COMPARISON TO THE EPA'S NATIONAL MUNICIPAL WASTE CHARACTERIZATION STUDY

		EPA	WCS
Glass	Container Glass/Mixed Cullet	7.2%	4.3%
	Other Glass	0.6%	0.2%
	Glass Total	7.8%	4.5%
Inorganics	Inorganics wastes	1.4%	4.5%
	Inorganics Total	1.4%	4.5%
Metal	Aluminum Cans	1.0%	0.2%
	Aluminum Foil/Containers	0.3%	0.5%
	Empty Aerosol Cans	0.0%	0.2%
	Other Aluminum	0.8%	0.1%
	Other Ferrous, incl. appliances	0.8%	2.7%
	Other Non-Ferrous, incl. appliances	0.3%	0.9%
	Tin Food Cans	2.0%	1.2%
	Metal Total	5.2%	5.7%
Organics	Clothing Textiles, Nonclothing Textiles, Carpet/Upholstery, Shoes	6.2%	5.7%
	Disposable Diapers and Sanitary Products, Animal By-Products, Rubber Products, Fines, Misc. Organics	1.6%	8.6%
	Food	9.1%	17.7%
	Leaves and Grass, prunings	20.8%	4.1%
	Rubber Products, Other Leather Products	2.1%	0.4%
	Stumps/Limbs; Wood Furniture/Furniture Pieces; Untreated Dimension Lumber, Pallets, Crates; Treated/Contaminated Wood	1.0%	4.7%
	Organics Total	40.7%	41.1%
Paper	Compostable/Soiled Paper/Waxed OCC/Kraft	1.5%	5.6%
	High Grade Paper	1.5%	0.9%
	Mixed Low Grade Paper	11.1%	10.3%
	Newspaper	9.5%	7.5%
	Other Nonrecyclable Paper	1.8%	0.7%
	Paper Bags	1.4%	0.6%
	Phone Books/Paperbacks	1.0%	0.9%
	Plain OCC/Kraft Paper	2.5%	2.4%
	Polycoated Paper Containers	0.2%	0.5%
	Single Use Paper Plates, Cups	0.2%	0.4%
	Paper Total	30.7%	30.0%
Plastic	#1PET Tubs/Trays/Other Containers	0.3%	0.0%
	#2 Tubs/Trays/Other Containers	0.5%	0.1%
	#3 Bottles/Tubs/Trays/Other Containers	0.1%	0.0%
	#4 Bottles/Tubs/Trays/Other Containers	0.0%	0.0%
	#5 Bottles/Tubs/Trays/Other Containers	0.1%	0.2%
	#7 Bottles/Tubs/Trays/Other Containers	0.0%	0.1%
	HDPE Bottles: Natural, HDPE Bottles: Colored	0.5%	0.9%
	Other Plastics Materials, Appliances: Plastic	4.4%	2.1%
	Other Rigid Containers and Packaging, Soda Crates and Bottle Carriers	1.8%	0.8%
	PET Bottles	0.5%	1.2%
	Plastic Bags, Other Film	5.8%	7.5%
	Polystyrene Containers and Packaging	0.1%	0.8%
	Single Use Plastic Plates, Cups, Cutlery, Etc.	0.1%	0.5%
	Plastic Total	14.3%	14.2%
	Grand Total	100%	100%

How does NYC's waste compare to the nation's waste as a whole? We can assess this by comparing the annual NYC WCS results to those that the EPA publishes for the United States. The comparison takes some recalculations to make EPA and WCS categories comparable.

Several points are of note in this comparison. The first is the overall similarity between New York City's residential waste composition and the composition of the nation's residential stream for the major material categories (shaded in grey). Despite having used an entirely different methodology, the NYC WCS results mirror those for the nation.

Effect of Bottle Bills

Second, we see certain differences at finer levels of detail. The U.S. residential waste stream has a greater proportion of its waste comprised of glass and aluminum cans than does NYC's. This suggests the effect of the absence of bottle bills in the majority of U.S. states. Only 11 out of 50 U.S. states currently apply deposits to beverage containers. New York State is one of the eleven. The fact that its glass and aluminum can fraction is lower than the nation's on average suggests that bottle bill redemptions may be preventing these materials from ending up in curbside waste or recycling. On the other hand, NYC's residential stream has a higher proportion of PET bottles. PET bottles include those for soda (which do fall under New York's and other States' deposit laws) and other non-carbonated beverages (which do not in New York State and most other states with bottle bills).

The information herein has been compiled, analyzed, and reported by the DSNY Bureau of Waste Prevention, Reuse and Recycling, using data collected by its consultant R.W. Beck. These highlights do not substitute for a thorough review of R.W. Beck's Final Report, which contains more detailed data. Some percentages may not total exactly due to rounding.

Other Differences

Appliances

Other differences, such as the fact that NYC's residential waste is comprised of considerably more bulk metal, such as appliances; and that the U.S.'s stream is correspondingly richer in plastic appliances, are not readily explainable but may reflect different consumption patterns in NYC, or methodological differences in classification of durables.

Yard Waste

It is not surprising that a much lower percentage of waste generated is leaves, grass and prunings in NYC, given New York City's extreme housing density compared to the rest of the country.

