



ZERO WASTE CHALLENGE

Background and Introduction

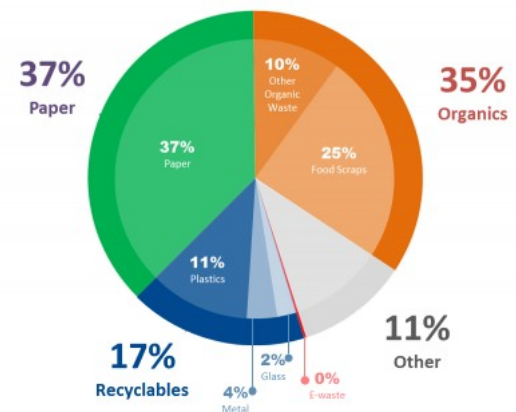
Every day, New Yorkers generate 18,500 tons of waste. New York City's commercial establishments, offices, restaurants, hotels, shops, theaters, arenas, and manufacturers, create an estimated three million tons of waste per year, less than one-third of which is currently recycled or reused. According to the Department of Sanitation's [2012 Commercial Waste Characterization Study](#), food scraps and other organics constitute 35% of the total commercial waste stream, paper constitutes 37%, and other recyclables make up another 17%. Combined, about 90% of waste generated by commercial businesses has the potential to be diverted from landfill.

More than 30% of that is food wasteⁱ almost 40% is paper, and another 17% is metal, glass, plastic and other recyclables.ⁱⁱ Diverting this compostable or recyclable material from landfill or incineration represents a huge opportunity to preserve the environment, and is one of the hallmarks of a Zero Waste program. Another consideration is the global warming potential of our waste stream. Even though greenhouse gas emissions from waste are minor when compared to other sources—like buildings, energy and transportation—the effect of the methane gas produced by the disposal of organic material is unique in terms of potency. Methane gas has more than 25 times the global warming potential of carbon dioxide, and therefore presents a major threat to the environment.ⁱⁱⁱ

OneNYC

In April, 2015, Mayor de Blasio announced *One New York: The Plan for a Strong and Just City* ("OneNYC"), a groundbreaking effort to address New York City's long-term challenges, including sustainable solid waste management. In this plan, the City committed to the ultimate goal of sending zero waste to landfills by 2030. [OneNYC](#) also proposed an initiative to reduce commercial waste sent to landfill by 90% by 2030. Diverting all organic and recyclable material for beneficial use is a major opportunity area for reaching the City's zero waste goals.

Share of Disposed Commercial Waste By Material Type, 2012



NYC Mayor's Zero Waste Challenge

The Mayor's Zero Waste Challenge (ZWC) was developed to help reach several of the City's zero waste goals laid out in OneNYC. The ZWC helped all participating businesses separate edible, reusable, recyclable and compostable material from their trash to ensure that these valuable materials were diverted from landfill and incineration. Many participating businesses were already source-separating, while others used the Challenge as an opportunity to start their zero waste plans and programs. The Challenge assisted all businesses— regardless of their current sustainable waste management practices – reach, and in most cases, exceed the diversion goals of the Challenge.

Approach

Businesses from a variety of sectors participated in the Challenge, run out of the Mayor's Office of Sustainability (MOS), including arenas, commercial tenants and building owners, food wholesalers, grocers and caterers, schools, hotels, restaurants, and TV productions. Haulers were asked to perform a baseline audit and a final audit for customers who participated in the Challenge. In total, the ZWC included 39 participating locations, from 31 different businesses across all 5 boroughs.

