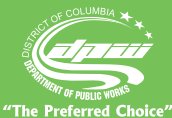


DISTRICT OF COLUMBIA RESIDENTIAL RECYCLING PROGRAM: 2017-2018 BENCHMARKING, TRENDS, AND GOALS



GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

WASTE LESS, RECYCLE MORE.



EXECUTIVE SUMMARY

In support of meeting the District’s sustainability and waste diversion goals, the District of Columbia Department of Public Works (DPW) has worked to establish a baseline and improve the performance of its residential recycling program. To understand the current state of residential recycling, DPW commissioned recycling consultancy Resource Recycling Systems (RRS) to design and conduct a recycling characterization study – teams manually sorted and categorized materials collected in curbside bins in June 2017 (see Table 1: Sort Categories). In the fall of 2017, DPW kicked off a new city-wide promotional campaign through the Zero Waste DC program with the tag line “Waste Less, Recycle More.” The recycling promotional campaign added a suite of new materials to the recycling program and included messaging about how to recycle properly. Goals for the campaign were to increase recovery, decrease contamination, and introduce the new materials that can be recycled in the District. A number of operational improvements were also instituted for recycling collection.

As a result of these efforts, when a follow-up waste characterization study was performed one year later, the data indicated improvements in several key areas. Of particular note was the 9.5% increase in the amount recycled by DC residents, and an 8 percentage point decrease in the amount of unrecyclable material in the recycling stream.

BENCHMARKING

DPW partnered with recycling consultancy RRS to plan and execute a recycling sort of inbound loads at the Benning Road Transfer Station. The initial sort was performed in July 2017, and the follow-up sort in June 2018. The goal of the recycling sorts was to obtain representative samples from District residential recycling routes delivered to the Fort Totten and Benning Road stations to better understand what people were including in their residential recycling containers across the District.

RRS used a sampling plan to target a representative sample

TABLE 1: SORT CATEGORIES

Main Categories	Sub-Categories
Paper	Newspaper
	Mixed Paper
	Cardboard
	Paper Cups
	Paper Containers & Trays
	Paper Bags
	Cartons (Aseptic & Gable Top)
Metal	Aluminum (UBC & Foil)
	Steel Cans
	Scrap Metal
Plastic	PET Bottles (#1)
	HDPE Bottles (#2)
	PET Cups and Containers
	PP Cups and Containers
	PS Cups and Containers
	Bulky Rigid Plastics
	Plastic Film
	Other Plastics
Glass	Glass Containers
	Glass Fines
Residue	Plastic Film
	Other Residue

of routes from a cross section of the District. Residential collection routes were selected from each ward based on the number of households served by DPW and the corresponding collection day.

During the recycling sort, the field team pulled samples from designated loads after the DPW trucks had dumped onto the tipping floor at the Benning Road Transfer Station. The sort

DC OUTREACH TIMELINE

Zero Waste DC website and social media launch

Initial press releases on upcoming Mayor's List requirements

Mayor's List requirements take effect

Press release on roll-out of Mayor's List

What Goes Where App launches

Recycling videos launch

AUG 2017 SEP 2017 OCT 2017 NOV 2017 DEC 2017 JAN 2018 FEB 2018 MAR 2018 APR 2018 MAY 2018 JUN 2018

Outreach and engagement events

Digital ad campaign for Mayor's List focusing on newly added foodservice packaging

team averaged 22 residential loads of recyclables during each of the four-day sorts.

ADDITION OF NEW ITEMS TO THE DISTRICT'S RESIDENTIAL RECYCLING PROGRAM

The Sustainable Solid Waste Management Amendment Act of 2014 established the [Mayor's List of Recyclables and Compostables](#), which provides a single comprehensive list of recyclable and compostable materials for DC residents and businesses. Taking effect on January 1, 2018, the Mayor's List expanded the types of materials accepted in DC's recycling program.

New items added to the curbside recycling program included a suite of single-use packaging including:

- Pizza boxes
- Paper & plastic plates, cups, cup lids, to-go containers
- Plastic produce, deli & bakery containers and trays

OPERATIONAL CHANGES

DPW enacted practical changes to route operations to reduce missed pick-ups, resulting in higher tonnages in the recycling stream. These included:

- Optimization of recycling routes
- Dedicated recycling crews
- Dedicated supervisors for recycling collection
- 100% route completion goals on scheduled days
- Improved equipment availability
- New fleet

As with any new initiative, consistent efforts will have to be made to keep progress moving forward. The Project Team developed next steps to help DC DPW meet its goals.

