CIF #508.4

Multi-Residential Recycling: Implementing Best Practices
City of Kawartha Lakes

City of Kawartha Lakes
Catch the Kawartha spirit

Final Project Report, November 19, 2013

City of Kawartha Lakes

CIF # 508.4

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Acknowledgement:

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1. Executive Summary

This is the final report of a multi-residential project implemented by the City of Kawartha Lakes from January 2011 to August 2013. The project goal was to increase recycling rates by implementing best practices in the municipal multi-residential recycling program. Waste Diversion Ontario's, Continuous Improvement Fund (CIF) provided financial/ technical assistance working with City staff to complete this project.

The City of Kawartha Lakes currently provides recycling to 39,445 households, with an alternating weekly collection of blue (container) recycling and green (fibre) recycling. Of this, there are currently 213 multi-residential buildings (3,022 units). However, there were approximately 14 buildings (142 units) identified on the original multi-residential list that, upon site inspection, were not multi-residential units. This resulted in staff being able to conduct sites visits at only 199 buildings with 2,880 units (should all buildings wish to participate in this education program). Over this two year program, City staff has visited all buildings as of August 2013, however, only 53 buildings completed site visits.

The deliverables that were implemented during this project included creating a database of multi-residential properties, evaluating the recycling performance of individual buildings and estimating recycling rates, increasing the number of recycling containers at buildings and distributing new promotion & education materials to tenants and building staff. Additional work included design of an online survey for building managers, literature reviews and creating tenant recycling totes.

The average recycling rate at buildings was estimated at 117 kg per unit/ year for containers and 154 kg per unit/ year for fibre; the total amount recycled for containers and fiber for all buildings is estimated at 780.5 tonnes per year. Through this program seventy (70) blue 95-gallon carts (25,172.99 litres), sixty-one (61) green 65-gallon carts (15,009.16 litres) and sixty-three (63) blue 22-gallon bins (5,246.58 litres) were added to the program. This has increased the recycling capacity from 97.7 litres per unit to 195.27 litres per unit. It is estimated that implementing best practices had the effect of increasing recycling by 50% or from 271 kg per unit to 544 kg per unit.

This project is was pilot program that will provide the foundation for a permanent multi-residential initiative geared to increasing communication with building owners and managers and setting yearly goals based on Council approval. The cost to complete the project budget was $8,774.00 the City of Kawartha Lakes was approved up to $19,850.00 funding from CIF.

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2. Introduction

Ontarians generate an estimated 34, 000 tonnes of waste per day or over 12 million tonnes per year. As a result, landfill space is running out. The solution to this issue is waste diversion. The City of Kawartha Lakes currently has a diversion rate of 39% (Waste Diversion Ontario, 2012) but is dedicated to attaining their diversion rate target of 60%. To accomplish this task a City-wide diversion campaign *'Be Waste Wise: Sort it Out!'* was launched September 2010. Local residents, businesses and schools are challenged to think about the choices they make from product packaging to disposal options. As part of this campaign, new promotion & education tools are being developed for multi-residential buildings (MRB).

Third-year Ecosystem Management Technology, Credit for Product Field Placement students from Fleming College assisted with this program's development. Delivery of this program has been by the City's Public Education Officer, with the assistance of summer staff.

The first tasks embarked upon were to develop a site visit form to record all relevant information during site visits (Appendix A). Also, an online survey (Appendix B) was designed and maintained for building managers to arrange site visits. The next steps were to create a multi-residential database, a property manager's recycling handbook, and conduct site visits to populate the database with information. Finally, we conducted literature reviews to compose appropriate verbiage for the production of educational and promotional materials and follow-up visits were completed. As this project was postponed until the summer of 2012, most of these tasks were completed once the project had continued in 2012.

The database has been created to provide the City with details of current recycling practices for multi-residential buildings, assess needs and allow for program recommendations. Promotion and education materials (Appendix D) will help building managers implement/improve their recycling programs and help tenants to understand the program and how to participate. All efforts made will support the City's commitment to the environment and promote diversion programs that will lead to an increase in the City's diversion rate.

3. Background: Multi-Residential Recycling Program Overview

Provincial legislation requires property managers of buildings to operate a recycling program if the building is located in a municipality with a population of at least 5, 000. The City of Kawartha Lakes has a population of 79, 526, therefore, all multi-residential building managers in the City are obligated to organize a recycling program for their tenants. Multi-residential buildings are defined by the Continuous Improvement Fund (CIF) as buildings containing 6 or more units.

