**Category:** Education Program

**Entrant Organization:** City of Toronto

**Contact Person:** Charlotte Ueta | 416.392.8506 | Charlotte.Ueta@toronto.ca

**Entry Title:** The Mayor's Towering Challenge

**Jurisdiction:** Toronto, Ontario, Canada

**Approximate Population of the Jurisdiction:** 2.8 million

**Cost Per Household for the Project:** $0.72 CDN per multi-residential household

**Approximate Budget:** $286,275.00 CDN
EXECUTIVE SUMMARY

More than half of Toronto residents live in apartments and condominiums, but they recycle and compost significantly less than single family residents. As part of the City of Toronto's Long Term Waste Management Strategy, multi-residential buildings were identified as the largest opportunity for waste diversion improvements. In March 2016, Toronto's Mayor toured an exemplary 1,000-resident condominium that has successfully implemented various waste diversion measures, generating only about 6 cubic yards of garbage per month. Inspired by his visit, the Mayor engaged Solid Waste Management Services staff to develop and lead a waste diversion challenge for multi-residential buildings in Toronto. The 'Mayor's Towering Challenge' provided a unique opportunity to use a "friendly competition" and the Mayor's support to engage and educate property managers, superintendents, building staff and residents across the city. It increased awareness of waste issues and led to more positive attitudes and behaviours towards waste reduction and diversion.

RESEARCH

Identifying the Need for the Mayor's Towering Challenge

Toronto is unique among large North American municipalities in that multi-residential buildings (apartments and condominiums) make up approximately 55% of the dwelling units in the city. This number is forecasted to increase over time as the population grows. Solid Waste Management Services currently provides services to approximately 4,300 multi-residential buildings or 406,000 units. A review of the amount and composition of waste that is generated by multi-residential buildings through waste audits and tonnage reports indicate that there is a great opportunity to reduce and divert more waste from this housing sector.

Based on comprehensive 2016 diversion reports, the multi-residential waste diversion rate was 28%, while the single family diversion rate was 65%. Similarly, multi-residential waste composition audits conducted in 2014-2015 showed a 27% diversion rate, with a potential one of 68%. Surveys and focus groups over recent years have helped identify barriers to participation in diversion programs and have concluded that there is still confusion and lack of awareness of proper waste sorting. The research indicates that barriers to proper participation in waste diversion programs include access to information (e.g. respondents receive information from multiple sources or require translated information), program complexity (e.g. recycling bin is located in not as easily accessible areas), use of industry terms or jargon (e.g. words like contamination or diversion do not resonate with the general public), and general absence of feeling the direct impact of poor diversion performance (e.g. Solid Waste fees/invoice is charged to the property owner rather than sent to individual unit owners/renters).

Given that over half of Toronto residents live in apartments and condominiums and the multi-residential sector keeps growing rapidly, there is a significant need to continue increasing the multi-residential diversion rate. Furthermore, since there is a high turnover rate in tenants and building staff, as well as a higher proportion of newcomers living in multi-residential buildings compared to single family homes, there is a continual need to educate multi-residential tenants and staff on waste diversion.

Opportunities to improve the multi-residential waste diversion rate comprised much of the dialogue throughout consultation on the development of the City's Long Term Waste Management Strategy. As a result, a significant element of the Strategy's recommendations includes extensive promotion and education to residents, property managers and superintendents to ensure program comprehension and compliance. The City offers comprehensive programs and resources to increase diversion in the multi-residential sector, but it was clear that there was significant potential to increase awareness and use of these services. The Mayor's Towering Challenge (MTC) provided a unique opportunity to use a "friendly competition" and the Mayor's profile to promote and increase participation in the City's existing waste diversion programs. It encouraged MTC participants to maximize the effective and efficient use of the City's current programs, while going further to implement innovative solutions at their buildings.
Existing Educational Programs & Services

The City of Toronto offers a wide variety of waste diversion programs and services specifically targeted at City-serviced\(^1\) multi-residential buildings (categorized as having nine or more units), however through development of the Long Term Waste Management Strategy, it was identified that they were underused and there was an opportunity to better promote the City’s offerings. The City recognized that it already had comprehensive and innovative programs and, rather than changing them or creating new ones, there was significant potential to increase awareness and engagement around existing programs.