PROMOTIONAL CAMPAIGN

Throughout 2017, DPW carried out a targeted educational campaign to notify residents and businesses of the rule changes. DPW held community and business engagement events leading up to the District's official program launch of the Mayor's List. The communications strategy featured outreach events, presentations, a [new Zero Waste DC website](#), a new "[What Goes Where](#)" web tool, social media, digital and print advertisements, [videos](#), a [recycling game](#), and new [signs](#) to encourage residents' recycling behavior change.

CHECK OUT DPW'S ONLINE RESOURCES

- [Zero Waste DC website and What Goes Where search tool](#)
- [Waste Sorting Game](#)
- Recycling Video: [English](#) | [Spanish](#)
- [Additional Resources](#)

OUTREACH EVENTS AND PRESENTATIONS

DPW was present at popular events like the Cherry Blossom Festival, Washington Capitals home opener, the Bea Johnson Earth Day event, and Kingman Island Bluegrass Festival. DPW reached hundreds of residents through neighborhood associations, lunch and learns, university presentations, organizational conferences, and more. Overall, the team logged 50 outreach and engagement events reaching more than 9,000 people between October 2017 and June 2018.

PRINT AND DIGITAL MEDIA

DPW sent mailers and shared flyers in seven languages to ensure messages reached residents. These included:

- 4 Press releases
- 2 recycling videos: English and Spanish
- 2 residential outreach mailers
- 250 Metro Rail ads making 8.7 million impressions
- 375 bus ads making 10 million impressions
- New signs for recycling, composting, and trash

WEBSITE

DPW launched a new Zero Waste website in October 2017 providing residents with an interactive way to engage with key messages. In addition to providing information about how and what to recycle, the site hosts a new Waste Sort Game and allows residents to obtain information about recyclables with the “What Goes Where” search tool. After the launch of this tool in May, 2018, web traffic peaked, garnering 12,149 materials viewed on the “What Goes Where” website tool through June 2018.

SOCIAL MEDIA

Newly created DC Zero Waste Facebook, Twitter, and Instagram pages helped communicate and reinforce the new recycling messages. The pages quickly grew in reach and popularity - between October 2017 and June 2018, there was a 1626% increase in Facebook followers and a 402% increase in Twitter followers. Digital outreach methods have proven to be effective communications tools.

TRENDS

Several key trends were identified from the recycling sorts. First, over the length of the promotional campaign, from 2017 to 2018, recycling tonnage increased by approximately 200 tons per month, meaning that overall, people are recycling more this year than they did last year. The increase is likely due to a combination of the addition of new materials to the recycling program, the outreach campaign, and the operational improvements that DPW undertook.

PROMOTIONAL CAMPAIGN RESULTS*



1626%

increase in Facebook followers



402%

increase in Twitter followers



15,504

recycling guideline page views



7,388

downloads of Zero Waste resources



142,000

total views of recycling videos



9,000

people engaged at events



12,149

materials viewed on the “What Goes Where” website tool

**The promotional campaign took place between October 2017 and June 2018*

RECYCLING STREAM TRENDS

2017 TO 2018 COMPARISON



The average monthly recycling tonnage collected from residents increased **9.5%** from **2100 tons per month** to **2300 tons per month**



Residue decreased by 8 percentage points from **27%** to **19%***



Cups and containers (both paper and plastic), jumped from **1.3% of the stream** to **3.4% of the stream**



Mixed paper increased by **10.5 percentage points**

**This is after subtracting out the estimated amount of crushed glass in the recycling stream. Crushed glass is not actually residue but was measured with residue during the sorts because the pieces were too small to sort out.*

Second, residue, the leftover material in the recycling stream that cannot be recycled, decreased in the residential stream by eight percentage points from 27% in 2017 to 19% in 2018 as referenced in Tables 2 and 3.

Third, cups and containers (both paper and plastic) rose from 1.3% of the recycling stream in 2017 to 3.4% of the recycling stream in 2018. Most of the measured increase in this category was due to the addition of plastic cups and clamshells to the residential recycling program.