Within the City's database there are 99 multi-residential buildings that meet this requirement. The remaining 100 buildings have 3-5 units (as the City of Kawartha Lakes defines 3 or more units as a multi-residential dwelling for curbside collection requirements). The 99 multi-residential buildings with 6 or more units comprise 2,510 units in the City of Kawartha Lakes, representing 87% of the total number of multi-residential units in this community.

Curbside collection of waste occurs weekly; with recycling being sorted into two streams (fibres and containers) for alternating weekly collection. Requirements on collection include the following: containers must be rinsed of all residues, cardboard boxes must be broken down into 2ft X 2ft X 2ft or 61cm X 61cm X 61cm bundles and no bagged recycling is accepted unless it contains shredded paper in a clear bag. All recycling must be placed at the curb in recycle bins or carts. Recycling carts are only available for use at commercial and multi-residential locations. The City of Kawartha Lakes uses 65- and 95-gallon blue carts as well as 65- gallon green carts. These carts are purchased at cost from local City Municipal Service Centres by property managers or owners on an as needed basis.

Based on the provincial recycling diversion rate target, each multi-residential unit would require 50 litres of storage space. This means one 95 gallon (360 litres) cart for every 7 units. Multi-residential building recyclables are collected as part of the regular curbside collection schedule by the City's current collection contractor- Miller Waste Systems Inc. There is no limit to the amount of recyclables each building can set out at the curb.

Waste collection occurs weekly between Monday and Thursday depending on the building's location (same day as recycling collection). Each unit is permitted to dispose of a maximum of two 40lbs (18kg) bags per unit. If the amount of waste for disposal exceeds the allowable limit, the City's Waste Operations Supervisor or a Private Waste Contractor should be contacted to discuss alternative collection options. Also, if the building exceeds 10 units they are required to contact the City to discuss curbside set out options. All curbside materials must be set out by 7:00 AM (6:00 AM in some

downtown cores), clearly marked, properly contained and with no restricted materials (hazardous waste, construction materials, etc.).

A number of best practices would help increase recycling rates and divert more materials from landfills. First, educate, advertise and simplify. Every residence in the City could be equipped with factsheets, refrigerators magnets, annual Recycling & Waste Collection Calendars and other materials that clearly identify how the recycling program works, what materials are recyclable and the benefits of participating in the recycling program.

Table 3.1: Number of households in the City of Kawartha Lakes (as of 2012)

	Households	Percent
Single Family	36, 565	92%
Multi-res	2, 880	8%
Total	39, 445	100%

4. The Project Scope

The project scope 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/Maintain Building Database

Creating and maintaining a database of all multi-residential properties is an important step towards implementing best practices. To obtain the list of multi-residential properties, the sources of data included

- Municipal planning and taxation departments and
- Multi-Residential database generated through previous curbside collection contracts

4.1.1 Sources and Collection Methodology

In order to develop and populate the City's database, initial consultation was completed with the Municipal Property Assessment Corporations' (MPAC) multi-residential buildings (MRBs) list for the City of Kawartha Lakes and obtained from the Tax & Revenue Department. In order to ensure that no multi-residential buildings were overlooked we cross-referenced this list with a second multi-residential list that is utilized for the City's current curbside collection contract. These lists were compiled, in 2011, into an initial database (database template supplied by CIF). While some preliminary data can be collected from the methods discussed above, in-person site visits to each building were completed to collect detailed information.

In total, 53 site visits were performed from 2011 to 2013; booked between City staff and building managers. During the visits, site photos were taken and a site visit form was completed (Appendix A). The consistency of site visit documentation was ensured by providing all parties involved with training to conduct site visits in a similar manner and limiting the number of staff conducting site visits. Some challenges experienced during these site visits included arranging meeting times with building managers and lack of contact information.

4.1.2 Database and Completeness of Data

Site visit data collected during this program is housed within a Microsoft Excel database. Data from the 53 completed site visits was entered into this database. Once all data has been included in the database, it can be analysed for trends and statistical information.

4.1.3 Data Maintenance

After the initial task of creating an up-to-date database was complete, steps were taken to ensure that the database was continuously updated and maintained for program continuity and integrity.

