

**Development and Review of
Baseline Information on
Multi-Residential Recycling Programs
in Ontario**

E&E Fund Project # 18

Association of Municipal Recycling Coordinators
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Members of the Multi Residential Working group are: Renée Dello, City of Toronto; Anne Boyd, City of London; Pat Parker & Ruta Morkunas, City of Hamilton; Kim Kidd Kitagawa, Region of Waterloo; Cameron Wright, Essex Windsor Solid Waste Authority; Annette Synowiec, Region of Peel and Rick Clow, Quinte Waste Solutions.

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1.0 Executive summary

The Multi-residential Recycling Program survey was undertaken to develop baseline information on the larger multi residential recycling programs in Ontario. Its purpose was to determine program scope, levels of service and recovery rates, promotional and educational activities and program challenges prior to initiating specific projects aimed at improving multi-residential (MR) capture.

Survey responses have been summarized in the following report and include:

- Multi-residential (MR) recycling program background (staffing, demographics)
- MR program scope and level of service
- Collection containers, vehicles
- Processing issues
- Program monitoring and participation
- Recycling tonnage
- Regulatory incentives
- Costs and charges
- Promotion & education, and
- Challenges, studies and program evolution

Full survey responses are contained in Appendix A, *Final Multi res Survey Results.xls*, which is provided in a separate file.

1.1 Multi-residential recycling baseline information survey recipients

The survey was forwarded to representatives of the 22 largest multi-residential programs in the province (as identified by the Waste Diversion Ontario data call). The survey was completed by the following 19 municipalities:

- | | |
|---------------------------------------|----------------------------|
| • Barrie, City | • Peel, Region |
| • Cornwall, City | • Peterborough, City |
| • Essex Windsor Solid Waste Authority | • Quinte Waste Solutions |
| • Guelph, City | • Sarnia, City |
| • Halton, Region | • Simcoe, County |
| • Hamilton, City | • Sudbury, City of Greater |
| • Kingston, City | • Thunder Bay, City |
| • London, City | • Toronto, City |
| • Niagara, Region | • Waterloo, Region |
| • Ottawa, City | |

A copy of the survey can be found in Appendix 1.

1.2 Overview of survey results

The detailed survey results generated more comprehensive information on the state of multi-residential recycling programs in Ontario than was previously available. Result highlights include:

- Although the majority of multi-residential buildings in the surveyed municipalities have access to recycling services, low capture rates, low participation levels, and high contamination mean that this represents an important opportunity to increase tonnage;
- Most programs define MR consistently with Regulation 103/94;
- Regulation 103/94 is not enforced, but is used by a number of programs as a “backdrop” or tool when dealing with some buildings;
- Resources to adequately staff, monitor and promote MR programs are uniformly insufficient;
- Contamination is a consistent and persistent problem;
- Communications is always an issue – no MR program deals directly with tenants;

- Superintendents and/or building managers are critical elements of a “successful” recycling program;
- Unlike curbside recycling for single family dwellings, there is a lack of ownership/responsibility on the part of some MR residents. There is no direct accountability for not participating; and it is often less convenient to carry many items to depots or carts;
- Efforts and resources dedicated to MR recycling appear to have declined in a number of MR programs since they were first launched.

It should be pointed out however, that the results have not pinpointed any specific program factors that might lead to increased participation, capture, or efficiency. In general there is inadequate baseline information, as a result of insufficient monitoring systems or procedures. Without these two elements in place, there is no basis for moving forward. Not only is there a critical need for adequate MR tonnage information by municipality, and number of MR buildings and units, there is also a need to cross reference this information with tonnage and capture from corresponding single family unit recycling programs. Thus, the survey data do not allow for any correlation between specific program parameters/practices and increased recovery.

For example, the results of the survey indicate that:

1. Few municipalities have designed public education materials or initiatives exclusively for the multi-residential sector. Of the programs that do have materials, some indicate that there are now insufficient resources to continue to do so.
2. With one or two exceptions, few municipalities have tested various promotional and educational approaches for the MR sector and attempted to correlate these approaches with improved practices, e.g., increased capture or decreased contamination.
3. Provision of in-unit containers varies substantially across programs. No program has reported monitoring the impact of in-unit containers on capture or participation.
4. Few programs undertake regular waste audits at their MR buildings. Those that have done audits do not appear to correlate the results with single family dwelling audits.
5. While most municipalities indicate that the superintendent/building owner is integral to the success of MR programs, few have developed educational materials for this target audience and fewer provide any on-site education or training. There are no data that provide information on the impact of these initiatives.
6. Many programs report that the location of recycling containers vs. access to garbage containers/chutes means that it is often more convenient for tenants to dispose of materials rather than recycle them. No program has reported on the results of any measures to mitigate such situations, such as closing up garbage chutes or comparing capture at buildings with chutes vs. those without.
7. Individual tenant accountability is consistently cited as a barrier to increased capture or reduced contamination. As previously noted, few programs have adopted initiatives that focus on this issue.
8. In the case of buildings that refuse to recycle, the ultimate recourse for the municipality is to refer the case to the MOE for enforcement of O. Reg. 103/94. None of the programs in the survey indicated that this had resulted in any action taken by MOE.

1.3 Next Steps

While the survey results provide some information on annual per unit and per building recovery rates (2004 numbers), this reveals little in the absence of waste audit information for MR buildings or per household numbers for single family dwellings in these programs. There are no data on participation rates for any of the surveyed programs. An examination of overall generation

(recyclables + waste) does shed some light for those programs able to report these numbers. But, because the survey results do not reveal capture or participation, no conclusions can be drawn about the specific aspects of MR programs that have resulted in higher diversion.

It is critical therefore, that any initiative designed to test a particular approach for increasing capture and participation or decreasing contamination, include routine audits and waste composition studies.

Notwithstanding these issues, there are specific concepts that have been introduced in some programs and/or that merit examination to help improve capture, participation or address contamination issues.

For example:

1. *Promotion and education*: Develop and test a comprehensive promotion and education program to gauge impact on capture, participation and contamination. Test various delivery mechanisms and frequency (e.g., monthly, bi-monthly, quarterly). Monitor through focus groups, pre and post surveys, and waste audits. Explore feasibility of province-wide televised campaign aimed at MR recycling.
2. *In-unit containers*: Distribute various in-unit containers (e.g., bags, apartment size blue boxes). Monitor through focus groups, pre and post surveys, and waste audits.
3. *Superintendent's handbook*: Develop and test a detailed MR program guide for superintendents. The guide should stress the superintendent's key role in program success and encompass all aspects of the recycling program. It should be easily updatable (e.g., binder) to allow for addition of new program information. Monitor impact directly with superintendents and through waste audits. This could be combined with the concept of a paid "building champion" whereby the superintendent is remunerated based on building performance.
4. *Outdoor containers/depots*: Test various container/depot types and locations for improved access and convenience. Monitor for improved contamination rates, capture.
5. *Model lease agreement*: Develop and test a social marketing approach whereby new tenants sign on to the building recycling program when they sign their lease. This could be combined with;
6. *New-tenant package*: Package providing detailed information on how, where and why's of recycling specific to the building.
7. *Bag limits/user pay*: Gauge the impact of enforced bag limits or pay as you throw on program participation and recyclables capture through pre- and post-implementation audits.
8. *Model Building Permit*: Monitor the impact of building permits/development standards/design standards that require specific design standards, space allocation and access for recycling collection in new developments.
9. *Provision of service*: In municipalities with mandatory MR recycling bylaws and provision of waste collection linked to recycling performance, monitor the impact of such measures and the specific improvements in buildings that have been removed from and subsequently reinstated into the program.

These concepts and the specific program issues they address are summarised on the following page.

Initiative/concept	Issue Addressed
Promotion and education	<ul style="list-style-type: none"> • Communications challenges
In-Unit Containers	<ul style="list-style-type: none"> • Tenant accountability, program convenience
Superintendent's Handbook	<ul style="list-style-type: none"> • Communications challenges, lack of program resources, superintendent's key role
Model Lease Agreement	<ul style="list-style-type: none"> • Communications challenges, tenant accountability
New-tenant Package	<ul style="list-style-type: none"> • Communications challenges, lack of program resources
Bag Limit/waste levy	<ul style="list-style-type: none"> • Tenant accountability, superintendent's key role
Paid Champion	<ul style="list-style-type: none"> • Communications challenges, lack of program resources
Model Building Permit	<ul style="list-style-type: none"> • Lack of enforcement of Reg 103/94
Enforcement	<ul style="list-style-type: none"> • Tenant accountability, superintendent's key role

As part of the background research for this project, a cursory examination of pertinent multi-residential programs outside Ontario was carried out. A list of the materials reviewed is provided in Appendix 6. All of the reference materials cover U.S. based programs. The common theme of the materials underscores the challenges faced by these multi-family programs – challenges that are very much in line with those faced by Ontario multi-residential programs. By researching the practices of multi-family programs that are deemed to be successful (i.e., greater than 20% diversion), the goal of much of the literature cited is to assist the less successful programs increase diversion and reduce costs.