The City's existing programs and services for City-serviced multi-residential buildings include:

- Customer Service and Waste Diversion Implementation unit dedicated to improving the diversion rate in buildings through site visits, presentations and lobby displays to educate property managers, superintendents and residents about proper waste disposal;
- 3Rs Ambassador Volunteer Program, which trains and supports residents that volunteer to encourage others in their building reduce, reuse and recycle more;
- Implementation of community programming in areas with multi-residential buildings on food waste reduction, community composting, sewing/textile repair workshops, bike repair, and sharing libraries;
- Administration of Waste Reduction Community Grants to community-led waste reduction activities with priority placed on projects that improve multi-residential diversion;
- Provision of free in-unit containers for recyclables and organics;
- Workshops to train property managers and superintendents on the City's waste diversion programs and policies; and
- Free and convenient collection of electronics and household hazardous waste.

The City also offers comprehensive promotion and educational resources and tools specifically for multi-residential customers, including:

- An annual calendar, posters, sorting guides (in up to 18 different languages);
- A comprehensive website (toronto.ca/waste), with a dedicated section for Apartments, Condos & Co-ops, including both building management and residents;
- Waste bin labels;
- Tenant Engagement Guide, developed in consultation with stakeholders; and
- Advertising and direct mail campaigns (e.g. 2013-2014 “Please get with the recycling program” campaign).

Review of Other Programs

In planning and developing the MTC, the City reviewed programs that aimed to change attitudes and behaviours targeting either waste reduction or high-rise buildings, including:

- Civic Action's Race To Reduce energy conservation challenge between office buildings;
- New York City's Mayor's Food Waste Challenge to Restaurants; and
- Toronto Environmental Alliance's Waste Free Challenge.

While the City didn't find any waste diversion challenges among multi-residential buildings in other jurisdictions, it was useful to review similar programs and how they were structured and engaged participants.

\(^1\) Approximately 65% of multi-residential buildings are serviced by the City. The remainder are serviced by the private sector either because they do not comply with the City’s eligibility criteria or they have opted out of the City's waste services.
In addition, some research was conducted on effective adult education and as a result, Kolb’s Experiential Learning Theory was used to help structure the written document that MTC participants were required to submit at the end of the Challenge. In order to improve learning outcomes and support long-term behavioural change, the questions on the written submission asked participants to:

- identify challenges (review);
- find methods to reduce waste (learn, plan);
- describe resident involvement; promote reuse/reduction (do); and
- describe results and plans moving forward (review, learn, plan).

**PLANNING & GOAL SETTING**

**Target Audience & Promotion**

The target audience were residents, owners, property managers, superintendents and building staff of all multi-residential buildings, including apartments, condominiums and co-operatives, in the City of Toronto. All buildings, regardless of whether they receive City or private waste collection were eligible to participate in the MTC.

The MTC was promoted in the following ways:

- Media launch event with Mayor Tory and news release;
- Letter from Mayor Tory to all Property Management companies inviting their buildings to participate;
- Postcards and posters for stakeholders and building management (mostly digital, minimal copies printed);
- Solid Waste Management Staff reached out to invite buildings personally, e.g. during site visits;
- Advertisements (Weather Network, Blog TO, Facebook, Toronto Life, Pattison Outdoor, Google, CP24, Inside Toronto, Metro Toronto, NOW);
- Social Media: Twitter, Facebook;
- Emails to all Councillors and key stakeholders;
- Digital ads on screens in multi-residential buildings and subway platform;
- Newsletters (Live Green, City Update);
- Promotion at Community Environment Days and other summer community events;
- Dedicated webpage on City website: [toronto.ca/toweringchallenge](http://toronto.ca/toweringchallenge); and
- [Video](#) on City's website and YouTube channel.