Updates occur on a regular basis; with 'triggers' for updates being communications with multi-residential building owners and the yearly recycling calendar. The City's Public Education Officer is responsible for maintaining this database.

4.1.4 Summary and Recommendations

Currently the multi-residential database consists of 199 buildings, spread across 6 former townships which are within the boundaries of the City of Kawartha Lakes. In total, 53 site visits have been completed and entered into the database as part of the CIF multi-residential funding project.

It is recommended that continual communication with building managers be maintained and should new property owners be engaged that sites visits be continued beyond the length of this CIF project. Also, the City is currently developing new promotional materials (i.e. tenant totes) that can be distributed to multi-residential buildings. Finally, there maybe opportunities in the future to host various 'train the trainer' workshops to further engage multi-residential building owners.

4.2 Phase 2: Benchmarking Recycling Performance (Results)

To move forward a key step will be recording benchmarks in current performances seen at the site visits. This will allow staff to determine future recycling targets and program improvements through tangible measurements. Evaluating performance was a quantitative assessment that measured

1) How much each building is recycling (kg/unit)
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. Obtaining this information from each building was instructive both for flagging low performing buildings and for highlighting top performers.

4.2.1 Procedure for Estimating Recycling Rates

Site visits would begin with a sit-down interview with the property owner, building manager, superintendent or other building representative. The direction of the interview was based on the CIF Site Form (Appendix A).

Participants were asked basic details about their building including number of units and floors, collections days and whether waste and recycling collection was completed by municipal or private services. After, the site contact would take staff on a building tour to preform visual inspections of chute rooms and recycling storage areas.

The number and condition of the containers was recorded and their level of fullness, apparent contamination and stream mixing. The area itself was evaluated based on accessibility, cleanliness, lighting and signage. Completing the site visit form and photo documentation concluded the building inspection. Data collected from site visits was input into the database and used to estimate building recycling rates.

Figure 1: Site visit completed in 2011.

4.2.2 Recycling Rate Estimates

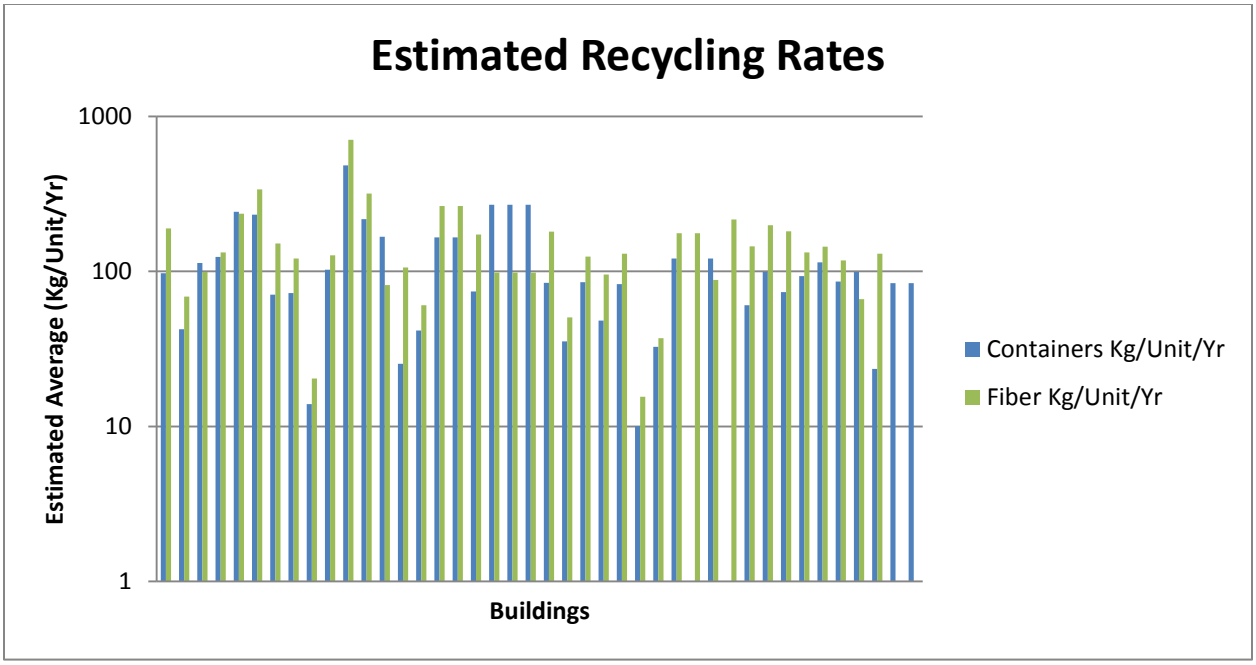
In order to estimate recycling rates staff conducted site visits to evaluate recycling practices. In total, 53 site visits were completed from 2011 to 2013 and are summarized in table 4.1 and graph 4.2 below.

