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Zero Waste, Zero Chance

New York wants to cut its landfill contribution to near nil by 2030. The city's data shows that's not likely not to happen.

By Sawyer Click | March 2020

New York is trying to kick its title as the trash capital of the world by going zero waste. Some parts of the city aren't playing along.

Over the past few years and mayors, the city has attempted to curb the issue through the implementation of waste management initiatives for residents and businesses, most ambitiously Mayor Bill de Blasio's 2015 OneNYC plan. In terms of waste, the city's plans could make a difference that no other place in the world has succeeded at - going zero waste, meaning next to no waste is contributed to landfills.

But since that ambition was enacted as policy, not much progress has been made, according to an analysis of the Department of Sanitation's monthly tonnage reports that detail waste flow in New York's 59 community districts. Landfill contribution has lingered at more than 2.5 million tons, the weight of more than 11,000 Statue of Liberty monuments.

The stagnation is reminiscent of Canberra, Australia's failed zero waste attempt in 1996. The local government had given itself a 15-year deadline, the same period as New York's, to reach zero waste. Before the deadline even hit, it was obvious the initiative was a bust. The city couldn't control its consumption and found itself trapped by consumerism.

A similar fate may befall the Big Apple, where the landfill contribution has only inched down 3% since 2009. The thorn in the side of New York's zero waste dreams is that even though residents are recycling more, they aren't throwing away less.

New York, though the greatest trash producer in the world, doesn't have its own landfill or incinerator to handle the waste. Each year the city ships off its garbage across the country, mostly to landfills in New Jersey, Kentucky and Connecticut. In the fiscal year 2019, the practice cost the city more than $407 million, an increase of $37 million from the year prior.

The tenacious waste issue has hindered the diversion rate, the rate at which waste is diverted from a landfill through programs such as recycling. The city-wide recycling rate grew from 20% in 2009 to 25% in 2019, according to estimates calculated from the monthly tonnage reports. The city estimates for the fiscal year 2019 - a different time period of calculations - residents alone only recycled 18.1% of their waste, a gain of only .1% from the year prior.

At this rate, the city won't hit its zero waste goal until the year 2169.

Twenty of the city's 59 community districts have increased their landfill contribution over the past decade, driving the city-wide diversion rate down. The city's 2018 status report notes that most recycling initiatives were only a half-way success: enacting encouraging policy, partnering with schools, developing new streams, expanding curbside organics collections. As a result, the city stated it would double down on getting more residents to participate in curbside recycling.

"In order to achieve our goal of sending zero waste to landfills by 2030, we see a need and an opportunity to elevate the importance of traditional curbside recycling and work aggressively to increase participation in the newly launched organics collection program," the status report states.

The Department of Sanitation did not respond to requests for comment regarding recycling trends and education campaigns.

FOR HIGH SOCIETY, LESS RECYCLING

Five community districts across the city are recycling a lower percentage of their waste than a decade ago, according to an analysis of the Department of Sanitation monthly collection reports. Among these are the wealthiest districts in the city - Wall Street, Chelsea, Canarsie - where the recycling of institutions and residents hasn't kept up with bubbling waste emissions.

"Today, we are collecting more recyclable metal, glass, plastic and paper then [sic] at any point in the last decade, and yet we know that in order to hit our ambitious goal, we need to do more," the status report states.

The "more" boils down to the city putting more promotional resources behind the initiative, according to Adriana Espinoza, a program director for the environmental advocacy group New York League of Conservation Voters. Other parts of the 2015 OneNYC plan have been given more spotlight - like the heavily marketed Vision Zero program to end traffic accidents and fatalities.

"Targeted community outreach and engagement is important, but we think there should be a city-wide public service initiative," Espinoza said. "Basically the same as the way you see Vision Zero signs in the subways and at bus stops and on radio commercials."

These community outreach programs have been successful and account for much of the city's change, but the initiatives aren't pointed at the whole city.

DSNY targets neighborhoods with historically low diversion rates, particularly those with cultural or language barriers, according to Espinoza.

These efforts, which have largely taken place in the Bronx, Queens and Brooklyn, have worked. Each neighborhood with a high poverty rate, according to Census data, had an increase in its diversion rate.

Twenty-nine of New York's community districts have a high poverty rate, and several have a high poverty rate, according to Census data.

They're spread throughout all five boroughs but more heavily in Brooklyn, Queens and the Bronx - the borough that saw the greatest increases.

Each of these 29 districts increased its diversion rate, and most are altogether throwing away less.

But when it came to districts that are recycling less, the five districts were spread across lower Manhattan, Staten Island and Brooklyn.

Four of the five districts are significantly more affluent than the rest of the city, according to Census income data.

Manhattan's community districts 1 and 6 - containing Wall Street, Ellis Island, Tribeca, Tudor City, Gramercy Park and more - recorded the greatest drop with a little more than a one percentage point, equal to thousands of tons of waste.