2.0 Survey Results

2.1 Multi-residential Recycling Program Background

With few exceptions, multi residential recycling programs have been in place since the early 1990's. A few were "grandfathered" in with amalgamations (Peel and Hamilton) and so appear to be more recent than they actually are. Multi-residential recycling began in Toronto in 1988, but it was not until 2002 that all eligible buildings were on-board with the program. The City of Thunder Bay's multi-residential recycling program is currently in pilot stage, with rollout anticipated with the City's new collection contract.

The percentage of the population in multi residential dwellings ranged from a low of 11% in Halton to a high of 40% in Toronto.

Regulation 103/94 defines a multi-unit residential building as a building containing "six or more dwelling units". Most survey respondents indicated that their definition was consistent with this and if modified, was done so to conform either to how materials were collected and/or whether garbage collection service was also provided. Thus, the definition sometimes also includes eligibility criteria for collection. Table 2.1 outlines definitions used for some of the survey respondents.

Table 2.1 Working definition of multi-residential dwelling(s)

Municipality	Working definition of MR	Working definition of high rise	Working definition of low rise
Barrie, City	> 6 plex with no central dining facilities	Same as MR	Less than 6 plex
Windsor, City	Greater than 6 units	No bylaw; Buildings that receive municipal garbage collection are entitled to free recycling service	Private buildings can also opt for free recycling collection but must buy own carts
Guelph, City	Guelph's residential bylaw stipulates that buildings with more than 6 units do not receive City collection.		
Halton, Region	6 units or less receive curbside blue box collection; greater than 6 units receive cart collection		
Hamilton, City	A vertical residential building consisting of 6 or more units and 3 or more storeys. Must have kitchen facilities.		
Kingston, City	Highrise buildings with 25+ units	no working definition	no working definition
London, City	No written definition: in general MR properties receive bulk bin collection for garbage and cart collection for recycling. Some smaller MR (3-12 units) may receive curbside collection for garbage and cart collection for recycling. Because London manages recycling collection, MR is defined as those buildings that use carts for recycling. MR normally also refers to high rise/stacked properties vs townhouses. Townhouses are generally treated as SFD for both garbage and recycling		
Ottawa, City	MR building means an apartment bldg., condo complex, townhouse complex, co-op housing complex or other similar residential complex containing more than 7 dwelling units with self-contained living, kitchen and sanitary facilities and which is rented on a not less than monthly basis	5 floors and up	Less than 5 floors
Peel, Region	An apartment building, condominium or townhouse complex or other similar residential complex containing more than 6 self contained dwelling units	na	na
Quinte Waste Solutions	6 units or more	4 storey or more	Less than 4 storey

Municipality	Working definition of MR	Working definition of high rise	Working definition of low rise
Sarnia, City	All multi-family complexes with 7 or more units	na	na
Thunder Bay, City	Bylaw: Multiple dwelling means apartment buildings, hotels, rooming houses or any separate building designed to contain 4 or more dwelling units; As per the Fall, 2005 recycling contract, MR means a building that contains more than 6 dwelling units and currently receives regular garbage collection from the City of Thunder Bay.	na	na
Toronto, City	As per bylaw: a multiple household residence is a "building used mainly for residential purposes which contains eight or more dwelling units." Dist 3&4: Large residential development: greater than 29 units including stacked townhouses, infill townhouses and high rise multiple hhd residential bldgs.	na	na

2.1.1 Materials collected

Materials collected are consistent with those collected in the municipalities' curbside recycling programs, and are typically the full range of materials, with the only variability being in mixed metal containers (only 8 programs collect them) and certain plastics. All collect OCC and have specific preparation and/or set out criteria.

2.1.2 Multi-residential program staffing

On the administrative side, program staffing appeared to be relatively low. This was reflected as well in comments made elsewhere in the survey about the lack of resources for specific aspects of the MR program. The following chart provides an overview of administrative and collection staffing levels, relative to number of buildings in each program.

Table 2.2 MR program staffing

Municipality	MR Program staffing	Total number of buildings in program
Barrie, City	Admin.: 0.25; Collection: 2	196
Cornwall, City	Admin: 1, 16% of time; Collection: 3, 16% of time	3,120 units
Essex Windsor Solid Waste Authority (EWSWA)	Admin: 0; Collection: 3	65
Windsor, City	Admin: 0	243
Guelph, City	Admin.: 1 staff, 1% of time	approx. 40 bldgs.
Halton, Region	Admin: Part of duties for 1 planning person, 2 customer service, and 2 field staff, as required. Collection: Contract, 2 trucks	na
Hamilton, City	No admin staff specific to MR; Collection: 2 people, 7% towards MR	940
Kingston, City	Admin: 3% of staff time; Collection: 7% of staff time	179
London, City	Admin.: No dedicated admin staff, 5% of staff time spent on MR; Collection.: one driver on the dedicated collection route	542
Niagara, Region	Admin: 1 staff, 20% of time; Collection: 2 staff, 100% of time	approx. 600 participating

Municipality	MR Program staffing	Total number of buildings in program
Ottawa, City	Admin (City staff only, contractor time unknown): 1 FT, 5 PT; Contractor (WMI): Approx 3 drivers for Front End Loaders, and 3 for cart collection, plus 1 road supervisor	982
Peel, Region	Admin: 4 (1 FT, 2=75% of time, and 1=25% of time); Collection: 4 (2 FT, 2=50% of time)	approx 650
Peterborough, City	Admin: 1% of staff time; Collection (contractor): 15-20% of time	135-140
Quinte Waste Solutions	Admin: 3 staff, 10% of time	na
Thunder Bay, City	Admin: One percent of two staff persons' time; Collection: contracted, depends which route MR is on	85
Toronto, City	Admin: District 1&2: 30%; Dist.3&4: 2 staff, 75 and 90%; Collection: District 1&2: 40%; Dist. 3&4: 35 people	5,081
Waterloo, Region	Admin: 0.5 staff (split among 5 staff); Collection: 3	1,553

3.0 Multi-residential program scope/level of service

All but three respondents provided information either on the total number of buildings or the total number of units in their MR programs. Only one respondent was able to provide information on the specific types of buildings (high rise, low rise and townhouses).

Twelve programs indicated that IC&I establishments are included in the collection program if they are en route. These include buildings such as small businesses, and municipal buildings and schools, as described in Table 3.1. Seven programs (Barrie, Guelph, Kingston, London, Ottawa, Greater Sudbury and Thunder Bay) have dedicated collection for their multi-residential programs.

Table 3.1 IC&I stops included on MR collection routes

Municipality	Types of IC&I establishments collected en route
Cornwall, City	There is no dedicated collection for MR, it is collected at the same time as residential areas, and includes schools, stores, gas stations, etc.
Essex Windsor Solid Waste Authority	Small businesses on residential collection routes
Windsor, City	Small businesses
Halton, Region	Schools only
Hamilton, City	Nursing homes, schools, fire & police, university, hotels, trailer parks
Niagara, Region	Collection provided by private contractor, not Region's contractor; stores, offices, etc.
Peel, Region	Some BIA areas, City and Regional buildings
Peterborough, City	Grocery stores, office bldgs, arena, high schools, etc.
Simcoe, County	Some small generators, e.g., variety stores, hair salons, etc. along main streets
Toronto, City	District. 1&2: agencies, boards, commissions and departments (abcd's) associated with City; Dist. 3&4: schools, abcd's, commercial
Waterloo, Region	Schools, businesses, municipal bldgs, nursing homes

4.0 Collection

The City of Windsor is the only program using solely municipal collection forces. Kingston, Simcoe and Toronto use both municipal and contractor staff for MR collection. The remainder use contracted collection forces.

Collection frequency is a minimum of weekly for all high rises in all programs. Halton, Hamilton, Ottawa and Toronto provide twice weekly collection for high rises as required (thrice weekly if requested in Hamilton). Low rises and townhouses typically receive weekly collection in all programs, with a few exceptions (some bi-weekly collection in Windsor, Essex, Hamilton, Simcoe, Thunder Bay and Toronto). Niagara collects alternate streams weekly for some buildings and both streams weekly for others.

