Advancing Sustainable Materials Management: 2018 Tables and Figures

Assessing Trends in Materials Generation and Management in the United States

December 2020

List of Tables

Page

List of Tables (Continued)

Page

List of Figures

Page

Table 1. Materials Generated* in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of total generation)

Materials	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard	29,990	44,310	55,160	72,730	87,740	84,840	71,310	68,050	67,010	67,390
Glass	6,720	12,740	15,130	13,100	12,770	12,540	11,520	11,470	12,300	12,250
Metals										
Ferrous	10,300	12,360	12,620	12,640	14,150	15,210	16,920	18,190	18,890	19,200
Aluminum	340	800	1,730	2,810	3,190	3,330	3,510	3,670	3,820	3,890
Other Nonferrous	180	670	1,160	1,100	1,600	1,860	2,020	2,010	2,510	2,510
Total Metals	*10,820*	*13,830*	*15,510*	*16,550*	*18,940*	*20,400*	*22,450*	*23,870*	*25,220*	*25,600*
Plastics	390	2,900	6,830	17,130	25,550	29,380	31,400	34,480	35,410	35,680
Rubber and Leather	1,840	2,970	4,200	5,790	6,670	7,290	7,750	8,560	9,110	9,160
Textiles	1,760	2,040	2,530	5,810	9,480	11,510	13,220	16,060	16,890	17,030
Wood	3,030	3,720	7,010	12,210	13,570	14,790	15,710	16,300	18,200	18,090
Other **	70	770	2,520	3,190	4,000	4,290	4,710	4,880	4,630	4,560
Total Materials in Products	***54,620***	***83,280***	***108,890***	***146,510***	***178,720***	***185,040***	***178,070***	***183,670***	***188,770***	***189,760***
Other Wastes										
Food^	12,200	12,800	13,000	23,860	30,700	32,930	35,740	39,730	40,670	63,130
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	33,400	34,720	35,180	35,400
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,840	3,990	4,040	4,070
Total Other Wastes	***33,500***	***37,780***	***42,750***	***61,760***	***64,730***	***68,690***	***72,980***	***78,440***	***79,890***	***102,600***
Total MSW Generated - Weight ¥	***88,120***	***121,060***	***151,640***	***208,270***	***243,450***	***253,730***	***251,050***	***262,110***	***268,660***	***292,360***

Materials	Percent of Total Generation									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard	34.0%	36.6%	36.4%	34.9%	36.0%	33.4%	28.4%	26.0%	24.9%	23.1%
Glass	7.6%	10.5%	10.0%	6.3%	5.2%	4.9%	4.6%	4.4%	4.6%	4.2%
Metals										
Ferrous	11.7%	10.2%	8.3%	6.1%	5.8%	6.0%	6.7%	6.9%	7.0%	6.6%
Aluminum	0.4%	0.7%	1.1%	1.3%	1.3%	1.3%	1.4%	1.4%	1.4%	1.3%
Other Nonferrous	0.2%	0.6%	0.8%	0.5%	0.7%	0.7%	0.8%	0.8%	1.0%	0.9%
Total Metals	*12.3%*	*11.4%*	*10.2%*	*7.9%*	*7.8%*	*8.0%*	*8.9%*	*9.1%*	*9.4%*	*8.8%*
Plastics	0.4%	2.4%	4.5%	8.2%	10.5%	11.6%	12.5%	13.2%	13.2%	12.2%
Rubber and Leather	2.1%	2.5%	2.8%	2.8%	2.7%	2.9%	3.1%	3.3%	3.4%	3.1%
Textiles	2.0%	1.7%	1.7%	2.8%	3.9%	4.5%	5.3%	6.1%	6.3%	5.8%
Wood	3.4%	3.1%	4.6%	5.9%	5.6%	5.8%	6.3%	6.2%	6.8%	6.2%
Other **	0.1%	0.6%	1.7%	1.5%	1.6%	1.7%	1.9%	1.8%	1.7%	1.5%
Total Materials in Products	***62.0%***	***68.8%***	***71.8%***	***70.3%***	***73.4%***	***72.9%***	***70.9%***	***70.1%***	**70.3%**	**64.9%**
Other Wastes										
Food^	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	14.2%	15.2%	15.1%	21.6%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.3%	13.2%	13.1%	12.1%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.4%
Total Other Wastes	***38.0%***	***31.2%***	***28.2%***	***29.7%***	***26.6%***	***27.1%***	***29.1%***	***29.9%***	**29.7%**	**35.1%**
Total MSW Generated - % ¥	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Generation before materials are recycled, composted, managed by other food pathways, combusted with energy recovery or landfilled. Does not include construction & demolition debris, industrial process wastes or certain other wastes.

** Includes electrolytes in batteries and fluff pulp, feces and urine in disposable diapers.

^ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data.

¥ Generation rose considerably from 2017 to 2018 mainly because EPA enhanced its food measurement methodology to more fully account for all the ways wasted food is managed throughout the food system.

Table 2. Materials Recycled,* Composted and Managed by Other Food Pathways in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of generation of each material)

Materials	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Paper and Paperboard	5,080	6,770	11,740	20,230	37,560	41,960	44,570	45,320	44,170	45,970
Glass	100	160	750	2,630	2,880	2,590	3,130	3,190	3,070	3,060
Metals										
Ferrous	50	150	370	2,230	4,680	5,020	5,800	6,070	6,170	6,360
Aluminum	Neg.	10	310	1,010	860	690	680	670	600	670
Other Nonferrous	Neg.	320	540	730	1,060	1,280	1,440	1,290	1,710	1,690
Total Metals	*50*	*480*	*1,220*	*3,970*	*6,600*	*6,990*	*7,920*	*8,030*	*8,480*	*8,720*
Plastics	Neg.	Neg.	20	370	1,480	1,780	2,500	3,120	3,000	3,090
Rubber and Leather	330	250	130	370	820	1,050	1,440	1,550	1,670	1,670
Textiles	50	60	160	660	1,320	1,830	2,050	2,460	2,570	2,510
Wood	Neg.	Neg.	Neg.	130	1,370	1,830	2,280	2,660	3,030	3,100
Other **	Neg.	300	500	680	980	1,210	1,370	1,230	990	970
Total MSW recycled	***5,610***	***8,020***	***14,520***	***29,040***	***53,010***	***59,240***	***65,260***	***67,560***	***66,980***	***69,090***
Composted										
Food - composted										
Food^	Neg.	Neg.	Neg.	Neg.	680	690	970	2,100	2,570	2,590
Yard Trimmings - composted										
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	19,200	21,290	24,420	22,300
Misc. Inorganic Wastes - composted										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***4,200***	***16,450***	***20,550***	***20,170***	***23,390***	***26,990***	***24,890***
Other Food Management										
Other Food Management¥										
Food - animal feed										1,820
Food - bio-based materials/biochemical processing										1,840
Food – codigestion/anaerobic digestion										5,260
Food - donation										4,790
Food - land application										260
Food – sewer/wastewater treatment										3,740
Total Food – other food management										***17,710***
Total MSW Recycled and Composted - Weight	***5,610***	***8,020***	***14,520***	***33,240***	***69,460***	***79,790***	***85,430***	***90,950***	***93,970***	***93,980***
Total MSW Recycled, Composted and Other Food Management - Weight										***111,690***

Materials	Percent of Generation of Each Material									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Paper and Paperboard	16.9%	15.3%	21.3%	27.8%	42.8%	49.5%	62.5%	66.6%	65.9%	68.2%
Glass	1.5%	1.3%	5.0%	20.1%	22.6%	20.7%	27.2%	27.8%	25.0%	25.0%
Metals										
Ferrous	0.5%	1.2%	2.9%	17.6%	33.1%	33.0%	34.3%	33.4%	32.7%	33.1%
Aluminum	Neg.	1.3%	17.9%	35.9%	27.0%	20.7%	19.4%	18.3%	15.7%	17.2%
Other Nonferrous	Neg.	47.8%	46.6%	66.4%	66.3%	68.8%	71.3%	64.2%	68.1%	67.3%
Total Metals	*0.5%*	*3.5%*	*7.9%*	*24.0%*	*34.8%*	*34.3%*	*35.3%*	*33.6%*	*33.6%*	*34.1%*
Plastics	Neg.	Neg.	0.3%	2.2%	5.8%	6.1%	8.0%	9.0%	8.5%	8.7%
Rubber and Leather	17.9%	8.4%	3.1%	6.4%	12.3%	14.4%	18.6%	18.1%	18.3%	18.2%
Textiles	2.8%	2.9%	6.3%	11.4%	13.9%	15.9%	15.5%	15.3%	15.2%	14.7%
Wood	Neg.	Neg.	Neg.	1.1%	10.1%	12.4%	14.5%	16.3%	16.6%	17.1%
Other **	Neg.	39.0%	19.8%	21.3%	24.5%	28.2%	29.1%	25.2%	21.4%	21.3%
Total Materials in Products – recycled	***10.3%***	***9.6%***	***13.3%***	***19.8%***	***29.7%***	***32.0%***	***36.6%***	***36.8%***	***35.5%***	***36.4%***

Table 2. Materials Recycled,* Composted and Managed by Other Food Pathways in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of generation of each material)

Materials	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Composted										
Food - Composted										
Food^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.7%	5.3%	6.3%	4.1%
Yard Trimmings - Composted										
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	57.5%	61.3%	69.4%	63.0%
Misc. Inorganic Wastes – composted										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total – composted	***Neg.***	***Neg.***	***Neg.***	***6.8%***	***25.4%***	***29.9%***	***27.6%***	***29.8%***	***33.8%***	***24.3%***
Other Food Management										
Other Food Management¥										
Food - animal feed										2.9%
Food - bio-based materials/biochemical processing										2.9%
Food – codigestion/anaerobic digestion										8.3%
Food - donation										7.6%
Food - land application										0.4%
Food – sewer/wastewater treatment										5.9%
Total Food – other food management										***28.1%***
Total MSW Recycled and Composted - %	***6.4%***	***6.6%***	***9.6%***	***16.0%***	***28.5%***	***31.4%***	***34.0%***	***34.7%***	***35.0%***	***32.1%***
Total MSW Recycled, Composted and Other Food Management - %										***38.2%***

* Recycling of postconsumer wastes; does not include converting/fabrication scrap. Details may not add to totals due to rounding.

** Collection of electrolytes in batteries; probably not recycled.

Neg = Less than 5,000 tons or 0.05 percent.

^ Includes collection of other MSW organics for composting.

¥ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data.

Table 3. Materials Combusted with Energy Recovery* in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of total combusted)

Materials	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard		150	860	8,930	9,730	7,800	4,740	4,450	4,490	4,200
Glass		60	300	1,810	1,790	1,660	1,360	1,440	1,650	1,640
Metals										
Ferrous		60	250	1,690	1,610	1,640	1,810	2,150	2,290	2,310
Aluminum		0	30	300	390	410	440	510	550	560
Other Nonferrous		0	20	60	50	50	60	60	70	80
Total Metals		*60*	*300*	*2,050*	*2,050*	*2,100*	*2,310*	*2,720*	*2,910*	*2,950*
Plastics		0	140	2,980	4,120	4,330	4,530	5,330	5,590	5,620
Rubber and Leather		10	70	830	1,970	2,110	1,910	2,520	2,490	2,500
Textiles		10	50	880	1,880	2,110	2,270	3,060	3,170	3,220
Wood		10	150	2,080	2,290	2,270	2,310	2,570	2,880	2,840
Other **		0	30	410	540	510	540	670	670	660
Total Materials in Products		***300***	***1,900***	***19,970***	***24,370***	***22,890***	***19,970***	***22,760***	***23,850***	***23,630***
Other Wastes										
Food		50	260	4,060	5,820	5,870	6,150	7,380	7,470	7,550
Yard Trimmings		90	550	5,240	2,860	2,220	2,510	2,630	2,110	2,570
Miscellaneous Inorganic Wastes		10	50	490	680	670	680	780	790	800
Total Other Wastes		***150***	***860***	***9,790***	***9,360***	***8,760***	***9,340***	***10,790***	***10,370***	***10,920***
Total MSW Combusted - Weight		***450***	***2,760***	***29,760***	***33,730***	***31,650***	***29,310***	***33,550***	***34,220***	***34,550***

