

Best Practice
Spotlight

Best Practices in Multi-Family Recycling

Overview

Statistics Canada 2001 Census reported that approximately 26% of Ontario's residents currently live in multi-family buildings and the number is continuing to grow. Since the collection of recyclable materials from multi-family households has historically been a challenging process, a new approach that incorporates Best Practices is needed. This section is designed to provide guidance to municipalities that seek to enhance participation levels, recovery levels, and material quality levels, while yielding operational efficiencies in multi-family collection.

Key Benefits and Outcomes

By employing Best Practices in multi-family recycling, municipalities can obtain the following effectiveness benefits:

- Increased diversion from landfill
- Decreased contamination of materials
- Increased capture rates
- Increased participation in recycling

Programs can become more efficient due to the following factors:

- Collection of front-load bins or side-load carts at a single collection point are more cost-effective methods when compared to individual stops at each household for the equivalent number of units
- Front-load bins are more cost efficient than carts, carts more efficient than boxes
- Increased revenues from sale of recyclables captured
- Optimization of collection and processing systems due to increased tonnage

Description and Implementation of Best Practice

Ontario Regulation 103/94 requires the owner of a building that contains six or more dwelling units and is located within a municipality that has a population of at least 5,000 to implement a source separation program for the waste generated at the building.

Municipalities are required to collect recyclable materials from multi-family buildings only if the properties are receiving garbage collection services from the municipality. However, if garbage service is not provided by the municipality, all qualifying multi-family buildings are still required to recycle aluminium food or beverage cans, glass bottles and jars for food or beverages, newsprint, polyethylene terephthalate (PET) bottles for food or beverages, steel food or beverage cans, and any other categories of waste that are collected or accepted in the blue box program of the municipality

where the building is located. Despite this law being in place for over a decade, a recent E&E-funded Focus Group (see Sources and Links section) study revealed that most property managers were not aware of this Ontario government regulation.

Municipalities often regard multi-family buildings as being part of the commercial sector. Therefore, financial and operation information may not be reported under the WDO Datacall for the municipal Blue Box program. Municipalities who do not service the commercial sector may be unaware of the potential to include the multi-family sector in their residential Blue Box program as a possible cost-effective method of capturing large amounts of recyclables. Assuming the challenges associated with multi-family recycling are understood and addressed, the benefits of adding this sector to the municipal Blue Box program include increased diversion of materials from landfill, increased recycling tonnage, optimization of collection and processing systems, and increased revenues from the sale of the additional recycling materials captured.

It is recommended that municipalities identify all existing serviced and un-serviced multi-family buildings within their boundaries. For those currently not serviced, investigate the possibility of incorporating this sector with those residents served through the municipal Blue Box program. Factors to consider include whether some or all of the multi-family buildings could be absorbed into the existing curbside program or if a defined multi-family program would be warranted. The rationale will be affected by such things as the number, size, and location of the buildings, as well as the impact on the overall system to collect, process, and market the expected increased tonnage. For complexes that are currently being serviced under the municipal Blue Box program, it is important that the performance be measured and monitored.

Waste Composition Audits

It is recommended that periodic waste composition audits be conducted to assist with program planning, to determine generation rates and capture rates, and to obtain benchmark data used to compare performance over time. Stewardship Ontario has developed multi family waste audit worksheets, tips and, guidelines for waste sorting.

Generation and Capture Rates

Each multi-family household in a large urban area generates approximately 264 kg of recyclables per year (approximately 92 kg less than single family households), but less than 32% of this is captured. In comparison, approximately 60% of the available recyclables generated by single-family households are captured.

A contributing factor to the lower generation rate for both garbage and recyclable materials is that there are usually fewer occupants in each household. On average, there are 2 people per apartment unit, as opposed to 2.9 in a single family home.

Factors that adversely affect recycling at multi-family buildings include:

- Recycling is almost always less convenient than garbage disposal
- Insufficient recycling bin capacity
- Residents' sense of disconnect from recycling program, leading to sense of direct responsibility
- Anonymity limits repercussions for not recycling properly or at all
- Transience issues - apartments may be considered temporary accommodation
- Multi-cultural and socio-economic factors may affect recycling behaviour
- Multi-lingual issues may hinder understanding of the recycling program
- Opinion that maintenance fees cover waste management services
- Insufficient promotion and education of the program

Multi-family buildings exist in a variety of sizes, heights, and designs. Since the majority of multi-family recycling programs have been added to existing apartment developments that were not designed for recycling programs, there are often challenges with insufficient space, location, or collection system for recycling bins. In addition, multi-family buildings generally share common bins and have their garbage and recycling collected at a central collection point. Unless closely monitored, sharing common bins can contribute to the potential for misuse, causing contamination and premature topping out. However, given the high concentration of residents using common bins, there is a potential to cost-effectively capture large amounts of recyclables.