Most respondents indicated that collection is provided free of charge with the exception of Greater Sudbury where there is a charge of \$18/unit plus the cost of carts. In Toronto, costs are presently covered in taxes, but will become part of the multi-residential levy being implemented in 2006. Seven programs indicated that more frequent collection is provided as an option if there is no space to add carts. Windsor provides for weekly collection at its larger buildings, Halton provides extra collection as routing allows, Hamilton provides collection up to three times per week if required, Niagara provides weekly collection of both material streams, subject to the local municipality's approval. Peel adds an extra collection as requested, primarily for buildings with low storage capacity, and in Greater Sudbury, building managers contact the contractor directly to arrange for additional collection.

Barrie, Halton, Kingston, London, Niagara, Ottawa and Peel indicated they have no collection restrictions. Table 4.1 indicates the range of collection restrictions for the other programs:

Table 4.1 Multi-residential collection restrictions

Municipality	Collection restrictions
Cornwall, City	Restricted to list of recyclables, but this is difficult to police
Essex Windsor Solid Waste Authority	Must use EWSWA cart or equivalent
Windsor, City	If they receive municipal garbage collection, must have recycling program
Guelph, City	For the approx. 40 MR buildings collected by City, they must set out in 3 streams (clear, blue and green bags)
Hamilton, City	MR trucks cannot reverse into traffic, therefore curbside pickup is preferred; pickup on passenger side only, no pickup in alleyways or underground parking. Carts must not be chained or locked, and must be uncontaminated (on visual inspection). On multiple lane one way streets with bldg. on driver's side, pickup is impossible
Peterborough, City	Commercial collections have a volume limit of 20 carts/week. Proper receptacles must be used
Sarnia, City	Based on City of Sarnia list
Simcoe, County	On OCC based on volume
Toronto, City	All or nothing policy: Bldg. must participate in recycling to be eligible for waste collection. Recycling is collected once/week. There is no restriction on amounts of recyclables collected
Waterloo, Region	Must receive curbside garbage collection to qualify for recycling pick-up. Must have appropriate roadway geometry, maintain access, and comply with Terms and Conditions (provided with survey). Cart limits: One OCC cart per collection location (bldg. may have more than one collection location)

4.1 Collection Containers

The provision of in-unit containers varies significantly across programs and is detailed in Table 4.2

Table 4.2 In unit collection containers

Municipality	High rise	Low rise	Townhouse
Barrie, City	not provided	Blue boxes	Blue boxes
Cornwall, City	na	Blue boxes and blue bag	
Windsor, City	None		
Guelph, City	Na –for those bldgs on the program, residents must conform to residential program requirements		
Halton, Region	Blue bags		
Hamilton, City	Blue bags		
Kingston, City	Blue bags (not provided)	Blue boxes	
London, City	Unknown		
Niagara, Region	Blue/grey box		
Ottawa, City	Up to resident, not supplied by City; usually a plastic grocery bag		
Peel, Region	Blue bags	Blue bags	Blue bags or Blue boxes
Peterborough, City	Not supplied by City, left up to residents		
Quinte Waste Solutions	Blue box, desk siders	Blue box, hanging basket	
Simcoe, County	Blue boxes		
Sudbury, City of Greater	Blue boxes		
Thunder Bay, City	Blue bags		
Toronto, City	Some in former City of Toronto may still use blue bags; Currently sell apt. size blue boxes at Env. Days; Dist 1&2: Chute system or residents carry recyclables to collection area	Blue/Grey boxes if curbside; Dist 1&2: Residents carry to containers or B/G boxes in units	Blue/Grey boxes if curbside; Dist 1&2: Residents carry to containers or B/G boxes in units
Waterloo, Region	Blue bags	Blue bags or blue boxes	

Bulk containers, conditions under which they are provided, and their location also vary significantly by program, as outlined in Appendix 2. With the exception of three programs, all had guidelines for cart distribution, which, as a rule of thumb appear to service between 10 and 12 units.

Location of the bulk containers also varies, often within programs as well, depending on building logistics and access. This can range from garbage rooms, to outside depots, parking garages or lots. The end result is that in many cases residents must travel some distance to deposit their recyclables. This is in contrast with the ability (in many buildings) to simply drop garbage down a chute.

The majority of programs (11) supply carts at no direct cost to the building owner/management. Of these, most replace the containers at no direct cost as well. The remainder require buildings to

purchase their own carts either from the recycling contractor or the municipality. Prices range from \$75 - \$95.00. All those programs that supply carts also track them.

4.2 Collection vehicles

Collection vehicles are detailed in Appendix 3. The range of vehicle makes, types, and lift mechanisms reflects varying program demographics and requirements.

5.0 Processing

Fourteen programs provided an estimate of the contamination rate of their MR materials. Responses varied from as low as 3% to a high of 40%. A few programs were unable to provide numbers, simply indicating that contamination is “significant”. Table 5.1 outlines how programs deal with contamination issues.

Table 5.1 Contamination rates and mitigation measures

Municipality	Estimated Contamination	Measures Taken
Barrie, City	15%	Contractor leaves carts that are contaminated and superintendent must sort or put in dumpster
Cornwall, City	High	Contact super, ask him/her to speak to tenants, container signs, information sent out
Halton, Region	Not tracked, residential rate is 5%; MR is higher	Driver notes on daily run sheet; Region sends letter to bldg; provides flyers, posters, stickers, bags; Super or mgr. may call for assistance
Hamilton, City	7% (based on audit results);	Driver talks to super/owner if on site; carts left with notice (stickers, info, pamphlet); Open house offered
Kingston, City	Unknown, but significant	Carts are tagged and left for super to deal with; sometimes contact on potential solutions
London, City	3-5%; 70-120 T	Contact super/bldg mgr.; provide promotional info
Niagara, Region	30-40%	Contractor leaves contaminated carts behind
Ottawa, City	Mixed with curbside collection: Fibre: 1.8% (940.75 T); containers: 8% (15% with mixed plastic); (1,181.70 T);	Containers not collected if contaminated, driver leaves contamination tape on container and City notifies property owner. Property owner must then clean out containers
Peel, Region	10% by weight	Drivers record daily and report to Region staff who contact bldg. mgrs. to help correct.
Peterborough, City	5-10%	Difficult to isolate offending building unless driver spots something. If so, attempt to contact owner, super to remedy.
Quinte Waste Solutions	na	3 tag rule: if bins are tagged by driver three times, then bins are left until they are cleaned up
Sarnia, City	40%	Sorted on line, if very bad, building owner is advised and service withdrawn
Simcoe, County	na	Property owner or manager is told to clean out material that is left behind
Sudbury, City of Greater	na	Extreme contamination handled by super; munic sends letter/calls; contractor sorts.
Thunder Bay, City	4-5%	Depends on amount in bag, if most of bag is recyclables, then collected; if not, then tagged and left behind
Toronto, City	14%	Collection is refused - follow up with bylaw and operations staff; Bylaw officers perform routine contamination checks and leave notice of contamination; eventual discontinuation of service after several warnings.
Waterloo, Region	12%; approx 761 T/yr. (assumes 75% MRF residue from MR)	Collection contractor checks cart prior to emptying, if top contam. >30%, cart is left; notifies Region on route sheet; Region investigates, contacts on site person and works to improve (e.g., P&E). If contamination persists, bldg. is removed from pgm. Bldg. can request reinstatement after 6 months

Higher than average contamination was cited as the prime operating issue at the MRFs receiving multi residential materials. Collection crews are often unable to see what is in the carts before they are collected and then tipped at the MRF, which is then often too late to deal with a specific problem building. One program also noted that the commingling of glass is an issue as it constitutes most of the cross contamination in the carts.

Seven programs indicated that they have completed or are in the process of completing audits. This work should assist in clarifying contamination and recycling rates. This also speaks to the need to complete audits of MR materials as received at the MRF.

6.0 Program monitoring and participation

Survey respondents were asked to differentiate between the total number of buildings currently participating in their MR recycling program and the total number of buildings that are eligible to participate. For the eight programs that reported the numbers of both eligible and participating buildings, the range went from a low of 63% of eligible buildings participating in the recycling program to a high of 100%. Although most/a majority of multi-family buildings have access to recycling services, low capture rates, low participation levels, and high contamination mean that this represents an important opportunity to increase tonnage.

Eligibility criteria were reported by most programs. Cornwall and Halton indicated they have no criteria – all residents have access to recycling. For the remainder, eligibility criteria focused either on meeting the municipality's definition of multi residential (Barrie, Hamilton, Kingston, London, Ottawa, Peterborough and Waterloo), whether they receive City waste collection (Thunder Bay), have accessible collection (Hamilton), and meet set terms and conditions or criteria (Waterloo, Toronto). A number of these programs provided examples of the procedures used for determining eligibility. These documents (hard copy format) are available from the AMRC office.