Materials	Percent of Total Combusted									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard		33.3%	31.2%	30.0%	28.8%	24.6%	16.2%	13.3%	13.1%	12.2%
Glass		13.3%	10.9%	6.1%	5.3%	5.2%	4.6%	4.3%	4.8%	4.8%
Metals										
Ferrous		13.3%	9.0%	5.7%	4.8%	5.2%	6.2%	6.4%	6.7%	6.7%
Aluminum		0.0%	1.1%	1.0%	1.2%	1.3%	1.5%	1.5%	1.6%	1.6%
Other Nonferrous		0.0%	0.7%	0.2%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Total Metals		*13.3%*	*10.8%*	*6.9%*	*6.1%*	*6.6%*	*7.9%*	*8.1%*	*8.5%*	*8.5%*
Plastics		Neg.	5.1%	10.0%	12.2%	13.7%	15.5%	15.9%	16.3%	16.3%
Rubber and Leather		2.2%	2.5%	2.8%	5.9%	6.7%	6.5%	7.5%	7.3%	7.2%
Textiles		2.2%	1.8%	2.9%	5.6%	6.7%	7.7%	9.1%	9.3%	9.3%
Wood		2.2%	5.4%	7.0%	6.8%	7.2%	7.9%	7.7%	8.4%	8.2%
Other **		Neg.	1.1%	1.4%	1.6%	1.6%	1.8%	2.0%	2.0%	1.9%
Total Materials in Products		**66.6%**	**68.8%**	**67.1%**	**72.3%**	**72.3%**	**68.1%**	**67.9%**	***69.7%***	***68.4%***
Other Wastes										
Food		11.1%	9.4%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	21.9%
Yard Trimmings		20.0%	20.0%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.4%
Miscellaneous Inorganic Wastes		2.3%	1.8%	1.7%	1.9%	2.1%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes		***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***31.6%***
Total MSW Combusted with Energy Recovery- %		***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Products and materials combusted with energy recovery estimated at percentage total MSW after recycling and composting. In 2018, 19.6 percent of MSW after recycling and composting was combusted with energy recovery except for major appliances, tires and lead-acid batteries (see Table 16 for details) and food (percentage distribution for food varies by generator sector, see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data). No combustion with energy recovery in 1960 (see Table 35). Does not include construction & demolition debris, industrial process wastes, or certain other wastes. Details may not add to totals due to rounding.

** Includes electrolytes in batteries and fluff pulp, feces and urine in disposable diapers.

Table 4. Materials Landfilled* in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of total landfilled)

Materials	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard	24,910	37,390	42,560	43,570	40,450	35,080	22,000	18,280	18,350	17,220
Glass	6,620	12,520	14,080	8,660	8,100	8,290	7,030	6,840	7,580	7,550
Metals										
Ferrous	10,250	12,150	12,000	8,720	7,860	8,550	9,310	9,970	10,430	10,530
Aluminum	340	790	1,390	1,500	1,940	2,230	2,390	2,490	2,670	2,660
Other Nonferrous	180	350	600	310	490	530	520	660	730	740
Total Metals	*10,770*	*13,290*	*13,990*	*10,530*	*10,290*	*11,310*	*12,220*	*13,120*	*13,830*	*13,930*
Plastics	390	2,900	6,670	13,780	19,950	23,270	24,370	26,030	26,820	26,970
Rubber and Leather	1,510	2,710	4,000	4,590	3,880	4,130	4,400	4,490	4,950	4,990
Textiles	1,710	1,970	2,320	4,270	6,280	7,570	8,900	10,540	11,150	11,300
Wood	3,030	3,710	6,860	10,000	9,910	10,690	11,120	11,070	12,290	12,150
Other **	70	470	1,990	2,100	2,480	2,570	2,800	2,980	2,970	2,930
Total Materials in Products	***49,010***	***74,960***	***92,470***	***97,500***	***101,340***	***102,910***	***92,840***	***93,350***	***97,940***	***97,040***
Other Wastes										
Food	12,200	12,750	12,740	19,800	24,200	26,370	28,620	30,250	30,630	35,280
Yard Trimmings	20,000	23,110	26,950	25,560	11,900	9,990	11,690	10,800	8,650	10,530
Miscellaneous Inorganic Wastes	1,300	1,770	2,200	2,410	2,820	3,020	3,160	3,210	3,250	3,270
Total Other Wastes	***33,500***	***37,630***	***41,890***	***47,770***	***38,920***	***39,380***	***43,470***	***44,260***	***42,530***	***49,080***
Total MSW Landfilled - Weight	***82,510***	***112,590***	***134,360***	***145,270***	***140,260***	***142,290***	***136,310***	***137,610***	***140,470***	***146,120***
Materials	**Percent of Total Landfilled**									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Paper and Paperboard	30.2%	33.2%	31.7%	30.0%	28.8%	24.7%	16.1%	13.3%	13.1%	11.8%
Glass	8.0%	11.1%	10.5%	6.0%	5.8%	5.8%	5.1%	5.0%	5.4%	5.2%
Metals										
Ferrous	12.4%	10.8%	8.9%	6.0%	5.6%	6.0%	6.8%	7.2%	7.4%	7.2%
Aluminum	0.4%	0.7%	1.0%	1.0%	1.4%	1.6%	1.8%	1.8%	1.9%	1.8%
Other Nonferrous	0.2%	0.3%	0.4%	0.2%	0.3%	0.3%	0.4%	0.5%	0.5%	0.5%
Total Metals	*13.0%*	*11.8%*	*10.3%*	*7.2%*	*7.3%*	*7.9%*	*9.0%*	*9.5%*	*9.8%*	*9.5%*
Plastics	0.5%	2.6%	5.0%	9.5%	14.2%	16.4%	17.9%	18.9%	19.1%	18.5%
Rubber and Leather	1.8%	2.4%	3.0%	3.2%	2.8%	2.9%	3.2%	3.3%	3.5%	3.4%
Textiles	2.1%	1.7%	1.7%	2.9%	4.5%	5.3%	6.5%	7.7%	7.9%	7.7%
Wood	3.7%	3.3%	5.1%	6.9%	7.1%	7.5%	8.2%	8.0%	8.7%	8.3%
Other **	0.1%	0.4%	1.5%	1.4%	1.8%	1.8%	2.1%	2.2%	2.2%	2.0%
Total Materials in Products	***59.4%***	***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***66.4%***
Other Wastes										
Food	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	24.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.2%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	1.9%	2.2%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes	***40.6%***	***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***33.6%***
Total MSW Landfilled - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Landfilling after recycling, composting, other food management pathways and combustion with energy recovery. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

** Includes electrolytes in batteries and fluff pulp, feces and urine in disposable diapers.

Table 5. Paper and Paperboard Products In MSW, 2018

(In thousands of tons and percent of generation)

Product Category	Generation	Recycled		Combusted with Energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Nondurable Goods					
Newspapers/Mechanical Papers†	5,050	3,270	64.8%	350	1,430
Books	690				
Magazines	980				
Office-type Papers*	3,970				
Marketing Mail**	3,670				
Other Commercial Printing	2,000				
Tissue Paper and Towels	3,790				
Paper Plates and Cups	1,420				
Other Nonpackaging Paper***	3,920				
Subtotal Nondurable Goods excluding Newspaper/Mechanical Papers§	***20,440***	***8,810***	***43.1%***	***2,280***	***9,350***
Total Paper and Paperboard Nondurable Goods	**25,490**	**12,080**	**47.4%**	**2,630**	**10,780**
Containers and Packaging					
Corrugated Boxes	33,260	32,090	96.5%	230	940
Gable Top/Aseptic Cartons‡	630				
Folding Cartons	5,370				
Other Paperboard Packaging	50				
Bags and Sacks	1,090				
Other Paper Packaging	1,500				
Subtotal Containers and Packaging excluding Corrugated Boxes§	***8,640***	***1,800***	***20.8%***	***1,340***	***5,500***
Total Paper and Paperboard Containers and Packaging	**41,900**	**33,890**	**80.9%**	**1,570**	**6,440**
Total Paper and Paperboard	**67,390**	**45,970**	**68.2%**	**4,200**	**17,220**

† Starting in 2010, newsprint and groundwood inserts expanded to include directories and other mechanical papers previously counted as Other Commercial Printing.

* High-grade papers such as copy paper and printer paper; both residential and commercial.

** Formerly called Third Class Mail and Standard Mail by the U.S. Postal Service.

*** Includes paper in games and novelties, cards, etc.

§ Valid default values for separating out paper and paperboard sub-categories for recycling, combustion with energy recovery and landfilling from subtotal mixed paper were not available.

‡ Includes milk, juice, and other products packaged in gable top cartons and liquid food aseptic cartons.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 6. Glass Products in MSW, 2018

(In thousands of tons and percent of generation)

Product Category	Generation	Recycled		Combusted with Energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Durable Goods*	2,460	Neg.	Neg.	330	2,130
Containers and Packaging					
Beer and Soft Drink Bottles**	4,650	1,840	39.6%	550	2,260
Wine and Liquor Bottles	1,810	720	39.8%	210	880
Other Bottles and Jars	3,330	500	15.0%	550	2,280
Total Glass Containers	***9,790***	***3,060***	***31.3%***	***1,310***	***5,420***
Total Glass	**12,250**	**3,060**	**25.0%**	**1,640**	**7,550**

* Glass as a component of appliances, furniture, consumer electronics, etc.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

Neg. = Less than 5,000 tons or 0.05 percent.

Details may not add to totals due to rounding.

Table 7. Metal Products in MSW, 2018

(In thousands of tons and percent of generation)

Product Category	Generation	Recycled		Combusted with Energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Durable Goods					
Ferrous Metals*	16,990	4,730	27.8%	2,200	10,060
Aluminum**	1,750	NA	NA	270	1,480
Lead†	1,710	1,690	98.8%		20
Other Nonferrous Metals‡	800	Neg.	Neg.	80	720
Total Metals in Durable Goods	***21,250***	***6,420***	***30.2%***	***2,550***	***12,280***
Nondurable Goods					
Aluminum	220	NA	NA	40	180
Containers and Packaging					
Steel					
Cans	1,580	1,120	70.9%	90	370
Other Steel Packaging	630	510	81.0%	20	100
Total Steel Packaging	***2,210***	***1,630***	***73.8%***	***110***	***440***
Aluminum					
Beer and Soft Drink Cans§	1,330	670	50.4%	130	530
Other Cans	80	NA	NA	20	60
Foil and Closures	510	NA	NA	100	410
Total Aluminum Packaging	***1,920***	***670***	***34.9%***	***250***	***1,000***
Total Metals in Containers and Packaging	***4,130***	***2,300***	***55.7%***	***360***	***1,470***
Total Metals	***25,600***	***8,720***	***34.1%***	***2,950***	***13,930***
Ferrous	19,200	6,360	33.1%	2,310	10,530
Aluminum	3,890	670	17.2%	560	2,660
Other nonferrous	2,510	1,690	67.3%	80	740

* Ferrous metals (iron and steel) in appliances, furniture, tires and miscellaneous durables.
** Aluminum in appliances, furniture and miscellaneous durables.
† Lead in lead-acid batteries.
‡ Other nonferrous metals in appliances and miscellaneous durables.
§ Aluminum can recycling does not include used beverage cans imported to produce new beverage cans.
NA = Not Available
Details may not add to totals due to rounding.

