



# sanitation

Kathryn Garcia Commissioner

**Testimony of Samantha MacBride, Director  
Research and Operations, Bureau of Recycling & Sustainability  
New York City Department of Sanitation**

**Oversight Hearing on the Department of Sanitation's 2017 Waste  
Characterization Study before the  
New York City Council Committee on Sanitation and Solid Waste Management**

**Tuesday, April 24, 2018  
10:00 A.M.  
250 Broadway – 14<sup>th</sup> Floor**

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Good morning Councilman Reynoso and members of the Committee on Sanitation and Solid Waste, I am Samantha MacBride, Director of Research and Operations for the Bureau of Recycling and Sustainability at the Department of Sanitation. I am joined by Gregory Anderson, Chief of Staff for the Department, and Katherine Kitchener, Director of Policy and Programs for the Bureau of Recycling and Sustainability. We are pleased to be here this morning on behalf of the Department to present the results of our most recent citywide waste characterization study, officially known as the 2017 Residential, School and NYCHA Waste Characterization Study. This study was conducted pursuant to Local Law 40 of 2010. I'd like to call your attention to the screen to begin our presentation.

The Department conducted the study over three seasons during spring, summer and fall in 2017. Our method involved randomly selecting over 800 different refuse, recycling and organics truck routes to ensure that our results were statistically representative of residential waste throughout entire city, including each of the five boroughs. We also randomly selected school collection routes and New York City Housing Authority (NYCHA) container routes for sampling.

All of these routes were collected in a standard fashion, without foreknowledge of the crews. Using truck numbers, we then identified sample trucks with study posters at the garage so they would be easily identified when they went to discharge their loads at transfer stations and recycling vendors, as shown here.

At those sites, we took samples of 100 to 200 pounds from loads on the tipping floor. These samples were labelled and then brought to an enclosed facility at Fresh Kills in Staten Island for sorting and quantification.

Each sample was emptied on to a sort table, and then hand-sorted by trained workers into 70 main sort categories, as well as an additional 172 sub-categories. This was done meticulously by inspecting waste contents and separating them into labelled buckets around the sorting table, and at sub-sort tables elsewhere in the facility. Each bucket was weighed and the net weight of the contents was recorded as a data point with strict quality control.

Using this method, we gained a detailed understanding of the variety products and materials in NYC's residential, school and NYCHA waste streams. Our study builds on decades of research and analysis into the evolving composition of the Department-managed solid waste stream by providing statistics on the types of materials collected and diverted from the waste stream in New York City, changes in what New Yorkers buy and use every day, and highlights opportunities for the Department to develop and grow programs to meet our goal of sending zero waste to landfills by 2030.

The 2017 Waste Characterization Study was the first comprehensive look at waste stream since 2013, and follows a similar study done in 2005. We used an industry-standard methodology that entailed random sampling of over 800 actual DSNY collection trucks to ensure statistically representative results for residential curbside collections in all boroughs, and to look at changes over time. For the first time, we also characterized curbside organics in those areas that were receiving service at the time of the study, we looked at the composition of school waste, and of NYCHA refuse.

I will be detailing study results in the slides to follow, but to start, some of the important findings from the study show us that:

- New Yorkers are producing less waste at home than ever before— and 68 percent of what we do throw away belongs in a curbside recycling bin (34%) or organics bin (34%).
- Organics—including food scraps, food-soiled paper, and yard waste—are the largest and still growing category of waste, representing the biggest opportunity for New Yorkers to divert waste from landfills;
- DSNY currently offers special programs to target much of an additional 9% that is readily diverted through other means. We are proud of our programs to keep Textiles, Harmful household products, and e-waste out of disposed waste.

- With respect to e-waste, there is particularly encouraging news; New York State implemented an electronic waste disposal ban in 2015; since 2012, DSNY has launched and facilitated a wide array of programs to make electronics recycling convenient for residents. As a result, e-waste has declined by 60 percent citywide.

Now on to some more detailed findings.

As mentioned before, our waste stream is diminishing. Over the past decade, the overall weight of both refuse and recycling curbside collections has declined, even as the number of New Yorkers has grown. The drops are most marked for refuse. For recycling, we saw a decline between 2005 and 2013 but since then, both Paper recycling (which includes different types of paper and cardboard), and “MGP” recycling (which includes metals, glass containers, rigid plastics and beverage cartons) r have increased.

Before we proceed, a word about measurement. In our results, we present quantities in terms of pounds per household per year to show how the overall waste stream is changing. We also present capture rates, the ratio of how much New Yorkers actually recycle to how much total recyclable material is in the curbside waste stream. To illustrate the relative share of each material in the waste stream, we use percent composition. Each of these statistics should be considered independently from each other, but combined, they paint a picture of what is going on with recycling and refuse in New York City.

If we examine the materials that make up residential curbside recyclables over time, we see some marked changes. Let’s start with paper and cardboard. The bars show the total amount of each type of paper in the residential curbside waste stream. Cardboard collections have increased steadily over the three studies, while the quantity of newspaper has fallen dramatically. Mixed low-grade paper, including junk mail, smooth cardboard, and colored paper, has fallen as well, although not as sharply. These shifts reflect changes that we all experience – there is less use of printed material and more online ordering. Looking at these changes, we observe trends in production and consumption that ultimately determine what ends up as waste.

In addition, the capture rate for corrugated cardboard is the highest of all recyclables – 79% - meaning that out of all corrugated cardboard that residents discard, 79% makes it correctly into the recycling set out. Capture rates for newspaper and mixed low-grade paper were much lower.

Moving on to metals, we see that some metal categories, like large or bulk items, steel cans, and other metals have diminished over time, while aluminum cans and other items have slightly increased.

At the same time, we see that capture rates for aluminum products are lower than for other metals. The aluminum can – one of the most iconic recyclable products – has a capture rate of just 30%. This is likely due to frequent scavenging of cans bearing a 5-cent deposit. Aluminum foil and other containers have an even lower capture rate of 15%. This may be due to the tendency of aluminum foil to be food-soiled when discarded.

The situation around plastics is more complex due to the immense variety of these lightweight materials. Here I show categories of plastics we accept in our recycling program. In 2013 to make recycling more easy and convenient, the City expanded curbside recycling to accept all rigid plastics. This change took place shortly after the 2013 study had been completed. We see increases in the amount of material recycled across all types of plastics, but the increases are largest for newly added groups: bulky rigid plastics and appliances, single-use plastic plates, cups and cutlery, and rigid packaging like yogurt tubs and deli trays.

Turning to other recyclables, we see that glass containers are declining overall in waste. Today, the average New Yorker discards 15 fewer pounds per household per year of glass bottles and jugs than they did in 2005. Capture rates are holding at around 63%.

We collect beverage cartons and aseptic boxes with our commingled metal, glass and plastic recycling, for processing and marketing reasons. We see this form of packaging declining in discards as well, down from a little over 11 pounds per household per year to a little over seven today. About 8% of all beverage cartons are incorrectly included with Paper recycling; the capture rate in MGP recycling is a little over 34%.

Overall, we can look at average capture rates for both of our recycling streams, which are average out to around 50% overall. We've seen improvements overall in this rate, which compares favorably to multi-unit capture rates studied in other cities throughout the U.S.

Capture rate is one measure of recycling success, another is contamination rate. Here, we see that in residential MGP collection, the contamination rate is nearly 20%, and has fallen from almost 27% since 2013.

For Paper recycling, it is up slightly, to almost 9%. Note that in both collections, contamination includes “cross-recycling.” That means putting paper in the MGP and vice versa. Film plastics such as bags and wraps also make up a substantial portion of contamination.

Our study sampled curbside organics collections from districts that had service rolled out to them at that time (20 out of 59 districts.) Because this program is new and not yet citywide, our organics collections are small, but growing. We don’t show per household pounds because not all households are covered.

The good news is that these collections are relatively clean, showing about 7% contamination. We also note that at present, curbside organics contain more yard waste than food waste. As time goes by and the program coverage expands, we expect to see the food waste percentage increase.

Speaking of good news, I’d like to draw your attention to s electronic waste, or e-waste. Starting January 1, 2015, New York state law prohibited the disposal of e-waste in refuse collections. Well before this date, however, the Department had launched a number of programs, including apartment programs, drop off sites and events, and starting in 2016 in Staten Island, and in 2017 in Brooklyn, on-demand curbside pickup to make recycling electronics convenient. These programs were funded in part by electronics producers under state extended producer responsibility programs, and private companies that supplemented outlets with take-back and mail-back options. We see a substantial decline in e-waste between 2013 and 2017, from nearly 17 pounds a year to a little over 5 pounds a year, per New York City household.

I’d now like to close by a brief review of the other two waste streams we looked at. The first is school waste. We characterized refuse and recycling setouts of schools not yet participating in the schools organics program, so that we could get a baseline understanding of the composition of school waste.

What we found is that aggregate waste from schools, which is the sum total of refuse and recycling, contains roughly the same percentage of recyclables, but far more compostable organics than do residential collections.

We also found that while paper recycling capture rates were close to residential capture rates, MGP rates were far lower. In addition, both paper and MGP recycling collections from schools are more contaminated; in the case of MGP, this contamination rate is quite high and composed mainly of compostable organics that are improperly placed in the recycling bin for metals, glass and plastics.

Finally, some highlights from our characterization of NYCHA refuse. As of now, curbside recycling collections from NYCHA properties are extremely low. The vast majority of NYCHA discards are in the form of refuse. If we look at the composition of this refuse, it looks a lot like the composition of residential discards in total. What this tells us is that there is great room to grow curbside recycling programs at NYCHA, so as to capture and to divert paper, MGP and ultimately compostable organics.

In this presentation, I have only scratched the surface of detail on the many categories and subcategories -- which number in the hundreds -- which we measured in this study. We have published the data in easily accessible excel files that allow the public to look in depth at different products and materials in discards, make their own calculations, and draw their own conclusions. You can download the full report and associated documents at [nyc.gov/wastestudy](http://nyc.gov/wastestudy).

I will now separately turn briefly to the two pre-considered bills on the agenda today. The first bill increases the fines imposed for littering from a motor vehicle, and the second bill requires the Commissioner to issue a report to the Mayor and Council regarding how the Department can increase enforcement of this infraction. The Department supports efforts to discourage littering, including through increased enforcement and higher penalties, and we thank the Council for its support as we work to keep New York City healthy, safe and clean.

This concludes our presentation this morning. Thank you for providing us the opportunity to share with you the results of the Study at this hearing today, and we now welcome your questions.