![Media Launch Event](image)
Goals & Objectives

The objectives for the MTC during the Challenge period (September 1, 2016 to February 28, 2017) were to:

- Increase knowledge and use of waste diversion programs within multi-residential buildings in Toronto;
- Increase waste diversion at participating buildings;
- Have 100 buildings register for the Challenge and 75 complete an award submission;
- Have at least 40 apartments and 40 condominiums, as well as 10 from co-operatives, community and non-profit housing buildings, register;
- Have registered buildings located in 22 out of 44 wards across the city;
- Recruit 25 new 3Rs Ambassador Volunteers from MTC buildings;
- Increase Toxic Taxi service requests from participating buildings by 50% compared to the same time period the previous year (from 38 to 57);
- Increase the number of MTC buildings requesting Toxic Taxi by 50% compared to the same time period the previous year (from 20 to 30);
- Distribute at least 3,000 in-unit organics containers and recycling bags to residents at participating buildings;
- Engage 500 people in MTC training and engagement events;
- Reduce waste management costs at 15 buildings; and
- Identify and learn at least five new best practices to reduce waste and increase diversion in multi-residential buildings.

Tactics

Solid Waste Management Services staff engaged and supported buildings participating in the MTC in a variety of ways including providing site visits, presentations, lobby displays, as well as delivering posters, stickers, in-unit organics containers and in-unit recycling bags, posting case studies of well-performing buildings to provide ideas and encourage information sharing for best practices.

Staff also planned and hosted events for all participating buildings including a Superintendent Workshop, a satellite event of the National Zero Waste Conference, a movie screening about textile waste, three tours of well-performing buildings, 3Rs Ambassador Volunteer training, information webinar sessions to provide guidelines on completing their award submission, and an awards and recognition ceremony at City Hall, hosted by the Mayor. Buildings were encouraged to host events in their buildings as well. Throughout the entire MTC, staff regularly communicated with participating buildings via biweekly emails and provided resources, such as weekly log sheets to track waste generation and a Resident Engagement Menu, which listed ways to engage residents.
The MTC was launched in June 2016 and the official Challenge period ran from September 1, 2016 to February 28, 2017. Winning buildings were announced in May 2017. Below is a timeline for the program.