Results

Category of Business	Arenas	Buildings	Food Wholesalers/Grocery	Hotels	Office Tenants	Restaurants / Caterers	TV	Full Challenge	
Number of Businesses in Category	2	10	6	6	7	7	1	39	
Total Tonnage	Trash (landfill)	19,064.52	3,463.98	575.26	1,281.06	499.28	3,519.45	4.91	28,408.45
	MGP	3,506.09	428.77	23.09	84.40	124.90	58.50	0.82	4,226.58
	Paper	1,404.42	336.18	33.87	200.08	178.18	1,916.43	1.34	4,070.49
	Cardboard	1,513.15	219.95	394.96	140.67	101.72	1,165.36	0.37	3,536.19
	Food Waste	17,834.91	459.30	660.43	452.29	328.60	4,752.12	30.31	24,517.97
	Food Donation	61.59	3.23	220.72	4.92	3.99	26.68	0.54	321.67
	Non Food Donation	0.79	14.93	118.88	12.94	90.20	0.02	0.00	237.77
	Total Waste	43,385.47	4,927.88	2,027.21	2,176.37	1,326.88	11,438.57	38.29	65,320.67
	Diversion Rate	56.1%	29.7%	71.6%	41.1%	62.4%	69.2%	87.2%	56.5%

Overall

- **36,910** tons of material were diverted from landfill and incineration by participants (and their haulers)
- **24,517** tons of organic waste were diverted from landfill and incineration and instead composted, anaerobically digested, or otherwise beneficially used by participants (and their haulers)
- **11,833 tons** of recyclables were diverted from landfill and incineration and recycled by participants (and their haulers)
- Average diversion rate of all participants was **56.5%**
- **74%** of participants reached **50%** diversion of total waste from landfill/incineration
- The first and last month of the challenge presented higher diversion rates. During the Challenge, most participant categories observed a spike in diversion rates in the last month. For example, in the Food Wholesaler/ Grocery category, the diversion rate for month 4 was 20% higher than it was in months 1-3. Participants in the Office Tenant category increased their diversion

rate by 10% in the last month of the challenge. Only in the Restaurant/ Caterer category did the diversion rate drop in month 4. Coincidentally, the amount of waste sent to trash/ landfill by participants in the Restaurant/ Caterer category increased by 33% from previous months.

Food Donation

- Participants donated **321** tons of edible food to food donation groups and local charities (they were required as part of the Challenge to donate all edible leftover food to a food donation collection group to feed hungry New Yorkers)
- Participants worked with City Harvest, Rock and Wrap it Up!, Rescuing Leftover Cuisine, and many other food donation groups, local soup kitchens, and shelters to feed hungry New Yorkers with their delicious leftover food
- Some participants started donating food for the first time as a result of the Mayor's ZWC

Non-Food Donation

- Participants were asked to track non-food donations as well such as furniture, electronics, textiles, pallets, etc. Participants reported donating **238 tons** of goods to other organizations and non-profits.

Challenges, Opportunities and Lessons Learned

- **Challenge Length.** Getting a zero waste program started can be a challenge but is also an opportunity to improve the way waste is handled. One lesson learned is that Challenges of this type should run for 6 months or longer to allow adequate time for businesses to get their zero waste programs up and running and to see maximum results during the challenge.
- **Composting.** Participants that generate food waste found that haulers did not always have the capacity to handle high volumes of food waste and found composting to be the most difficult aspect of achieving zero-waste.
- **Seasonal fluctuations.** Seasonal fluctuations impacted the total amount of waste generated and diverted. During the off-season period that some business experience, they can take the time to devise longer-term strategies to reduce and divert waste during peak seasons. For example, continued training could be provided to staff and investments could be made in additional compactors or bailers to reduce the size of materials and cut down waste. The ZWC took place partially during the off season for participants in the Arenas category; during the early months fewer events were being held which resulted in less overall waste.