# 2017 Waste Characterization Study

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Oversight Hearing of the Committee on Sanitation and Solid Waste  
NYC Council



April 24, 2018  
NYC Department of Sanitation



Spring –  
Summer- Fall

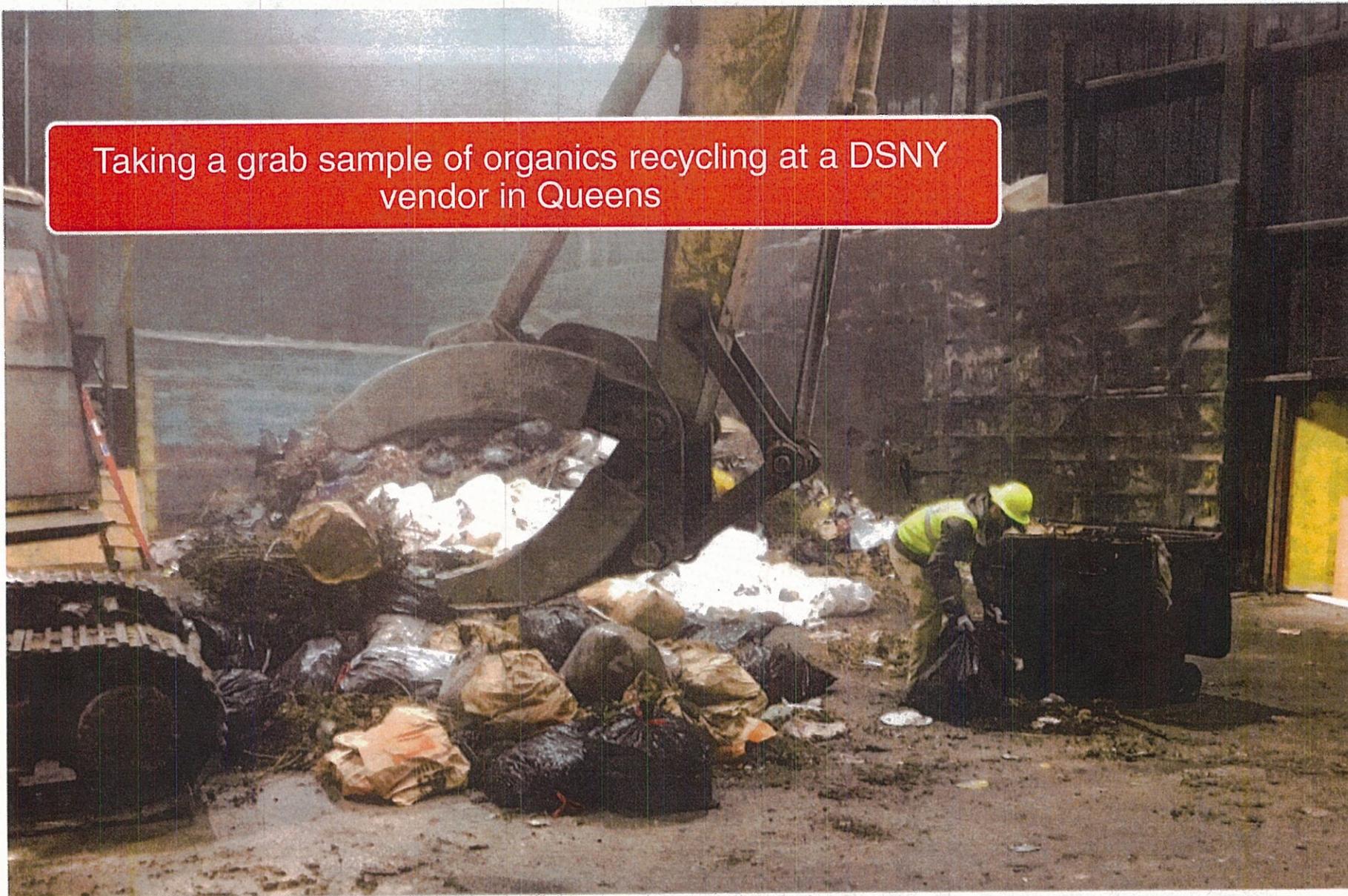
Over 800  
random  
samples

Residential  
(all five  
boroughs)  
Schools,  
NYCHA

DSNY supervisor watching a Paper sample truck tip at a paper processor in the Bronx