Finally, mixed paper increased by 10.5 percentage points from 2017 to 2018. Some of this gain could be attributed to single-use paper packaging that was not sorted into the proper individual category but instead sorted with mixed paper. Regardless, paper cups, clamshells, trays and paper bags made up an additional 1.7% of the recycling stream in 2018 vs. 2017.

It's also important to note that the overall amount of unbroken glass measured during the sorts averaged about 5%. There was a large amount of broken container glass in the residential loads that was not sorted into the glass category because the pieces were too small. The broken glass (2-inch minus) was measured as residue and is estimated to comprise 8% of the recycling stream by weight¹

As was the case in 2017, the 2018 recycling sort provided a great opportunity to learn how people are currently recycling and to compare local trends with national trends. One of these trends is the large amount of cardboard in the residential stream.

- 26% of all residential material was cardboard by weight
- 27% of the residential stream by weight that was newspaper and mixed paper
- Newspaper is a significantly smaller portion of the stream than in years past

GOALS AND NEXT STEPS

Thanks to the 2017 and 2018 recycling sorts at the Benning Road Transfer Station, the District has some great data to plan its next series of recycling stream improvements.

During the recycling hand sort, the team observed that bagged waste in the recycling stream is a major challenge. Bagged recyclables and loose plastic bags clog recycling machinery and contaminate clean materials. In September 2018, the District launched a campaign targeting plastic bags, reminding residents that recyclables should be loose in the container, and plastic grocery bags should

TABLE 2: BROAD MATERIAL CATEGORIES, 2017 VS. 2018 SORTS

Category	2017	2018	Percentage Point Change
Residue (Includes Plastic Film)	27%	19%	-8
Fiber	47%	55%	8
Bottles and Cans	18%	16%	-2
Cups and Containers (Plastic and Paper)	1.3%	3.4%	2.1

TABLE 3: DETAILED MATERIAL CATEGORIES, 2017 VS. 2018 SORTS

CATEGORY	2017	2018	Percentage Point Change
Cardboard	28.1%	26.2%	-1.9
Newspaper	9.6%	6.2%	-3.4
Mixed Paper	9.4%	19.9%	10.5
Paper Cups	0.1%	0.1%	0.0
Paper Containers & Trays	0.1%	0.4%	0.3
Paper Bags	0.0%	1.4%	1.4
Cartons (Aseptic)	0.4%	1.0%	0.6
Aluminum Cans & Foil	1.3%	2.2%	0.9
Steel Cans	1.1%	1.4%	0.3
Scrap Metal	0.5%	0.3%	-0.2
PET Bottles	3.6%	2.3%	-1.3
PET Cups and Containers	0.3%	1.6%	1.3
HDPE Bottles	2.8%	1.6%	-1.2
PP Cups & Containers	0.4%	0.8%	0.4
PS Cups & Containers	0.4%	0.5%	0.1
Rigid Plastics	1.3%	1.7%	0.4
Other Plastics	0.2%	2.0%	1.8
Glass Containers	5.4%	3.1%	-2.3
Glass Fines*	8%*	8%*	0.0
Residue	27.2%	19.2%	-8.0
Residue - Plastic Film	2.0%	1.4%	-0.6
Residue - Other	25.2%	17.8%	-7.4

¹ The estimated percent crushed glass in the recycling stream was calculated based on the range of data from 2016 and 2018 Material Recovery Facility sorts as well as the 2017 and 2018 recycling hand sorts. The percent of glass measured at the Material Recovery Facility is in the 15% to 18% range. The range of glass fines is estimated to be 6% to 10% (conservative estimate). Eight percent is used as an average for reporting purposes.

*Glass fines (defined as 2-inch minus in size) is an estimated number based on the range of data from 2016 and 2018 MRF sorts, as well as the 2017 and 2018 recycling hand sorts. The range of glass fines is estimated to be 6% to 10%. 8% is used as an average for reporting purposes.



be returned to the grocery store for recycling, NOT placed in curbside recycling carts.

Operational planning, facility updates, procedures and communication combined with continued residential outreach through the Zero Waste DC platform can combine to positively impact the performance of the District's waste reduction and recycling programs for the long term.

GOALS



Decrease to 12%
residue



Decrease in volume of
plastic bags



Increase in participation



Increase in quality tons
recovered