Table 4.1: Database Summary (August, 2013)

	Buildings	**Units**
Total	199	2,880
With recycling (# of site visits completed)	53	1,995
Without recycling (based on # of site visits completed)	0	0
Unknown (no site visit completed)	146	885

It should be noted that City staff visited all 199 sites during the three years however, only 53 site visit forms were completed as 146 multi-residential owners were not interested in the program (even with visiting the sites without appointments).

Graph 4.2: Building recycling rates (August, 2013)



At the start of the program, the average recycling rate for all buildings for container recycling is 117 Kgs/ unit/ year and for fibre recycling is 154 Kgs/ unit/ year. All number reflected in table 4.2 are estimates based on visual inspections and represents a 'snap-shot' of the multi-res program at that time.

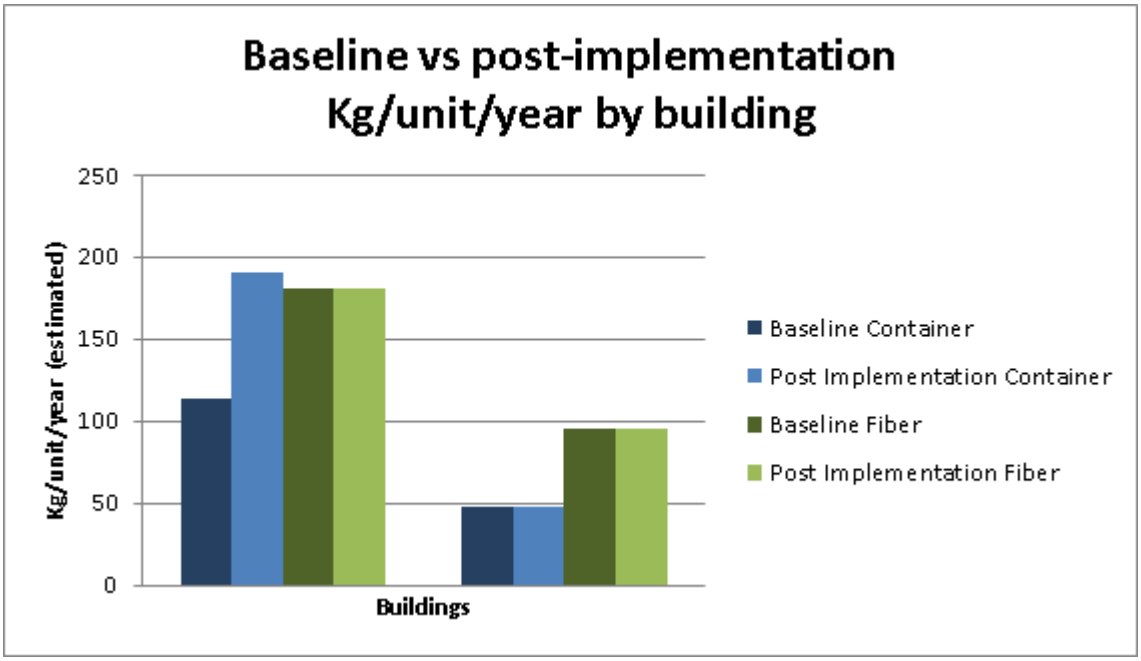
Table 4.3: Distribution of buildings by recycling rates

Average Recycling rate (container & fibre) Kg/unit/year		Number of Buildings	Percentage
Low	0- 100	31	59%
Mid	101- 200	14	26%
High	201 +	8	15%
Total buildings		53	100%

Comparative Building Recycling

In August 2013, summer staff members were able to follow-up with two (2) multi-residential buildings that were both visited during the previous summer. The results from these site visits are summarized in graph 4.4.