Taking a grab sample of organics recycling at a DSNY vendor in Queens



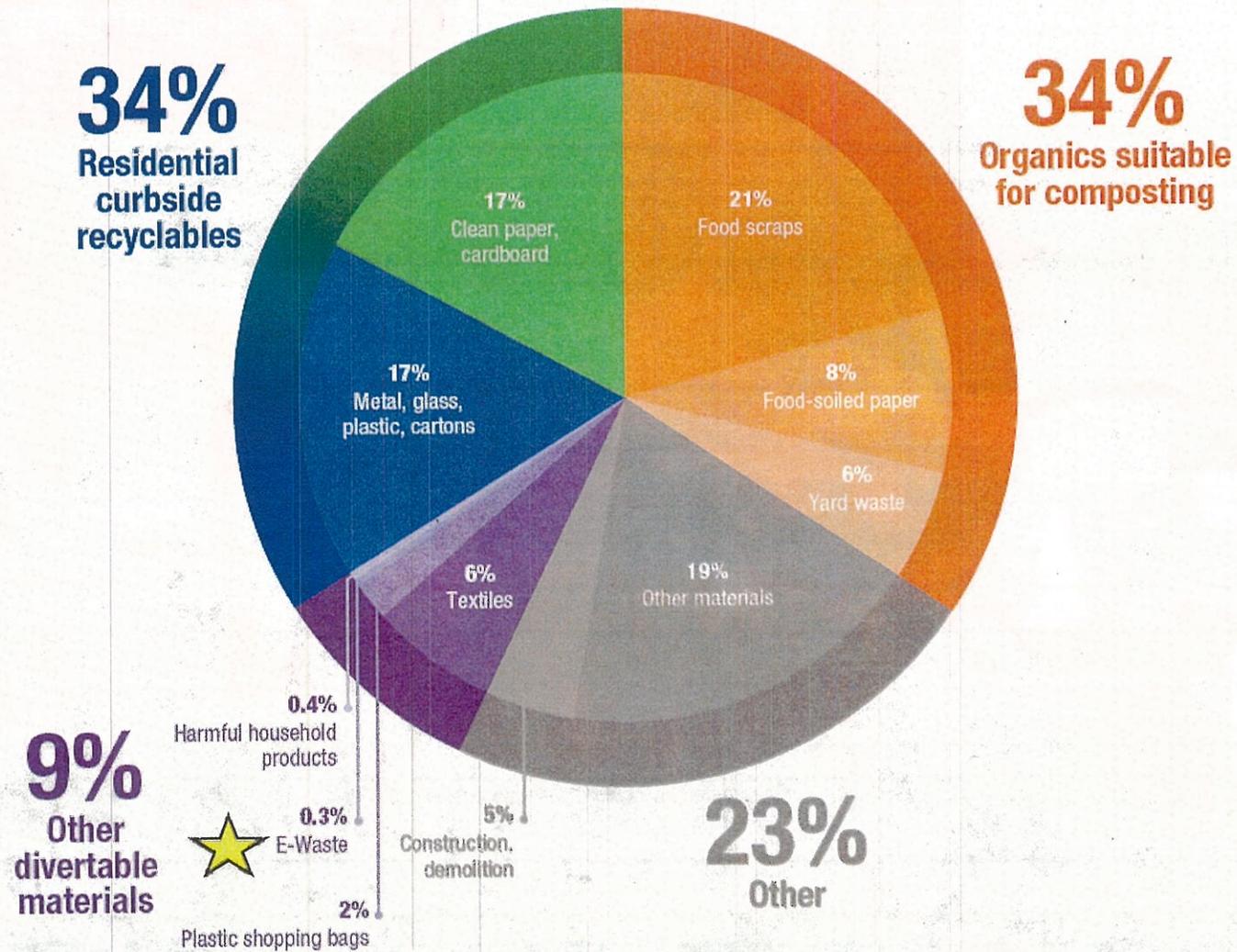


Sorting samples at a facility at Fresh Kills landfill in Staten Island

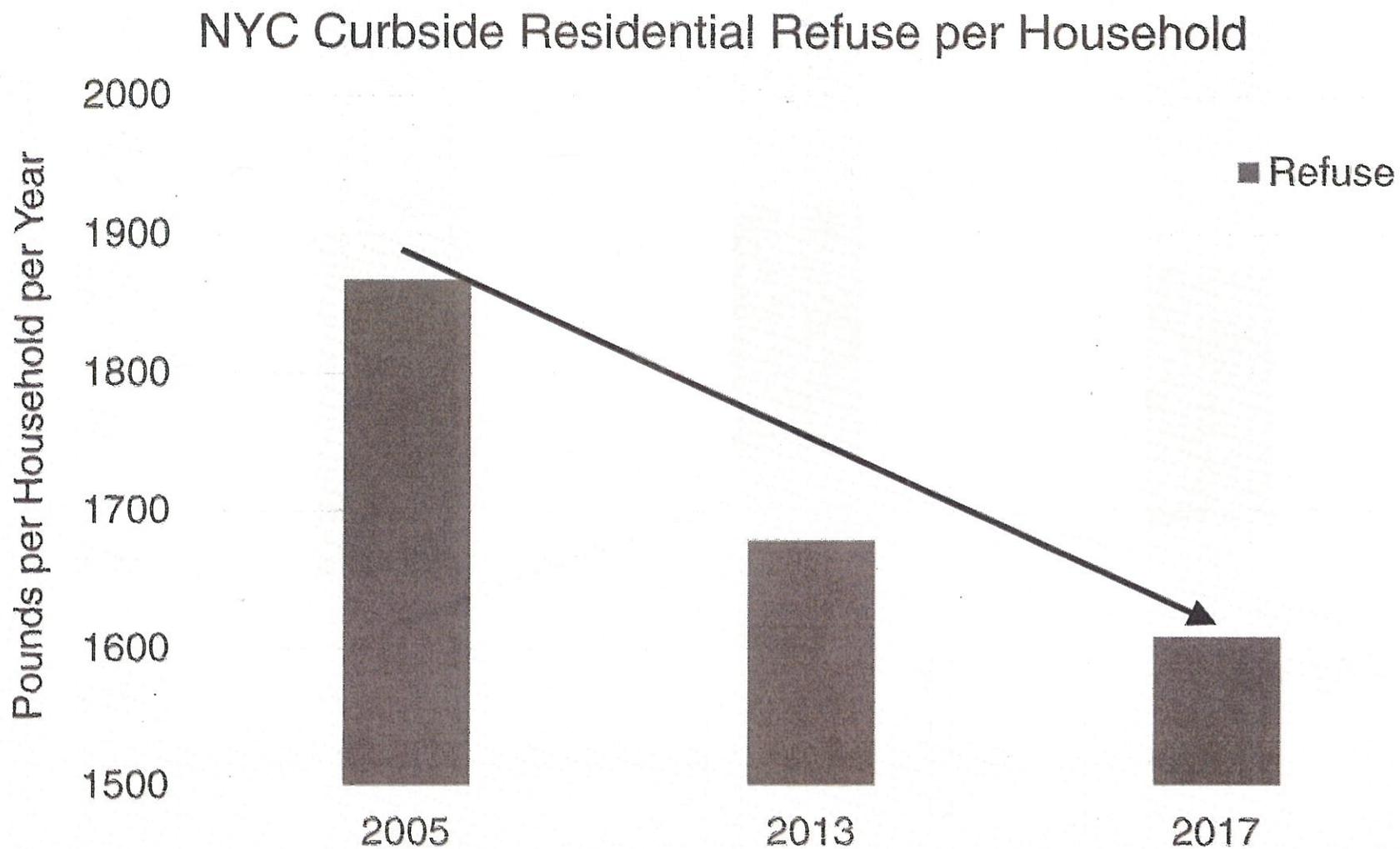
70 Main Sort categories

172 Subsort categories

# NYC Residential Waste Profile, 2017

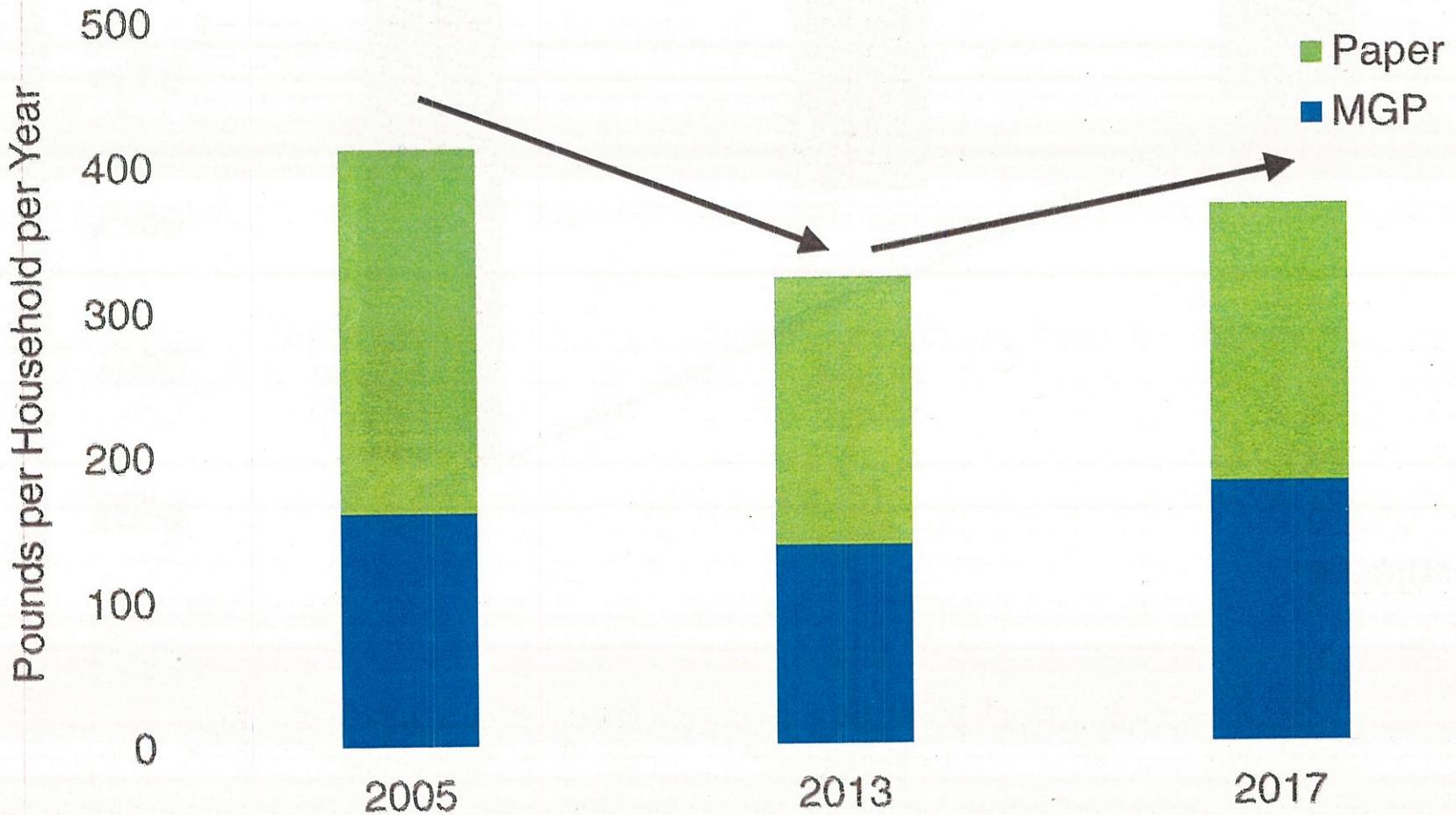


# Characterizing a changing waste stream

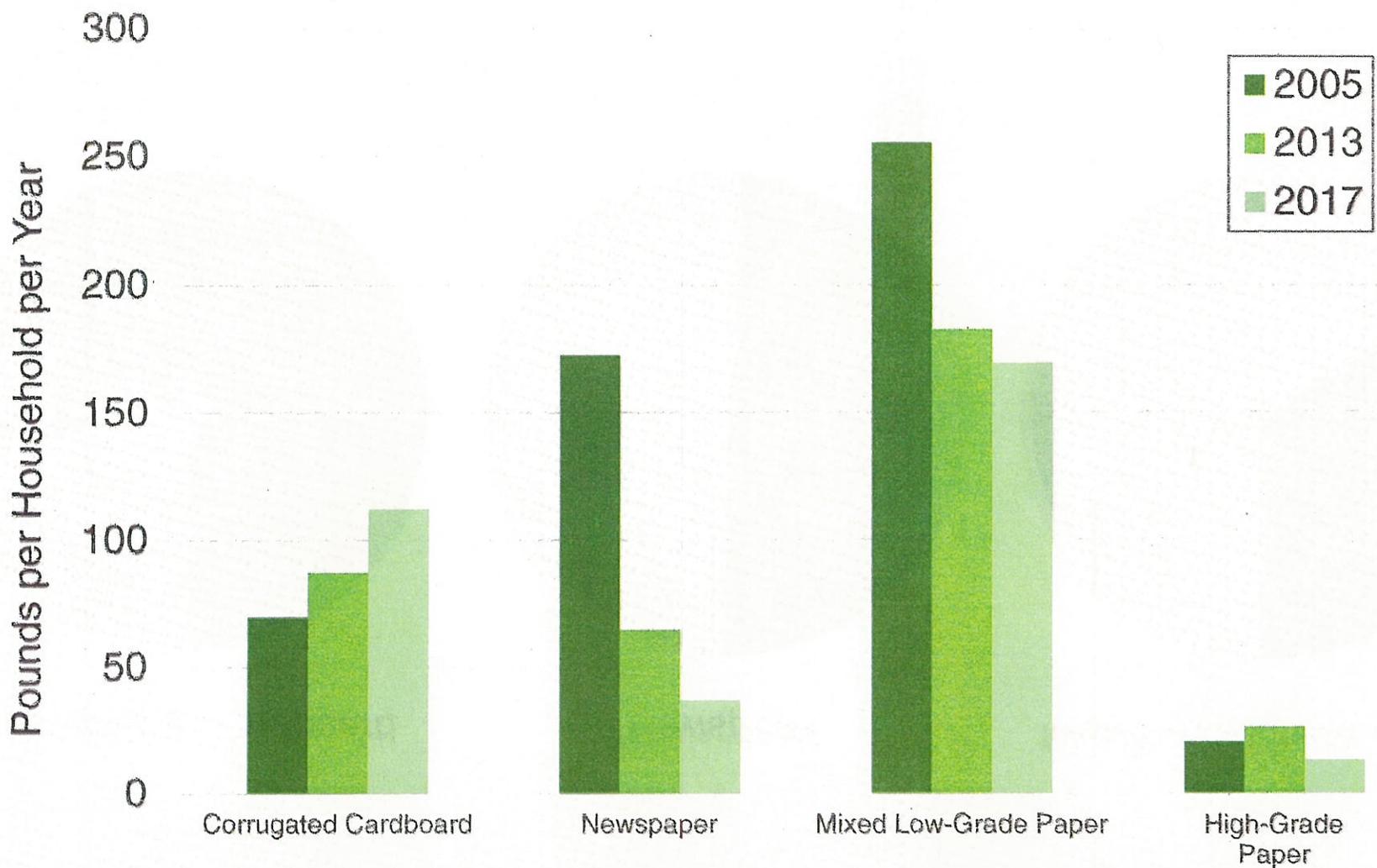


# Characterizing a changing waste stream

## NYC Curbside Residential Recycling per Household

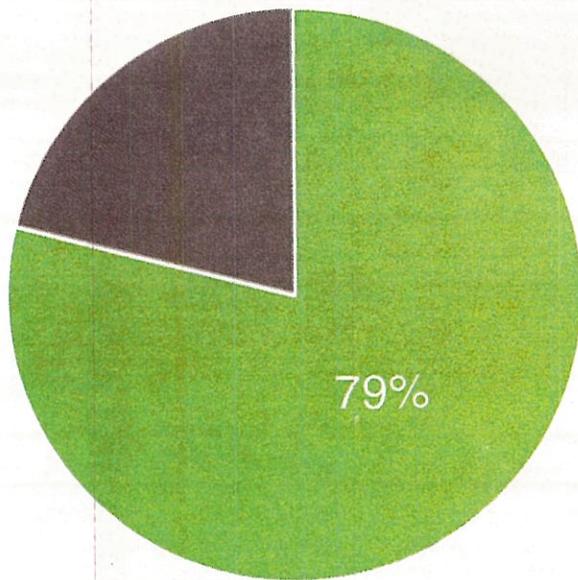


# Changes in Paper Recyclables in All Waste

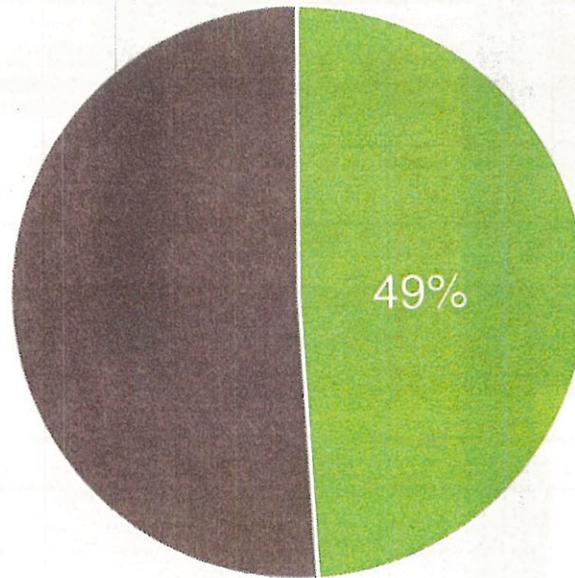


# Capture Rates for Paper Recyclables (2017)

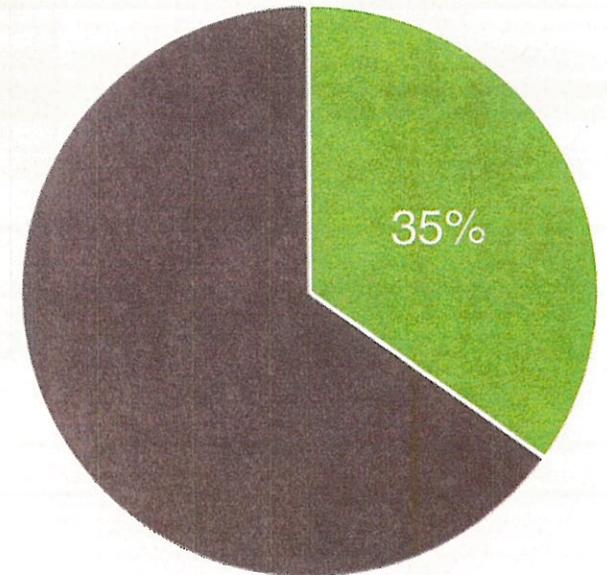
Corrugated Cardboard



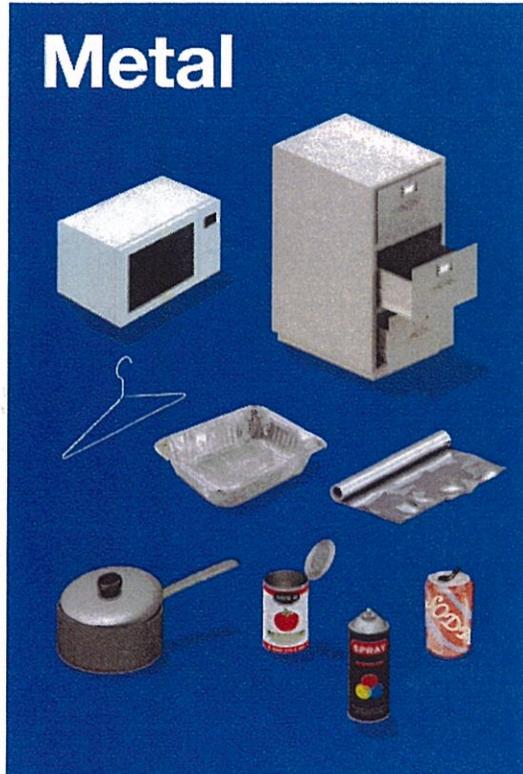
Newspaper