Table 8. Plastics in Products In MSW, 2018

(In thousands of tons and percent of generation by resin)

Product Category	Generation	Recycled *		Combusted with energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Durable Goods					
PET	660				
HDPE	1,590				
PVC	180				
LDPE/LLDPE	2,130				
PP	4,590				
PS	760				
Other resins	3,780				
Total Plastics in Durable Goods	13,690	***930***	***6.8%***	***1,740***	***11,020***
Nondurable Goods‡					
Plastic Plates and Cups§					
LDPE/LLDPE	20				
PLA	30				
PP	160				
PS	820				
Subtotal Plastic Plates and Cups	***1,030***	***Neg.***	***Neg.***	***200***	***830***
Trash Bags					
HDPE	230				
LDPE/LLDPE	1,000				
Subtotal Trash Bags	***1,230***			***240***	***990***
All other nondurables**					
PET	770				
HDPE	690				
PVC	270				
LDPE/LLDPE	1,710				
PLA	40				
PP	1,570				
PS	130				
Other resins	20				
Subtotal All Other Nondurables	***5,200***	***180***	***3.5%***	***980***	***4,040***
Total Plastics in Nondurable Goods, by resin					
PET	770				
HDPE	920				
PVC	270				
LDPE/LLDPE	2,730				
PLA	70				
PP	1,730				
PS	950				
Other resins	20				
Total Plastics in Nondurable Goods	***7,460***	***180***	***2.4%***	***1,420***	***5,860***

Table 8. Plastics in Products In MSW, 2018

(In thousands of tons and percent of generation by resin)

Product Category	Generation	Recycled *		Combusted with energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Plastic Containers & Packaging					
Bottles and Jars***					
PET	3,130	910	29.1%	440	1,780
Natural Bottles†					
HDPE	750	220	29.3%	100	430
Other plastic containers					
HDPE	1,600	290	18.1%		
PVC	20	Neg.			
LDPE/LLDPE	40	Neg.			
PP	250	20	8.0%		
PS	80	Neg.			
Subtotal Other Containers	***1,990***	***310***	***15.6%***	***330***	***1,350***
Bags, sacks and wraps					
HDPE	640	50	7.8%		
PVC	70				
LDPE/LLDPE	2,780	370	13.3%		
PP	570				
PS	140				
Subtotal Bags, Sacks and Wraps	***4,200***	***420***	***10.0%***	***740***	***3,040***
Other Plastics Packaging¥					
PET	730	70	9.6%		
HDPE	800	Neg.			
PVC	300	Neg.			
LDPE/LLDPE	910	Neg.			
PLA	20	Neg.			
PP	1,010	30	3.0%		
PS	330	20	6.1%		
Other resins	360	Neg.			
Subtotal Other Packaging	***4,460***	***120***	***2.7%***	***850***	***3,490***
Total Plastics in Containers & Packaging, by resin					
PET	3,860	980	25.4%		
HDPE	3,790	560	14.8%		
PVC	390	Neg.			
LDPE/LLDPE	3,730	370	9.9%		
PLA	20	Neg.			
PP	1,830	50	2.7%		
PS	550	20	3.6%		
Other resins	360	Neg.			
Total Plastics in Containers & Packaging	***14,530***	***1,980***	***13.6%***	***2,460***	***10,090***

Table 8. Plastics in Products In MSW, 2018

(In thousands of tons and percent of generation by resin)

Product Category	Generation	Recycled *		Combusted with energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Total Plastics in MSW, by resin					
PET	5,290	980	18.5%		
HDPE	6,300	560	8.9%		
PVC	840	Neg.			
LDPE/LLDPE	8,590	370	4.3%		
PLA	90	Neg.			
PP	8,150	50	0.6%		
PS	2,260	20	0.9%		
Other resins	4,160	1,110	26.7%		
Total Plastics in MSW	***35,680***	***3,090***	***8.7%***	***5,620***	***26,970***

* Mechanical and non-mechanical recycling.

‡ Nondurable goods other than containers and packaging.

§ Due to source data aggregation, PET cups are included in "Other Plastic Packaging".

** All other nondurables include plastics in disposable diapers, clothing, footwear, etc.

*** Injection stretch blow molded PET containers as identified in *Report on Postconsumer PET Container Recycling Activity in 2017*. National Association for PET Container Resources. Recycling includes caps, lids and other material collected with PET bottles and jars.

† White translucent homopolymer bottles as defined in the *2017 United States National Postconsumer Plastics Bottles Recycling Report*. American Chemistry Council and the Association of Postconsumer Plastic Recyclers.

¥ Other plastic packaging includes coatings, closures, lids, caps, clamshells, egg cartons, produce baskets, trays, shapes, loose fill, etc.

PP and HDPE caps and lids recycled with PET bottles and jars are included in the recycling estimate for PET bottles and jars.

Other resins include commingled/undefined plastic packaging recycling.

Some detail of recycling by resin omitted due to lack of data.

Neg. = negligible, less than 5,000 tons

HDPE = High density polyethylene
LDPE = Low density polyethylene
LLDPE = Linear low density polyethylene
PET = Polyethylene terephthalate
PP = Polypropylene
PLA = Polylactide
PS = Polystyrene
PVC = Polyvinyl chloride

Table 9. Rubber and Leather Products In MSW, 2018

(In thousands of tons and percent of generation)

Product Category	Generation	Recycled		Combusted with energy Recovery	Landfilled
	(Thousand tons)	(Thousand tons)	(Percent of generation)	(Thousand tons)	(Thousand tons)
Durable Goods					
Rubber in Tires*	4,180	1,670	40.0%	1,730	780
Other Durables**	3,800	Neg.	Neg.	540	3,260
Total Rubber and Leather					
Durable Goods	***7,980***	***1,670***	***20.9%***	***2,270***	***4,040***
Nondurable Goods					
Clothing and Footwear	900	Neg.	Neg.	180	720
Other Nondurables	280	Neg.	Neg.	50	230
Total Rubber and Leather					
Nondurable Goods	***1,180***	***Neg.***	***Neg.***	***230***	***950***
Total Rubber and Leather	***9,160***	***1,670***	***18.2%***	***2,500***	***4,990***

* Automobile and truck tires. Does not include other materials in tires.

** Includes carpets and rugs and other miscellaneous durables.

Neg. = Less than 5,000 tons or 0.05 percent.

Details may not add to totals due to rounding.

Table 10. Products Generated* in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of total generation)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**9,920**	**14,660**	**21,800**	**29,810**	**38,870**	**45,060**	**49,350**	**53,940**	**56,870**	**57,100**
(Detail in Table 14)										
Nondurable Goods	**17,330**	**25,060**	**34,420**	**52,170**	**64,010**	**63,650**	**53,250**	**51,810**	**50,700**	**50,440**
(Detail in Table 18)										
Containers and Packaging	**27,370**	**43,560**	**52,670**	**64,530**	**75,840**	**76,330**	**75,470**	**77,920**	**81,200**	**82,220**
Detail in Table 22)										
Total Product Wastes	***54,620***	***83,280***	***108,890***	***146,510***	***178,720***	***185,040***	***178,070***	***183,670***	***188,770***	***189,760***
Other Wastes										
Food^	12,200	12,800	13,000	23,860	30,700	32,930	35,740	39,730	40,670	63,130
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	33,400	34,720	35,180	35,400
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,840	3,990	4,040	4,070
Total Other Wastes	***33,500***	***37,780***	***42,750***	***61,760***	***64,730***	***68,690***	***72,980***	***78,440***	***79,890***	***102,600***
Total MSW Generated - Weight	***88,120***	***121,060***	***151,640***	***208,270***	***243,450***	***253,730***	***251,050***	***262,110***	***268,660***	***292,360***

Products	Percent of Total Generation									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**11.3%**	**12.1%**	**14.4%**	**14.3%**	**16.0%**	**17.8%**	**19.7%**	**20.6%**	**21.2%**	**19.5%**
(Detail in Table 14)										
Nondurable Goods	**19.7%**	**20.7%**	**22.7%**	**25.0%**	**26.3%**	**25.1%**	**21.2%**	**19.8%**	**18.9%**	**17.3%**
(Detail in Table 18)										
Containers and Packaging	**31.1%**	**36.0%**	**34.7%**	**31.0%**	**31.2%**	**30.1%**	**30.1%**	**29.7%**	**30.2%**	**28.1%**
(Detail in Table 23)										
Total Product Wastes	***62.0%***	***68.8%***	***71.8%***	***70.3%***	***73.4%***	***72.9%***	***70.9%***	***70.1%***	***70.3%***	***64.9%***
Other Wastes										
Food^	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	14.2%	15.2%	15.1%	21.6%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.3%	13.2%	13.1%	12.1%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.4%
Total Other Wastes	***38.0%***	***31.2%***	***28.2%***	***29.7%***	***26.6%***	***27.1%***	***29.1%***	***29.9%***	***29.7%***	***35.1%***
Total MSW Generated - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Generation before materials are recycled, composted, managed by other food pathways, combusted with energy recovery or landfilled. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

^ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Table 11. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 TO 2018

(In thousands of tons and percent of generation of each product)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods	**350**	**940**	**1,360**	**3,460**	**6,580**	**7,970**	**9,390**	**9,880**	**10,550**	**10,570**
(Detail in Table 15)										
Nondurable Goods	**2,390**	**3,730**	**4,670**	**8,800**	**17,560**	**19,770**	**19,190**	**16,190**	**16,290**	**14,190**
(Detail in Table 19)										
Containers and Packaging	**2,870**	**3,350**	**8,490**	**16,780**	**28,870**	**31,500**	**36,680**	**41,490**	**40,140**	**44,330**
Detail in Table 24)										
Total Product Wastes - recycled	***5,610***	***8,020***	***14,520***	***29,040***	***53,010***	***59,240***	***65,260***	***67,560***	***66,980***	***69,090***
Composted										
Food - composted										
Food^	Neg.	Neg.	Neg.	Neg.	680	690	970	2,100	2,570	2,590
Yard Trimmings - composted										
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	19,200	21,290	24,420	22,300
Misc. Inorganic Wastes - composted										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total – composted	***Neg.***	***Neg.***	***Neg.***	***4,200***	***16,450***	***20,550***	***20,170***	***23,390***	***26,990***	***24,890***
Other Food Management										
Other Food Management¥										
Food - animal feed										1,820
Food - bio-based materials/biochemical processing										1,840
Food – codigestion/anaerobic digestion										5,260
Food - donation										4,790
Food - land application										260
Food – sewer/wastewater treatment										3,740
Total Food – other food management										***17,710***
Total MSW Recycled and Composted - Weight	***5,610***	***8,020***	***14,520***	***33,240***	***69,460***	***79,790***	***85,430***	***90,950***	***93,970***	***93,980***
Total MSW Recycled, Composted and Other Food Management - Weight										***111,690***

Products	Percent of Total Generation									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods	**3.5%**	**6.4%**	**6.2%**	**11.6%**	**16.9%**	**17.7%**	**19.0%**	**18.3%**	**18.6%**	**18.5%**
(Detail in Table 15)										
Nondurable Goods	**13.8%**	**14.9%**	**13.6%**	**16.9%**	**27.4%**	**31.1%**	**36.0%**	**31.2%**	**32.1%**	**28.1%**
(Detail in Table 19)										
Containers and Packaging	**10.5%**	**7.7%**	**16.1%**	**26.0%**	**38.1%**	**41.3%**	**48.6%**	**53.2%**	**49.4%**	**53.9%**
Detail in Table 24)										
Total Product Wastes – recycled	***10.3%***	***9.6%***	***13.3%***	***19.8%***	***29.7%***	***32.0%***	***36.6%***	***36.8%***	***35.5%***	***36.4%***
Composted										
Composted - Food										
Food^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.7%	5.3%	6.3%	4.1%
Composted – Yard Trimmings										
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	57.5%	61.3%	69.4%	63.0%
Composted – Misc. Inorganic Wastes										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***6.8%***	***25.4%***	***29.9%***	***27.6%***	***29.8%***	***33.8%***	***24.3%***

Table 11. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 TO 2018

(In thousands of tons and percent of generation of each product)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Food Management										
Other Food Management¥										
Food - animal feed										2.9%
Food - bio-based materials/biochemical processing										2.9%
Food – codigestion/anaerobic digestion										8.3%
Food - donation										7.6%
Food - land application										0.4%
Food – sewer/wastewater treatment										5.9%
Total Food – other food management										***28.1%***
Total MSW Recycled and Composted - %	***6.4%***	***6.6%***	***9.6%***	***16.0%***	***28.5%***	***31.4%***	***34.0%***	***34.7%***	***35.0%***	***32.1%***
Total MSW Recycled, Composted and Other Food Management - %										***38.2%***

* Recycling of postconsumer wastes; does not include converting/fabrication scrap. Details may not add to totals due to rounding.

^ Includes collection of other MSW organics for composting.

¥ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Neg. = Less than 5,000 tons or 0.05 percent.