Graph 4.4: Comparative building recycling rates



4.2.3 Barriers to Recycling

There are four identified types of barriers to tenant recycling. These categories are situational barriers, behavioural barriers, knowledge & understanding and attitudes & motivators (Pocock et al., 2008).

The key situational barriers can include the need for more or bigger containers, space to store recycling bins, need for more frequent collection and containers being difficult to move. A reason for tenants not recycling fully is that they are not entirely clear on which items that can be recycled and therefore choose to throw them out. Tenants may choose not to wash containers that may be recycled and throw them away instead. Many people are 'regular recyclers', however during the holiday season many recyclables, such as wrapping paper are thrown away. Another barrier to recycling is a lack of knowledge about the recycling program including what materials may be recycled and the benefits of recycling. Attitudes and motivators also have an effect on recycling, where the use of incentives and appreciation can increase participation rates.

Table 4.5: Barriers to recycling noted at site visits completed at 53 buildings

Barrier to increased recycling	Require corrective action	% of total	Set high standard 'model building'	% of total	No information available	% of total
OCC managed well	10	19%	12	23%	31	58%
Contamination	29	55%	13	24%	11	21%
Access to recycling	11	21%	32	60%	10	19%
Loose materials noted	17	32%	26	49%	10	19%
Containers overflowing	21	40%	22	41%	10	19%
Cleanliness of area	10	19%	33	62%	10	19%
Area well lighted	11	21%	31	58%	11	21%
Well labelled & signed	38	72%	5	9%	10	19%

Figure 2: Container carts at 51 Rivermill Boulevard

4.2.4 Featured Building

One site that has demonstrated an exemplary multi-residential recycling building is located at 51 Rivermill Blvd in Lindsay, ON. This building had a high diversion rate due to the enthusiasm of one of the residents for the buildings recycling program and the support of the buildings board.

The recycling collection and storage area is located in the underground parking garage. This area is convenient for tenants since they are able to deposit recyclables as they leave the garage. There are several large recycling carts as well as an assortment of smaller bins for sorting materials such as electronics, textiles and hazardous waste.

This program is also beneficial since some of the sorted materials (such as scrap metal) can be sold for profit. Items such as textiles and cell phones are collected until there is enough volume to warrant delivering them to an appropriate destination. All bins are clearly labelled with the type of materials that may be placed in them, making it easy for tenants to recycle.

Figure 3: 51 Rivermill Boulevard provided Household Hazardous Waste disposal to tenants.

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 site visits the baseline recycling quantities (for containers and fibres) were recorded. Information was collected about where carts could be relocated within the building to provide more convenience to tenants. Site visits also provided the opportunity to determine if additional carts are required and where additional carts 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 carts used by building tenants to deposit their recyclables. The City of Kawartha Lakes offers three cart size options for multi-residential properties. These include 95- gallon blue carts (sold for $95.00), 65- gallon blue carts (sold for $80.00) and 65- gallon green carts (sold for $80.00). All carts are sold at cost.

Figure 2: Example of a 95 gallon container cart

Recycling carts can be purchased by property owners from any of the five (5) Municipal Service Centres. The number of carts per building is based on the provincial recycling diversion rate target. If a building is effective at recycling and the carts are reaching capacity, then a recommendation would be made to increase recycling capacity by adding additional carts. As recycling efforts increase, it may be beneficial for property owners to boost the container capacity to one 95 gallon cart (360 litres) for every 5 units.

4.3.2 How Much Recycling Capacity is being Provided?

Based on the provincial target of capturing 70% of all recyclables, it was recommended to each building 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 (53 litres) blue box. In terms of multi-residential carts, the following guidelines are recommended by CIF and are considered best practices:

- 360 litre carts – one cart for every 7 residential units
- Bulk bins - one cubic meter for every 15 residential units (ex a 4-yard bin for 60 units)

Table 4.6 summarizes the total number of recycling carts that were observed during the 53 site visits and additional carts that were purchased during the program, adding additional capacity.

Table 4.6: Total number of recycling containers

Type of Collection Cart	Baseline	Post Implementation
95 gallon blue carts (360 litres)	142	70
65 gallon blue carts (246 litres)	123	0
65 gallon green carts (246 litres)	178	61
22 gallon blue boxes (83 litres)	47	63
Total program capacity in litres	129, 067	174, 502
Capacity per unit (l/unit)	**51.4**	**69.5**

It should be noted that there were several buildings that were visited by staff that did not participate in purchasing additional carts. The main limitation identified by these building managers was lack of space.