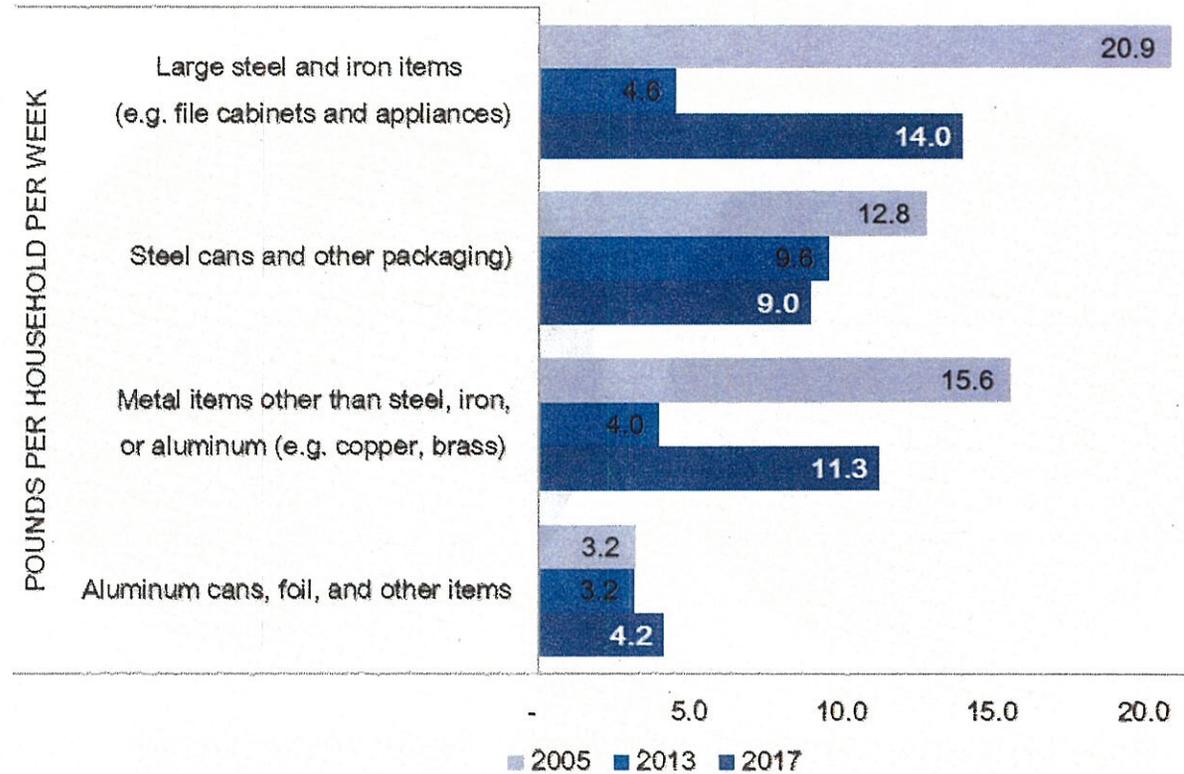
Mixed Low-Grade Paper



# Trends in Metals Recycling

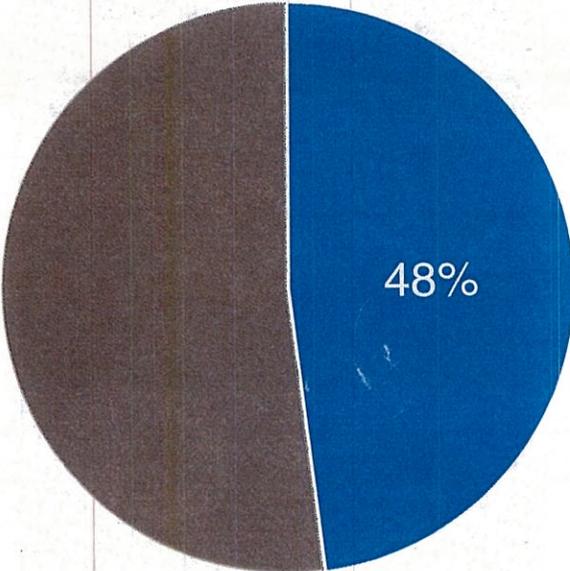


Pounds per household per week

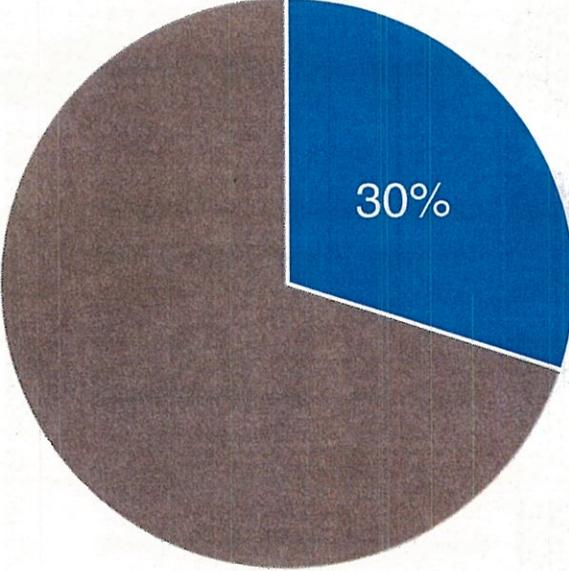


# Capture Rates for Metal Recyclables (2017)

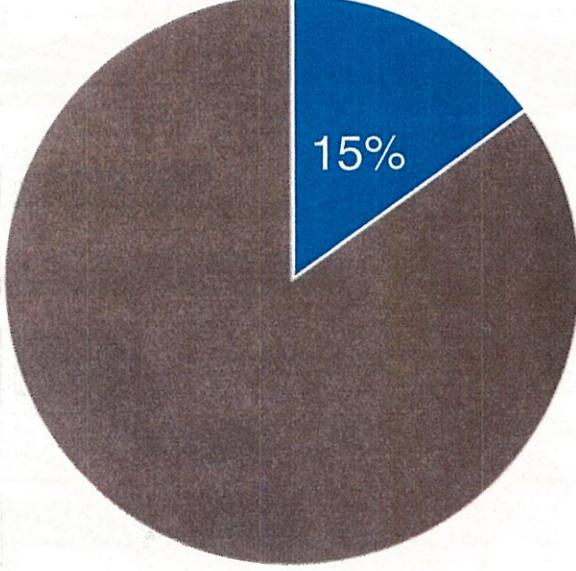
Steel Cans and Packaging



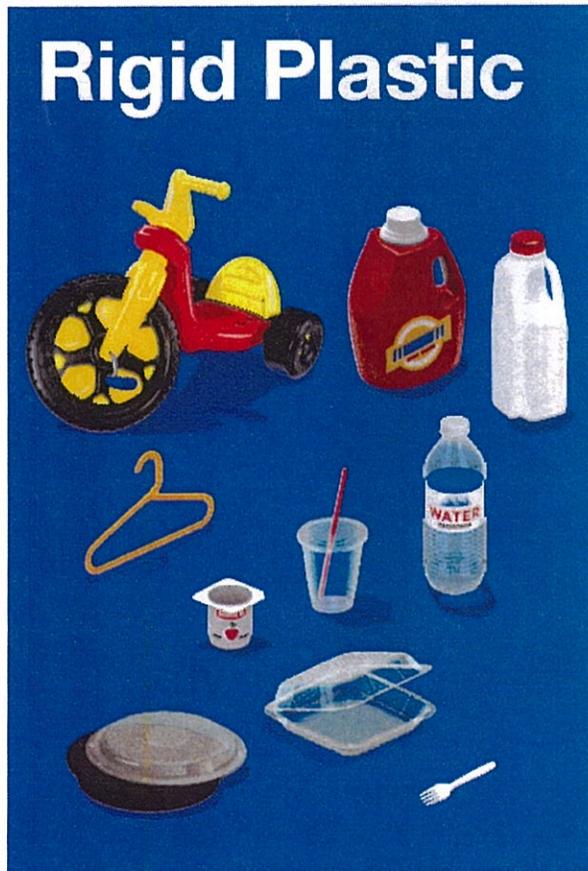
Aluminum Cans



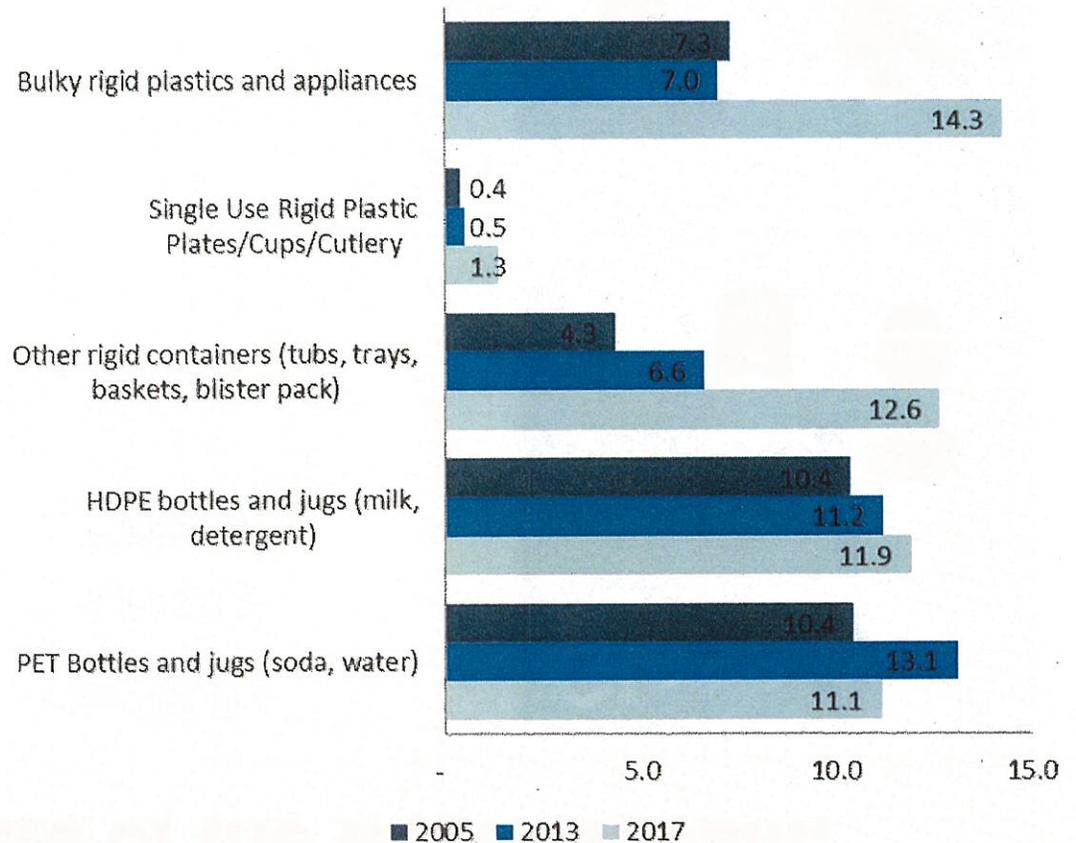
Aluminum Foil and Containers



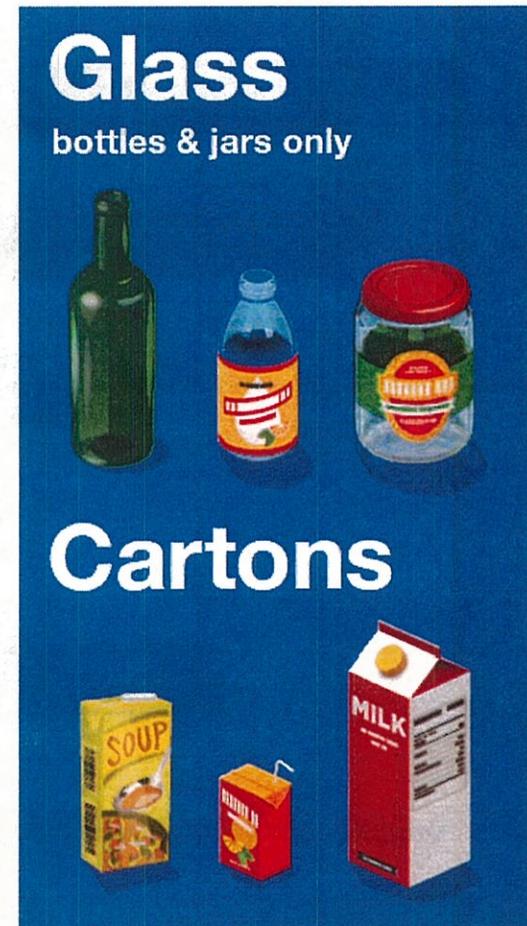
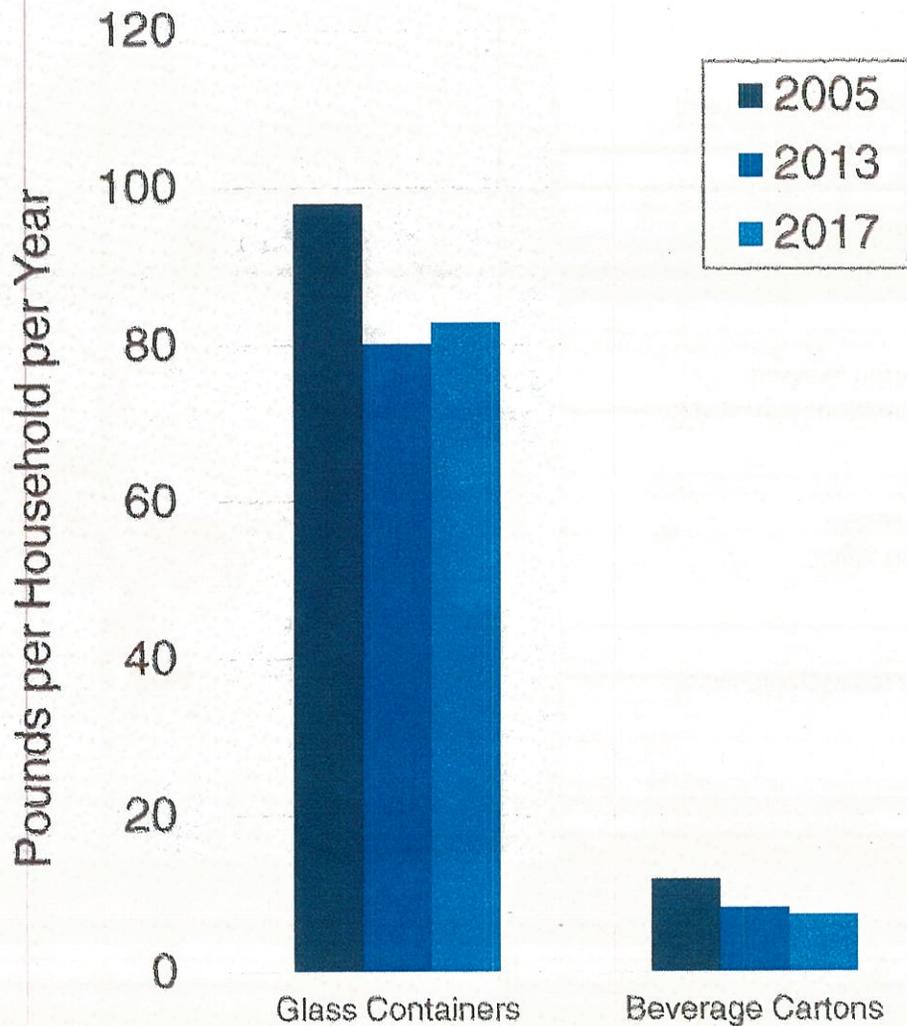
# Trends in Rigid Plastics Recycling



Pounds per household per week

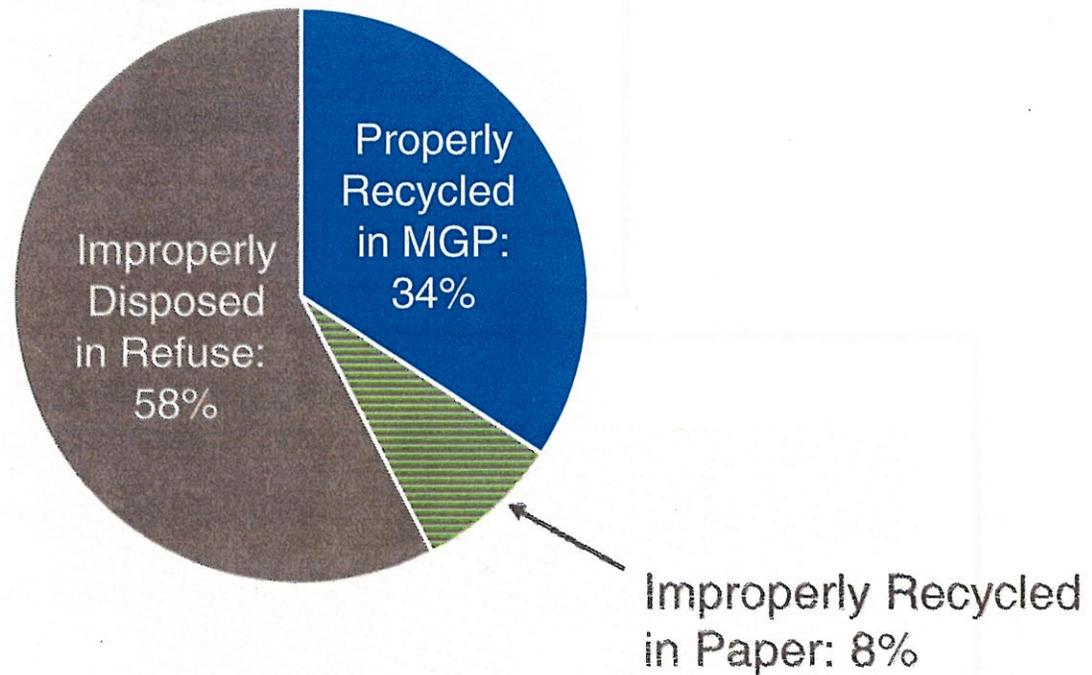


# Glass containers and beverage cartons make up a declining share of the waste stream.



# Beverage cartons are placed in the wrong bin 8% of the time.

Capture Rate for Beverage Containers