Design Requirements for New Developments and Re-Developments

Although some existing buildings may have less than optimal layouts for recycling programs, there is an opportunity to ensure that any new developments are designed to meet the individual municipality's recycling system requirements prior to approval. It is recommended that municipalities develop mandatory requirements for new or re-developed multi-family buildings to be designed to allow for integrated waste management practices.

The standards for these developments should work in harmony with each municipality's Waste Management Master Plan, and suit the collection system and processing operations accordingly. The design plans submitted by the developer should be reviewed by competent staff with the Solid Waste knowledge to assess the drawings to determine if the design requirements for garbage and recycling collection have been met.

If developers propose a change in collection points, method of collection, change of use, or an existing building being expanded by more than 1/3 its original size, the plans should also be reviewed by Solid Waste staff. Each site and building should be inspected prior to approval to ensure that the development has complied with all requirements for solid waste and recycling programs.

In order for multi-family buildings to qualify for the municipal garbage and recyclables collection services, it is recommended that municipalities only approve those new

developments or redevelopments that adhere to the appropriate design requirements. Requirements may stipulate an appropriate type, quantity, and location of the garbage and recycling bins to accommodate the volume of material expected to be generated by the number of residential units at the complex, assuming full participation in the municipal recycling program.

The application submitted to the municipality should include details regarding the number of dwelling units in the development, the total ground floor area, the number of stories, access routes, loading facilities, garbage rooms, recycling rooms, size and quantity of garbage and recycling containers to be used, and, if designed for a chute disposal system, the type and quantity of chutes for garbage and recycling.

The new or re-development should be designed to ensure that the recycling system is as convenient a system for the residents to use as the garbage system.

For example, a chute system on each floor would have to receive both garbage and recyclables, either as one chute with mechanical baffles for residents to control the direction of the appropriate stream, or with individual chutes for garbage and each stream of recyclables. If no chute is provided, then there should be a central garbage and recycling facility on the ground floor.

Set a minimum recovery threshold for recycling. It is recommended that sites fully participate in the municipal recycling program in order to be eligible to receive municipal garbage collection. It will be necessary to determine what quantity of recyclables should be used as a benchmark in order to be considered fully participating in the recycling program. This will depend largely on the frequency of collection, the amount of materials accepted in the program, and the collection system in which to base the measurement. For example, the City of Toronto has used the following benchmark: for every 100 units at a complex, a volume of 6 cubic yards (or 1212 US gallons) of recyclables should be captured per week as a minimum. The management and residents are informed of this minimum requirement. In many cases, once appropriate promotion and education activities are executed, the capture rate exceeds the minimum requirements.

Many programs require multi-family buildings to purchase the recycling bins at full or subsidized cost. A recent focus group study revealed that although superintendents identified the need and repeatedly requested that their property management supply more recycling bins, this minimal investment request was refused. Unless the building was going to incur additional garbage charges for excess quantities, they did not see the financial benefit to their business. If there were maximum garbage limits and minimum recycling limits, they would be more likely to comply with obtaining the appropriate number of bins.

The feedback from the collector is crucial regarding compliance at the multi-family buildings. Buildings that are not meeting their minimum should be notified regarding their performance and offered guidance toward achieving a better capture rate in order to be eligible to receive municipal garbage collection.

There should not be a maximum limit placed on recycling. In some programs, a limit has been placed on the quantity of cardboard set out in the recycling carts. The operational problems created by big quantities of cardboard can be resolved by changing collection method, bin type, or increasing frequency rather than limiting the quantity accepted as recycling. On the first of the month, buildings are likely to have an increase in the amount of cardboard due to new residents unpacking. This should be taken into consideration when assessing the collection system and bin types. Setting a limit on recyclables will only result in the disposal of the material as garbage. If the quantity of recyclables is unmanageable within the current system, it may be necessary to reassess the bin size and type used at the site, and/or consider increasing the collection frequency to meet the need.

Type of Collection Bin

The type of collection bins is dependent on current operational practices for each municipal program, as well as the location and design of the multi-family building. The method of garbage collection may determine the method of recycling collection. For example, multi-family buildings receiving front-end bulk garbage would be an appropriate candidate to consider bulk recycling, as the layout is already conducive to this type of bins and collection vehicles.

Very small complexes that have less than 6 units, may distribute individual blue boxes for their residents to set at the curb for collection with the single family homes. However, depending on each program's recycling sort streams, and the extent of recycling materials accepted by the program, combined with the collection frequency offered through the municipal programs, each unit may require more than one box to sufficiently contain the recyclables between collections. This can create storage issues within the units, potential problems at the set out point, and an inefficient collection method at the complex.