Most programs reported detailed building implementation procedures that include at a minimum, site review and cart/bin assessment. For municipalities experiencing substantial new building starts (e.g., Halton, Peel, Toronto), there is significant time spent on ensuring that site plans meet specific requirements for recycling and access.

Program monitoring seems to be quite variable across the programs, perhaps reflecting the lack of administrative staff dedicated to the work. Once again, drivers are in the front line for determining and reporting issues at specific buildings. Only one program (Windsor) indicated it was someone other than collection staff that had done any building monitoring, and this was in the past (summer students). Toronto sends bylaw officers if problems are reported by collection crews. Monitoring also extends to keeping records on the poorly performing buildings, and only a few programs indicated that this is done. The majority have databases that record baseline information (building, address, etc.,) but only a handful said that they track the problem buildings.

Seven municipalities indicated that they had eliminated poor or non-performing buildings from the program. In the case of Toronto, the suspension of services was reinstated after a period of increased promotion and education and with the cooperation of the property managers.

7.0 Recycling tonnage

Only ten programs were able to provide numbers for recycling tonnage. The remainder indicated for the most part that MR tonnage is not tracked separately from single family curbside tonnage. The following table presents recycling and waste information for those that could provide it.

Table 7.1: Recycling and waste tonnage, 2004

Municipality	2004 MR recycling (Tonnes)	2004 Kg/building	2004 Kg/unit	2004 waste (Tonnes)	Total recycling + waste (Tonnes)	Collection route includes IC&I or residential?
Barrie, City	746	3,808	91	4,103	4,849	No
Cornwall, City	359	2,476	115			Yes
Halton, Region	3,145		117.7			Yes
Hamilton, City	3,767	4,400	84.6	12,128.6	15,895.6	Yes
London, City	2,400		68			No
Ottawa, City	9,109	9,276	83	30,112	39,221	No
Peel, Region	6,744	11,315	84.7	53,332.27	60,076.27	Yes
Toronto, City	28,792	5,667	60.8	275,068	303,860	Yes
Waterloo, Region	6,354	4,099	115.5			Yes

This table reveals a very wide range of material and waste tonnages, as well as kilograms per unit collected.

Table 7.2 summarises costs per tonne and diversion rates (where available). Diversion rates range from a low of 11% to a high of 26%. Methods of determining diversion rates vary from using scale weights, waste audit results and estimates based on assumed quantities received at depots and other recycling venues. In general, however, this information is not easily tracked or reported as i) multi-residential recycling tonnage is not always tracked separately (from e.g., single family curbside, or IC&I); ii) total waste tonnage is not necessarily known or tracked by the municipality as some waste is collected privately, and iii) few multi-residential programs have completed waste audits.

Table 7.2 Summary: Diversion rates and costs per tonne

Program	2004 MR Tonnes recycled	Diversion rate for MR: how rate derived, estimated	Cost per tonne for MR	Does MR collection route include schools, ICI?
Barrie, City	746	18-20% based on in unit container study done in 2002	200.80	No
Cornwall, City	359	No diversion rate	358.80	Yes: no dedicated collection for MR; is done with residential
Essex Windsor Solid Waste Authority		No diversion rate	na	na
Guelph, City		No diversion rate	na	na
Halton, Region	3145	No diversion rate as Region does not provide all waste collection and therefore does not have total number information	Current cost/tonne: 131.19	Yes: schools only
Hamilton, City	3767	No diversion rate	na	Yes: institutions., schools, hospital, police, fire depts.
Kingston, City	na	No diversion rate		
London, City	2400	18%, derived as follows: i) blue box material as determined by what is collected in London's program, and ii) total waste stream as determined by waste audits of MR in London and other municipalities and WDO	na	No

Program	2004 MR Tonnes recycled	Diversion rate for MR: how rate derived, estimated	Cost per tonne for MR	Does MR collection route include schools, ICI?
		information (Recycling rate is 28%)		
Niagara, Region	na	No diversion rate (much of program is done privately; on the recycling side, some local municipalities provide service, others do not).	na	Yes: stores, offices
Ottawa, City	9109	18-20% based on recycling tonnage vs: total tonnage. Note that waste tonnage is for subsidised waste collection only and does not include the waste in the extra pick-ups required by approx. 30% of MR. (MR buildings are allocated a specific number of waste containers collected per week at no cost – this is the subsidised service.)	Collection: \$144.76/tonne Fibre processing: \$47.00/tonne Container processing: \$160.00/tonne	No
Peel, Region	6744	11-13%; measured tonnage over scales using cart tipper (recycling truck) vs. front end (waste) truck weights	\$102.34	Yes – some BIAs, and city and regional buildings
Peterborough, City	na	No diversion rate	Not separated	Yes: high schools, grocery stores, office bldgs., etc.
Quinte Waste Solutions	628.71	26% - derived from “snapshot” waste audits completed in Belleville in Fall, 2005	na	Yes: schools, restaurants, institutions, etc.
Sarnia, City	na	No diversion rate	na	Yes
Simcoe, County	Not separated	No diversion rate	na	Yes: small generators, commercials on main streets
Sudbury, City of Greater	Not separated	No diversion rate as high density and low density collected together	na	No
Thunder Bay, City	na	No diversion rate	Not separated from curbside costs	No
Toronto, City	28,792	12% - derived by using total MR recycling tonnage, with additional tonnage attributed to MR from Environment Days and depots.	na	Yes: ABCD's, schools in some districts, commercial, some businesses
Waterloo, Region	Approx 6354	No diversion rate	151.99/tonne	Yes: schools, some businesses, municipal offices, facilities, institutions

8.0 Regulatory incentives

Six of the 19 programs indicated that they have a mandatory recycling bylaw. Six indicated that they have a bylaw that mandates their multi-residential recycling program. Eleven programs either have container limits or pay as you throw for waste. All but four have landfill restrictions on blue box materials. Additional regulatory and other incentives for multi residential recycling are in use by a number of programs. These are detailed in Appendix 4.

Municipalities were also asked if they had referred any clients to Ontario Reg 103/94. Ten indicated that they had, two cited the fact that the regulation is either referenced in their Superintendents' Handbooks or that they give a copy of the regulation to new buildings when they join the program. Only five programs indicated that they had reported buildings or building owners in violation of Reg 103/94 to the Ontario Ministry of the Environment (MOE), and this was done infrequently. A number of respondents expressed dismay that there appeared to be little or no regulatory enforcement on the part of the MOE.

9.0 Costs and charges

Survey respondents were asked for total program, per tonne and per building costs. Per unit operating, capital and promotion and education costs were also requested. This section of the survey was rather sketchily filled out and speaks to the need for the development of standardised cost elements for consistent reporting. Total reported MR program costs ranged from \$102.34 to \$358.80 per tonne. Promotion and education costs apportioned on a per tonne collected basis ranged from \$1.34 to \$9.08.

Respondents were also asked who pays for what, and the responses reflected the substantial differences between programs. The following table outlines their responses:

Table 9.1 Charges: who pays for what?

Municipality	Charges: who pays for what?			
	Carts/bulk containers	In-unit containers	Collection	P&E
Barrie, City	City	City, property mgr, tenant	City	City, property mgr
Cornwall, City	Building owners		City	
Essex Windsor Solid Waste Authority	Municipality	na	Munic	Munic
Windsor, City	Carts: munic; but privates pay	na	Munic	Munic
Halton, Region	Region			
Hamilton, City	City			
Kingston, City	City	Resident	City	City
London, City	Building	Unknown	City	City
Niagara, Region	Property owner	na	Region/local municipality	Region
Ottawa, City	City pays for carts and FEL, does not provide bulk containers	Resident	City	City
Peel, Region	Region			
Peterborough, City	City	na	City	City
Thunder Bay, City	na	na	City	City
Toronto, City	Bldg owner pays unless in old Toronto, get recycling containers as part of garbage bin lease	Not supplied	City	City
Waterloo, Region	Region			

The majority of respondents indicated that they pay their contractor a per tonne rate to collect and/or process MR materials.

10.0 Promotion & Education

Most programs have some kind of brochure and/or poster that is provided to buildings on a scheduled or as required basis. Most have cart/bin stickers that use both text and graphics. Some programs have gone to significant lengths to translate materials into many languages. Two programs (Hamilton and Toronto) have prepared Superintendents' Handbooks. Certain programs appear to try to maintain some level of contact with buildings. None of the programs contact tenants directly. Refer to Appendix 5 for a summary of all the promotion and education materials and initiatives used by survey respondents.