4.4 Phase 4: Provide Promotion & Education Materials

4.4.1 Print Materials

A project goal was to distribute new print materials to promote recycling and educate building residents and building 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 municipal specific information, summarized in table 4.7.

Table 4.7: Summary of Promotion & Education Materials Distributed

Promotion & Education component	Number distributed	Method of distribution
Tenant flyers	2,510	By municipal staff to each unit
Posters	265	Posted by building staff on each floor (chute room), laundry room, lobby, mail room, etc.
Recycling Magnets	2,510	By municipal staff to each unit
Containers labels	530	By municipal staff
Recycling guidebook	For each superintendent, property manager and property owners	By mail or provided during site visits

4.4.2 Other Promotional Materials

During the summer of 2013, City staff designed and ordered recycling tenant totes. These will be distributed during Waste Reduction Week as continued education and outreach for building managers and tenants. Approximately 2,000 totes will be distributed.

4.4.3 Timing of Promotion & Education Campaign

Education efforts were made year round to encourage building managers to participate in this multi-residential program. A new 'multi-res' section was added to the annual recycling and waste collection calendar and on the City website. Also, newspaper ads, letters, radio ads and scalehouse hand outs were developed to gain interest in the program.

5. Project Budget and Schedule

The following table summarizes the project budget.

Table 5.1 Project budget, planned and actual

Task	Budget	Budget 50% CIF	Actual Spent (100%)	Actual Spent (50% CIF)	% of Budget Spent
Site Visits	$14, 910	*$7,455*	$3,850	*$1, 925*	26%
95- Gallon Recycle Cart Purchase	$10, 800	*$5,400*	$7,412	*$1, 680*	31%
22- Gallon Recycle Box Purchase	$5, 941	*$2,964*	$3,954	*$862*	29%
P&E	$4, 049	*$2,030*	$6, 881	*$2, 030*	100%
Final Report	$4, 000	*$2,000*	$4, 000	*$2, 000*	100%
Total	**$39, 700**	***$19, 849***	**$26, 097**	***$8, 517***	

6. Concluding Comments

This information was collected from a combination of the Municipal Property Assessment Corporation (MPAC) and the City of Kawartha Lakes Tax and Revenue report. Through an in person interview, information about the current recycling capacity, barriers to recycling and contact information were collected at 53 buildings within the City of Kawartha Lakes.

Some barriers that limited building recycling included a lack of and adequate number of bins, lack of knowledge about recycling and also negative attitudes of a small number of tenants towards the program. Verbiage was developed for a handbook for the property managers of multi-residential buildings. Posters outlining the acceptable materials for the two-stream recycling program were also been developed.

The City will continue to work with building managers to increase recycling in the multi-residential sector. The City will also continue to strive to meet the CIF target to improve the current recycling rate and increase site capacity to a target level of 70%.

7. Appendices

Appendix A – Blank Site Visit From
Appendix B –Online Survey
Appendix C – Print Materials

Appendix A

Multi-residential Recycling Program: Site Visit Form

Address :_____

Units:_____ Floors:_____ Site Visit Date & Day of Week:_____

Condo / Rental / Senior / Student / Co-op / Public
Garbage: Municipal / Private
Recycling: Municipal / Private

Recycling Collection Day(s) _____

Garbage Collection Day(s):_____

Contact Information

Property Manager: Same as owner ☐ (or see over)

Company:_____

Name:_____

Phone #:_____

Cell #:_____

E-Mail:_____

Address:_____

On-Site Contact: Super / Building Manager / Property Manager / Owner / Recycling Manager

Name:_____

Phone #:_____

Cell #:_____

E-Mail:_____

Address:_____

Recycling Quantity

Recycling Containers: # of 65 gal = _____ # of 95 gal = _____ OR # of 14 gal green box=_____ # of 16 gal blue box____

Full + part full carts (express in ¼ units) **Containers**: _____ **Fibre**: _____

Number of damaged carts: _____ Details: _____

Barrier Evaluation: note only if Excellent ☑ or Requires attention ☒

Contamination _____ Stream mixing _____ Accessibility _____

Loose materials _____ Overflowing carts _____ Area clean _____ Area well lit _____