Multi-family buildings or infill townhouse complexes that have a common collection point for up to 30 units should consider using 90 or 95 gallon (340-360 litre) roll-out carts that are compatible with the collection vehicles. Each recycling cart offers the equivalent volume of 6 to 8 curbside recycling boxes. The residents will not have the negative aspects associated with storing the material in their own units between collections, and the cart can be mechanically lifted and emptied more efficiently. The carts should be stored in a location that is convenient for the residents to use (inside or sheltered from rain and snow), and, if different than the collection point, moved out for the day of collection only.

For complexes between 30 and 100 units either carts or front-end bulk bins can be effective, depending on the number of recycling streams in the program and the design of the complex. Programs offering single stream recycling may see a benefit by using front load recycling bins in this mid-size multi-family building category, as several carts can be replaced by one bulk bin, thereby reducing the number of carts and lifts required. For example, one 4-cubic yard (3-cubic m) bin could replace 9 carts containing the same materials. However, if the existing design is a sprawling infill townhouse complex, it may be more appropriate to have several recycling stations to

enhance convenience, and have the carts brought to one or more central location points on collection day.

For complexes with 100 units or greater, front-load bulk bins should be considered the preferred choice to maximize both efficiency and effectiveness. If the bins are to be accessed directly by residents, it is recommended that the bins be modified to limit the opening to contain only the desired materials and thereby minimize opportunity for contamination. The top lid should be kept padlocked between collections, with only the building's maintenance staff responsible to open it daily to remove any contaminating items. On collection day, the top lid should be unlocked, contaminating items should have been removed, and the bin placed in position for collection.

Determine Suitable Recycling Bin Capacity

Bin capacity should be considered in relation to the number of residential units sharing the recycling containers, the number of sort streams required under the municipal program, and the degree of automation by the collection system.

As a guideline, the City of Toronto has used the bin capacity formula of a minimum of 6 cubic yards (4.6 cu m) recycling capacity for every 100 units collected weekly. This same volume converts to 1211.84 US gallons (4587 litres). Multi-family buildings using 90 or 95 US gallon recycling carts would, therefore, require a minimum of 13 carts for every 100 units.

Capacity considerations for individual communities, however, will be highly affected by the recycling program in place. For example, some semi-automated programs require the cardboard to be flattened and tied in bundles of specified dimensions beside the recycling carts. In this case, the collector could manually set the bundled cardboard in the hopper as he/she must get out of the truck anyway to connect the carts to be mechanically lifted. This method may reduce the number of carts required.

Automated systems are designed for all recycling materials to be contained in the carts, as the driver controls the lifting of the carts from inside of the vehicle. Although this is a convenient method of collection, considerably more carts may be required. This is particularly the case with excess cardboard generated by new residents unpacking.

Frequency of Collection

Recyclables from multi-family buildings with 6 or more units, and that have a common collection point, should be collected weekly. In cases of existing structures that can demonstrate there is insufficient storage space to provide recycling bin capacity for weekly collection, more frequent collection of recyclables may be required to ensure maximum capture of recycling materials.

Storage and Collection Area

Recycling bins should be stored inside, where possible, provided that all building and fire codes are followed. This ensures better control over the proper use of the bins and minimizes opportunity for public contamination. The recycling room should be large enough to contain all the recycling bins to be used, be safe and clean for residents to access, permit easy movement of the bins, and allow for additional space for future program expansion.

In-unit Storage and/or Transfer Containers

A mini Blue Box, basket or a reusable Blue Bag may contribute to a higher recovery rate, particularly when the box or bag has printed graphics to reinforce the items that are accepted in the recycling program. However, research has shown inconclusive results as to the long-term effects of these tools, partly due to the ongoing turnover of new residents.

Depending on an individual's recycling habits, such tools can be seen as a convenience or as a nuisance. Surveys have shown that often residents take their recycling to the bins on their way out to work, shopping, etc. They do not want to take the empty container with them nor have to come back to their unit with it. However, even if the mini Blue Box or Blue Bag is used only as storage within the unit, and not for transferring purposes, it can serve as an effective reminder that a program exists for the complex, and that certain items should be separated from the garbage.

Some programs recommend that residents transport the recyclables from their units to the bins in plastic bags and deposit the material loose into the appropriate bin. Although this can be promoted as the second "R" (Reuse), this method can pose a contamination problem in the recycling bin if residents do not understand the importance of depositing the material loose into the appropriate category. If plastic bags are not included in the municipal recycling program, it is imperative that there be a small clearly labelled waste receptacle beside the recycling bin instructing residents to deposit their empty plastic bags there.