11.0 Challenges, studies and program evolution

Survey respondents were asked to describe the main barriers to increased capture within their own MR programs. Responses included:

- No financial implications for tenant, transient population, no peer pressure
- Large portion of community on social assistance, disability; Budget constraints; Collections very strict with respect to set out; Lots of landfill space; MOE not enforcing regulation
- Lack of disincentives, owner inertia, turnover
- For private haulers: Cost, effort, ignorance of legislation
- Access to residents, transient population
- Garbage chute is more accessible or closer than recycling cart
- Not mandatory, no desire to collect "problem" buildings
- Participation is not required as waste collection occurs anyway
- Attitude, lack of convenience to recycling carts/containers, and more convenient to throw garbage and recycling together; lack of understanding that landfill is finite
- Convenience and language barriers
- Lack of ownership/responsibility on part of some MR residents; no direct accountability for not participating; often less convenient to carry many items to depot
- Not having control over garbage, aside from "green thinkers" there is no reason or incentive or penalty for participating in recycling program; also garbage can go in chutes, whereas recycling must go to outside depot.
- Poor attitude of some supers and tenants
- Property mgr dealing with tagged bags, residents' participation, contamination
- Education and promotion, adequate recycling container provision, lack of convenience, lack of resources to maintain contact with bldgs, lack of direct contact with residents
- Language barriers, transient population (tenants, mgrs and owners), lack of motivation/interest

On a more positive note, there are a number of studies and initiatives under way among the programs that responded to the survey. They include:

- Changing to a real calendar that can be used, WDO advertising, moving to a blue/black box system.
- Planning reward/recognition (possibly), more visual P&E; door to door recycling ambassador
- 2005 MR waste study to improve capture and quality of materials
- Better communications, better education in schools
- Moving to single stream recycling
- Enhance bylaw enforcement/education, MR waste reduction levy, workshops for building managers, planning focus groups for tenants, requiring waste diversion plans
- Planning MR P&E campaign in 2005

It is suggested that these become part of the knowledge base that should result from this project.

Appendix 1 Multi Residential Survey

PROJECT BACKGROUND

This survey is being undertaken by the AMRC and is funded through the Effectiveness and Efficiency Fund of Stewardship Ontario to develop baseline information on multi-residential (MR) recycling programs in Ontario.

Twenty of the largest MR recycling programs in Ontario are being surveyed. Results of the survey will be reported to Stewardship Ontario and Waste Diversion Ontario.

Please assist us with this project by completing this survey as accurately and fully as you can. This survey is a vital part in establishing data for this important sector and identifying needs and future steps to increase diversion rates.

There are two sections to this survey:

Section 1: General Information

Section 2: Details about your Multi-residential Recycling Program

As part of this survey, we would like to obtain, where available, the following information related to your MR recycling program:

- copies of any by-laws, on-site agreements, property standards, and MR application forms for service;
- any research or evaluation reports;
- copies of your promotion/education communications materials; and,
- copies of your reports to Council.

Please forward these copies and the completed survey by Friday, August 12, 2005, to:

AMRC
127 Wyndham Street North, Suite 100
Guelph, ON N1H 4E9 fax: 519 823-0084

Regulatory Definition

Regulation 103 defines a multi-unit residential building as a building containing "six or more dwelling units". (Source: *A Guide to Source Separation of Recyclable Materials for Industrial, Commercial and Institutional Sectors and Multi-Unit Residential Buildings, As Required Under Ontario Regulation 103/94*)

Please note:

If your municipal/contractor definition of multi-residential unit differs from Regulation 103, please give details in Section 1 of the survey.

Data year: Except where noted, the information we are seeking is 2004. It is important that all information you provide be consistent with your 2004 data call submission.

IC&I Information: IC&I stops are excluded from the survey, so please ensure that you do not include any IC&I information, except where requested.

When answering this survey, **please attach additional sheets of information if enough room has not been provided within the questionnaire.** The project team may need to follow-up for more information/clarification and/or to possibly include your

municipality as a case study for the manual. Should you have any questions about this survey or the project, please contact Cynthia Hyland at the AMRC office: telephone 519-823-1990, fax 519-823-0084 or e-mail amrc@golden.net.

SECTION 1: General Information

Municipality/or Organization:			Population:		
Contact Name:					
Phone number					
email:					
%age of Population in MR					
Start Date of Multi-Residential Program:					
Your municipality's working definition/bylaw of "Multi-Residential" with respect to provision of service					
Your municipality's working definition/bylaw of "high rise" buildings with respect to provision of service					
Your municipality's working definition/bylaw of "low rise" buildings with respect to provision of service					
Materials collected in Multi-Residential Program	Fibres: <input type="checkbox"/> ONP <input type="checkbox"/> OCC ¹ <input type="checkbox"/> OBB <input type="checkbox"/> OMG <input type="checkbox"/> Polycoat containers <input type="checkbox"/> Mixed fibre Metals: <input type="checkbox"/> Aluminum (cans, containers, foil) <input type="checkbox"/> Steel (cans, containers) <input type="checkbox"/> Mixed metal containers (aerosols/paint cans)		Glass: <input type="checkbox"/> Flint/clear <input type="checkbox"/> Coloured <input type="checkbox"/> Mixed Plastics: <input type="checkbox"/> PET (#1) <input type="checkbox"/> HDPE (#2) <input type="checkbox"/> Plastic film (#2, #4) <input type="checkbox"/> Tubs and lids (#2, #4, #5) <input type="checkbox"/> Polystyrene (#6) <input type="checkbox"/> Mixed plastics		
If OCC is collected, please indicate how:					
Number of employees or %age of employees dedicated to MR program	Administration:		Collection:		
	No.	%age	No.	%age	

SECTION 2: Details about your Multi-Residential Recycling Program (Please use same #'s as were entered for your 2004 Datacall)

1. LEVEL OF SERVICE	Types of MR buildings on program - Please provide total number of buildings and units per type. If you do not have a breakdown, put total number of units served here: _____		High rise # of buildings: # of units:	
			Low rise # of buildings: # of units:	
			Townhouses # of buildings: # of units:	
			Other (specify type) # of buildings: # of units :	
			Total number of units on MR program: _____ Total number of buildings on MR program: _____ Total number of buildings eligible for program (if different) _____	
1. LEVEL OF SERVICE	Location of collection containers for pickup	Describe location		
		High rise		
		Low rise		
		Townhouses		
		Other MR buildings		
Are IC&I units included if they are en route – such as schools, businesses? <u>Yes</u> <u>No</u>		Types of IC&I included en route		
2. COLLECTION	Who provides collection service? (indicate municipality or contractor, or both) and type of collection service provided (i.e., cart, BB, or FEL)	Municipality		Contractor
		High rise		
		Low rise		
		Townhouses		
		Other MR buildings		
	Collection frequency:	Weekly	Bi-Weekly	Other - specify
		High rise		
		Low rise		
		Townhouses		
		Subsidized housing		
Other MR buildings				
<ul style="list-style-type: none"> • Is the collection service provided free of charge? <u>Yes</u> <u>No</u> If no, please specify: • Are there restrictions on collection? <u>Yes</u> <u>No</u> If yes, please describe: • Do you offer more frequent collection if building has no space/capacity to add more carts? <u>Yes</u> <u>No</u> 				

3. COLLECTION CONTAINERS	Containers used in units		Blue box	Blue bag	Other - describe	
		High rise				
		Low rise				
		Townhouses				
	Bulk Containers used in buildings/depot	Other MR buildings				
		Cart/bin type and capacity				
		High rise				
		Low rise				
		Townhouses				
	Other MR buildings					
Total number of bulk containers in system:						
Describe any guidelines you use for cart distribution e.g., minimum number of carts/unit or per building ratio:						
Explain your related policies re: supplying/replacing containers. For example, are they provided free of charge? Who supplies the containers? Cost if not supplied? Replacement policy? Eligibility?						
Do you track the number of carts that are distributed? <u>Yes</u> <u>No</u>						

4. COLLECTION VEHICLES		Vehicle type	Number	Automated collection?	Manual collection?	Type of lift mechanism
	High rise					
	Low rise					
	Townhouses					
	Other MR buildings					
5. CONTAMINATION	Estimated rate of contamination			Percentage of total MR tonnage: _____ or Tonnes per year: _____		
	How do you handle contamination issues?					
	• Have you completed multi-residential waste audits? <u>Yes</u> <u>No</u>					
6. PROCESSING	• Where is material processed?					
	• Describe any operating issues:					