They're also extremely wealthy, with median incomes of more than $110,000, more than twice that of the city.

IN THE DARK

The Department of Sanitation has focused most of its marketing resources on community outreach and a limited subway ad campaign complete with puns and innocuous graphics, according to the department's fiscal year 2020 budget.

Moving forward, the budget calls for an increase in funds allocated for outreach and enforcement specifically to tackle the zero-waste initiative in unreached areas, such as the five districts with diversion rates. Now, these events are sparse in affluent neighborhoods as a result of DSNY's hyper-targeted campaigns, leaving these residents without a solid foundation for building recycling and zero waste habits.

Occasionally, DSNY will host an event that's more in the spotlight, often held in Union Square. Last November, DSNY celebrated the 30th anniversary of its recycling program with a massive

event in Union Square. The event was far from typical: a clothes swap, recycling-themed games, bicycle repair, garbage trucks on-site for attendees to peruse.

In Union Square's community district, Manhattan CD 5, there was only a slight uptick in diversion rate. It's neighbors fared worse.

To clarify, these wealthy districts have among the highest diversion rates in the city. Generally, the wealthier a district is, the more that it recycles. But over the last decade, the Department of Sanitation's lack of attention and education in these neighborhoods has caused their statuses to wilt, while diversion rates in less affluent districts have blossomed, up by several percentage points.

The Department of Sanitation recognized in the 2018 status report that it would have to take drastic steps to hit its goal. It took its biggest step a year later.

New York's City Council declared in June 2019 that the city was in a state of climate emergency, joining the ranks of Los Angeles, Sydney, London and dozens of cities across the globe. It was backed by Mayor de Blasio, whose signature was not necessary for the legislation to pass, and received heavy press. Critics, including the *New York Times* and *Huffington Post*, were worried though that the declaration was a mere political move with no real weight behind it.

In the more than a thousand-words-long declaration, recycling and waste contribution is only mentioned in passing:

"The economy must shift from dirty energy that benefits fossil fuel companies to energy democracy that benefits our people, environment and a clean, renewable energy economy, from funding new highways to expanding public transit, from incinerators and landfills to zero waste products, from industrial food systems to food sovereignty, from car-dependent sprawl and destructive unbridled growth to smart urban development without displacement, and from destructive over-development to habitat and ecosystem restoration."

But it caught the attention of some New Yorkers, including Nicole Grossberg.

ENVIRONMENTAL INFLUENCERS

Nicole Grossberg is like the King Midas of zero waste: everyone she talks to turns to a green… lifestyle. And she's intent on talking to the city's 8.6 million residents.

Grossberg decided to join the zero-waste effort as an educator after the city's declaration. At first, it was about showing her neighbors how to reduce, reuse, recycle - and if all else fails - refuse. Grossberg, a lifelong New Yorker and a content strategist by trade, had been living a

zero-waste lifestyle for years, and she found a knack in educating others about sustainable living.

After a layoff in summer 2018, Grossberg, an Astoria resident, shifted to freelance work. She let her subject focus drift to where she worked solely with clients in the atmosphere of environmental sustainability.

“I always kept putting it off and I feel like the universe was giving me all these signs along the way," Grossberg said. “I kinda just took it [the layoff] as a sign from the universe that at that point was just screaming at me to follow my passion and do what I really wanted to do. So I decided to go off on my own.“

It was fulfilling, and she enjoyed her day-to-day, which comprised social media management and copywriting, but she wanted to do more. She knew if the city was going to make any real change, it would have to start at the grassroots level. In her spare time, she dreamed of hosting her own workshops to help others go green.

She had talked her family into becoming zero waste: reusing water bottles, taking tote bags to grocery stores, donating clothes. Then she convinced her friends. Now she wanted to make a living while doing the same with strangers.

In August 2019 Grossberg teamed up with Sandra Noonan, another zero-waste New Yorker seeking to be the change she wanted to see. The duo founded the Zero Waste NYC Workshop Series, a monthly lecture series aimed at educating audience members on the basics.

Right off the bat, they paired with the Department of Sanitation’s nonprofit, The Foundation for New York’s Strongest, which involves occasionally teaming up for certain events. The foundation sponsors myriad organizations and events geared toward promoting environmental sustainability, including fashion swaps, beach clean-ups and education workshops like Grossberg’s.

The overarching theme of the Series’s lectures, Grossberg said, is reducing and reusing, with recycling and discarding as a last-resort option. If residents want to make a substantive difference, it starts with cutting back, Grossberg said.

In February, the Workshop Series teamed with the Foundation as a part of the city’s ReFashion Week program for a panel discussion on textile waste in the fashion industry. Future topics will tackle traveling, parenting and handling food.