Table 12. Products Combusted with Energy Recovery* in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of total combusted)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods		**60**	**440**	**4,480**	**6,260**	**6,750**	**7,070**	**8,640**	**9,080**	**9,120**
(Detail in Table 16)										
Nondurable Goods		**90**	**580**	**7,380**	**9,000**	**7,980**	**6,030**	**6,960**	**6,720**	**7,090**
(Detail in Table 20)										
Containers and Packaging		**150**	**880**	**8,110**	**9,110**	**8,160**	**6,870**	**7,160**	**8,050**	**7,420**
Detail in Table 26)										
Total Product Wastes		***300***	***1,900***	***19,970***	***24,370***	***22,890***	***19,970***	***22,760***	***23,850***	***23,630***
Other Wastes										
Food		50	260	4,060	5,820	5,870	6,150	7,380	7,470	7,550
Yard Trimmings		90	550	5,240	2,860	2,220	2,510	2,630	2,110	2,570
Miscellaneous Inorganic Wastes		10	50	490	680	670	680	780	790	800
Total Other Wastes		***150***	***860***	***9,790***	***9,360***	***8,760***	***9,340***	***10,790***	***10,370***	***10,920***
Total MSW Combusted with Energy Recovery - Weight		***450***	***2,760***	***29,760***	***33,730***	***31,650***	***29,310***	***33,550***	***34,220***	***34,550***

Products	Percent of Total Combusted									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods		**13.3%**	**15.9%**	**15.1%**	**18.6%**	**21.3%**	**24.1%**	**25.8%**	**26.5%**	**26.4%**
(Detail in Table 16)										
Nondurable Goods		**19.9%**	**21.0%**	**24.8%**	**26.7%**	**25.2%**	**20.6%**	**20.7%**	**19.7%**	**20.5%**
(Detail in Table 20)										
Containers and Packaging		**33.3%**	**31.9%**	**27.3%**	**27.0%**	**25.8%**	**23.4%**	**21.4%**	**23.4%**	**21.5%**
(Detail in Table 27)										
Total Product Wastes		***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***68.4%***
Other Wastes										
Food		11.1%	9.4%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	21.9%
Yard Trimmings		20.0%	20.0%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.4%
Miscellaneous Inorganic Wastes		2.3%	1.8%	1.7%	1.9%	2.1%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes		***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***31.6%***
Total MSW Combusted with Energy Recovery - %		***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Products and materials combusted with energy recovery estimated at percentage total MSW after recycling and composting. In 2018, 19.6 percent of MSW after recycling and composting was combusted with energy recovery except for major appliances, tires and lead-acid batteries (see Table 16 for details) and food (percentage distribution for food varies by generator sector, see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data). Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 13. Products Landfilled* in the Municipal Waste Stream, 1960 to 2018

(In thousands of tons and percent of total landfilled)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**9,570**	**13,660**	**20,000**	**21,870**	**26,030**	**30,340**	**32,890**	**35,420**	**37,240**	**37,410**
(Detail in Table 17										
Nondurable Goods	**14,940**	**21,240**	**29,170**	**35,990**	**37,450**	**35,900**	**28,030**	**28,660**	**27,690**	**29,160**
(Detail in Table 21)										
Containers and Packaging	**24,500**	**40,060**	**43,300**	**39,640**	**37,860**	**36,670**	**31,920**	**29,270**	**33,010**	**30,470**
Detail in Table 28)										
Total Product Wastes	***49,010***	***74,960***	***92,470***	***97,500***	***101,340***	***102,910***	***92,840***	***93,350***	***97,940***	***97,040***
Other Wastes										
Food	12,200	12,750	12,740	19,800	24,200	26,370	28,620	30,250	30,630	35,280
Yard Trimmings	20,000	23,110	26,950	25,560	11,900	9,990	11,690	10,800	8,650	10,530
Miscellaneous Inorganic Wastes	1,300	1,770	2,200	2,410	2,820	3,020	3,160	3,210	3,250	3,270
Total Other Wastes	***33,500***	***37,630***	***41,890***	***47,770***	***38,920***	***39,380***	***43,470***	***44,260***	***42,530***	***49,080***
Total MSW Landfilled - Weight	***82,510***	***112,590***	***134,360***	***145,270***	***140,260***	***142,290***	***136,310***	***137,610***	***140,470***	***146,120***
Products	**Percent of Total Landfilled**									
	1960	**1970**	**1980**	**1990**	**2000**	**2005**	**2010**	**2015**	**2017**	**2018**
Durable Goods	**11.6%**	**12.1%**	**14.9%**	**15.0%**	**18.6%**	**21.3%**	**24.1%**	**25.7%**	**26.5%**	**25.6%**
(Detail in Table 17)										
Nondurable Goods	**18.1%**	**18.9%**	**21.7%**	**24.8%**	**26.7%**	**25.2%**	**20.6%**	**20.8%**	**19.7%**	**19.9%**
(Detail in Table 21)										
Containers and Packaging	**29.7%**	**35.6%**	**32.2%**	**27.3%**	**27.0%**	**25.8%**	**23.4%**	**21.4%**	**23.5%**	**20.9%**
(Detail in Table 29)										
Total Product Wastes	***59.4%***	***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***66.4%***
Other Wastes										
Food	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	24.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.2%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	1.9%	2.2%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes	***40.6%***	***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***33.6%***
Total MSW Landfilled - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Landfilling after recycling, composting, other food management pathways and combustion with energy recovery. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 14. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail On Durable Goods)

(In thousands of tons and percent of total generation)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Major Appliances	1,630	2,170	2,950	3,310	3,640	3,610	4,020	4,860	5,160	5,250
Small Appliances**				460	1,040	1,180	1,830	2,050	2,120	2,160
Furniture and Furnishings	2,150	2,830	4,760	6,790	8,120	9,340	10,820	12,050	12,210	12,080
Carpets and Rugs**				1,660	2,460	2,960	3,720	3,630	3,390	3,370
Rubber Tires	1,120	1,890	2,720	3,610	4,930	4,910	5,130	5,970	6,540	6,530
Batteries, Lead-Acid	Neg.	820	1,490	1,510	2,280	2,750	3,020	2,700	2,940	2,900
Miscellaneous Durables										
Selected Consumer Electronics***					1,900	2,630	3,120	3,100	2,840	2,700
Other Miscellaneous Durables					14,500	17,680	17,690	19,580	21,670	22,110
Total Miscellaneous Durables	*5,020*	*6,950*	*9,880*	*12,470*	*16,400*	*20,310*	*20,810*	*22,680*	*24,510*	24,810
Total Durable Goods	***9,920***	***14,660***	***21,800***	***29,810***	***38,870***	***45,060***	***49,350***	***53,940***	***56,870***	***57,100***
Nondurable Goods	**17,330**	**25,060**	**34,420**	**52,170**	**64,010**	**63,650**	**53,250**	**51,810**	**50,700**	**50,440**
(Detail in Table 18)										
(Detail in Table 22)										
Total Product Wastes	***54,620***	***83,280***	***108,890***	***146,510***	***178,720***	***185,040***	***178,070***	***183,670***	***188,770***	***189,760***
Other Wastes										
Food^	12,200	12,800	13,000	23,860	30,700	32,930	35,740	39,730	40,670	63,130
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	33,400	34,720	35,180	35,400
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,840	3,990	4,040	4,070
Total Other Wastes	***33,500***	***37,780***	***42,750***	***61,760***	***64,730***	***68,690***	***72,980***	***78,440***	***79,890***	***102,600***
Total MSW Generated - Weight	***88,120***	***121,060***	***151,640***	***208,270***	***243,450***	***253,730***	***251,050***	***262,110***	***268,660***	***292,360***
Products										
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Major Appliances	1.8%	1.8%	1.9%	1.6%	1.5%	1.4%	1.6%	1.9%	1.9%	1.8%
Small Appliances**				0.2%	0.4%	0.5%	0.7%	0.8%	0.8%	0.7%
Furniture and Furnishings	2.4%	2.3%	3.1%	3.3%	3.3%	3.7%	4.3%	4.6%	4.5%	4.1%
Carpets and Rugs**				0.8%	1.0%	1.2%	1.5%	1.4%	1.3%	1.2%
Rubber Tires	1.3%	1.6%	1.8%	1.7%	2.0%	1.9%	2.0%	2.3%	2.4%	2.2%
Batteries, Lead-Acid	Neg.	0.7%	1.0%	0.7%	0.9%	1.1%	1.2%	1.0%	1.1%	1.0%
Miscellaneous Durables										
Selected Consumer Electronics***					0.8%	1.0%	1.2%	1.2%	1.1%	0.9%
Other Miscellaneous Durables					6.0%	7.0%	7.0%	7.5%	8.1%	7.6%
Total Miscellaneous Durables	*5.7%*	*5.7%*	*6.5%*	*6.0%*	*6.7%*	*8.0%*	*8.3%*	*8.7%*	*9.2%*	8.5%
Total Durable Goods	***11.3%***	***12.1%***	***14.4%***	***14.3%***	***16.0%***	***17.8%***	***19.7%***	***20.6%***	***21.2%***	***19.5%***
	19.7%	**20.7%**	**22.7%**	**25.0%**	**26.3%**	**25.1%**	**21.2%**	**19.8%**	**18.9%**	**17.3%**
(Detail in Table 18)										
	31.1%	**36.0%**	**34.7%**	**31.0%**	**31.2%**	**30.1%**	**30.1%**	**29.7%**	**30.2%**	**28.1%**
(Detail in Table 23)										
Total Product Wastes	***62.0%***	***68.8%***	***71.8%***	***70.3%***	***73.4%***	***72.9%***	***70.9%***	***70.1%***	***70.2%***	***64.9%***
Food^	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	14.2%	15.2%	15.1%	21.6%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.3%	13.2%	13.1%	12.1%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.4%
Total Other Wastes	***38.0%***	***31.2%***	***28.2%***	***29.7%***	***26.6%***	***27.1%***	***29.1%***	***29.9%***	***29.7%***	***35.1%***
	100.0%	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Generation before materials are recycled, composted, managed by other food pathways, combusted with energy recovery or landfilled. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

** Not estimated separately prior to 1990. *** Not estimated separately prior to 2000.

^ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Table 15. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 TO 2018 (With Detail on Durable Goods)

(In thousands of tons and percent of generation of each product)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods										
Major Appliances	10	50	130	1,070	2,000	2,420	2,610	3,000	3,110	3,140
Small Appliances**				10	20	20	120	120	120	120
Furniture and Furnishings	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	10	10	40	40
Carpets and Rugs**				Neg.	190	250	270	190	280	310
Rubber Tires	330	250	150	440	1,290	1,640	2,270	2,410	2,610	2,610
Batteries, Lead-Acid	Neg.	620	1,040	1,470	2,130	2,640	2,980	2,670	2,910	2,870
Miscellaneous Durables										
Selected Consumer Electronics***					190	360	650	1,230	1,020	1,040
Other Miscellaneous Durables					760	640	480	250	460	440
Total Miscellaneous Durables	*10*	*20*	*40*	*470*	*950*	*1,000*	*1,130*	*1,480*	*1,480*	1,480
Total Durable Goods – recycled	***350***	***940***	***1,360***	***3,460***	***6,580***	***7,970***	***9,390***	***9,880***	***10,550***	***10,570***
Nondurable Goods – recycled	**2,390**	**3,730**	**4,670**	**8,800**	**17,560**	**19,770**	**19,190**	**16,190**	**16,290**	**14,190**
(Detail in Table 19)										
Containers and Packaging – recycled	**2,870**	**3,350**	**8,490**	**16,780**	**28,870**	**31,500**	**36,680**	**41,490**	**40,140**	**44,330**
(Detail in Table 24)										
Total Product Wastes - recycled	***5,610***	***8,020***	***14,520***	***29,040***	***53,010***	***59,240***	***65,260***	***67,560***	***66,980***	***69,090***
Composted										
Food - composted										
Food - composted^	Neg.	Neg.	Neg.	Neg.	680	690	970	2,100	2,570	2,590
Yard Trimmings - composted										
Yard Trimmings – composted	Neg.	Neg.	Neg.	4,200	15,770	19,860	19,200	21,290	24,420	22,300
Misc. Inorganic Wastes - composted										
Miscellaneous Inorganic Wastes composted	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***4,200***	***16,450***	***20,550***	***20,170***	***23,390***	***26,990***	***24,890***
Other Food Management										
Other Food Management¥										
Food - animal feed										1,820
Food - bio-based materials/biochemical processing										1,840
Food – codigestion/anaerobic digestion										5,260
Food - donation										4,790
Food - land application										260
Food – sewer/wastewater treatment										3,740
Total Food – other food management										***17,710***
Total MSW Recycled and Composted - Weight	***5,610***	***8,020***	***14,520***	***33,240***	***69,460***	***79,790***	***85,430***	***90,950***	***93,970***	***93,980***
Total MSW Recycled, Composted and Other Food Management - Weight										***111,690***
Products	**Percent of Total Generation**									
	1960	**1970**	**1980**	**1990**	**2000**	**2005**	**2010**	**2015**	**2017**	**2018**
Recycled										
Durable Goods										
Major Appliances	0.6%	2.3%	4.4%	32.3%	54.9%	67.0%	64.9%	61.7%	60.3%	59.8%
Small Appliances**				2.2%	1.9%	1.7%	6.6%	5.9%	5.7%	5.6%
Furniture and Furnishings	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.1%	0.1%	0.3%	0.3%
Carpets and Rugs**				Neg.	7.7%	8.4%	7.3%	5.2%	8.3%	9.2%
Rubber Tires	29.5%	13.2%	5.5%	12.2%	26.2%	33.4%	44.2%	40.4%	39.9%	40.0%
Batteries, Lead-Acid	Neg.	75.6%	69.8%	97.4%	93.4%	96.0%	98.7%	98.9%	99.0%	99.0%
Miscellaneous Durables										
Selected Consumer Electronics***					10.0%	13.7%	20.8%	39.7%	35.9%	38.5%
Other Miscellaneous Durables					5.2%	3.6%	2.7%	1.3%	2.1%	2.0%
Total Miscellaneous Durables	*0.2%*	*0.3%*	*0.4%*	*3.8%*	*5.8%*	*4.9%*	*5.4%*	*6.5%*	*6.0%*	6.0%