- **Networking.** The Challenge allowed for participants and haulers from diverse backgrounds to forge new relationships and share best practices.
- **Strategic planning.** Waste management is one subset of an overall sustainability or other strategic plan. Some participants that had not included waste in their existing strategic plans, used the Challenge to develop and integrate zero waste strategies into their larger sustainability and CSR plans.
- **Hauler Relations.** The Challenge provided participants with further information and insight on how the haulers work and on the hauling options they offer. For the next challenge, it could be helpful to set up conference calls with the participants, their haulers and the city to troubleshoot and mitigate any challenges in working together to improve waste collection.
- **Starting the conversation and keeping it going.** Countless participants remarked on how the Challenge has increased management and employee awareness around waste and sustainability in their respective organizations. Many have made waste more visible by elevating its importance in their business operations.
- **Upper Management Support.** The Challenge confirmed that it's critical to gain leadership and management buy-in in order to make an operational, and often financial, commitment to zero waste goals, and in turn, make these goals achievable. Without the support of leadership and management it is very difficult and often impossible to reach waste reduction and diversion goals.
- **Education and Training.** Initial and continued training and education were critical to participants' success in the Challenge. Participants realized that re-educating and re-training employees on correct separation of waste and other waste reduction techniques on a regular basis was critical to reaching their goals.
- **Monthly Participant Meetings.** Participants were invited to monthly participant meetings throughout the challenge for the chance to network with other participants and hear about best practices in waste management, including recycling, organics separation, donation of food and goods, and other topics. These meetings also featured "Participant Spotlights" during which select participants were asked to give 15- 20 minute presentations on their work to achieve their zero waste goals.
- **Weighing Waste.** Many participants began the Challenge doing bag counts and entering these counts into our monthly waste tracking sheets. Using the EPA estimated weights for different types of waste, the number of bags they counted, and the type and size of bag, we were able to calculate their estimated total waste per month for each category. This system resulted in some inconsistencies because the estimates from the bag counts were often very different from the actual weights obtained from the hauler's reports, for a certain business. Because haulers are often further separating customers' waste at a material recovery facility (MRF), participants' actual diversion rates were typically much higher than what was shown by the bag counts. For some participants we switched from bag counts to filling in hauler-provided waste weights at the end of the month. Moving forward with this and other waste tracking programs, we recommend businesses purchase inexpensive scales to get an adequate measure of their waste, combined with a waste report from their hauler post-MRF.
- **Signage.** Participants found it was helpful to standardize signage across the business and also increase signage to help staff sort and separate materials correctly.

- **Keeping participants engaged throughout the challenge.** The ZWC held sector-specific calls with participants in each sector to discuss challenges and lessons learned with their zero waste programs, and organized monthly participant meetings. The calls and monthly meetings provided opportunities for networking, feedback, and sharing lessons learned. Participants also had the chance to showcase their efforts and share best practices with others in the challenge.

Participants

- Cleaver Co., COOKFOX Architects with landlord SL Green, D'Arrigo Brothers, Dig Inn Seasonal Market (1 location), Durst (8 buildings), EPA Region 2 Office (GSA Building), Etsy, Great Performances Catering, Hilton Garden Inn Staten Island, Hyatt Place Flushing, Katzman Produce, Le Bernardin Restaurant, Le Pain Quotidien (1 location), Madame Secretary (Eye Productions Inc.), Marta Manhattan, Momofuku (1 location), NRDC, RXR's Starrett-Lehigh Building, sweetgreen (1 location), The New School, The Peninsula New York, The Pierre New York, The Waldorf Astoria, Top Banana, Viacom with landlord SL Green, and Whole Foods Market (2 locations.)

Haulers, Consultants and Food Donation organizations

- Haulers, food donation collectors, and consultants included Action Environmental Services, Avid Waste System, Inc., City Harvest, Boro Wide Recycling, Earth Angel, Filco Carting, Flag Container Service Inc., Five Star Carting Inc., Great Forest Sustainability Solutions, IESI, Mr. T Carting, Project Hospitality, Quality Waste Services Corp., Recycle Track Systems, Rescuing Leftover Cuisine, Rock and Wrap it Up!, Royal Waste Services, Sanitation Salvage Corp., TV & Film Support Services, Vokashi

ⁱ One New York: The Plan for a Strong and Just City, pp 186-187.

ⁱⁱ http://www1.nyc.gov/assets/dsny/docs/about_2012-commercial-waste-study_0815.pdf

ⁱⁱⁱ <http://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>