Labels & Signage _____

Recycling & Garbage Area Description – check all that apply

Garbage: # bins x size _____ Or curbside bags ☐ Garbage Chutes ☐ Weekly Pickup ☐ Twice/wk ☐

Recycling Area: Outdoor ☐ Outdoor under cover ☐ Inside room ☐ Main Fl ☐ Underground ☐ Collect from each floor ☐

Twinned with garbage ☐ Number of Recycling Depots (i.e. number of times truck stops at this buildings _____

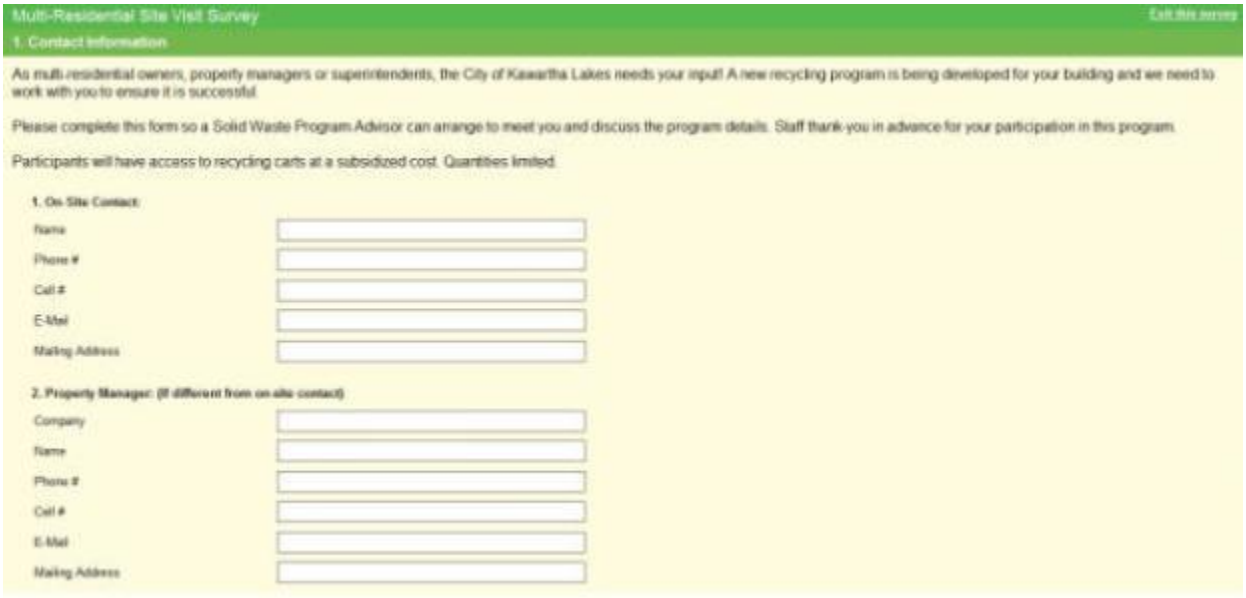
If no depot at this building, note address where depot is _____