Table 15. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 TO 2018 (With Detail on Durable Goods)

(In thousands of tons and percent of generation of each product)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Total Durable Goods – recycled	***3.5%***	***6.4%***	***6.2%***	***11.6%***	***16.9%***	***17.7%***	***19.0%***	***18.3%***	***18.6%***	18.5%
Nondurable Goods -recycled	**13.8%**	**14.9%**	**13.6%**	**16.9%**	**27.4%**	**31.1%**	**36.0%**	**31.2%**	**32.1%**	**28.1%**
(Detail in Table 19)										
Containers and Packaging - recycled	**10.5%**	**7.7%**	**16.1%**	**26.0%**	**38.1%**	**41.3%**	**48.6%**	**53.2%**	**49.4%**	**53.9%**
(Detail in Table 25)										
Total Product Wastes - recycled	***10.3%***	***9.6%***	***13.3%***	***19.8%***	***29.7%***	***32.0%***	***36.6%***	***36.8%***	***35.5%***	***36.4%***
Composted										
Composted – Food										
Food – composted^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.7%	5.3%	6.3%	4.1%
Composted – Yard Trimmings										
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	57.5%	61.3%	69.4%	63.0%
Composted – Misc. Inorganic Wastes										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***6.8%***	***25.4%***	***29.9%***	***27.6%***	***29.8%***	***33.8%***	***24.3%***
Other Food Management										
Other Food Management¥										
Food - animal feed										2.9%
Food - bio-based materials/biochemical processing										2.9%
Food – codigestion/anaerobic digestion										8.3%
Food - donation										7.6%
Food - land application										0.4%
Food – sewer/wastewater treatment										5.9%
Total Food – other food management										***28.1%***
Total MSW Recycled and Composted - %	***6.4%***	***6.6%***	***9.6%***	***16.0%***	***28.5%***	***31.4%***	***34.0%***	***34.7%***	***35.0%***	***32.1%***
Total MSW Recycled, Composted and Other Food Management - %										***38.2%***

* Recycling of postconsumer wastes; does not include converting/fabrication scrap. Details may not add to totals due to rounding.

** Not estimated separately prior to 1990. † Other than food products.

*** Not estimated separately prior to 2000.

^ Includes collection of other MSW organics for composting.

¥ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Neg. = Less than 5,000 tons or 0.05 percent.

Table 16. Products Combusted with Energy Recovery* in the Municipal Waste Stream, 1960 to 2018
(With Detail On Durable Goods)

(In thousands of tons and percent of total combusted)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods										
Major Appliances[±]		0	0	0	0	0	0	0	0	0
Small Appliances**				90	200	200	310	380	390	400
Furniture and Furnishings		Neg.	90	1,150	1,570	1,700	1,910	2,350	2,380	2,360
Carpets and Rugs**				290	440	490	610	670	610	600
Rubber Tires[§]		Neg.	30	400	2,260	2,390	2,000	2,840	2,710	2,710
Batteries, Lead-Acid[±]		0	0	0	0	0	0	0	0	0
Miscellaneous Durables										
Selected Consumer Electronics										
Other Miscellaneous Durables										
Total Miscellaneous Durables[§]		*60*	*320*	*2,550*	*1,790*	*1,970*	*2,240*	*2,400*	*2,990*	3,050
Total Durable Goods		***60***	***440***	***4,480***	***6,260***	***6,750***	***7,070***	***8,640***	***9,080***	***9,120***
Nondurable Goods		**90**	**580**	**7,380**	**9,000**	**7,980**	**6,030**	**6,960**	**6,720**	**7,090**
(Detail in Table 20)										
Containers and Packaging		**150**	**880**	**8,110**	**9,110**	**8,160**	**6,870**	**7,160**	**8,050**	**7,420**
(Detail in Table 26)										
Total Product Wastes		***300***	***1,900***	***19,970***	***24,370***	***22,890***	***19,970***	***22,760***	***23,850***	***23,630***
Other Wastes										
Food		50	260	4,060	5,820	5,870	6,150	7,380	7,470	7,550
Yard Trimmings		90	550	5,240	2,860	2,220	2,510	2,630	2,110	2,570
Miscellaneous Inorganic Wastes		10	50	490	680	670	680	780	790	800
Total Other Wastes		***150***	***860***	***9,790***	***9,360***	***8,760***	***9,340***	***10,790***	***10,370***	***10,920***
Total MSW Combusted with Energy Recovery - Weight		***450***	***2,760***	***29,760***	***33,730***	***31,650***	***29,310***	***33,550***	***34,220***	***34,550***

Products	Percent of Total Combusted									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods										
Major Appliances[±]		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Small Appliances**				0.3%	0.6%	0.6%	1.1%	1.1%	1.1%	1.2%
Furniture and Furnishings		Neg.	3.3%	3.9%	4.7%	5.4%	6.5%	7.0%	7.0%	6.8%
Carpets and Rugs**				1.0%	1.3%	1.5%	2.1%	2.0%	1.8%	1.7%
Rubber Tires[§]		Neg.	1.1%	1.3%	6.7%	7.6%	6.8%	8.5%	7.9%	7.8%
Batteries, Lead-Acid[±]		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Miscellaneous Durables										
Selected Consumer Electronics										
Other Miscellaneous Durables										
Total Miscellaneous Durables[§]		*13.3%*	*11.6%*	*8.6%*	*5.3%*	*6.2%*	*7.6%*	*7.2%*	*8.7%*	*8.8%*
Total Durable Goods		***13.3%***	***15.9%***	***15.1%***	***18.6%***	***21.3%***	***24.1%***	***25.8%***	***26.5%***	***26.4%***
Nondurable Goods		**19.9%**	**21.0%**	**24.8%**	**26.7%**	**25.2%**	**20.6%**	**20.7%**	**19.7%**	**20.5%**
(Detail in Table 20)										
Containers and Packaging		**33.3%**	**31.9%**	**27.3%**	**27.0%**	**25.8%**	**23.4%**	**21.4%**	**23.4%**	**21.5%**
(Detail in Table 27)										
Total Product Wastes		***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***68.4%***

Table 16. Products Combusted with Energy Recovery* in the Municipal Waste Stream, 1960 to 2018
(With Detail On Durable Goods)

(In thousands of tons and percent of total combusted)

Products		Percent of Total Combusted								
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Wastes										
Food		11.1%	9.4%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	21.9%
Yard Trimmings		20.0%	20.0%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.4%
Miscellaneous Inorganic Wastes		2.3%	1.8%	1.7%	1.9%	2.1%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes		***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***31.6%***
Total MSW Combusted with Energy Recovery - %		***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Products and materials combusted with energy recovery estimated at percentage total MSW after recycling and composting. In 2018, 19.6 percent of MSW after recycling and composting was combusted with energy recovery except for major appliances, tires and lead-acid batteries (see Table 16 for details) and food (percentage distribution for food varies by generator sector, see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data). Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

** Not estimated separately prior to 1990.

§ Tires: tires to fuel based on industry percentage estimates applied to tire generation. *Total Miscellaneous Durables*: calculated as difference between total durable goods going to combustion and individual durable goods shown. The amounts of consumer electronics going to combustion with energy recovery are not available and are included in Total Miscellaneous Durables.

± Energy Recovery Council, 2016. Major appliances and lead-acid batteries are not accepted at waste-to-energy facilities.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 17. Products Landfilled* in the Municipal Waste Stream, 1960 to 2018 (With Detail On Durable Goods)

(In thousands of tons and percent of total landfilled)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods										
Major Appliances	1,620	2,120	2,820	2,240	1,640	1,190	1,410	1,860	2,050	2,110
Small Appliances**				360	820	960	1,400	1,550	1,610	1,640
Furniture and Furnishings	2,150	2,830	4,670	5,640	6,550	7,640	8,900	9,690	9,790	9,680
Carpets and Rugs**				1,370	1,830	2,220	2,840	2,770	2,500	2,460
Rubber Tires	790	1,640	2,540	2,770	1,380	880	860	720	1,220	1,210
Batteries, Lead-Acid		200	450	40	150	110	40	30	30	30
Miscellaneous Durables										
Selected Consumer Electronics***										
Other Miscellaneous Durables										
Total Miscellaneous Durables	*5,010*	*6,870*	*9,520*	*9,450*	*13,660*	*17,340*	*17,440*	*18,800*	*20,040*	20,280
Total Durable Goods	***9,570***	***13,660***	***20,000***	***21,870***	***26,030***	***30,340***	***32,890***	***35,420***	***37,240***	***37,410***
Nondurable Goods	**14,940**	**21,240**	**29,170**	**35,990**	**37,450**	**35,900**	**28,030**	**28,660**	**27,690**	***29,160***
(Detail in Table 21)										
Containers and Packaging	**24,500**	**40,060**	**43,300**	**39,640**	**37,860**	**36,670**	**31,920**	**29,270**	**33,010**	**30,470**
(Detail in Table 28)										
Total Product Wastes	***49,010***	***74,960***	***92,470***	***97,500***	***101,340***	***102,910***	***92,840***	***93,350***	***97,940***	***97,040***
Other Wastes										
Food	12,200	12,750	12,740	19,800	24,200	26,370	28,620	30,250	30,630	35,280
Yard Trimmings	20,000	23,110	26,950	25,560	11,900	9,990	11,690	10,800	8,650	10,530
Miscellaneous Inorganic Wastes	1,300	1,770	2,200	2,410	2,820	3,020	3,160	3,210	3,250	3,270
Total Other Wastes	***33,500***	***37,630***	***41,890***	***47,770***	***38,920***	***39,380***	***43,470***	***44,260***	***42,530***	***49,080***
Total MSW Landfilled- Weight	***82,510***	***112,590***	***134,360***	***145,270***	***140,260***	***142,290***	***136,310***	***137,610***	***140,470***	***146,120***

Products	Percent of Total Landfilled									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods										
Major Appliances	2.0%	1.9%	2.1%	1.5%	1.2%	0.8%	1.0%	1.4%	1.5%	1.4%
Small Appliances**				0.2%	0.6%	0.7%	1.0%	1.1%	1.1%	1.1%
Furniture and Furnishings	2.6%	2.5%	3.5%	3.9%	4.7%	5.4%	6.5%	7.0%	7.0%	6.6%
Carpets and Rugs**				0.9%	1.3%	1.5%	2.1%	2.0%	1.8%	1.7%
Rubber Tires	1.0%	1.5%	1.9%	1.9%	1.0%	0.6%	0.6%	0.5%	0.9%	0.7%
Batteries, Lead-Acid	Neg.	0.2%	0.3%	0.1%	0.1%	0.1%	0.1%	Neg.	Neg.	Neg.
Miscellaneous Durables										
Selected Consumer Electronics***										
Other Miscellaneous Durables										
Total Miscellaneous Durables	*6.1%*	*6.1%*	*7.1%*	*6.5%*	*9.7%*	*12.2%*	*12.8%*	*13.7%*	*14.3%*	*13.9%*
Total Durable Goods	***11.6%***	***12.1%***	***14.9%***	***15.0%***	***18.6%***	***21.3%***	***24.1%***	***25.7%***	***26.5%***	***25.6%***
Nondurable Goods	**18.1%**	**18.9%**	**21.7%**	**24.8%**	**26.7%**	**25.2%**	**20.6%**	**20.8%**	**19.7%**	**19.9%**
(Detail in Table 21)										
Containers and Packaging	**29.7%**	**35.6%**	**32.2%**	**27.3%**	**27.0%**	**25.8%**	**23.4%**	**21.4%**	**23.5%**	**20.9%**
(Detail in Table 29)										
Total Product Wastes	**59.4%**	**66.6%**	**68.8%**	**67.1%**	**72.3%**	**72.3%**	**68.1%**	**67.9%**	**69.7%**	**66.4%**
Other Wastes										
Food	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	24.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.2%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	1.9%	2.2%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes	***40.6%***	***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***33.6%***
Total MSW Landfilled - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Landfilling after recycling, composting, other food management pathways and combustion with energy recovery. Details may not add to totals due to rounding.