Admittedly, Grossberg said her audience is primarily made up of those who have an interest in living a zero-waste lifestyle, which could only make a small dent in the city’s diversion numbers. Grossberg estimates there are typically about 45 attendees at each event, which was strong enough for DSNY to invite the Series into a formal partnership.

“One of the tricks is to get the people who could really make a big difference,” Grossberg said. “I would love to have more of an audience that doesn’t know anything about zero waste. I just haven’t found the right way to reach everyone yet. It would be the people who don’t know much about it.”

But to really tackle the bottom line, efforts need to reach the other 8.6 million New Yorkers who don’t have an inclination toward a more sustainable lifestyle. To inch toward all of them, Grossberg set up the workshops so all of the attendees leave as environmental sustainability ambassadors - or influencers, as she calls them - to educate neighbors, friends and followers.

“If we can't reach those people, then we want the people that come to our workshops to be influencers,” Grossberg said. “We want to encourage people to go out there and spread the message. We give them tools on how they can talk to other people without seeming like they're being preachy and aggressive about their beliefs.”

FIVE DOWN, TEN TO GO

Looking to the next decade, the city has a plan to get where it needs to be. An aggressive one.

The most visible of which is a plastic bag ban starting March 1, forged as a part of the OneNYC and zero waste plan, aims to kick a large portion of plastic waste. The city has spent a lot of time and effort marketing the switch, with Mayor de Blasio himself even passing out reusable, sustainable tote bags in Union Square.

One of the least visible, though, is the city’s switch to single-stream recycling, which hopes to skyrocket resident participation. Currently, the city operates under a dual-stream process, meaning that residents are responsible for initially sorting materials into different bins: paper, cardboard, metal, plastics and glass.

Under single-stream recycling, residents only need to sort recyclables from refuse, making the process less of a burden for residents. Or at least that’s what the city is banking on.

With these implementations, this year marks one that will make or break the OneNYC plan’s attainability.

“Many people are under the impression that recycling is ineffective because most of it ends up in landfills anyway, or because they believe that so much is not recycle that it doesn't make a difference,” Grossberg said. "People need to believe that behavior makes a difference, especially if it involves some inconvenience.“

METHODOLOGY

With waste collection data from New York's Department of Sanitation, I calculated the total amount of waste that was recycled and refused from each of New York's 59 community districts. With this, I gathered demographic data from the Census and from New York's Department of Planning. After a spatial join in QGIS of the tonnage reports and the demographic data, I could perform geographical and historical analysis, which informed me that the city has not made much progress in terms of reducing waste and hitting its zero waste goals. A more full methodology report can be found here.

Source list

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Data

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Postscript

This project was born out of curiosity to see if there was a relationship between recycling and demographics, primarily race and wealth. After a months-long reporting process, though, it morphed into a story about the city's failing attempts to curb the trash mountains created by its residents.

The most granular recycling data I could find for New York City, where I focused my project, was by community district, of which New York has 59. This data is publicly available and includes information on refuse and the primary recycling forms: paper, plastic, metal, glass. I was able to use Python's Pandas package to analyze historical trends across each district. I chose to look at data from the calendar year 2009 to 2019, though reliable data goes back to 2004. I wanted to paint a decade of recycling in the Big Apple amid growing climate change awareness.

Later on in the process, I discovered the city's Department of Planning maintained Census demographical data on a by-Community District level, which meant that I could perform spatial joins in QGIS to get an understanding of how wealth, poverty and nationality plays a factor. Once the data was cleaned, there was an overwhelmingly positive trend of districts recycling more. I also noticed, though, that five districts weren't, and they seemed to be the most affluent ones.

With this information, I reached out to several experts, advocates, and city officials. After four months of communication with DSNY, I was unable to secure an interview. However, spokesperson Belinda Mager had first offered base-level information on background. Still, after 24 emails and 19 phone calls, I had no luck getting a city official to explain the trends to me.

Onward, I found a city-adjacent business, Zero Waste NYC, where co-founder Nicole Grossberg helped explain the groundswell of support that she's seen as an educator. A mini-profile of Grossberg's path to zero waste was built off several conversations with her, as well as a visit to one of her workshops.

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For more sourcing, I was able to talk with advocate Adriana Espinoza of the New York League of Conversation Voters, who explained the marketing resources that the Zero Waste campaign has been given compared to similar initiatives.

Further, I talked with recycling policy expert Shawn Burn, who explained prospective recycling policies, as well as Anne MacDonald, a 16-year-old Manhattanite who is enthused about zero waste and recycling.

Altogether, I put together a story detailing the flaws so far in the Zero Waste campaign, driven by the compiled data. For faults, I wish I had more input from experts who could have detailed policy in New York, as I had to rely heavily on historical documents and tangential sources like Espinoza.

With all reporting and data, I was able to build visualizations using D3.js, intersection-observer for delayed animations, and in-view for scrolly-telling capabilities. Most were prototyped in Observable notebooks.