<table>
<thead>
<tr>
<th>Dates</th>
<th>Events &amp; Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>March – April 2016</td>
<td>Brainstorm, review other challenges, develop challenge structure and submission requirements</td>
</tr>
<tr>
<td>May</td>
<td>Recruit Judging Committee and sponsors, develop: communications plan, website, online registration system, submission documents</td>
</tr>
<tr>
<td>June</td>
<td>Visit media launch sites and pick location, finalize design</td>
</tr>
<tr>
<td>June 30, 2016</td>
<td>Media launch event and MTC registration opens</td>
</tr>
<tr>
<td>July/August</td>
<td>Promotion of the MTC – print and digital ads, social media, lobby displays, presentations</td>
</tr>
<tr>
<td>September 6, 2016</td>
<td>MTC starts</td>
</tr>
<tr>
<td>September onwards</td>
<td>Provide support to buildings, case study development, bi-weekly emails</td>
</tr>
<tr>
<td>September 15, 2016</td>
<td>Superintendent Waste Diversion Workshop</td>
</tr>
<tr>
<td>September 15, 2016</td>
<td>MTC registration closes (deadline extended until after the Superintendent Workshop on September 15, 2017 to allow more buildings to register)</td>
</tr>
<tr>
<td>October</td>
<td>Prepare for movie screening - buy license, book venue, advertise, recruit staff</td>
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<tr>
<td>November 17, 2016</td>
<td>Movie screening</td>
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<tr>
<td>December 2017</td>
<td>Building tours</td>
</tr>
<tr>
<td>December/January</td>
<td>Prepare for 3Rs Ambassador training – book venue, promote</td>
</tr>
<tr>
<td>January 26, 2017</td>
<td>3Rs Ambassador Volunteer Training</td>
</tr>
<tr>
<td>January/February</td>
<td>Prepare for Submission document webinar – develop workshop, promote</td>
</tr>
<tr>
<td>February 15, 2017</td>
<td>Submission document webinar</td>
</tr>
<tr>
<td>March 3, 2017</td>
<td>MTC ends</td>
</tr>
<tr>
<td>March 10, 2017</td>
<td>Submissions due</td>
</tr>
<tr>
<td>March/April</td>
<td>Prepare submissions for review (remove identifying information) and prepare for review day (book venue, plan selection process)</td>
</tr>
<tr>
<td>April 13, 2017</td>
<td>Judging Committee reviews submissions and selects winners</td>
</tr>
<tr>
<td>April/May</td>
<td>Prepare for awards ceremony – book venue, hire caterer, invite attendees, write media release, prepare framed awards and certificates, confirm sponsors, write speaking notes, recruit staff</td>
</tr>
<tr>
<td>May 17, 2017</td>
<td>Awards Ceremony at City Hall for all participants</td>
</tr>
<tr>
<td>June</td>
<td>Prepare for Barbecue at winning building - hire caterer, invite attendees, recruit staff, site plan</td>
</tr>
<tr>
<td>July 29, 2017</td>
<td>Barbecue at winning building</td>
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</tbody>
</table>
Budget

See table below for a breakdown of the MTC's budget.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Promotion of the MTC (print, online, social media)</td>
<td>$117,435.25</td>
</tr>
<tr>
<td>Video to promote the MTC and multi-residential waste diversion</td>
<td>$8,475.00</td>
</tr>
<tr>
<td>Events for participating buildings during the MTC period</td>
<td>$488.16</td>
</tr>
<tr>
<td>Awards ceremony (May 2017) &amp; barbecue at winning building (July 2017)</td>
<td>$9,453.65</td>
</tr>
<tr>
<td>Posters, signage, supplies for Awards Ceremony, miscellaneous</td>
<td>$423.88</td>
</tr>
<tr>
<td>Solid Waste Management Services &amp; Communications staff:</td>
<td>$150,000.00</td>
</tr>
<tr>
<td>• 0.5 FTE from March 1, 2016 to October 15, 2016</td>
<td></td>
</tr>
<tr>
<td>• 0.9 FTE and two 0.1 FTEs from March 1, 2016 to August 31, 2017</td>
<td></td>
</tr>
<tr>
<td>• 0.1 FTE from September 1, 2016 to February 28, 2017</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$286,275.94</strong></td>
</tr>
</tbody>
</table>

Any changes in MTC participating buildings were implemented by resident volunteers, property management companies and building staff and it is difficult to estimate the time and money of these efforts. At the City, nearly one full-time staff person was dedicated to administering the program and supporting participating buildings. Additional staff in Solid Waste Management Services spent some of their time on the MTC.

Many of the MTC’s costs were absorbed through Solid Waste Management Service’s operating budget since multi-residential programs and services (e.g. Toxic Taxi, multi-lingual posters, in-unit organics and recycling containers, superintendent workshop etc.) are already offered regularly. The only additional costs incurred are outlined in the budget table above.

Since the MTC was offered only to multi-residential buildings, the total cost per household was divided by the number of multi-residential units in Toronto (406,000). As such, the MTC cost $0.72 per multi-residential household. Not all multi-residential buildings participated in the MTC, therefore some of the costs (e.g. Awards ceremony) are mostly attributed to participating buildings. Also, an external sponsor (Loblaws Corporation Limited) helped support a barbecue at the winning building.

