

Minnesota's Trash: What's In It

This information brief describes the Minnesota Pollution Control Agency's most recent estimates of the quantities of 50 types of waste materials contained in the state's municipal solid waste stream, based on hand-sorting conducted at six waste disposal and processing facilities.

Minnesotans threw away 2.9 million tons of waste in 2013.

About 2.9 million tons of municipal solid waste (MSW) generated in Minnesota remained for disposal in 2013 after recyclable materials were separated from the waste stream. In order to accurately assess the composition of this MSW, the Minnesota Pollution Control Agency (PCA) hand-sorted more than 39,000 pounds of waste delivered to six solid waste collection, processing, and disposal facilities in different parts of the state.¹ A waste sort of this type was last conducted by PCA in 2000.

The participating facilities included two landfills (in Lyon and Dakota counties), three transfer stations (St. Paul, Duluth, and Park Rapids), and a resource recovery facility (Elk River) where solid waste is processed into RDF (refuse derived fuel) for incineration to produce electricity. These facilities collectively accounted for about 26 percent of annual statewide MSW.²

¹ Minnesota Pollution Control Agency, *2013 Statewide Waste Characterization – Final Report*, December 2013, Table 3-1, p. 3-4, <https://www.pca.state.mn.us/sites/default/files/w-sw1-60.pdf>. The waste sorted excluded industrial waste and dedicated construction and demolition waste received at the facilities, although some commingled construction and demolition wastes were included. *Ibid.*, p. 4-3.

² *Ibid.*, Table 4-2, p. 4-2.

Waste materials were classified into 50 categories within eight major material types—paper, plastic, glass, metal, electronic, organic, household hazardous waste, and miscellaneous. The results are shown in the table on page 3.

Organic waste made up nearly a third of all waste.

The largest waste material disposed is organic waste—yard and food waste, wood and other organics—accounting for more than 900,000 tons, or 31 percent of total MSW. Food waste comprises more than half of that amount, over 519,000 tons (17.8 percent). Paper represents almost one-quarter of all MSW (714,600 tons), and plastic contributes 17.9 percent (522,800 tons). The composition of waste from the highest to lowest material type is as follows:

- Organic: 31.0 percent (906,800 tons)
- Paper: 24.5 percent (714,600 tons)
- Miscellaneous (see table for breakdowns): 18.3 percent (534,600 tons)
- Plastic: 17.9 percent (522,800 tons)
- Metal: 4.5 percent (130,200 tons)
- Glass: 2.2 percent (65,600 tons)
- Electronics: 1.2 percent (35,070 tons)
- Household hazardous waste: 0.4 percent (12,605 tons)

Comparing these figures to those of the 2000 waste sort reveals some changes. The share of paper in disposed waste declined significantly, from 34.3 percent to 24.5 percent. Conversely, the proportion of plastic waste increased by more than half, from 11.4 percent to 17.9 percent of total MSW. Film plastic—plastic grocery bags, plastic film used to stretch wrap products, and shrink wrap—contributed significantly to this increase. The share of organic material also increased, from 25.7 percent to 31.0 percent.³

Nearly 60 percent of waste could be recycled or composted.

The table also reveals that almost 60 percent of MSW is capable of being recycled or composted. This includes most paper and plastic, metal and glass containers, yard and food waste, even mattresses and carpet. While this figure indicates a significant potential for increasing the amount of materials diverted from disposal, it is also the case that in areas of the state with low population densities that are located far from collection, recycling, and composting facilities, the economics of diversion may be problematic.

³ *Ibid.*, Table 4-6, pp. 4-8 and 4-9.

Minnesota's Municipal Solid Waste Composition: 2012⁴

2012 Statewide MSW		2,922,045 tons			
Material	%	Tons	Material	%	Tons
PAPER			METAL		
Newsprint (ONP)	1.4%	40,400	Aluminum Beverage Containers	0.4%	12,200
High Grade Office Paper	1.1%	33,500	Other Aluminum	0.7%	19,000
Magazines/Catalogs	0.7%	21,500	Steel/Tin (Ferrous) Containers	0.7%	21,100
Phone Books	0.1%	3,900	Other Metal	2.7%	77,900
Gable Top/Aseptic Containers/Cartons	0.3%	9,000	<i>Subtotal Metal</i>	4.5%	130,200
OCC and Kraft Bags	3.7%	106,700			
Boxboard	1.6%	45,900	GLASS		
Compostable Paper	9.8%	285,400	Beverage Container Glass	1.3%	38,900
Mixed Recyclable Paper	3.4%	100,400	Glass Containers	0.5%	14,500
Non-Recyclable Paper	2.3%	67,900	Other (Non-Container) Glass	0.4%	12,200
<i>Subtotal Paper</i>	24.5%	714,600	<i>Subtotal Glass</i>	2.2%	65,600
PLASTIC			ELECTRONICS		
#1 PET Beverage Containers	0.8%	23,200	Laptops	0.0%	70
Other PET (e.g. jars and clamshells)	0.5%	15,400	Computer Monitors	NA	NA
HDPE Bottles/Jars	0.5%	14,800	Televisions	0.0%	1,400
Other HDPE	0.6%	16,100	Printers	0.1%	2,100
PVC - #3	0.0%	1,100	All Other Electronic Items	1.1%	31,500
Polystyrene - #6	1.0%	28,900	<i>Subtotal Electronics</i>	1.2%	35,070
LDPE (Rigids) - #4	0.1%	1,700			
Polypropylene - #5	0.6%	17,200	ORGANIC		
Other #7 Plastics	0.1%	2,800	Yard Waste	2.8%	81,500
PLA & Compostable Plastics	0.0%	700	Food Waste	17.8%	519,400
Bag and Film Plastic	6.6%	192,600	Wood	5.7%	168,000
Other Plastic (nonpackaging)	7.1%	208,300	Other Organic Material	4.7%	137,900
<i>Subtotal Plastic</i>	17.9%	522,800	<i>Subtotal Organic</i>	31.0%	906,800
HOUSEHOLD HAZARDOUS WASTE (HHW)			MISCELLANEOUS WASTES		
Batteries	0.1%	1,500	Mattresses/Box Springs	0.4%	10,800
Mercury Containing Lamps	0.0%	1	Appliances & Furniture	3.0%	87,400
Paint Containers	0.2%	6,600	Textiles & Leather	4.7%	135,900
Oil Containers & Filters	0.0%	100	Carpet	2.3%	67,300
Smoke Detectors	0.0%	4	Sharps and Infectious Waste	0.0%	200
Other HHW	0.2%	4,400	Other Not Elsewhere Classified	8.0%	233,000
<i>Subtotal HHW</i>	0.4%	12,605	<i>Subtotal Miscellaneous Wastes</i>	18.3%	534,600

Source: Minnesota Pollution Control Agency, 2013 Statewide Waste Characterization – Final Report, December 2013, Table 5-1, p. 5-2

⁴ The samples were taken in 2013, but the resulting percentages of total MSW for each category were then multiplied by the 2012 total weight of all MSW (2,922,045 tons) to estimate the number of tons in each category.