7. MONITORING & PARTICIPATION	<ul style="list-style-type: none"> • Number of eligible buildings and units in your municipality: _____ • Eligibility criteria, please describe: • Number of buildings currently participating: _____ • Implementation strategy and rate (how are buildings added)? Describe process. • How do you monitor program (handling non & poor performers)? • Have any buildings been eliminated from the program? <u>Yes</u> <u>No</u> If so, how many? • Do you have a database? <u>Yes</u> <u>No</u> • What does it monitor? • Please forward any working templates along with the completed survey. 	
8. QUANTITIES	MR recyclables collected/yr 2004 data	Total MR tonnes: _____ Kilograms/unit/year: _____ Kilograms /building/year: _____
	Average capture rate Average participation rate Average building or unit participation rate, if known	_____ (kg/unit/year) _____ (percentage of total MR tenants participating in program) _____ (please specify whether building or unit; if "unit" is used, please specify how this is determined):

Please circle appropriate response

9. REGULATORY INCENTIVES/DISINCENTIVES	<ul style="list-style-type: none"> • Do you have a mandatory recycling by-law? <u>Yes</u> <u>No</u> • Do you have a by-law mandating your MR program? <u>Yes</u> <u>No</u> • Do you have a by-law mandating collection set out criteria? <u>Yes</u> <u>No</u> • Do you have container limits, or partial or full user pay? <u>Yes</u> <u>No</u> If so – please specify • Landfill restrictions on blue box recyclable materials? <u>Yes</u> <u>No</u> If yes, please indicate which ones: • Are garbage fees linked to recycling participation? <u>Yes</u> <u>No</u> • Are there any other recycling incentives/garbage disincentives? For example: Building Permit requirement: <u>Yes</u> <u>No</u> Lease Agreement requirement: <u>Yes</u> <u>No</u> Property Standards Requirement: <u>Yes</u> <u>No</u> Fines: <u>Yes</u> <u>No</u> Awards: <u>Yes</u> <u>No</u> Other: <u>Yes</u> <u>No</u> Please describe • What are the consequences if a building refuses to participate in a recycling program? (<i>For example, some municipalities will not provide garbage collection unless the building also recycles</i>) • Do you have property standards re: ensuring space & routing? <u>Yes</u> <u>No</u> (Please provide copy of relevant sections). • Do you have written indemnity agreements with property owners/superintendents? <u>Yes</u> <u>No</u> • Do you mandate an on-site contact? <u>Yes</u> <u>No</u> • Have you referred customers to O. Reg. 103/94? <u>Yes</u> <u>No</u> If yes, how often? _____ • Have you reported any buildings/building owners in violation of 103/94 to MOE? <u>Yes</u> <u>No</u> If yes, how often? _____
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10. 2004 MR PROGRAM COSTS & CHARGES	2004	Total Cost	Cost per Building	Cost per Tonne
	Total MR program cost (administration, collection, processing, containers, promotion/education, etc.)			
	Operating Costs (staffing, collection, processing- this will entail getting collection cost per bldg or per tonne and processing cost per tonne or per bldg).			
	Capital Costs (in-unit and bins/roll out containers)			
	Promotion & Education			
	Charges – please specify who pays for each	<ul style="list-style-type: none"> • Carts/Bulk Containers? • In-Unit Containers? • Collection? • Promotion/Education? 		
	Do you pay your contractor a \$ per tonne rate to collect and/or to process recyclables?	<u>Yes</u> <u>No</u>		

11. PROMOTION & EDUCATION		Distribution frequency	Distribution method(s)	Languages
	Brochure - Y/N			
	Newsletter Y/N			
	Poster Y/N			
	Other – please describe			
	Website	Y / N		
	Outreach – please check any methods used	<input type="checkbox"/> On-site meetings or presentations <input type="checkbox"/> On-site displays <input type="checkbox"/> Apartment Managers' Association <input type="checkbox"/> Building champion <input type="checkbox"/> Welcome wagon <input type="checkbox"/> Contests <input type="checkbox"/> Other – please describe		
	Please state how often you contact tenants	Frequency: _____ Door to door or some other method (please state):		
Cart/Bin Stickers	Type, wording, symbols, languages used			
Other promotion, education or outreach campaigns	Please describe			

12. DIVERSION STRATEGY	What do you see as the main barriers to increased capture in your MR program?	
	With WDO prioritizing MR programs, what have you implemented/planned to increase diversion of recyclables from MR?	
	How has your program evolved over the years (why and when changes took place)?	
	Have you conducted any special projects, pilots or demonstration work with individual buildings to increase capture or participation?	

13. WASTE COLLECTION	Who provides waste collection service? (indicate municipality or contractor, or both) and type of collection service provided		Municipality	Contractor	Type of Collection	
		High rise				
		Low rise				
		Townhouses				
		Schools				
		Other MR buildings				
	Waste collection frequency:		Weekly	Bi-Weekly	Other - specify	
		High rise				
		Low rise				
		Townhouses				
		Schools				
		Other MR buildings				
	Collection vehicles:	Type	Number	Automated?	Manual?	Type of lift
	High rise					
	Low rise					
Townhouses						
Schools						
Other MR buildings						
<ul style="list-style-type: none"> • Is the waste collection service provided free of charge? <u>Yes</u> <u>No</u> If no, please specify: • Are there restrictions on waste collection? <u>Yes</u> <u>No</u> If yes, please describe: • Tonnes of waste collected from MR in 2004: _____ • Cost of MR waste collection in 2004: _____ • Bulky goods (couches, mattresses, etc.): Are these collected by the same truck that collects the garbage? <u>Yes</u> <u>No</u> - Collection frequency for bulky goods? _____ - Are they set out with the garbage or at the curb? <u>Yes</u> <u>No</u> 						

14. SCHOOLS	Total no. of schools in your municipality: _____ Number of schools that participate in MR program: _____		Who provides collection service? (indicate municipality or contractor, or both) and type of collection service provided (i.e., cart, BB, or FEL)		Municipality	Contractor	Type of Collection	
	Materials collected from schools		Same as MR program <u>Y</u> <u>N</u> or		Specify materials collected:			
	Collection frequency:		Weekly		Bi-Weekly		Other - specify	
	Collection vehicles:		Type	Number	Automated?	Manual?	Type of lift	
	Bulk Containers used in schools		Cart/bin type and capacity:					
	Describe any guidelines you use for cart distribution e.g., minimum number of carts/student or per school ratio:							
Explain your related policies re: supplying/replacing containers. For example, are they provided free of charge? Who supplies the containers? Cost if not supplied? Replacement policy? Eligibility?								
<ul style="list-style-type: none"> • Do you track the number of carts that are distributed to schools? <u>Yes</u> <u>No</u> • Is the collection service provided free of charge? <u>Yes</u> <u>No</u> If no, please specify: • Are there restrictions on collection? <u>Yes</u> <u>No</u> If yes, please describe: • Do you offer more frequent collection if school has no space/capacity to add more carts? <u>Yes</u> <u>No</u> • Tonnes of recyclables collected from schools in 2004: _____ • Cost of school recyclables collection in 2004: _____ • Estimated contamination rate: _____ 								

Appendix 2 Bulk collection containers, location, distribution guidelines and policies

Municipality	Bulk containers used in building/depot			Location of collection containers for pick up			Guidelines for cart distribution	Policy for supplying/replacing containers
	High rise	Low rise	Town houses	High rise	Low rise	Town houses		
Barrie, City	95 gal cart	Bbox	Bbox or cart	In garbage enclosure or at back of bldg			None	Provided free of charge, contractor supplies
Cornwall, City	90 gal wheeled carts	90 gal wheeled carts or bbox	Blue boxes	Travel on site for most collections, otherwise, containers are placed curbside			One per stream	Were originally purchased with grant funding, now must purchase from contractor
Essex Windsor Solid Waste Authority	Cart	Cart	Bbox	Garbage rooms, or outside	Outside	Curbside	Minimum 2: containers and fibre	Carts supplied and replaced free to all participating MR
Windsor, City	90 gal carts		Bbox	Garbage rooms, or outside	Outside	Curbside	2 stream pgm., must take a minimum of 2	For bldgs on munic. garbage coll'n, carts are free; on private garbage coll'n, carts must be purchased
Guelph, City	For the approx 40 MR collected by City, they must set out in 3 streams (clear, blue and green bags)			na			na	na
Halton, Region	95 gal wheeled carts			On property if possible, if not possible or safe, then at curb			Determined by number at similar sized buildings	Region purchases carts, contractor assembles and distributes to locations determined by Region; if cart broken or additional carts needed, Region provides
Hamilton, City	96 gal, 2 wheel Schaefers			At most locations, carts must be placed curbside for pickup. If there is room for truck to drive in to side or back, then carts can be there. All carts must be visible to driver			One cart for 10 units; 3 carts for 20 units (2 for fibre, 1 for containers); more upon request	Carts are supplied free to eligible buildings (MR); staff try to fix carts before replacing
Kingston, City	Schaefer Carts	Blue box	Blue box	Curbside			Determined by number at similar sized buildings; adjustments as needed	Carts are funded through general taxation, City provides and replaces.