** Not estimated separately prior to 1990.

*** The amount of consumer electronics going to combustion with energy recovery versus landfilling are not available. These products are included in Total Miscellaneous Durables.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 18. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of generation of each product)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**9,920**	**14,660**	**21,800**	**29,810**	**38,870**	**45,060**	**49,350**	**53,940**	**56,870**	**57,100**
(Detail in Table 14)										
Nondurable Goods										
Newspapers/Mechanical Papers†	7,110	9,510	11,050	13,430	14,790	12,790	9,880	6,730	5,440	5,050
Directories†**				610	680	660	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	1,920	2,470	3,390							
Books**				970	1,240	1,100	990	800	700	690
Magazines**				2,830	2,230	2,580	1,590	1,190	1,020	980
Office-Type Papers***	1,520	2,650	4,000	6,410	7,420	6,620	5,260	4,530	3,970	3,970
Marketing Mail§				3,820	5,570	5,830	4,340	4,050	3,790	3,670
Other Commercial Printing†	1,260	2,130	3,120	4,460	7,380	6,440	2,480	2,080	1,960	2,000
Tissue Paper and Towels	1,090	2,080	2,300	2,960	3,220	3,460	3,490	3,680	3,750	3,790
Paper Plates and Cups	270	420	630	650	960	1,160	1,350	1,360	1,440	1,420
Other Nonpackaging Paper	2,700	3,630	4,230	3,840	4,250	4,490	4,190	3,700	3,880	3,920
Total Other Paper Nondurable Goods	***8,760***	***13,380***	***17,670***	***25,940***	***32,270***	***29,920***	***23,690***	***21,390***	***20,510***	***20,440***
Disposable Diapers	Neg.	350	1,930	2,700	3,230	3,410	3,700	4,170	4,150	4,100
Plastic Plates and Cups¥			190	650	870	930	890	1,050	1,080	1,030
Trash Bags**				780	850	1,060	980	1,130	1,140	1,230
Clothing and Footwear	1,360	1,620	2,170	4,010	6,470	7,890	9,100	11,940	12,800	12,970
Towels, Sheets and Pillowcases**				710	820	980	1,290	1,350	1,470	1,520
Other Miscellaneous Nondurables	100	200	1,410	3,340	4,030	4,250	3,720	4,050	4,110	4,100
Total Nondurable Goods	***17,330***	***25,060***	***34,420***	***52,170***	***64,010***	***63,650***	***53,250***	***51,810***	***50,700***	***50,440***
Containers and Packaging	**27,370**	**43,560**	**52,670**	**64,530**	**75,840**	**76,330**	**75,470**	**77,920**	**81,200**	**82,220**
(Detail in Table 22)										
Total Product Wastes	***54,620***	***83,280***	***108,890***	***146,510***	***178,720***	***185,040***	***178,070***	***183,670***	***188,770***	***189,760***
Other Wastes	**33,500**	**37,780**	**42,750**	**61,760**	**64,730**	**68,690**	**72,980**	**78,440**	**79,890**	**102,600**
Total MSW Generated - Weight	***88,120***	***121,060***	***151,640***	***208,270***	***243,450***	***253,730***	***251,050***	***262,110***	***268,660***	***292,360***

Products	Percent of Generation of Each Product									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**11.3%**	**12.1%**	**14.4%**	**14.3%**	**16.0%**	**17.8%**	**19.7%**	**20.6%**	**21.2%**	**19.5%**
(Detail in Table 14)										
Nondurable Goods										
Newspapers/Mechanical Papers†	8.1%	7.9%	7.3%	6.4%	6.1%	5.0%	3.9%	2.6%	2.0%	1.7%
Directories†**				0.3%	0.3%	0.3%	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	2.2%	2.0%	2.2%							
Books**				0.5%	0.5%	0.4%	0.4%	0.3%	0.3%	0.2%
Magazines**				1.4%	0.9%	1.0%	0.6%	0.5%	0.4%	0.3%
Office-Type Papers***	1.7%	2.2%	2.6%	3.1%	3.0%	2.6%	2.1%	1.8%	1.6%	1.4%
Marketing Mail§				1.8%	2.3%	2.3%	1.7%	1.5%	1.4%	1.3%
Other Commercial Printing†	1.4%	1.8%	2.1%	2.1%	3.0%	2.5%	1.0%	0.8%	0.7%	0.7%
Tissue Paper and Towels	1.2%	1.7%	1.5%	1.4%	1.3%	1.4%	1.4%	1.4%	1.4%	1.3%
Paper Plates and Cups	0.3%	0.3%	0.4%	0.3%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%
Other Nonpackaging Paper	3.1%	3.0%	2.8%	1.8%	1.7%	1.8%	1.7%	1.4%	1.5%	1.3%
Total Other Paper Nondurable Goods	***9.9%***	***11.1%***	***11.7%***	***12.5%***	***13.3%***	***12.5%***	***9.4%***	***8.2%***	***7.7%***	***7.0%***
Disposable Diapers	Neg.	0.3%	1.3%	1.3%	1.3%	1.3%	1.5%	1.6%	1.5%	1.4%
Plastic Plates and Cups¥			0.1%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
Trash Bags**				0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%

Table 18. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of generation of each product)

Products	Percent of Generation of Each Product									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Clothing and Footwear	1.5%	1.3%	1.4%	1.9%	2.7%	3.1%	3.6%	4.6%	4.8%	4.4%
Towels, Sheets and Pillowcases**				0.3%	0.3%	0.4%	0.5%	0.5%	0.5%	0.5%
Other Miscellaneous Nondurables	0.1%	0.2%	0.9%	1.6%	1.7%	1.7%	1.5%	1.5%	1.5%	1.4%
Total Nondurables	***19.7%***	***20.7%***	***22.7%***	***25.0%***	***26.3%***	***25.1%***	***21.2%***	***19.8%***	***18.9%***	***17.3%***
Containers and Packaging	**31.1%**	**36.0%**	**34.7%**	**31.0%**	**31.2%**	**30.1%**	**30.1%**	**29.7%**	**30.2%**	**28.1%**
(Detail in Table 23)										
Total Product Wastes	***62.0%***	***68.8%***	***71.8%***	***70.3%***	***73.4%***	***72.9%***	***70.9%***	***70.1%***	***70.3%***	***64.9%***
Other Wastes	**38.0%**	**31.2%**	**28.2%**	**29.7%**	**26.6%**	**27.1%**	**29.1%**	**29.9%**	**29.7%**	**35.1%**
Total MSW Generated - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	**100.0%**	**100.0%**

* Generation before materials are recycled, composted, managed by other food pathways, combusted with energy recovery or landfilled. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

† Starting in 2010, newsprint and groundwood inserts expanded to include directories and other mechanical papers previously counted as Other Commercial Printing.

** Not estimated separately prior to 1990.

*** High-grade paper such as printer paper; generated in both commercial and residential sources.

§ Marketing Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard Mail by the U.S. Postal Service.

¥ Plastic Plates and Cups: Not estimated separately prior to 1980.

\- Detailed data not available. Neg. = Less than 5,000 tons or 0.05 percent.

Table 19. Products Recycled,* Composted and Managed By Other Food Pathways In The Municipal Solid Waste Stream, 1960 To 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of generation of each product)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods – recycled	**350**	**940**	**1,360**	**3,460**	**6,580**	**7,970**	**9,390**	**9,880**	**10,550**	**10,570**
(Detail in Table 15)										
Nondurable Goods – recycled										
Newspapers/Mechanical Papers†	1,820	2,250	3,020	5,110	8,720	9,360	7,070	4,790	4,180	3,270
Directories†**				50	120	120	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	100	260	280							
Books**				100	240	270	-	-	-	-
Magazines**				300	710	960	-	-	-	-
Office-Type Papers***	250	710	870	1,700	4,090	4,110	-	-	-	-
Marketing Mail§				200	1,830	2,090	-	-	-	-
Other Commercial Printing†	130	340	350	700	810	1,440	-	-	-	-
Tissue Paper and Towels	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-	-
Paper Plates and Cups	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-	-
Other Nonpackaging Paper	40	110	Neg.	Neg.	Neg.	Neg.	-	-	-	-
Total Other Paper Nondurable Goods – recycled	***520***	***1,420***	***1,500***	***3,000***	***7,680***	***8,870***	***10,650***	***9,330***	***9,910***	***8,810***
Disposable Diapers				Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Plastic Plates and Cups¥			Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Trash Bags**				Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Clothing and Footwear	50	60	150	520	900	1,250	1,250	1,690	1,740	1,690
Towels, Sheets and Pillowcases**				120	140	170	220	220	240	240
Other Miscellaneous Nondurables	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	160	220	180
Total Nondurable Goods	***2,390***	***3,730***	***4,670***	***8,800***	***17,560***	***19,770***	***19,190***	***16,190***	***16,290***	***14,190***
Containers and Packaging - recycled	**2,870**	**3,350**	**8,490**	**16,780**	**28,870**	**31,500**	**36,680**	**41,490**	**40,140**	**44,330**
(Detail in Table 24)										
Total Product Wastes - recycled	***5,610***	***8,020***	***14,520***	***29,040***	***53,010***	***59,240***	***65,260***	***67,560***	***66,980***	***69,090***
Food – composted										
Food^	Neg.	Neg.	Neg.	Neg.	680	690	970	2,100	2,570	2,590
Yard Trimmings - composted										
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	19,200	21,290	24,420	22,300
Misc. Inorganic Wastes - composted										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***4,200***	***16,450***	***20,550***	***20,170***	***23,390***	***26,990***	***24,890***
Other Food Management										
Other Food Management‼										
Food - animal feed										1,820
Food - bio-based materials/biochemical processing										1,840
Food – codigestion/anaerobic digestion										5,260
Food - donation										4,790
Food - land application										260
Food – sewer/wastewater treatment										3,740
Total Food – other food management										***17,710***
Total MSW Recycled and Composted - Weight	***5,610***	***8,020***	***14,520***	***33,240***	***69,460***	***79,790***	***85,430***	***90,950***	***93,970***	***93,980***
Total MSW Recycled, Composted and Other Food Management - Weight										***111,690***

Table 19. Products Recycled,* Composted and Managed By Other Food Pathways In The Municipal Solid Waste Stream, 1960 To 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of generation of each product)

