contamination refers to any material that is mixed in with your recyclable material. Recyclable material is sold by the Region and the revenue is used to help offset costs of operating the recycling program. In order for the Region to be able to sell recyclable items, material must be free of garbage and household hazardous waste.



Last year, more than 20,000 tonnes of material collected through the recycling program was not recyclable.

Keeping garbage and household hazardous waste out of your recycling containers helps to reduce program costs and increases waste diversion!

WHERE DOES IT GO? We'll Tell You!

More items, easier to search and a fresh new look!

Visit wheredoesitgo.ca to learn how to properly dispose of all your garbage, recyclable material and household hazardous waste.



MAKE SURE YOUR RECYCLING EFFORTS COUNT

Please use your reusable blue recycling bag*. Recyclables placed in plastic shopping bags or garbage bags cannot be recycled

*Recycling bags are **FREE**. If you do not have one, please contact your property manager or superintendent.



Thank you for participating in the Region of Peel's recycling programs.

If you need more information about any of the Region's waste management programs or services, call 905-791-9499. Caledon residents in long-distance areas can call 905-584-2216, free of charge.

Please keep this guide handy for future reference.

Visit our website at peelregion.ca/waste

This guide is published and distributed by the Region of Peel.



This is an important document. Translation tool available at peelregion.ca/waste.

Ceci est un document important. Un outil d'aide à la traduction est disponible sur peelregion.ca/waste.

Este es un documento importante. La herramienta de traducción está disponible en peelregion.ca/waste.

此文件很重要。可从 peelregion.ca/waste 处获取翻译工具。

यह महत्वपूर्ण दस्तावेज़ है। अनुवाद उपकरण peelregion.ca/waste पर उपलब्ध है।

ਇਹ ਇਕ ਮਹੱਤਵਪੂਰਨ ਦਸਤਾਵੇਜ਼ ਹੈ। ਅਨੁਵਾਦ ਕਰਨ ਲਈ ਸਹਾਇਤਾ ਇੱਥੇ ਉਪਲੱਬਧ ਹੈ peelregion.ca/waste

هذه وثيقة هامة. الترجمة متاحة على الرابط التالي: peelregion.ca/waste

یہ اہم دستاویز ہے۔ ترجمے کی ٹول peelregion.ca/waste پر دستیاب ہے۔

இது ஒரு முக்கியமான ஆவணம். மொழிபெயர்ப்புக் கருவிக்ளான இணைப்பு peelregion.ca/waste.

Ito ay isang mahalagang dokumento. Available ang tool sa pag-translate sa peelregion.ca/waste.

Jest to ważny dokument. Narzędzie do tłumaczenia znajduje się na stronie: peelregion.ca/waste.

Recycling Guide

Recycling is mandatory in the Region of Peel

Please put these items in the recycling container



Printed paper
No shredded paper;
place in garbage



Aluminum plates and trays
No foil wrap



Beverage cartons and boxes



Polystyrene foam packaging



Flattened cardboard boxes
Not to exceed
90 cm x 90 cm (36 in. x 36 in.);
remove plastic wrapping



Glass bottles and jars
Remove caps and place
in garbage



Plastic bottles, jugs and jars
Remove caps and place
in garbage



Cardboard cartons
Remove liners, empty
and flatten



Plastic tubs and lids
Remove lids and place in
recycling container



Empty aerosol and metal paint cans
Remove paint can lids and place
in recycling container; remove
aerosol caps and place in garbage



Plastic bags
Place all plastic bags in one
tied plastic bag



Metal food and beverage containers
Do not flatten cans



REMEMBER: Please make sure all containers are rinsed and empty before placing them in the recycling container.

Household Hazardous Waste (HHW) CANNOT be included in the garbage, recycling or poured down the drain. Please take your HHW to one of Peel's Community Recycling Centres.



DO NOT RECYCLE Please put these items in the garbage bin



Home health care waste
Plastic tubing for IV bags or dialysis



Dishes and cookware*
Pots/pans; plastic cups;
drinking glasses; ceramics;
plastic and metal utensils;
food wrapping; reusable
containers



Shoes and textiles*
Clothes; towels;
shoes; linens



Paper and plastic takeout beverage cups



Plastics
Plastic egg cartons;
clamshell and blister
packaging; takeout
containers; cookie/
chip bags



Other Items
Household electronics,
coat hangers;
foam/'popcorn'
packaging; toys*; pails;
plant trays



* Reusable items in good condition may be dropped off, free of charge, at any of Peel's Community Recycling Centres.

QUESTIONS? Call the Region of Peel at **905-791-9499** or visit www.peelregion.ca/waste

Region of Peel
Working for you

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containers



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Clothes; towels;
shoes; linens



Paper and plastic takeout beverage cups



Plastics
Plastic egg cartons;
clamshell and blister
packaging; takeout
containers; cookie/
chip bags



Other Items
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Region of Peel
Working for you