IMPLEMENTATION

MTC Program Activities

There is no 'one-size-fits-all' solution for waste diversion in multi-residential buildings because there are numerous factors that impact a building's ability to successfully divert materials from the garbage stream. These factors include the building design and layout; the age and income levels of residents; resident turnover rates; language barriers; and accessibility. However, over the years the City of Toronto has identified a number of best practices that improve waste diversion in buildings, including the following:

1. Invest in staff training to ensure staff are aware of common challenges and tools;
2. Track garbage, recycling and organics set out, volume and contamination levels;
3. Keep compactor maintenance schedules to ensure that the compactor is working correctly;
4. Improve accessibility by setting up convenient recycling and organics bins throughout the building and by making sure waste diversion rooms are clean and well lit;
5. Provide in-unit recycling and organics containers to residents to increase ease of use of programs and to serve as a visual prompt or reminder to sort waste in their units;
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6. Ensure adequate room or space capacity in the recycling and organics bins so that residents are not forced to put those materials in the garbage;
7. Communicate frequently with residents about waste diversion using various communication tools including posting information, social media/digital communications, through activities, etc.;
8. Give new tenants the City of Toronto Recycling Calendar and other important waste management information;
9. Post education materials in the waste diversion room, laundry room, chute rooms and party room;
10. Ensure consistent messaging; and
11. Support an active residents’ group and recruit a resident, board member or staff to become a 3Rs Ambassador Volunteer.

In order to ensure that the buildings experienced positive change as a result of participating in the MTC, the City created opportunities for participants to implement the best practices voluntarily (e.g. offered workshops) or by incorporating them into what was required of the building to participate in the MTC (e.g. submitting weekly log sheets).

The City provided the following support to participating buildings to implement best practices:

- Offered a superintendent training workshop (best practice #1);
- Asked participating buildings to use weekly log sheets to track garbage, recycling and organics output (best practice #2, #6);
- Provided buildings with a Resident Engagement Menu, which listed ways to engage residents (best practice #7) and encouraged buildings to host an event bi-monthly;
- Informed participants in biweekly emails about workshops and events and the many ways they could access free in-unit recycling bags and organics bins (best practice #5), recycling calendars (best practice #8) and posters (best practice #9);
- Promoted the challenge to 3Rs Ambassadors Volunteers in order to tap into buildings that already had a volunteer (best practice #11); and
- Offered 3Rs Ambassador Volunteer training specifically for participants of the Mayor’s Towering Challenge (best practice #11).
In addition to offering a training workshop for superintendents and 3Rs Ambassador Volunteer training, the City also invited MTC participants to the following events to inspire and engage them:

- A satellite event of the National Zero Waste Conference;
- A movie screening about the textile industry; and
- Three tours of buildings successfully using diversion programs.

The City also provided consistent and timely customer service support, including site visits to recommend areas for improvement. To share best practices used at buildings with high waste diversion rates, case studies of six buildings were created during the MTC. They were posted on the MTC webpage to provide recognition to successful buildings and help inspire other buildings.

**Sample Case Study:**

![Image of 430 McLevin Avenue case study](image-url)
Obstacles & How They Were Overcome