Products	percent of generation of each product									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods – recycled	**3.5%**	**6.4%**	**6.2%**	**11.6%**	**16.9%**	**17.7%**	**19.0%**	**18.3%**	**18.6%**	**18.5%**
(Detail in Table 15)										
Nondurable Goods – recycled										
Newspapers/Mechanical Papers†	25.6%	23.7%	27.3%	38.0%	59.0%	73.2%	71.6%	71.2%	76.8%	64.8%
Directories†**				8.2%	17.6%	18.2%	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	5.2%	10.5%	8.3%							
Books**				10.3%	19.4%	24.5%	-	-	-	-
Magazines**				10.6%	31.8%	37.2%	-	-	-	-
Office-Type Papers***	16.4%	26.8%	21.8%	26.5%	55.1%	62.1%	-	-	-	-
Marketing Mail§				5.2%	32.9%	35.8%	-	-	-	-
Other Commercial Printing†	10.3%	16.0%	11.2%	15.7%	11.0%	22.4%	-	-	-	-
Tissue Paper and Towels	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-	-
Paper Plates and Cups	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-	-
Other Nonpackaging Paper	1.5%	3.0%	Neg.	Neg.	Neg.	Neg.	-	-	-	-
Total Other Paper Nondurable Goods - recycled	***5.9%***	***10.6%***	***8.5%***	***11.6%***	***24.2%***	***28.0%***	***45.0%***	***43.6%***	***48.3%***	***43.1%***
Disposable Diapers				Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Plastic Plates and Cups¥			Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Trash Bags**				Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Clothing and Footwear	Neg.	Neg.	Neg.	13.0%	13.9%	15.8%	13.7%	14.2%	13.6%	13.0%
Towels, Sheets and Pillowcases**				16.9%	17.1%	17.3%	17.1%	16.3%	16.3%	15.8%
Other Miscellaneous Nondurables	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	4.0%	5.4%	4.4%
Total Nondurables recycled	***13.8%***	***14.9%***	***13.6%***	***16.9%***	***27.4%***	***31.1%***	***36.0%***	***31.2%***	***32.1%***	***28.1%***
Containers and Packaging - recycled	**10.5%**	**7.7%**	**16.1%**	**26.0%**	**38.1%**	**41.3%**	**48.6%**	**53.2%**	**49.4%**	**53.9%**
(Detail in Table 25)										
Total Product Wastes - recycled	***10.3%***	***9.6%***	***13.3%***	***19.8%***	***29.7%***	***32.0%***	***36.6%***	***36.8%***	***35.5%***	***36.4%***
Composted										
Composted - Food										
Food – composted^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.7%	5.3%	6.3%	***4.1%***
Composted – Yard Trimmings										
Yard Trimmings – composted	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	57.5%	61.3%	69.4%	***63.0%***
Composted – Misc. Inorganic Wastes										
Miscellaneous Inorganic Wastes - composted	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***6.8%***	***25.4%***	***29.9%***	***27.6%***	***29.8%***	***33.8%***	***24.3%***

Table 19. Products Recycled,* Composted and Managed By Other Food Pathways In The Municipal Solid Waste Stream, 1960 To 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of generation of each product)

Products	percent of generation of each product									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Food Management										
Other Food Management‡‡										
Food - animal feed										2.9%
Food - bio-based materials/biochemical processing										2.9%
Food – codigestion/anaerobic digestion										8.3%
Food - donation										7.6%
Food - land application										0.4%
Food – sewer/wastewater treatment										5.9%
Total Food – other food management										***28.1%***
Total MSW Recycled and Composted - %	***6.4%***	***6.6%***	***9.6%***	***16.0%***	***28.5%***	***31.4%***	***34.0%***	***34.7%***	***35.0%***	***32.1%***
Total MSW Recycled, Composted and Other Food Management - %										***38.2%***

* Recycling of postconsumer wastes; does not include converting/fabrication scrap. Details may not add to totals due to rounding.

† Starting in 2010, newsprint and groundwood inserts expanded to include directories and other mechanical papers previously counted as Other Commercial Printing.

** Not estimated separately prior to 1990.

*** High-grade paper such as printer paper; generated in both commercial and residential sources.

§ Marketing Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard Mail by the U.S. Postal Service.

¥ Plastic Plates and Cups: Not estimated separately prior to 1980.

^ Includes collection of other MSW organics for composting.

‡‡ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

\- Detailed data not available.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 20. Products Combusted with Energy Recovery* in Municipal Solid Waste, 1960 to 2018
(With Detail on Nondurable Goods)
(In thousands of tons and percent of total combusted)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**0**	**60**	**440**	**4,480**	**6,260**	**6,750**	**7,070**	**8,640**	**9,080**	**9,120**
(Detail in Table 16)										
Nondurable Goods										
Newspapers/Mechanical Papers†	0	30	160	1,420	1,180	620	500	380	250	350
Directories†**				100	110	100	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	0	10	60							
Books**				150	190	150	-	-	-	-
Magazines**				430	290	290	-	-	-	-
Office-Type Papers***	0	10	60	800	650	460	-	-	-	-
Marketing Mail§				620	730	680	-	-	-	-
Other Commercial Printing†	0	10	60	640	1,270	910	-	-	-	-
Tissue Paper and Towels	0	10	50	500	620	630	-	-	-	-
Paper Plates and Cups	0	Neg.	10	110	190	210	-	-	-	-
Other Nonpackaging Paper	0	10	80	650	820	820	-	-	-	-
Total Other Paper Nondurable Goods		***50***	***320***	***3,900***	***4,760***	***4,150***	***2,310***	***2,360***	***2,080***	***2,280***
Disposable Diapers		Neg.	30	460	630	620	650	810	810	800
Plastic Plates and Cups¥			Neg.	110	170	170	160	210	210	200
Trash Bags**				130	160	190	170	220	220	240
Clothing and Footwear	0	10	50	590	1,080	1,210	1,390	2,010	2,160	2,210
Towels, Sheets and Pillowcases**				100	130	150	190	220	240	250
Other Miscellaneous Nondurables	0	Neg.	20	570	780	770	660	750	750	760
Total Nondurables	***0***	***90***	***580***	***7,380***	***9,000***	***7,980***	***6,030***	***6,960***	***6,720***	***7,090***
Containers and Packaging	**0**	**150**	**880**	**8,110**	**9,110**	**8,160**	**6,870**	**7,160**	**8,050**	**7,420**
(Detail in Table 26)										
Total Product Wastes	***0***	***300***	***1,900***	***19,970***	***24,370***	***22,890***	***19,970***	***22,760***	***23,850***	***23,630***
Other Wastes	**0**	**150**	**860**	**9,790**	**9,360**	**8,760**	**9,340**	**10,790**	**10,370**	**10,920**
Total MSW Combusted with Energy Recovery - Weight	***0***	***450***	***2,760***	***29,760***	***33,730***	***31,650***	***29,310***	***33,550***	***34,220***	***34,550***

Products	Percent of Total Combusted									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods		**13.3%**	**15.9%**	**15.1%**	**18.6%**	**21.3%**	**24.1%**	**25.8%**	**26.5%**	**26.4%**
(Detail in Table 16)										
Nondurable Goods										
Newspapers/Mechanical Papers†		6.7%	5.8%	4.8%	3.5%	2.0%	1.7%	1.1%	0.7%	1.0%
Directories†**				0.3%	0.3%	0.3%	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines		2.2%	2.2%							
Books**				0.5%	0.6%	0.5%	-	-	-	-
Magazines**				1.4%	0.9%	0.9%	-	-	-	-
Office-Type Papers***		2.2%	2.2%	2.7%	1.8%	1.4%	-	-	-	-
Marketing Mail§				2.1%	2.2%	2.1%	-	-	-	-
Other Commercial Printing†		2.2%	2.2%	2.2%	3.8%	2.9%	-	-	-	-

Table 20. Products Combusted with Energy Recovery* in Municipal Solid Waste, 1960 to 2018
(With Detail on Nondurable Goods)
(In thousands of tons and percent of total combusted)

Products	Percent of Total Combusted									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Tissue Paper and Towels		2.2%	1.8%	1.7%	1.8%	2.0%	-	-	-	-
Paper Plates and Cups		Neg.	0.4%	0.4%	0.6%	0.7%	-	-	-	-
Other Nonpackaging Paper		2.2%	2.8%	2.2%	2.4%	2.6%	-	-	-	-
Total Other Paper Nondurable Goods		***11.1%***	***11.6%***	***13.1%***	***14.1%***	***13.1%***	***7.9%***	***7.0%***	***6.1%***	***6.6%***
Disposable Diapers		Neg.	1.1%	1.5%	1.9%	2.0%	2.2%	2.4%	2.4%	2.3%
Plastic Plates and Cups¥			Neg.	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%
Trash Bags**				0.4%	0.5%	0.6%	0.6%	0.7%	0.6%	0.7%
Clothing and Footwear		2.2%	1.8%	2.0%	3.2%	3.8%	4.7%	6.0%	6.3%	6.4%
Towels, Sheets and Pillowcases**				0.3%	0.4%	0.5%	0.7%	0.7%	0.7%	0.7%
Other Miscellaneous Nondurables		Neg.	0.7%	1.9%	2.3%	2.4%	2.3%	2.2%	2.3%	2.2%
Total Nondurables		***19.9%***	***21.0%***	***24.8%***	***26.7%***	***25.2%***	***20.6%***	***20.7%***	***19.7%***	***20.5%***
Containers and Packaging		**33.3%**	**31.9%**	**27.3%**	**27.0%**	**25.8%**	**23.4%**	**21.4%**	**23.4%**	**21.5%**
(Detail in Table 27)										
Total Product Wastes		***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***68.4%***
Other Wastes		**33.4%**	**31.2%**	**32.9%**	**27.7%**	**27.7%**	**31.9%**	**32.1%**	**30.3%**	**31.6%**
Total MSW Combusted with Energy Recovery - %		***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Products and materials combusted with energy recovery estimated at percentage total MSW after recycling and composting. In 2018, 19.6 percent of MSW after recycling and composting was combusted with energy recovery except for major appliances, tires and lead-acid batteries (see Table 16 for details) and food (percentage distribution for food varies by generator sector, see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data). Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

† Starting in 2010, newsprint and groundwood inserts expanded to include directories and other mechanical papers previously counted as Other Commercial Printing.

** Not estimated separately prior to 1990.

*** High-grade paper such as printer paper; generated in both commercial and residential sources.

§ Marketing Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard Mail by the U.S. Postal Service.

¥ Plastic Plates and Cups: Not estimated separately prior to 1980.

\- Detailed data not available.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 21. Products Landfilled* in Municipal Solid Waste, 1960 to 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of total landfilled)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**9,570**	**13,660**	**20,000**	**21,870**	**26,030**	**30,340**	**32,890**	**35,420**	**37,240**	**37,410**
(Detail in Table 17)										
Nondurable Goods										
Newspapers/Mechanical Papers†	5,290	7,230	7,870	6,900	4,890	2,810	2,310	1,560	1,010	1,430
Directories†**				460	450	440	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	1,820	2,200	3,050							
Books**				720	810	680	-	-	-	-
Magazines**				2,100	1,230	1,330	-	-	-	-
Office-Type Papers***	1,270	1,930	3,070	3,910	2,680	2,050	-	-	-	-
Marketing Mail§				3,000	3,010	3,060	-	-	-	-
Other Commercial Printing†	1,130	1,780	2,710	3,120	5,300	4,090	-	-	-	-
Tissue Paper and Towels	1,090	2,070	2,250	2,460	2,600	2,830	-	-	-	-
Paper Plates and Cups	270	420	620	540	770	950	-	-	-	-
Other Nonpackaging Paper	2,660	3,510	4,150	3,190	3,430	3,670	-	-	-	-
Total Other Paper Nondurable Goods	***8,240***	***11,910***	***15,850***	***19,040***	***19,830***	***18,660***	***10,730***	***9,700***	***8,520***	***9,350***
Disposable Diapers		350	1,900	2,240	2,600	2,790	3,050	3,360	3,340	3,300
Plastic Plates and Cups¥			190	540	700	760	730	840	870	830
Trash Bags**				650	690	870	810	910	920	990
Clothing and Footwear	1,310	1,550	1,970	2,900	4,490	5,430	6,460	8,240	8,900	9,070
Towels, Sheets and Pillowcases**				490	550	660	880	910	990	1,030
Other Miscellaneous Nondurables	100	200	1,390	2,770	3,250	3,480	3,060	3,140	3,140	3,160
Total Nondurables	***14,940***	***21,240***	***29,170***	***35,990***	***37,450***	***35,900***	***28,030***	***28,660***	***27,690***	***29,160***
Containers and Packaging	**24,500**	**40,060**	**43,300**	**39,640**	**37,860**	**36,670**	**31,920**	**29,270**	**33,010**	**30,470**
(Detail in Table 28)										
Total Product Wastes	***49,010***	***74,960***	***92,470***	***97,500***	***101,340***	***102,910***	***92,840***	***93,350***	***97,940***	***97,040***
Other Wastes	**33,500**	**37,630**	**41,890**	**47,770**	**38,920**	**39,380**	**43,470**	**44,260**	**42,530**	**49,080**
Total MSW Landfilled - Weight	***82,510***	***112,590***	***134,360***	***145,270***	***140,260***	***142,290***	***136,310***	***137,610***	***140,470***	***146,120***
Products	**Percent of Total Landfilled**									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**11.6%**	**12.1%**	**14.9%**	**15.1%**	**18.6%**	**21.3%**	**24.1%**	**25.7%**	**26.5%**	**25.6%**
(Detail in Table 17)										
Nondurable Goods										
Newspapers/Mechanical Papers†	6.4%	6.4%	5.9%	4.7%	3.5%	2.0%	1.7%	1.1%	0.7%	1.0%
Directories†**				0.3%	0.3%	0.3%	-	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	2.2%	2.0%	2.3%							
Books**				0.5%	0.6%	0.5%	-	-	-	-
Magazines**				1.4%	0.9%	0.9%	-	-	-	-
Office-Type Papers***	1.5%	1.7%	2.3%	2.7%	1.9%	1.4%	-	-	-	-
Marketing Mail§				2.1%	2.1%	2.1%	-	-	-	-
Other Commercial Printing	1.4%	1.6%	2.0%	2.1%	3.8%	2.9%	-	-	-	-
Tissue Paper and Towels	1.3%	1.8%	1.7%	1.7%	1.9%	2.0%	-	-	-	-
Paper Plates and Cups	0.3%	0.4%	0.5%	0.4%	0.5%	0.7%	-	-	-	-
Other Nonpackaging Paper	3.2%	3.1%	3.1%	2.2%	2.4%	2.6%	-	-	-	-
Total Other Paper Nondurable Goods	**10.0%**	**10.6%**	**11.8%**	**13.1%**	**14.1%**	**17.6%**	**7.9%**	***7.0%***	***6.1%***	***6.4%***