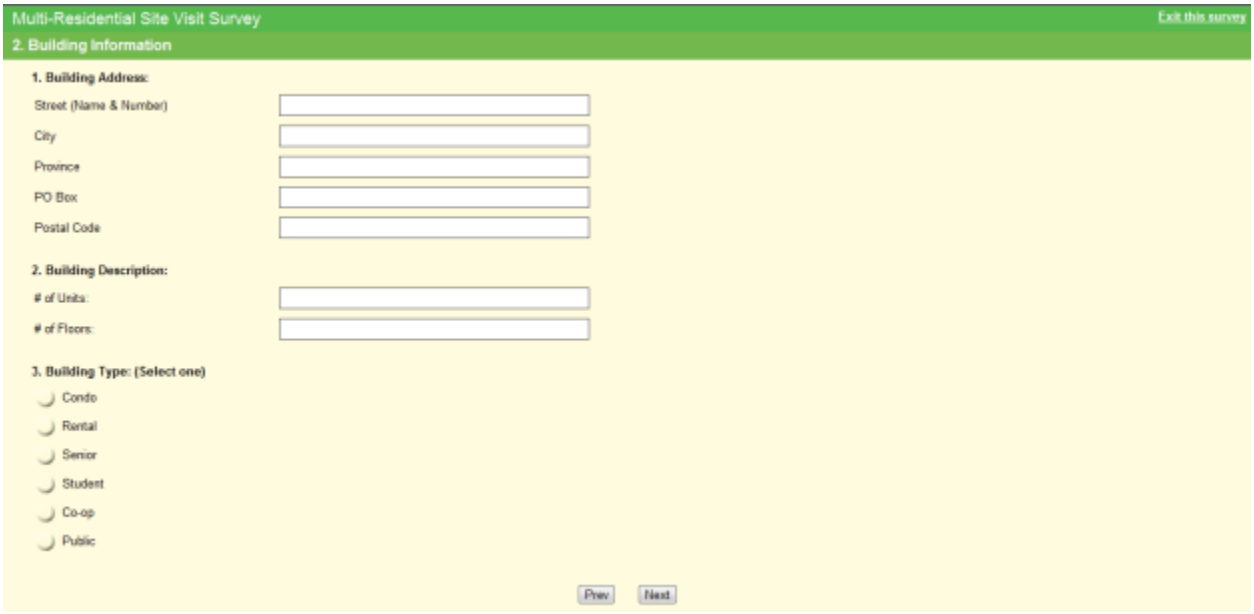
Room to add extra recycling carts ☐ Where _____

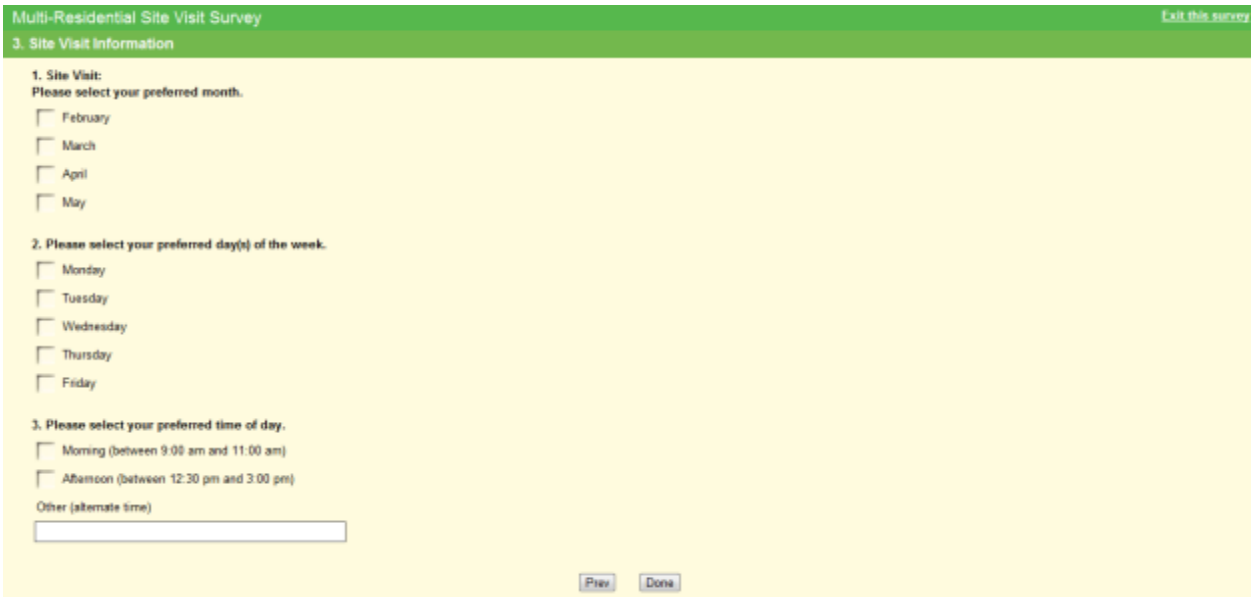
Comments:

Set out notes (curb, parking lot, etc.):

Appendix B (Online Survey)






Multi-Residential Site Visit Survey
Exit this survey
3. Site Visit Information
1. Site Visit:
Please select your preferred month.
February
March
April
May
2. Please select your preferred day(s) of the week.
Monday
Tuesday
Wednesday
Thursday
Friday
3. Please select your preferred time of day.
Morning (between 9:00 am and 11:00 am)
Afternoon (between 12:30 pm and 3:00 pm)
Other (alternate time)
Prev
Done