<table>
<thead>
<tr>
<th>Project obstacle</th>
<th>Obstacle description and how overcame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordinating Event Logistics</td>
<td>Multiple buildings were visited to choose an exemplary site for the MTC launch event. A building in the west end of the city was chosen, but due to a last-minute change in the Mayor's schedule, it needed to be changed to a building located downtown the day before the launch event. Since staff had already visited the building downtown when looking at potential sites, they were familiar with its layout and people and were able to quickly adapt to the change.</td>
</tr>
<tr>
<td>Data Gathering for Buildings on Private Collection</td>
<td>All buildings, regardless of whether they received City or private waste collection, were eligible to participate in the MTC. While the City wasn't able to obtain lift data from those buildings receiving private collection directly, it still supported them with site visits, posters, invitations to events etc.</td>
</tr>
<tr>
<td>Data Accuracy</td>
<td>The multi-residential waste collection contract changed from one contractor to another on July 1, 2016. This resulted in unforeseen challenges with collecting and reporting waste collection lift data. Recognizing that seeing a visible reduction in waste during a short period of time of 6 months would be a great challenge for participant buildings, the scoring matrix placed emphasis on scoring the creativity and innovative approaches to reducing waste, rather than relying on comparing lift data alone.</td>
</tr>
<tr>
<td>Coordinating the Winner's Recognition Event</td>
<td>The efforts of the winning building were recognized formally at a barbecue event, hosted by the Mayor. The overall winner of the MTC was a multi-building complex with over 660 units. To help cover the coordination and associated costs, the City pursued and secured sponsorship from Loblaws Corporation Limited.</td>
</tr>
</tbody>
</table>

New Opportunities

The winner of the MTC was initially going to be the building that reduced their garbage output and increased their diversion rate the most, though given some of the challenges (e.g. difficulty in obtaining accurate lift data) and recognizing the diversity of buildings, recognition of buildings was reconsidered. Rather than evaluating buildings mostly on quantitative data, buildings were judged based on their proven effort towards reducing garbage and increasing diversion. The buildings were scored based on a number of criteria, such as resident engagement, reuse and reduction tactics and completion of weekly collection lift log sheets. It was decided to choose an overall winner (based on total points), but to also create five new award categories, including Best Reduce and Reuse Initiative, Best Leadership, Best Initiative Using Data, Best Resident Engagement Initiative and Most Innovative. It was also decided that each category would have an honourable mention due to the excellent responses received from the buildings. The City wanted to recognize the significant efforts made and encourage the buildings to continue making improvements. Based on the five new award categories, the City will create case studies, which will be posted on the City's website, shared with the City's network of multi-residential stakeholders, and presented at a Multi-Residential Superintendent Workshop in the fall of 2018. In addition, the City will consider incorporating and highlighting the innovative activities that were undertaken as part of the MTC into future versions of the Tenant Engagement Guide.
Partnerships

The collaborations for the MTC were mostly internal, including the following stakeholders at the City:

- Mayor's Office;
- Councillors Offices;
- Clerk's Office;
- various Solid Waste Management Services sections and units: Senior Management, Waste Management Planning, Customer Service & Waste Diversion Implementation, Business Systems & Revenue, Contracted Services;
- Strategic Communications;
- Design Services;
- Legal Services; and
- Toronto Office of Partnerships.

The Judging Committee consisted of a representative from the City's Neighborhood Revitalization and Tower Renewal unit, while all other representatives were from external organizations, including:

- Greater Toronto Apartment Association;
- Recycling Council of Ontario;
- Toronto Environmental Alliance; and
- University of Toronto.

The Judging Committee included representatives from non-profit, advocacy, academic and municipal sectors that have a strong understanding of waste diversion and/or familiarity with the multi-residential sector. The Committee members reviewed all completed applications, from which all identifying information had been removed to ensure a fair and unbiased process. Each Committee member used scoring sheets to select their top buildings and later convened as a group to discuss and select the final winners.

The City attempted to secure some external sponsorships, but not all were successful due to potential for mixed messaging/interests.

The City did however accept an in-kind donation that was given to winning buildings. Each of the six winning buildings received two memberships to Toronto's Sharing Depots, where one can borrow games, toys, party supplies, sports and camping equipment, from the Institute for a Resource-Based Economy. This appropriate gift and partnership emphasized the City's commitment to waste reduction. The City also received support from Loblaw Corporation Inc., consisting of $3,500 cash and $2,500 in gift cards, to help cover the cost of the barbecue.