Municipality	Bulk containers used in building/depot			Location of collection containers for pick up			Guidelines for cart distribution	Policy for supplying/replacing containers
	High rise	Low rise	Town houses	High rise	Low rise	Town houses		
London, City	95 gal cart	95 gal cart	Bbox	Outside depot, moved curbside or dedicated room with outside door	na	outside	One cart for paper, one for containers; recommend 1 cart/10 units to 1 cart/20 units	Carts purchased and replaced by owner/property mgmnt company
Niagara, Region	95 gal cart			Inside and outside bldg.		Outside	na	Cost is \$75, replaced free only if under warranty
Ottawa, City	Otto carts and fibre containers (FEL)			Garbage room, parking garage or lot, beside bldg.		Usually parking lot or beside bldg.	No set chart; based on # of units, volume, community type and location of containers. No problem providing more containers as required	Containers provided free of charge by City, replaced free as required to all MR buildings
Peel, Region	95 gallon carts			Majority are on ground floor inside or outside of building		Central collection area, outside	One fibre, one container cart for every 12 units	Supplied and replaced free of charge by Region
Peterborough, City	95 gallon carts		Bbox if under 8 units	Mostly at curb, but some are left at depot on property if collection truck can enter and exit safely			Nothing set; generally don't consider carts for anything under 8 units; case by case basis	MR provided with carts and bboxes at no charge; commercial are charged \$80/cart and \$5/bbox
Quinte Waste Solutions	95 gallon carts			na			na	Carts initially purchased by bldg. owner, replaced if broken within 10 year warranty
Sarnia, City	95 gallon carts			Beside dumpster or at curb			Nothing specific, based on volume of output	Building owner to supply new carts
Simcoe, County	Carts			na			4 units=2 carts (fibre and containers)	Carts are purchased at \$95 each

Municipality	Bulk containers used in building/depot			Location of collection containers for pick up			Guidelines for cart distribution	Policy for supplying/replacing containers
	High rise	Low rise	Town houses	High rise	Low rise	Town houses		
Sudbury, City of Greater	95 gallon carts			Site specific			4 carts per depot; suggest a depot for each garbage collection location	No charge unless system is abused, carts are \$70-100 to replace
Thunder Bay, City				In garbage sheds/lockups, usually one side recycling, one side waste			Materials now supplied by property manager	na
Toronto, City	3,4,6 yd ³ bins; Dist 1&2 receiving mechanical coll'n.: 340L wheeled plastic bins, 2.3 - 4.6 m3 covered metal container or other container deemed acceptable by City; Dist. 1&2: 3 yd ³ steel bins or 90/95 gal containers	95 gal carts; Dist 1&2 receiving mechanical coll'n.: 340L wheeled plastic bins, 2.3 - 4.6 m3 covered metal container or other container deemed acceptable by City; Dist 1&2: Toters (90/95 gal) or B/Gboxes	95 gal carts; Dist. 1&2: Toters (90/95 gal) or B/Gboxes	Dist 1&2: designated coll'n area on property accessible to coll'n trucks; Dist. 3&4: mostly parking lots	Dist. 1&2: designated coll'n area either curbside or on property accessible to coll'n trucks; Dist. 3&4: curbside, parking lots, private walkways or doorways	Dist. 1&2: same as low rise if door to door is not possible depending on access; Dist. 3&4: garbage and recycling hut in front of each doorway, or carts in central location	Dist. 1&2: For 3 yd ³ bins: 2 bins (1 for each stream) per 100 units or a total of 4 bins per 200 units; for toters: 2 toters (1 for each stream for every 20 units for a total of 2 toters per 20 units; for B/Gboxes: 1 of each box for every unit	Dist 1&2: In former City of TO, containers are provided free to property owners that qualify, receive municipal garbage coll'n, and rent garbage bins; in all other areas of S and West district containers are purchased from City; repairs and replacements are done as needed; steel containers are typically replaced after 13 years; Dist 3&4: Bulk bins purchased privately; Carts: City sells for \$97.75; repaired if possible, free, replaced free only if City is responsible for loss or damage; Boxes: first 2 are free; if damaged are replaced free; additional cost \$6.00
Waterloo, Region	95 gal/360 L cart	Cart or bbox		Whenever possible, recycling program matches garbage pgm, e.g., carts beside dumpsters or individual bboxes for townhouses			One set of carts for 20-30 units (set=1 container, 1 mixed fibre and 1 OCC)	Region supplies and delivers free of charge; Contractor replaces broken ones. If additional carts are needed (volume), Region delivers.

Appendix 3 Collection Vehicles

Municipality	Vehicles			
	High rise	Low rise	Townhouses	Other
Barrie, City	Side loader, automated, hydraulic lift	Side loader, manual	Side loader, manual and automated	Side loader, automated
Cornwall, City	4 trucks, all dual side, sorting, manual collection			
Essex Windsor Solid Waste Authority	Automated			
Windsor, City	1 compactor, automated, North American lift mechanism			Depends on coll'n. frequency
Halton, Region	2 sideloaders, with automated collection			
Hamilton, City	Two 2004 Int'l Freightliner, automated collection, cart tipper			
Kingston, City	Same as bbox curbside: 14 Labrie & Walinga side loaders, manual			
London, City	One side loading packer, manual collection	na	na	na
Niagara, Region	2-3 co-collection trucks, manual and automated			
Ottawa, City	3 FEL and 3 sideloaders per day, mixed routing; automated coll'n: FEL and cart tipper	3 FEL and 3 sideloaders & rear packer, mixed MR routing, automated coll'n, manual for Bbox; FEL and cart tipper		
Peel, Region	4 Labrie trucks with automated collection			
Peterborough, City	3 top loaders and side bucket, automated collection; hydraulic side bucket			
Sarnia, City	Automated			
Sudbury, City of Greater	Labrie, semi-automated			
Thunder Bay, City	Cube vans, number depends on route			
Toronto, City	Dist 1&2: 8 FEL or side loaders, automated coll'n, hydraulic forks/lifters; Dist 3&4: 3 FEL, automated.	Dist 1&2: 15 FEL, side loader, rear packer and co-collection vehicles, automated and manual coll'n; hydraulic forks/lifters; Dist 3&4: 9 automated & side loaders with side lift arm and top kick, respectively	Dist 1&2: 15 FEL, side loader, rear packer and co-collection vehicles, automated and manual coll'n; hydraulic forks/lifters; Dist 3&4: Automated, rear loaders and side loader	
Waterloo, Region	3 semi automated Freightliners; side hookup; 4 carts max/lift			

Appendix 4 Regulatory Incentives and Disincentives

Municipality	Mandatory recycling bylaw?	MR bylaw?	Setout criteria bylaw?	Container limits; User pay?	Landfill restrictions on Bbox materials?	Garbage fees linked to recycling part'n?	Other incentives/ disincentives?	Consequence if building won't participate in pgm?	Property standards re space and routing?	Written indemnity agreements with owners/ supers?	On-site contact mandated
Barrie, City	No	No	No	Yes	Yes: OCC	An exemption system for landfill use	Landfill tipping fee exemption pgm; used to have a Master Recycler Pgm	No tipping fee exemption at landfill	No	No	No
Cornwall, City	No	No	Yes	No	Yes: OCC	No	No	None	No	Yes	Yes
Essex Windsor Solid Waste Authority	No	No	No	No	Yes: OCC	No	No	None	No	No	No
Windsor, City	No	No	No	No	Yes: OCC	No, but provision of service is	No	Loss of free garbage coll'n.	No	No	No
Guelph, City	No	No	Yes for SFD	No	Yes for residential	No	No	na	No, but collections supervisor would have to inspect and approve	Yes	No
Halton, Region	No	Yes	Yes	Yes	Yes	No	No	Not encountered	Yes	Yes	Yes, although difficult to keep current
Hamilton, City	Yes	Yes	Yes	Yes	No	Yes: no fees but no waste collection provided to non recycling buildings	Site plan requirement, property standards requirement	No waste collection provided	Yes	Yes, currently also being prepared for private routes	Yes, when possible
Kingston, City	No	No	No	Yes for UP (partial)	Yes: OCC ban	No	No	None	No	No	Yes