## Capture rates have increased overall since 2005

### Improvements in the Capture Rate for MGP Recycling

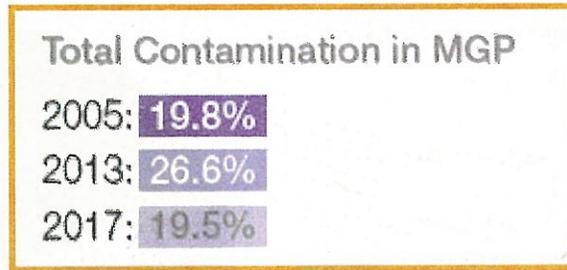
	<u>2005</u>	<u>2013</u>	<u>2017</u>
Rigid Plastic Bottles and Jugs	41.7%	50.6%	50.0%
Non-bottle Rigid Plastics	12.8%	16.4%	27.5%
Other MGP items: Metals, Glass containers, Cartons	45.3%	47.5%	51.4%

### Improvements in the Capture Rate for Paper Recycling

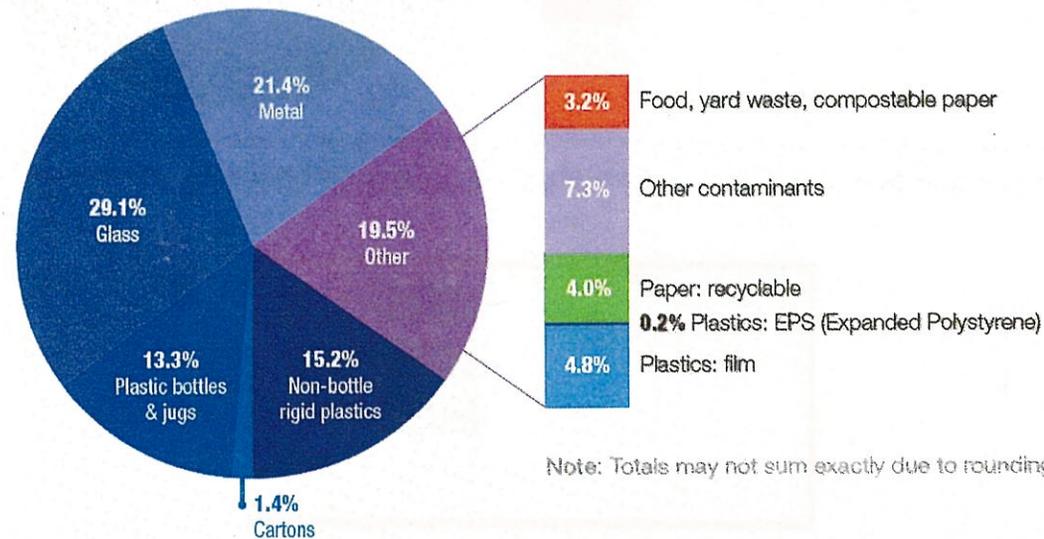
2005: 45.8%  
2013: 46.8%  
2017: 51.3%

*Comparative studies of urban capture rates are rare, but those that focus on multi-family recycling find capture rates at a maximum of 50% overall.*

# Contamination rates have decreased for MGP recycling...



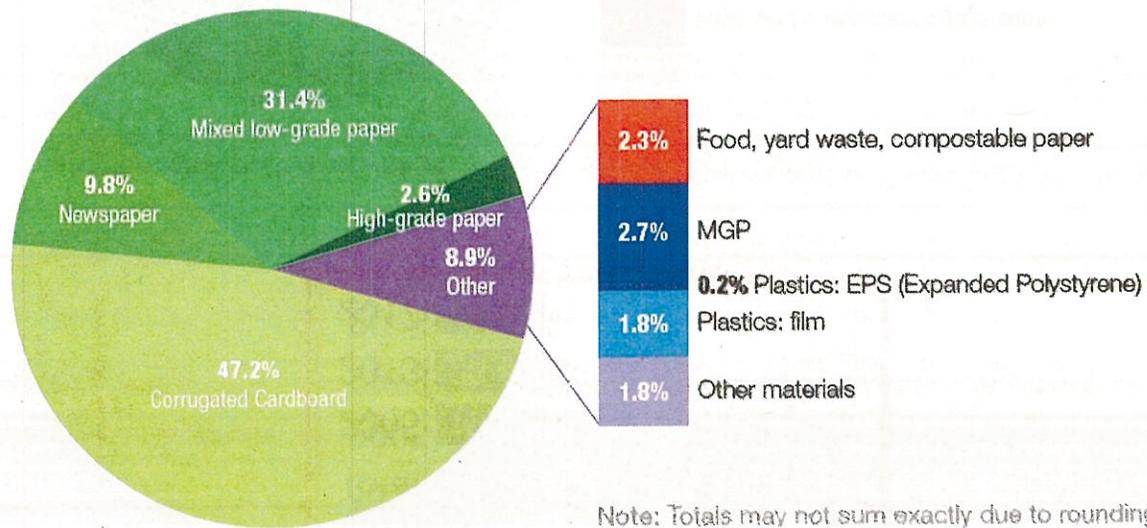
Contamination: Percentage of 2017 Residential Curbside MGP Recycling Collections