Uniqueness of MTC

The MTC was a new and unique program and therefore cannot be compared to a similar program. The City was able to use the MTC as a way to bring attention to the need to improve diversion in multi-residential buildings across Toronto, while promoting its comprehensive suite of programs and services. It was effective in that it engaged residents and staff, who are obviously more familiar with their building than City staff and more suited to make improvements from within. With supportive and useful training and resources from the City, each building tailored its programs to make them most appropriate and effective based on each building's unique characteristics. Buildings that participated in the MTC will be able to continue to build on a strong foundation of best practices for waste diversion.
RESULTS

Target Audience Feedback

Participants in the MTC provided positive feedback about their experience. These comments were provided through the written submissions:

"We feel that participating in this challenge has begun a cultural shift within the building, where residents know they are being held accountable and understand that every individual diverting waste makes a true difference in the big picture for our environment."

"Probably the biggest benefit of our participation in the challenge is that it prompted us to engage in more dialogue at all levels – management, staff and residents. The interchange and responses were almost entirely constructive and we have identified areas that have lots of room for improvement…"

"It appears the most effective ways to increase recycling is for peers to model recycling as the social norm".

"Our building complex will continue to strive to educate the residents to divert waste from the landfill and to source separate all materials into the appropriate streams. The Challenge has given us the impetus and motivation to think outside the box and come up with creative ways to achieve our diversion goals. We will also endeavour to work more closely with the City and Solid Waste Management Staff to host at least one information session per year."

Here are some responses when asked "What did you like about the challenge?".

"The combined involvement of staff, residents and city staff."

"Increased engagement of both staff and residents. Not only are our buildings cleaner, we have cut costs and developed better relations with our residents."

"Forced us to look at content vs quantity. Raised awareness. Forced out of the box thinking to drive waste diversion e.g. cost avoidance and revenue generation."

Many property management companies had multiple buildings participate in the MTC so change was implemented widely. As well, many of these property management companies implemented what they learned into buildings that weren't participating in the MTC.

Measurement of Results

The success of the MTC was measured based on the number of:

- building participants (and number of units within those buildings);
- wards represented (geographic participation across the city);
- new 3Rs Ambassador Volunteers and their engagement;
- requests for Toxic Taxi (household hazardous waste pickup);
- orders for in-unit organics containers and recycling bags;
- attendees at MTC training and engagement events (including superintendent waste reduction workshop, film screening, building tours, 3Rs Ambassador Volunteer training, awards ceremony, barbecue for winning building complex etc.); and
- cost savings from reduced garbage output at participating buildings.

Success was also measured based on participant feedback and media coverage.
Outcomes

The MTC achieved the following outcomes:

- 143 buildings registered (a 43% increase over the City's objective);
- Registered buildings included 71 apartments, 62 condominiums, 5 co-operatives, 3 Toronto Community Housing buildings and 2 non-profit housing buildings;
- Registered buildings located in 35 out of 44 wards across the city (a 59% increase over the City's objective);
- 89 buildings completed an award submission, representing over 22,000 multi-residential units;
- 26 new 3Rs Ambassador Volunteers from 11 MTC buildings were trained (including a few who joined in the few months following the conclusion of the MTC);
- 55 Toxic Taxi requests from participating buildings during MTC (a 45% increase in requests compared to the same time period the previous year);
- 29 participating buildings requested Toxic Taxi service during MTC (a 45% increase in buildings compared to the same time period the previous year);
- 4,866 in-unit organics containers and recycling bags ordered for residents at participating buildings;
- Over 800 people participated in MTC training and engagement events (a 60% increase over the City's objective); and
- 11 buildings saw significant cost savings, averaging 20%, over the six month period.

Based on a post-MTC survey (12 responses representing 22 buildings):

- 83% of buildings reported an increased effort by building staff and residents to improve waste diversion;
- 92% of buildings would participate in another challenge.

The City is continuing to see positive outcomes and high engagement as a result of the MTC, including new 3Rs Ambassadors, attendance at events hosted by Solid Waste Management Services and Toxic Taxi service requests.