Municipality	Mandatory recycling bylaw?	MR bylaw?	Setout criteria bylaw?	Container limits; User pay?	Landfill restrictions on Bbox materials?	Garbage fees linked to recycling part'n?	Other incentives/disincentives?	Consequence if building won't participate in pgm?	Property standards re space and routing?	Written indemnity agreements with owners/supers?	On-site contact mandated
London, City	No	Yes	Yes	No, but starting Jan/06 MR garbage fee for 2nd weekly pick up	Yes	No	No	None	No	Yes	No
Niagara, Region	Yes	No	Yes	Yes	Yes	Yes	Fines	None	No	Yes	Yes
Ottawa, City	Yes	Yes	Yes	Yes	Yes: restricted from landfill; if large load of rec. mixed with garbage, tipping fee is double or rec. must be removed.	Yes	Subsidised garbage coll'n only allows for a certain # containers/week; if properties produce more than allowed, property owner must pay for add'l. garbage coll'n.	City will not provide garbage collection. unless building recycles	Yes	Yes: the agreement is between collection contractor and property owner	No, but collection contractors do
Peel, Region	Yes	na	Yes	Yes, but not enforced for MR	Yes	No	No	Region can refuse collection	Yes	Yes	Yes
Peterborough, City	Yes	No	Yes	Yes; 2 bag limit on garbage	Yes	Yes, for commercial, not residential	No	Difficult since garbage is often collected by private haulers	No	No	No
Quinte Waste Solutions	No	No	No	No	na	No	No	None	Yes	No	No
Sarnia, City	No	No	No	No	No	No	To receive lower waste collection rate	Removal from program	Yes	Yes	No
Simcoe, County	na	No	Draft	Yes	Yes - banned from landfill	No	No	na	No	No	No

Municipality	Mandatory recycling bylaw?	MR bylaw?	Setout criteria bylaw?	Container limits; User pay?	Landfill restrictions on Bbox materials?	Garbage fees linked to recycling part'n?	Other incentives/disincentives?	Consequence if building won't participate in pgm?	Property standards re space and routing?	Written indemnity agreements with owners/supers?	On-site contact mandated
Sudbury, City of Greater	No	Yes	Yes, site specific, up to staff	Yes; 3 bag limit, and container limit based on # of units in bldg.	Yes	Yes	If they want garbage collection, then they must recycle	If they want garbage collection, then they must recycle	working on it	Yes	Yes
Thunder Bay, City	No	No	No	Yes, three bag limit and in process of developing new program: User Pay.	No	No	No	na at this time	na	na	na
Toronto, City	Yes	Bylaw includes MR	Yes	No, Council has approved a MR waste reduction levy (report provided)	Yes	Newly approved levy will link fees to recycling participation	Fines and bldg requirements for new developments (provided)	Garbage collection is discontinued	Yes	No	No
Waterloo, Region	No	No	Yes	Yes for those in tri-cities receiving munic. coll'n: 10 containers/unit/week. (Most MR have private waste coll'n. and receive garbage rebate of \$25/unit/year)	Yes: OCC	No	Building permit requirement; property standards requirement; fines; had Gold Star Recycling Awards pgm in 90's for MR.	None	Yes; City bldg. code may specify garbage room dimensions	Yes	Yes

Appendix 5 Summary of Promotion and Education Programs for MR

Municipality	Item/Frequency/Language (s)				Web site	Outreach	Frequency of tenant contact	Card/Bin stickers	Other
	Brochure	Newsletter	Poster	Other					
Barrie, City	As requested by property mgr or super; mailed or picked up, English	No	Some bldgs use bin stickers as posters	Displays in lobby	Yes	On site meetings, displays, contests/ draws	Never, now	Yes, graphics and text, English	Some of the Master Recyclers still manage the program
Cornwall, City				Yearly information guide and recycling calendar, distributed in ad bags, English and French	Yes		Used to have meetings with tenants at owners' request; now deal with landlords and supers	French and English, no symbols	
Essex Windsor Solid Waste Authority				Door hanger, hand delivered	Yes			Text and symbols	
Windsor, City				Door hanger, hand delivered, English	Yes		As required	Text and symbols	
Guelph, City				Article in Chamber of Commerce quarterly nstr.	Yes	On site mtgs, building champion, ongoing contact with private haulers to support P&E efforts	Respond to calls	Dry, Recyclables, Waste	Attempted to start committee with local haulers to improve recycling rates, attempted to survey hauling co's; both unsuccessful due to lack of interest

Municipality	Item/Frequency/Language (s)				Web site	Outreach	Frequency of tenant contact	Card/Bin stickers	Other
	Brochure	Newsletter	Poster	Other					
Halton, Region	Brochure, distributed as required: pickup, mail, delivered, English		Poster, as required, English		Under construction	On site meetings, Welcome Wagon	Tenants contact Region	Provided, currently being updated	
Hamilton, City	On program setup, in blue bags, or on request (English, with translation service available)		In person to super		Yes	On site mtgs, displays, Apartment Mgrs Ass'n	Never	Photographs with English text	
Kingston, City	Provided to super, as requested, English		Provided to super, as requested, English		Yes	On site meetings;	Tenants not contacted directly	Text and graphics	2001: all buildings provided with new poster and graphic to reduce contamination
London, City	As requested, English	Annual, sent to bldg. mgr. for dist'n., English	As requested		No	On site presentations as requested	na	Stickers with symbols, and wording for carts, English	
Niagara, Region	for 2005 study bldgs only		for 2005 study bldgs only		Yes	On site meetings and displays	na	Stickers with English text and graphics	

Municipality	Item/Frequency/Language (s)				Web site	Outreach	Frequency of tenant contact	Card/Bin stickers	Other
	Brochure	Newsletter	Poster	Other					
Ottawa, City	MR Disposal Guide, ongoing delivery to bldgs, in English/French and Somali/Arabic/Vietnamese/Chinese		As required to building in English and French	As required, Super's Guide to bldg. in English and French	Yes	On-site meetings and inspections	Daily: door to door, email, mail	Stream specific stickers with graphics and text, in English and French	Samples provided
Peel, Region	Brochure at start up, then as requested in English, Hindi, Urdu, Punjabi; dropped off to property mgr.		At start up then as requested, English; dropped off to property mgr.		Yes	On site displays	na	Stickers for each stream with picture, English text	
Peterborough, City	Annual newspaper insert, English			Annual calendar inserted in newspaper, English	Yes	On site mtgs. or presentation as requested	As requested or required	Stickers with highly visible graphics and simple text	
Quinte Waste Solutions	na				Yes	Building champion and welcome wagon			
Sarnia, City			Yes, English		Yes	Welcome Wagon	na	Yes	
Simcoe, County			Is provided upon request					Affixed upon cart purchase or on request	

Municipality	Item/Frequency/Language (s)				Web site	Outreach	Frequency of tenant contact	Card/Bin stickers	Other
	Brochure	Newsletter	Poster	Other					
Sudbury, City of Greater	At set up and then once/year, by mail; English and French				Yes	On-site meetings	As requested or needed	Text and graphics	
Thunder Bay, City	English brochure once during pilot in tenants' mailboxes		English poster in garbage areas, once;	One letter to tenants	na	On site meetings with property mgr.			Under development, planning: recycling kit for tenants, with follow up month later
Toronto, City		2/yr, mailed, English with small sections in 5 languages	On request in English and 19 other languages		Yes	Waste Watch Newsletter	By mail 2/yr	Text and graphics	
Waterloo, Region	Brochure at start up and on request, delivered by Region, English	No but Environews nsltr. may have MR related info; delivered 2/yr, English	At start up then as requested, delivered by Region, English	Labels; annually or as requested, Region applies, English	Yes	On site mtgs, AMA, on site contact, annual contact of property mgrs. for garbage rebate	Rarely, although door-to-door campaign in 90's	Per stream and substream , text and graphics, English	

Appendix 6 Summary of Non-Ontario Multi-residential Resources

- 1) Multi-family recycling – a national study
url: <http://fcgov.com/recycling/pdf/EPA-nationalstudy-2001.pdf>
- 2) Property managers handbook
<http://www.montgomerycountymd.gov/swstmpl.asp?url=/content/dpwt/SolidWaste/education/trrac/handbook.asp>
- 3) Complex recycling issues strategies for waste reduction in multi-family dwellings
url: <http://fcgov.com/recycling/pdf/f99022.pdf>
- 4) Multi-family recycling – a golden opportunity for solid waste reduction
url: <http://fcgov.com/recycling/pdf/EPA-multi-1999.pdf>
- 5) Exploring multi-family recycling – tools for the voyage
url: <http://www.eurekarecycling.org/Tools.cfm>
- 6) Multi-family recycling: a barrier/best practices inventory
url: www.mass.gov/dep/recycle/reduce/mfambopp.doc
- 7) Strategies for increasing multi-family recycling
url: <http://www.serainc.com/mfreport4.pdf>
- 8) Analysis of multi-family recycling programs
url: <http://www.publicpolicyresearch.net/source.html#mult>