Promotion and Education

Owners, Property Managers, and Superintendents: According to a recent focus group study, "superintendents in most of the study areas reported that they are working mainly in isolation and without the help of the municipal waste management experts". (E&E Fund Project #199, pg 7)

Building staff need to be fully trained with regards to the responsibilities and requirements of the recycling program. Several programs have developed a "Handbook for Owners, Property Managers and Superintendents" to educate them regarding the responsibilities and to trouble-shoot problems with suggestions of how to resolve the issues. In addition, it also may be beneficial to offer a link to a website that allows owners and property managers to download literature regarding the program, as well as graphics or translated educational material for posting and distribution to the residents. A list of resources, including contact names and

numbers, should be made available to the multi-family buildings to assist with concerns that may arise.

Written literature, however, cannot eliminate the need for face-to-face contact with the site staff. Site visits will be required to check on the bin contents, replace missing or outdated educational materials and faded bin labels, and offer guidance and support to the site staff. Depending on the specific building, there can be considerable rotation of site superintendents and property managers. Staff changes are usually not reported to the municipality and the new staff may not understand the program requirements that were explained to the previous staff.

Residents: As reported in focus groups and interviews “Residents are operating on the basis of habit, imitation and partial information”. (E&E Fund Project #199, pg 3)

Appropriate literature is required in order to convey program information to residents. The most critical information that needs to be understood by residents is:

- What items are to be included in the recycling bins
- How the items are to be sorted or prepared (flatten cardboard, rinse out bottles)
- Where the recycling bins are located to deposit the items (if required to take the material to a designated location)

It is recommended that new residents be given a recycling package, shown the recycling location, and have the recycling program explained as part of their lease or agreement to live in the complex. Having a clause in the lease or agreement that states that recycling is mandatory can help to stimulate residents’ participation in recycling.

It is important to know the demographics within the building to ensure the promotion and education materials and methods are applied appropriately.

Multi-lingual, multi-cultural, and socio-economic factors can affect the success of the recycling program if challenges are not acknowledged and addressed. If additional languages are required, it is recommended that recycling literature be translated as appropriate. These can be posted on a website for site staff to download and post or distribute as necessary.

In addition to distributing literature to each unit, it is recommended that recycling literature be posted in a common area(s) of the building in English, as well as in the other appropriate languages identified for the building. For durability, the postings can be contained in a protective case, or covered with plexi-glass or laminated. Common areas that may be suitable for the posting board include the lobby, mailbox room, laundry room, chute rooms, and recycling rooms. Having the recycling literature posted ensures that new residents have an opportunity to see the information, and offers repeated promotion and reinforcement of the program each time residents (or visitors) are exposed to the information. The use of pictures and other graphics to illustrate what can and cannot be recycled is recommended, particularly when residents speak multiple languages.

Collectors: It is important that the collectors, whether municipal forces or contracted, are adequately trained and fully understand their role in the multi-family recycling program. This includes understanding the acceptable recycling items, what constitutes contamination, the minimum amount of recycling material required at each site, and proper documentation.

It is recommended that collectors have a “problem sheet” for each collection day on which to record any issues with the site that would require follow up prior to the next collection day. These issues may include concerns such as contamination, bins not in the proper position for collection, bins not out, not meeting the minimum quantity to be considered fully participating, bin needing repair, etc. It should also state whether the recycling bin was emptied by the collector or not. The completed problem sheet should be submitted to Solid Waste staff for follow up at the end of each collection day.

Feedback

Site staff and residents need to hear how they are doing to stay motivated. Periodic communication with the site is recommended to update contact information, replenish resource materials, and offer guidance and support.

Training

To move beyond the feeling of disconnect and lack of responsibility for the recycling programs at multi-family buildings, it is imperative that key players that are directly involved with the recycling program (Property Managers, Superintendents, residents, and collectors) be adequately trained in all aspects of the program.

In the past, the City of Barrie offered an 8-hour Master Recycler course targeted at Property Managers, Superintendents and apartment residents who were committed to act as recycling champions within their buildings. The Master Recycler course was organized into four sessions:

- Day One: Introduction to Recycling
- Day Two: The MRF and Markets
- Day Three: Communications
- Day Four: Preparing to be Master Recyclers

The Master Recycler course participants were provided with information about the municipal recycling program as a whole, and how to communicate with multi-family residents to promote effective waste diversion through recycling. Upon successful completion of the 4 classes and a test, the participants were issued a Master Recycler Certificate. They became the on-site recycling contacts, educating new and existing residents, while promoting the program within their buildings. Subsequently, there were substantial improvements in the quality and quantity of the materials captured, and long-term benefits stemming from the Master Recycler course have been seen several years later. It is recommended that municipalities consider

offering similar comprehensive training for key participants in the multi-family recycling program.

Sources and Links

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