The MTC received significant media coverage, including articles by major news outlets like the Canadian Broadcasting Corporation (CBC), Toronto Star and Toronto Sun, as well as Waste 360 and WasteEDGE, the official publication of the Ontario Waste Management Association.
EVALUATION

Lessons to Improve Future Education Programs

As a result of the MTC, Solid Waste Management Services learned about creative and innovative actions that multi-residential buildings currently take to reduce and divert waste that go beyond traditional best practices. These new best practices include:

1. Having a strong working relationship between residents, 3Rs Ambassador Volunteers, committees, building staff, property management and board members
   Examples:
   - Include waste diversion as a topic during committee, board and staff meetings
   - Meet regularly to discuss waste management issues

2. Gearing education and support to specific audiences and issues
   Examples (audiences):
   - Collect bags of organics/recycling from the units of seniors or people with special needs
   - Put up posters in the common languages spoken in the building
   - Gear lobby displays to different learning styles (kinesthetic, visual, auditory, reading/writing)
   - Add an additional organics bin outside for dog owners to use
   Examples (issues):
   - Create a list of renovating units to ensure that they do not put renovation waste in the building's garbage bins
   - Put up weekly notices based on common errors found in the bins
   - Convert the garbage chute into an organics chute to increase organics diversion

3. Providing incentives to residents to reduce and divert waste
   Examples:
   - Use funds raised from diverting waste to fund social events (for ex., collect LCBO bottles, refurbish and sell electronic items)
   - Provide gift certificates to residents caught in the act of using the organics bin
   - Post monthly diversion stats to create competition between buildings

4. Increasing opportunities for residents to reduce and reuse waste
   Provide a collection bin where residents can donate textiles and gently used household goods for pick up by a non-profit organization
   Examples:
   - Provide a sharing shelf or table where residents can bring gently used items to share with other residents; consider rotating items with another building
   - Hold a repair event
   - Provide a space for a lending library, where residents can borrow items, such as, vacuum, blender, tools and party supplies

5. Using data to implement change
   Examples:
   - Inscribe the unit numbers on delivery boxes and parcels to ensure that they can be tracked back to the unit owner if they are found in the garbage chute, or improperly disposed
   - Invest in a system that monitors the compactor using integrated wireless communications to ensure waste bins are only switched when full
In addition to the five new best practices listed above, two other variables had a positive impact on waste diversion and reduction in buildings. Buildings that received top down support from property management in the form of support, funds, time and training were most successful. Also, buildings that had a strong community (strong board, a 3Rs Ambassador Volunteer or a "green team") were most successful.

This valuable information will be useful when developing future educational programs and resources. When planning a challenge in the future, the City will consider gearing training and education to property management companies based on size as their challenges and capacities to implement changes may differ. Another consideration will be judging condominiums and apartments separately as buildings with owners and buildings with renters may also differ in their needs, resources and incentives.

Finally, more consideration will be given to shortening the submission documents as some participants commented that they were time consuming to complete. Shortening the documents and/or offering other ways for participants to share information may increase the number of submissions.

**Replication of MTC in Other Communities**

The MTC itself could be replicated in other communities or elements of it and best practices gleaned from it could be implemented on their own. Having a champion like a mayor can certainly help raise a program's profile and encourage higher participation. While each municipality and building is unique, many best practices to increase multi-residential waste diversion are widely applicable. In fact, in addition to creating case studies of exemplar buildings, the City of Toronto also created summaries of several best practices by theme (building set up, education & outreach, promotional material and reduction and reuse initiatives), so others could learn from those. See examples below.
The MTC is particularly applicable to diverse cities with a high proportion of residents living in multi-residential buildings, such as New York City. In fact, the City of Toronto's 3Rs Ambassador Volunteer Program and the Mayor's Towering Challenge were included as Urban Design Case Studies in the American Institute of Architects New York's Zero Waste Design Guidelines.

Photos from the MTC Awards & Recognition Ceremony