Food Waste

NYC generates nearly double the amount of food waste than the U.S. as a whole. This trend in food waste is seen not only in overall composition, but in per household rates as well. If we multiply the percentage of food waste in the nation's and NYC's residential stream times the per household weekly waste generation in total, we find that, on average, the typical U.S. household throws out 4.1 pounds of food a week, while the typical NYC household throws out 7.1 pounds a week.

Waste Generation Overall

These estimates were derived from calculating per household generation based on (1) number of households in the nation and NYC; (2) annual residential waste tonnage. It is notable that although New Yorkers discard more food per household, they discard less overall per household than the average American:

	EPA	WCS
Annual WasteTonnage	120,202,500	3,358,997
Households	102,528,000	3,200,912
Pounds per household weekly	45	40
Effect of 5 pounds less per week per NYC household on the annual tonnage citywide, for NYC = 416,119 tons per year		

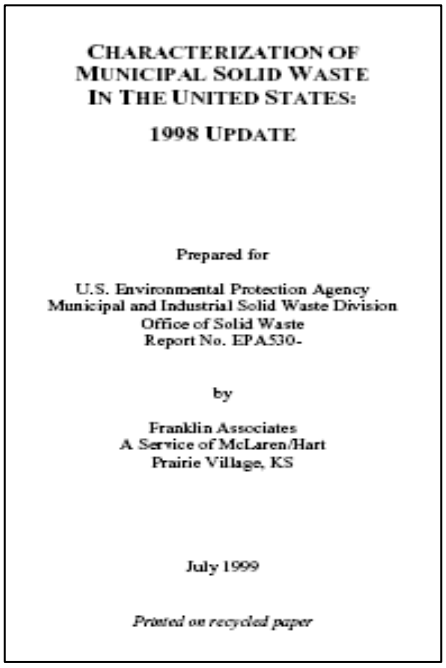
On an annual basis in NYC, this adds up to over 416,000 tons of waste that is not generated in NYC that is generated by residents elsewhere in the U.S. Talk about waste prevention!

Construction and Demolition Waste

Finally, there is data to suggest that the disposal of construction and demolition debris in residential waste is a particular problem for NYC. The EPA study did not have categories for brick, drywall, concrete, rubble, etc.; although it did have categories for lumber. We see that the NYC waste stream has considerably more wood and inorganic waste than the nation as a whole. Most of the inorganic fraction of the NYC waste consists of C&D materials.

Read more about the EPA WCS

Comparison of the NYC WCS results to the EPA's data on the nation as a whole was not part of the WCS scope of work. The above comparison is additional information provided by DSNY's BWPRR. For that reason, the WCS Final Report, written by DSNY's consultant R.W. Beck, does not contain any further information on comparing NYC to U.S. waste composition.



CHARACTERIZATION OF MUNICIPAL SOLID WASTE IN THE UNITED STATES:

1998 UPDATE

Prepared for

U.S. Environmental Protection Agency
Municipal and Industrial Solid Waste Division
Office of Solid Waste
Report No. EPA530-

by

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Readers interested in understanding how the above calculations were made should start with the EPA's Municipal Characterization of the United States, available on the EPA website. A visit to the EPA's Office of Solid Waste and Recycling[1] homepage yields a wealth of data on municipal solid waste from 1960 to 2003.

Readers should be aware that the EPA's data in most cases characterizes residential and commercial wastes together. In only one year, 1998, did the EPA present separate statistics on residential waste. For this reason, we have to use the data from the EPA's 1998 update if we want to make an accurate comparison to the WCS results, which also characterize only residential waste. It should be also be noted, that the EPA's reports do not convey results of studies that directly sample and weigh waste, as the NYC WCS did. As the authors explain:

> There are two basic approaches to estimating quantities of municipal solid waste at the local, state, or national levels—site-specific and material flows. In the first method, which is site-specific, sampling, sorting, and weighing the individual components of the waste stream could be used. This method is useful in defining a local waste stream, especially if large numbers of samples are taken over several seasons. Results of sampling also increase the body of knowledge about variations due to climatic and seasonal changes, population density, regional differences, and the like. In addition, quantities of MSW components such as food scraps and yard trimmings can only be estimated through sampling and weighing studies.
>
> To use these figures at the national level would require all states to perform these studies, and perform them in a way conducive to developing a national summary, which so far has not been practical.[2]

Instead, the EPA studies use the "Materials Flows" approach:

> . . .to estimate the waste stream on a nationwide basis [using] production data (by weight) for the materials and products in the waste stream. To estimate generation data, specific adjustments are made to the production data for each material and product category. Adjustments are made for imports

[1] www.epa.gov/msw/msw99.htm

[2] Franklin Associates for the Environmental Protection Agency. Municipal Solid Waste in the United States: 2000 Facts and Figures, EPA530-R-02-001, June 2002.

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and exports and for diversions from MSW (e.g., for building materials made of plastic and paperboard, which become construction and demolition debris). Adjustments also are made for the life spans of various products. Finally, food scraps and yard trimmings and a small amount of miscellaneous inorganic wastes are accounted for by compiling data from a variety of waste sampling studies.[1]

To make comparisons even more challenging, the EPA uses quite different material categories than the WCS did. Nonetheless, we were able to convert material categories used in the 1998 EPA characterization of residential waste into categories that were compatible with those used in the WCS in order to compare NYC's waste to the nation's as a whole.

[1] Franklin Associates for the Environmental Protection Agency. Municipal Solid Waste in the United States: 2000 Facts and Figures, EPA530-R-02-001, June 2002.