# But have increased slightly in Paper recycling.

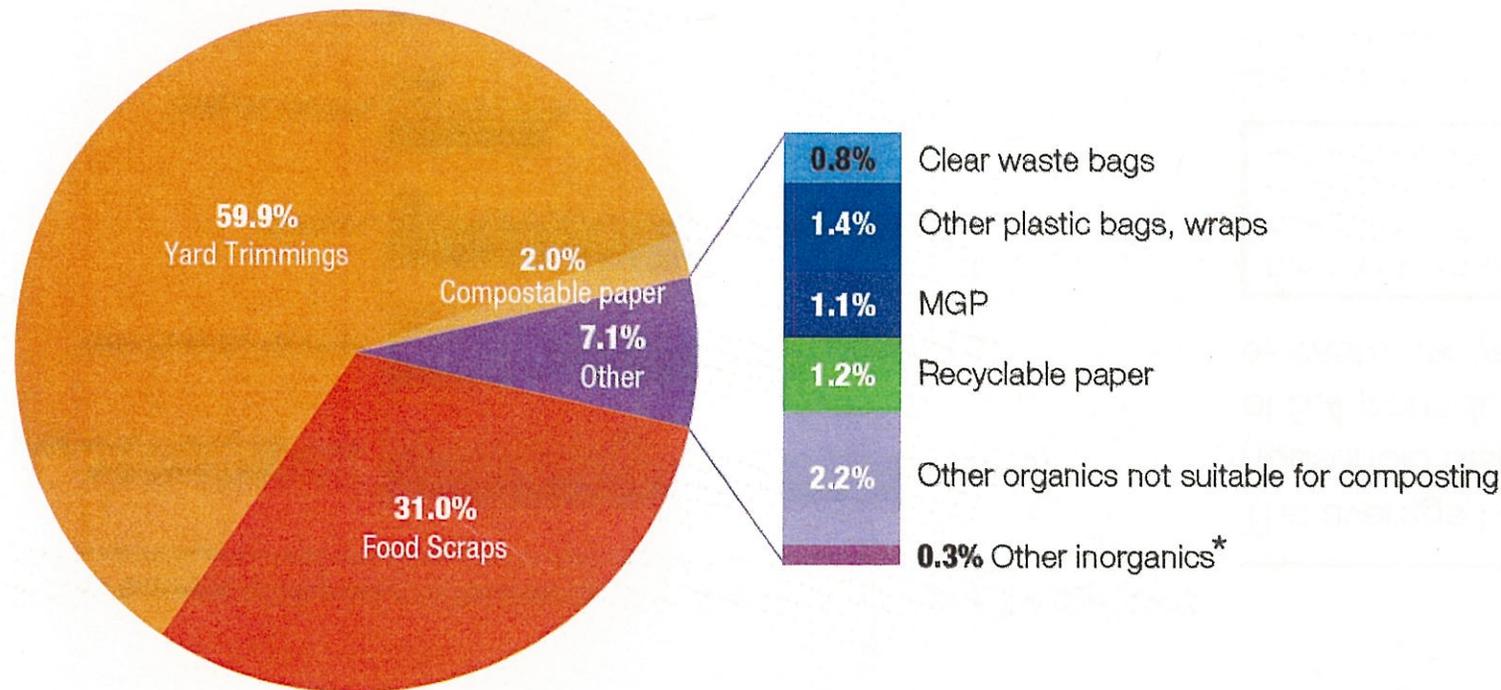
Total Contamination in Paper	
2005:	5.1%
2013:	7.3%
2017:	8.9%

Contamination: Percentage of 2017 Residential Curbside Paper Recycling Collections



# Curbside Organics consists primarily of Yard Trimmings, and has low contamination

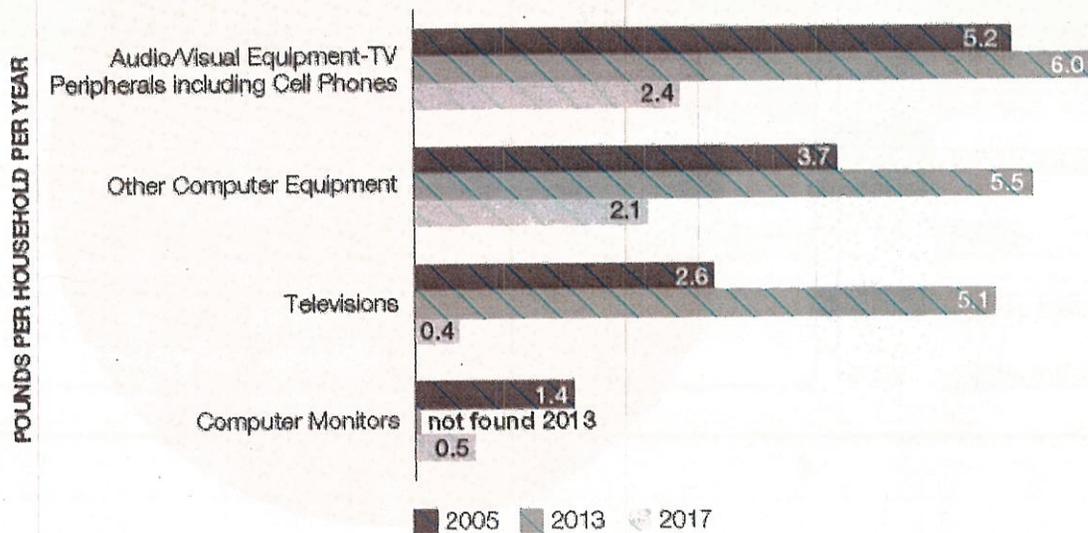
2017 Composition of Residential Curbside Organics



\* such as animal wastes, textiles, and hygiene products

# Electronic Waste has declined significantly since 2013

E-Waste Improperly Disposed in Residential Curbside Refuse: 2005 vs. 2013 vs. 2017



The average NYC household disposes of 5.4 pounds of e-waste per year.

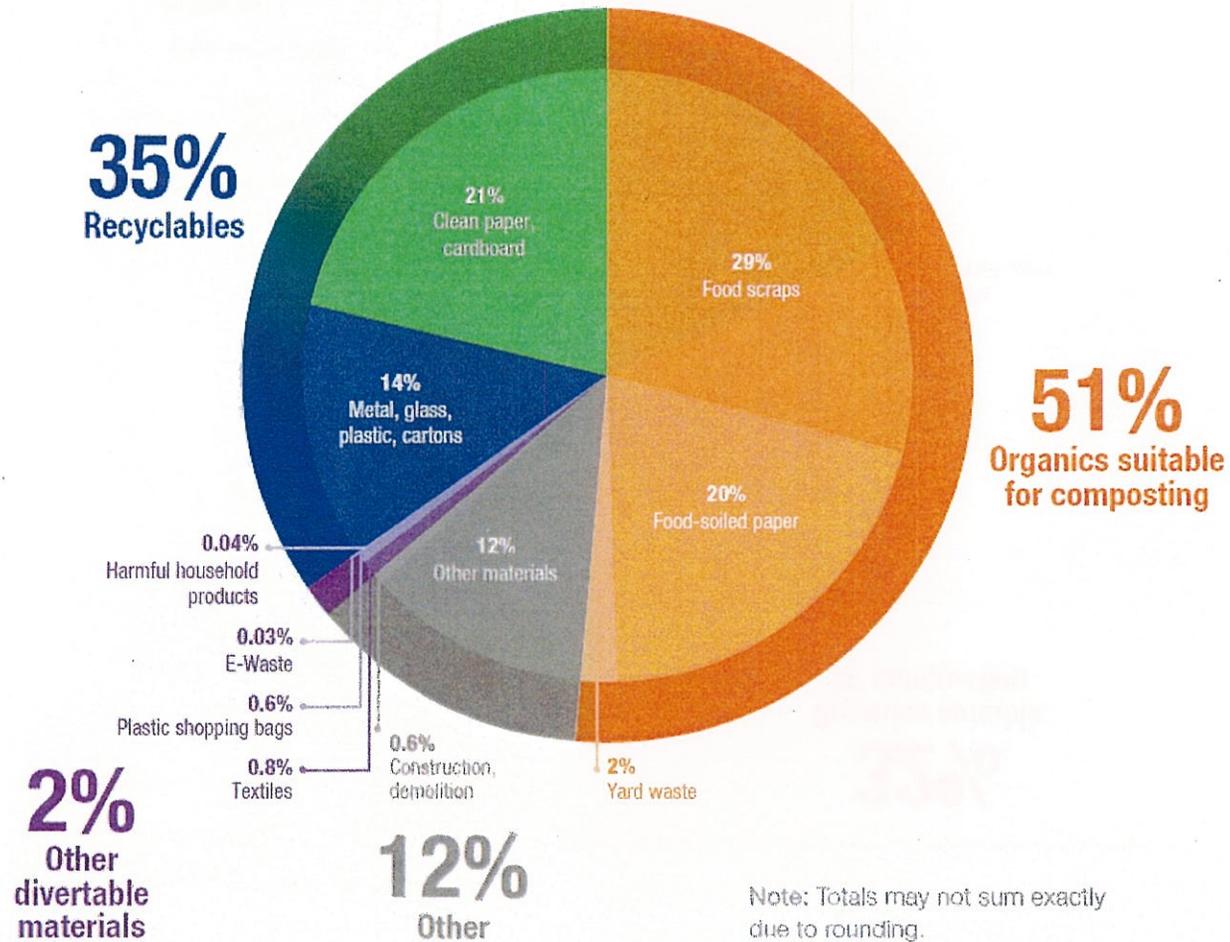
**Total E-Waste in Refuse**

2005: 13.0 lbs/hh/yr  
 2013: 16.6 lbs/hh/yr  
 2017: 5.4 lbs/hh/yr

Note: Totals may not sum exactly due to rounding.

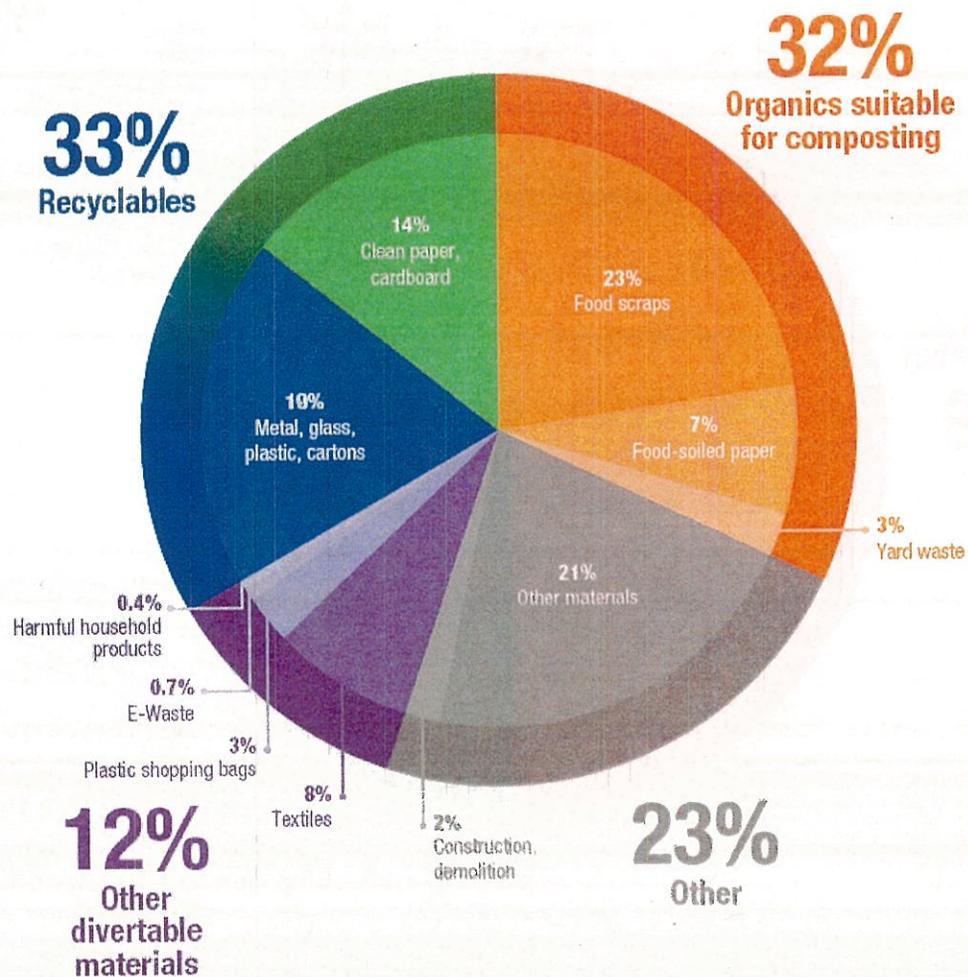
# Schools Waste Characterization

2017 Composition of Schools Aggregate Discards



# NYCHA Waste Characterization

2017 Composition of NYCHA Refuse



Visit [nyc.gov/wastestudy](http://nyc.gov/wastestudy) for more info!

The screenshot shows the NYC Sanitation website. At the top, there is a dark header with the NYC logo and the tagline "Keeping NYC healthy, safe and clean since 1881". To the right of the header, it says "311 Search all NYC.gov websites". Below the header, the word "sanitation" is prominently displayed next to a logo. A navigation menu includes "Home", "About", "Services", "Resources" (which is highlighted), "Our Work", "Contact", and "Search". There are also links for "繁體中文" and "Select Language".

The main content area has a dark green background with the title "Waste Characterization" in white. Below this, a paragraph reads: "We are always looking for ways to improve our agency. We are constantly evaluating our methods and proposing solutions for better operations. Read through our various waste characterization studies and view our findings."

The section "Waste Characterization, 2017" is highlighted with a dashed line. Below it, a paragraph states: "The Department conducted the 2017 NYC Residential, School, and NYCHA Waste Characterization Study over three seasons: spring, summer and fall. This study builds on decades of research and analysis into the evolving composition of our waste stream."

At the bottom, there are five links, each with a document icon and an external link icon:

- Waste Characterization, 2017
- Field Manual
- Main Sort: City and Boroughs
- SubSorts: City and Boroughs
- Compare 2017 to 2013 to 2005 Citywide



**TESTIMONY OF THE MANHATTAN**  
**SOLID WASTE ADVISORY BOARD**

***City Council Committee on Sanitation and Solid Waste Management***  
***Oversight Hearing on the 2017 Waste Characterization Study***  
***Tuesday, April 24, 2018***

Good morning, Chairman Reynoso and the other members of the Committee. My name is Jacquelyn Ottman, and I am testifying on behalf of the Manhattan Solid Waste Advisory Board (MSWAB). New York City's ambitious goal to send 'zero waste to landfill by 2030' was set in OneNYC in 2015. In order to reach this goal, the City must increase participation in existing recycling programs, encourage waste prevention, and develop and promote new and different opportunities to reuse products and materials. A well-designed waste characterization study can provide sufficient data to understand the performance of existing programs across the city; as well as inform the design of future programs to reach 0 x 30.

However, the methodology used to carry out the 2017 Waste Characterization Study was the same as that used in 2013. This means it did not take into account the programs that have been created and expanded since the City's declaration of a Zero Waste Goal. While we understand the need to consistently compare changes in waste composition over time, more granular data on recyclable materials and reusable products that are still exported and disposed are critical to achieving at least 90% diversion.

For starters, the Characterization, as designed, told us very little about the composition and distribution of the residual waste, including its reuse, recycling and organics waste streams — the very waste streams we want to divert more of — in different building types, and across different demographics.

The 29% that is deemed as non-recyclable is a very large figure that needs to be understood even more urgently than the numbers for typical recyclables. Some of this 29% is potentially reusable, and some, like packaging and products that are not designed to be recycled, could be reduced by legislative remedies such as bans and fees. But we can't identify these potential reductions and diversions without the refined data.

The Characterization Study also failed to show how effective organics collections have been in those neighborhoods that have the program, and the difference in diversion rates between the curbside and drop-off program collection areas.

Lastly, the 2017 Waste Characterization Study provides very little specific data to inform **what** education and strategies are needed **where**, and also what policy may be required to reduce

specific waste streams such as single use plastics; or increase the reuse of bulky and e-waste, as well as residuals.

If the 2030 deadline is serious and intended to be met, zero waste program expenditures need to be increased. The City is spending over \$400 million on just the export disposal of waste, and another \$739 million per annum on collecting it from households. If only a fraction of this was spent on understanding residents' views on, and behavior towards recycling, programs and education could be adapted to change long term behavior, and ultimately reduce both collection and disposal costs. Zero Waste can only be achieved with a very high participation rate.

We on the Manhattan SWAB therefore recommend another in-depth study be conducted in the near future to collect data that would lead to a better understanding of the attitudes and behavior of NYC's residents towards waste, reuse, and recycling in different areas of the city, in different building types, and among different demographics. The last time the city did a usage and attitude study was over twelve years ago—in 2005, and much has changed since then. Understanding what is preventing residents from engaging in existing programs, will help inform education and communications, as well as the design and provision of targeted outreach, while informing the budgets needed to fund these programs.

Finally, since there is great reuse potential left in NYC that is not being addressed by the private or public sector, we recommend DSNY characterize the reuse potential at curbside. What is the weight and volume of different types of the durable products that can be repaired or salvaged and their condition (i.e., repairability) that are left at curbside? With information like this, DSNY can design programs to collect reusables at curbside, as well as inform the design and use of repair shops and sales outlets, or other means to recover reusable products.

Thank you for the opportunity to testify on behalf of the Manhattan SWAB.

Respectfully,

**The Manhattan Solid Waste Advisory Board (SWAB)**

Chair: Sarah Currie-Halpern; Vice-Chair: Laura Rosenshine; Secretary: Katherine Hanner;  
Assistant Secretary: Christine Johnson; Treasurer: Diane Orr

Rona Banai, Margot Becker, Matthew Civello, Maggie Clarke, Debby Lee Cohen, Peter Cohen, Naomi Cooper, Philip Corradini, Sarah Currie-Halpern, Meredith Danberg-Ficarelli, Katherine Hanner, Cullen Howe, Sophia Huda, Melissa Iachan, Christine Johnson, Nathaniel Johnson, Tamara Lim, Debra Menich, Kate Mikuliak, Monica Munn, Kathy Nizzari, Diane Orr, Jacquelyn Ottman, Kellen Parker, Tinia Pina, Martin Robertson, Jennie Romer, Laura Rosenshine, Rick Schulman, Brendan Sexton, Marc Shifflett, Sam Silver

*The Manhattan Solid Waste Advisory Board (MSWAB) is a volunteer citizens' advisory board dedicated to helping NYC achieve its zero waste goals. We advise the Manhattan Borough President, City Council, City Administration and others on policies and programs regarding the development, promotion and operation of the City's waste prevention, reuse and recycling programs. We are a Board comprised of solid waste management industry, waste reduction and diversion consultants, sustainability professionals, and concerned citizens, appointed by the Manhattan Borough President's Office.*

**Testimony of Melissa Iachan at  
City Council Committee on Sanitation and Solid Waste Management Hearing  
Regarding Results of Waste Characterization Study  
Dated April 24, 2018**

Good morning, my name is Melissa Iachan, and I am a Senior Staff Attorney in the Environmental Justice Program at New York Lawyers for the Public Interest. I am here representing NYLPI, which is a member of the Transform Don't Trash coalition, to provide a response to the recently released results of the 2017 NYC Residential, School and NYCHA Waste Characterization Study (the "Waste Characterization Study" or the "2017 Study"). We are grateful for our continued partnership with DSNY in working towards establishing a much more sustainable, efficient and equitable commercial waste system in the City, and would like to thank Chair Reynoso and the members of the Sanitation Committee for the opportunity to comment here today.

The Waste Characterization Study revealed important information that can help shape the city's policy decisions in our attempt to move towards zero waste to landfills by 2030. The information revealed in the 2017 Study will guide DSNY and the Council in prioritizing public education efforts around waste reduction, re-use, organics and recycling. Unfortunately, we lack anywhere near this level of knowledge about what is in our City's biggest waste stream—the commercial waste stream—the millions of tons of material thrown out by our huge and diverse business sector every year.

The last Commercial Waste Characterization Study was done in 1990 – almost thirty years ago. I don't have to tell you how much has changed in our city since 1990. Since then, there have been profound changes in how we consume information and media, food and electronics, but we have no measure of how this has changed the composition of the City's enormous commercial waste stream. The only real way we can craft meaningful policies, infrastructure, and educational campaigns to reduce, recycle, and divert waste is by knowing what is in our waste!

Conducting a thorough, city-wide commercial waste analysis is more timely now than ever, as the City moves toward a major reform of a broken commercial waste system. Our City has committed to fixing this broken system by adopting a zoned commercial waste system, which we strongly endorse and are excited to be working hand-in-hand with DSNY in preparing for. Under this zoned system, the City will be able to incentivize private waste hauling companies to make major

changes to how they collect and process recyclable materials, and can encourage major investments in waste reduction and prevention strategies for businesses. This reform represents a crucial opportunity to make systemic changes that would bring us closer to our zero waste goals, while also offering an opportunity to reduce our city's greenhouse gas emissions, improve working conditions for the many workers in the private sanitation industry, and vastly improve safety on our streets. In order for the City to design the most efficient and sustainable new commercial waste system, we must make the effort to understand what is in our commercial waste stream, and how the various waste streams and concentrations may differ in different regions of the City. For example, we know that downtown Manhattan has much more commercial waste than northeast Queens per block, but is there a difference in how much recyclable material is being recycled among the various neighborhoods? Knowing information such as that could be incredibly useful when designing the waste zones and determining each area's particular needs. We strongly urge the City to initiate the process for a commercial waste characterization study as soon as possible.

Finally, as an Environmental Justice attorney and advocate, I would be remiss if I did not point out the disturbing implications that the 2017 Study results have for one of the greatest environmental inequities in our city—those communities that are overburdened by the clustering of transfer stations that process waste before trucking it out to landfills. The Waste Characterization Study reveals that more than <sup>half</sup> ~~45%~~ of what we are sending to landfills should have been recycled, composted, or otherwise diverted. This means that ~~just under~~ half of the trash that continues to be trucked through low income communities of color could have, and should have been diverted. If for no other reason than to reduce the impacts on communities who for so long have lived with the daily reality of inhaling the fumes of trucks carrying the entire city's garbage, we must do a better job educating the residents of our city about composting, recycling, and waste reduction strategies. We look forward to continuing our work with the Council and DSNY to accomplish these important goals.

Thank you.



Two Penn Plaza ■ Fifth Floor ■ New York, New York 10121

## Testimony on the Department of Sanitation's Waste Characterization Study

*Submitted to the New York City Council Committee on Sanitation and Solid Waste  
Management*

*April 24, 2018*

Thank you for the opportunity to testify today. My name is Ana Champeny, and I am the Director of City Studies at the Citizens Budget Commission (CBC). CBC is a nonpartisan, nonprofit civic organization whose mission is to achieve constructive change in the finances and services of New York State and New York City government.

Earlier this month, the New York City Department of Sanitation (DSNY) released the 2017 Waste Characterization Study; comparable studies were done in 2005 and 2013. CBC commends the City's commitment to completing these studies on a regular basis and releasing detailed results. These studies allow policymakers and advocates to better understand the waste stream and to assess the City's waste management strategies and programs.

CBC has written extensively about the economics of waste management in the City, and I want to comment on the fiscal and policy implications of changes in the waste stream on the City's waste management system. Specifically, while aggressively pursuing zero waste by 2030, the City should:

- Seek productivity gains in waste collection in order to realize savings, including meeting collection targets, increasing the volume of recyclables, and optimizing the Uniformed Sanitationmen's Association (USA) labor contract in the upcoming round of negotiations;
- Focus on increasing participation in the curbside organics program before extending it to other areas and pursuing the use of in-sink disposers;
- Continue policy initiatives to improve solid waste collection, including save-as-you-throw and single-stream recycling; and
- Revisit a plastic bag ban with a fee on alternatives.

### *The Waste Characterization Study*

The 2017 study shows the average New York household is throwing out 1,988 pounds, down from 2,001 pounds in 2013 and 2,280 pounds in 2005. This reduction in waste was not anticipated in the City's Solid Waste Management Plan and is a positive development.

Another positive development is that more than 75 percent of the waste New Yorkers are throwing out could be recycled or composted. Compared to 2013, the average household's waste stream contains less paper (ongoing decline in newspapers), but more plastic and organic waste.

But not all news is positive. While recyclable materials are increasing, New Yorkers are not dramatically better at sorting them out. The capture rate, which measures the share of a recyclable material that is separated, hovers around 50 percent for paper and metal, glass, and plastic (MGP). After decades of operating a curbside recycling program, the City is still landfilling as much as it is recycling. The 2013 expansion of MGP recycling to include rigid non-bottle plastics (bottles were already recyclable) has increased the amount of plastic recyclables, but just one-third of the newly recyclable materials are being separated.

### *Implications for the City's Solid Waste Management*

The City has set an ambitious goal of zero waste by 2030, but is far from reaching that, and progress has been slow.

### Curbside Refuse and Recycling Collection

While the City has set targets for diversion, which is the share of all waste that is recycled or composted, these rates have been stuck around 15 to 18 percent for many years, with the recent expansions of MGP recycling and organics composting associated with a 2 percentage point increase. However, the reality of recycling economics is that collecting a ton of recycling is much more costly than collecting a ton of refuse--\$629 compared to \$291. If all else stayed the same, having New Yorkers separate more recycling would increase the City's cost. For example, if households sorted 55 percent of recyclables, up from the current 50 percent, the City would spend about \$20 million more in collection and disposal, including savings from lower refuse collection and disposal.

Labor productivity at DSNY, measured in tons per truck shift, presents opportunities for the City to achieve savings. In 2017 the average recycling truck collected 5.6 tons per shift, while the average refuse truck collected 9.6 tons, making refuse collection 71 percent more productive. And because the cost to run a truck shift is basically the same regardless of the material being collected--the majority of the cost is for salaries and benefits of two sanitation workers--it costs substantially more per ton to collect recyclables.

This situation presents three opportunities for the City:

- 1) The USA labor contract sets a productivity target of 10.7 tons for refuse and 6.2 tons for recycling; actual collections are below that target. The City should implement recommendations from CBC's 2014 report, Getting the Fiscal Waste Out of Solid Waste Collection in New York City, in order to meet the productivity targets. The targets are attainable, as DSNY collected at those rates in 2005. This would require lengthening routes, reducing collection frequency in areas with low waste volume, and altering shifts or allowing for four 10-hour shifts instead of five 8-hour shifts. Meeting targets could generate savings of \$120 million per year.
- 2) The City should continue efforts to increase recycling participation. More recyclables at the curb will allow recycling productivity to increase, however, it is important that refuse productivity not decline concurrently. If the City were able to increase capture rates to 55 percent, as previously discussed, and meet productivity targets, the net reduction in costs would be \$105 million.
- 3) The USA contract expires January 19, 2019, and the City should pursue collective bargaining changes to increase flexibility and productivity and end certain differentials and bonuses. In addition to the routing and collection changes discussed above, the City should expand the use of large containers and automated trucks. Bonuses for meeting productivity targets and dumping on shift should be ended, as they are more a function of the neighborhood and housing density than employee productivity.

### Organics Recycling

Organic material presents a major opportunity for New York to decrease the amount of waste being sent to landfills. Organics, which can be readily composted, are currently 34 percent of an average household's waste. The City began piloting curbside organics collection in 2013 and expanded to 3.3 million New Yorkers by the end of 2017. The City plans to make organics composting available to all New Yorkers by the end of 2018.

However, as CBC documented in the 2016 report, Can We Have Our Cake and Compost It Too?, the current curbside organics program is costly and inefficient. The City reports in the waste study that just 13,000 tons of organics were separated and collected in 2017—just 1 percent of the citywide organic waste stream. Recent data released shows that DSNY collected an average of one ton per truck shift as part of the curbside organics program. Based on the average cost per truck shift, the estimated cost of collecting 13,000 tons of organics is about \$40 million.

While the program is well-intentioned and highlights the substantial potential that exists in organics, the City should prioritize fiscal considerations when deciding on next steps. CBC has argued for slower expansion, with a focus on districts likely to attain significant participation (based on recycling data). The City should halt expansion until participation can be increased in existing districts. CBC has also advocated the use of

in-sink disposers, which can crush food waste and send it to waste water treatment plants without incurring additional curbside collection. CBC estimated that a pilot in four districts with adequate wastewater treatment capacity would save the city \$4 million. Lastly, the organics program is currently voluntary; ultimately, the City will want to make it mandatory, as was done with recycling in 1989.

### Changes in Waste Management

The City is pursuing two policy avenues—single-stream recycling and save-as-you-throw—which have the potential to substantially improve waste management.

The City plans to implement single-stream recycling by 2020; this will present an opportunity to realize improvements and efficiencies in recycling collection. Under single-stream recycling, New Yorkers would no longer need to separate paper and metal, glass, and plastic; all recyclables would be put in one container. This is expected to increase participation, though the quality of the recyclables is likely to be lessened due to mixing paper with food containers. Single-stream recycling is likely to increase collection productivity as the City could send one truck instead of two, which would likely be fuller at the end of the shift. Alternatively, a dual-bin truck could collect recycling and organics or not be constrained by one of the two sides reaching capacity before the other.

The City has hired a consultant to recommend a volume-based garbage fee program, also called save-as-you-throw. CBC advocated for such a program in the report, *A Better Way to Pay for Solid Waste Management*, and supports the City's efforts. An economic incentive is an effective way to get residents to reduce their waste production. In order to encourage more diversion, especially of organics, the program should charge a lower fee for recyclable and organic waste, as compared to refuse. The design of the program is of significant importance given the challenges in New York City, such as dense, high-rise apartment buildings and limits on where to store waste for collection, both within and outside buildings.

### Plastic Bags

While not a substantial part of the waste stream, plastic bags represent a missed opportunity for the City. In 2017 plastic bags were 1.9 percent of the waste stream, about 71,000 tons annually. Based on a disposal cost of \$171 per ton, the City is spending \$12.1 million to landfill these bags. As you know, the City Council passed and Mayor Bill de Blasio signed a carryout bag fee in 2016 that would have taken effect on February 15, 2017. However, the State Legislature and Governor Cuomo enacted a moratorium to halt the City's fee from taking effect. Since then, the State Task Force released a report on plastic bags that recognized the substantial environmental problem but failed to endorse a course of action for New York State. During the intervening months, a plastic bag fee took effect in Suffolk County and recent survey data shows a significant switch to reusable bags. In a [blog](#) released last week, the CBC advocated for the City to, once again, act on this issue and pass a plastic bag ban along with a fee on alternative bags.

The Waste Characterization Study provides significant data about the makeup of New York City trash and changing consumer behavior. It also provides a lens to evaluate current and proposed DSNY policies with regard to waste management, with an eye to increasing efficiency and cost-effectiveness. I am happy to answer any questions you may have.

### **Recent CBC Publications on Waste Management**

*The Time is Right for New York City to Act on Plastic Bags* (April 2018)

*Can We Have Our Cake and Compost It Too?* (February 2016)

*A Better Way to Pay for Solid Waste Management* (February 2015)

*Getting the Fiscal Waste Out of Solid Waste Collection in New York City* (September 2014)

*12 Things New Yorkers Should Know About Their Garbage* (May 2014)

*Taxes In, Garbage Out* (May 2012)

FROM: Steve Changaris  
NYC NWRA Chapter Director

Thank you for this notice and invitation. The NYC NWRA Chapter would otherwise attend and participate in this hearing, except for the fact that it will be held during our industry's annual conference and tradeshow exhibition in Las Vegas, Nevada. Do not let our non-presence be interpreted as anything other than a simple scheduling conflict. We look forward to the next such notice and ripe opportunity to appear before you Mr. Chairman -- and the committee you chair and staff you supervise -- to talk about any aspect or part of our vibrant and essential industry in NYC.

That said below is excerpted language taken from written testimony we recently submitted to the BIC regarding its biennial review of the city's trade waste rate cap. You will note these excerpts focus heavily on issues about the recycling of recovered commodities from the waste stream. In NYC, the materials of highest concern are glass; mixed paper; and plastics 3 through 7. Also at the bottom of this email, there is a link to an Issues Brief NWRA recently published on the adverse impacts the implementation of the ongoing Chinese recyclables import restrictions is having on many of the recyclable commodities we are required to pick-up and manage in NYC.

Excerpts from NYC NWRA Chapter 4/9/18 BIC testimony:

*....., regarding the value of commodities we recover for recycling and diversion from disposal; we know more now than we did in October 2017 when we submitted our last testimony. Specifically back then we went on record expressing our great concerns with new Chinese recycling policies and restrictions. The impacts of these policies have only continued to roil and disrupt national and international recyclable commodities markets; depressing the value of the recyclable materials we are required to collect and divert from disposal much more than we imagined or anticipated last fall. Many of these commodities like mixed paper, plastics 3-7 and glass now have negative value or simply no market for their reuse. What we are experiencing today is worse than what we feared in October 2017. And the continued roll-out and implementation of these Chinese recycling initiatives will surely cause further severe turmoil and disarray for the all of our recycling efforts for a period likely to extend years into the future. It is a very reasonable person's view that it will simply take that long, until other markets take hold and are able to absorb and use these commodities.....*

*..... we strongly encourage the BIC to start a completely new internal review about how the new and evolving Chinese recyclables import restrictions have adversely impacted the private carting industry's recently harmonized metal, glass, plastic and paper recycling operations in the City. Further, we urge the BIC to explore and model the full economic impact of what is happening as 75% of these materials, i.e., metal, glass, plastic and paper, which are part of our NYC mandated recyclables basket, has a zero or negative value.....*

Thanks again for the invitation to participate on 4/24. We look forward to the next opportunity we have for interaction.

Regards,

Steve Changaris  
NYC NWRA Chapter Director

Link to NWRA Chinese Recyclables Import Restrictions Issue Brief:

[http://c.ymcdn.com/sites/wasterecycling.site-ym.com/resource/resmgr/files/issue\\_brief/China's Changing Policies on.pdf](http://c.ymcdn.com/sites/wasterecycling.site-ym.com/resource/resmgr/files/issue_brief/China's_Changing_Policies_on.pdf)

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Name: JACQUELYN A. OTTMAN

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I represent: MANHATTAN Solid Waste Advisory Board

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Name: Ana Champeny

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I represent: Citizens Budget Commission

Address: 2 Penn Plaza

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