Table 21. Products Landfilled* in Municipal Solid Waste, 1960 to 2018 (With Detail on Nondurable Goods)

(In thousands of tons and percent of total landfilled)

Products	Percent of Total Landfilled									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Disposable Diapers	Neg.	0.3%	1.4%	1.5%	1.9%	2.0%	2.2%	2.4%	2.4%	2.3%
Plastic Plates and Cups¥			0.1%	0.4%	0.5%	0.5%	0.5%	0.6%	0.6%	0.6%
Trash Bags**				0.4%	0.5%	0.6%	0.6%	0.7%	0.7%	0.7%
Clothing and Footwear	1.6%	1.4%	1.5%	2.0%	3.2%	3.8%	4.7%	6.0%	6.3%	6.2%
Towels, Sheets and Pillowcases**				0.3%	0.4%	0.5%	0.6%	0.7%	0.7%	0.7%
Other Miscellaneous Nondurables	0.1%	0.2%	1.0%	1.9%	2.3%	2.4%	2.3%	2.3%	2.2%	2.2%
Total Nondurables	***18.1%***	***18.9%***	***21.7%***	***24.8%***	***26.7%***	***25.2%***	***20.6%***	***20.8%***	***19.7%***	***19.9%***
Containers and Packaging	**29.7%**	**35.6%**	**32.2%**	**27.3%**	**27.0%**	**25.8%**	**23.4%**	**21.4%**	**23.5%**	**20.9%**
(Detail in Table 29)										
Total Product Wastes	***59.4%***	***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***66.4%***
Other Wastes	**40.6%**	**33.4%**	**31.2%**	**32.9%**	**27.7%**	**27.7%**	**31.9%**	**32.1%**	**30.3%**	**33.6%**
Total MSW Landfilled - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Landfilling after recycling, composting, other food management pathways and combustion with energy recovery. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

† Starting in 2010, newsprint and groundwood inserts expanded to include directories and other mechanical papers previously counted as Other Commercial Printing.

** Not estimated separately prior to 1990.

*** High-grade paper such as printer paper; generated in both commercial and residential sources.

§ Marketing Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard Mail by the U.S. Postal Service.

¥ Plastic Plates and Cups: Not estimated separately prior to 1980.

\- Detailed data not available.

Neg. = Less than 5,000 tons or 0.05 percent.

Table 22. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail on Containers and Packaging)

(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**9,920**	**14,660**	**21,800**	**29,810**	**38,870**	**45,060**	**49,350**	**53,940**	**56,870**	**57,100**
(Detail in Table 14)										
Nondurable Goods	**17,330**	**25,060**	**34,420**	**52,170**	**64,010**	**63,650**	**53,250**	**51,810**	**50,700**	**50,440**
(Detail in Table 18)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1,400	5,580	6,740	5,640	5,710	6,540	5,670	5,320	4,830	4,650
Wine and Liquor Bottles	1,080	1,900	2,450	2,030	1,910	1,630	1,700	1,810	1,800	1,810
Other Bottles & Jars	3,710	4,440	4,780	4,160	3,420	2,290	1,990	1,990	3,220	3,330
Total Glass Packaging	***6,190***	***11,920***	***13,970***	***11,830***	***11,040***	***10,460***	***9,360***	***9,120***	***9,850***	***9,790***
Steel Packaging										
Beer and Soft Drink Cans	640	1,570	520	150	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	3,760	3,540	2,850	2,540	2,630	2,130	2,300	1,740	1,480	1,580
Other Steel Packaging	260	270	240	200	240	240	440	480	530	630
Total Steel Packaging	***4,660***	***5,380***	***3,610***	***2,890***	***2,870***	***2,370***	***2,740***	***2,220***	***2,010***	***2,210***
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	100	850	1,550	1,520	1,450	1,370	1,220	1,330	1,330
Other Cans	Neg.	60	40	20	50	80	70	130	50	80
Foil and Closures	170	410	380	330	380	400	460	490	500	510
Total Aluminum Packaging	***170***	***570***	***1,270***	***1,900***	***1,950***	***1,930***	***1,900***	***1,840***	***1,880***	***1,920***
Paper & Paperboard Pkg										
Corrugated Boxes	7,330	12,760	17,080	24,010	30,210	30,930	29,050	31,330	32,540	33,260
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			790	510	550	500	540	590	590	630
Folding Cartons			3,820	4,300	5,820	5,530	5,470	5,380	5,330	5,370
Other Paperboard Packaging	3,840	4,830	230	290	200	160	90	70	50	50
Bags and Sacks			3,380	2,440	1,490	1,120	1,040	930	1,100	1,090
Wrapping Papers			200	110	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Other Paper Packaging	2,940	3,810	850	1,020	1,670	1,400	1,490	1,620	1,450	1,500
Subtotal Other Paper & Paperboard Pkg	*6,780*	*8,640*	*9,270*	*8,670*	*9,730*	*8,710*	*8,630*	*8,590*	8,520	8,640
Total Paper & Board Pkg	***14,110***	***21,400***	***26,350***	***32,680***	***39,940***	***39,640***	***37,680***	***39,920***	***41,060***	***41,900***
Plastics Packaging										
PET Bottles and Jars			260	430	1,720	2,540	2,670	2,980	2,960	3,130
HDPE Natural Bottles			230	530	690	800	800	760	770	750
Other Containers	60	910	890	1,430	1,740	1,420	1,830	1,940	1,990	1,990
Bags and Sacks			390	940	1,650	1,640	770	-	-	-
Wraps			840	1,530	2,550	2,810	3,160	-	-	-
Subtotal Bags, Sacks and Wraps			*1,230*	*2,470*	*4,200*	*4,450*	*3,930*	*4,130*	4,140	4,200
Other Plastics Packaging	60	1,180	790	2,040	2,840	3,210	4,450	4,870	4,630	4,460
Total Plastics Packaging	***120***	***2,090***	***3,400***	***6,900***	***11,190***	***12,420***	***13,680***	***14,680***	***14,490***	***14,530***
Other Packaging										
Wood Packaging	2,000	2,070	3,940	8,180	8,610	9,230	9,770	9,770	11,560	11,530
Other Misc. Packaging	120	130	130	150	240	280	340	370	350	340
Total Containers & Pkg	***27,370***	***43,560***	***52,670***	***64,530***	***75,840***	***76,330***	***75,470***	***77,920***	***81,200***	***82,220***
Total Product Wastes	***54,620***	***83,280***	***108,890***	***146,510***	***178,720***	***185,040***	***178,070***	***183,670***	***188,770***	***189,760***

Table 22. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail on Containers and Packaging)

(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Wastes										
Food^	12,200	12,800	13,000	23,860	30,700	32,930	35,740	39,730	40,670	63,130
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	33,400	34,720	35,180	35,400
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,840	3,990	4,040	4,070
Total Other Wastes	***33,500***	***37,780***	***42,750***	***61,760***	***64,730***	***68,690***	***72,980***	***78,440***	***79,890***	***102,600***
Total MSW Generated - Weight	***88,120***	***121,060***	***151,640***	***208,270***	***243,450***	***253,730***	***251,050***	***262,110***	***268,660***	***292,360***

* Generation before materials are recycled, composted, managed by other food pathways, combusted with energy recovery or landfilled. Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.

^ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 23. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail on Containers and Packaging)

(In percent of total generation)

Products	Percent of Total Generation									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**11.3%**	**12.1%**	**14.4%**	**14.3%**	**16.0%**	**17.8%**	**19.7%**	**20.6%**	**21.2%**	**19.5%**
(Detail in Table 14)										
Nondurable Goods	**19.7%**	**20.7%**	**22.7%**	**25.0%**	**26.3%**	**25.1%**	**21.2%**	**19.8%**	**18.9%**	**17.3%**
(Detail in Table 18)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1.6%	4.6%	4.4%	2.7%	2.3%	2.6%	2.3%	2.0%	1.8%	1.6%
Wine and Liquor Bottles	1.2%	1.6%	1.6%	1.0%	0.8%	0.6%	0.7%	0.7%	0.8%	0.6%
Other Bottles & Jars	4.2%	3.7%	3.2%	2.0%	1.4%	0.9%	0.8%	0.8%	1.2%	1.1%
Total Glass Packaging	***7.0%***	***9.8%***	***9.2%***	***5.7%***	***4.5%***	***4.1%***	***3.7%***	***3.5%***	***3.8%***	***3.3%***
Steel Packaging										
Beer and Soft Drink Cans	0.7%	1.3%	0.3%	0.1%	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	4.3%	2.9%	1.9%	1.2%	1.1%	0.8%	0.9%	0.7%	0.6%	0.5%
Other Steel Packaging	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Total Steel Packaging	***5.3%***	***4.4%***	***2.4%***	***1.4%***	***1.2%***	***0.9%***	***1.1%***	***0.9%***	***0.7%***	***0.8%***
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	0.1%	0.6%	0.7%	0.6%	0.6%	0.5%	0.5%	0.5%	0.5%
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.03%	0.04%	0.02%	0.03%
Foil and Closures	0.2%	0.3%	0.3%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Total Aluminum Packaging	***0.2%***	***0.5%***	***0.8%***	***0.9%***	***0.8%***	***0.8%***	***0.8%***	***0.7%***	***0.8%***	***0.7%***
Paper & Paperboard Pkg										
Corrugated Boxes	8.3%	10.5%	11.3%	11.5%	12.4%	12.2%	11.6%	12.0%	12.1%	11.4%
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			0.5%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
Folding Cartons			2.5%	2.1%	2.4%	2.2%	2.2%	2.1%	2.0%	1.8%
Other Paperboard Packaging	4.4%	4.0%	0.2%	0.1%	0.1%	0.1%	0.0%	Neg.	Neg.	Neg.
Bags and Sacks			2.2%	1.2%	0.6%	0.4%	0.4%	0.4%	0.4%	0.4%
Wrapping Papers			0.1%	0.1%	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Other Paper Packaging	3.3%	3.1%	0.6%	0.5%	0.7%	0.6%	0.6%	0.6%	0.5%	0.5%
Subtotal Other Paper & Paperboard Pkg							*3.4%*	*3.3%*	*3.1%*	*3.0%*
Total Paper & Board Pkg	***16.0%***	***17.7%***	***17.4%***	***15.7%***	***16.4%***	***15.6%***	***15.0%***	***15.3%***	***15.3%***	***14.3%***
Plastics Packaging										
PET Bottles and Jars			0.2%	0.2%	0.7%	1.0%	1.1%	1.1%	1.1%	1.1%
HDPE Natural Bottles			0.2%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
Other Containers	0.1%	0.8%	0.6%	0.7%	0.7%	0.6%	0.7%	0.7%	0.7%	0.7%
Bags and Sacks			0.3%	0.5%	0.7%	0.6%	0.3%	-	-	-
Wraps			0.6%	0.7%	1.0%	1.1%	1.3%	-	-	-
Subtotal Bags, Sacks and Wraps			*0.8%*	*1.2%*	*1.7%*	*1.8%*	*1.6%*	*1.6%*	*1.5%*	1.4%
Other Plastics Packaging	0.1%	1.0%	0.5%	1.0%	1.2%	1.3%	1.8%	1.8%	1.7%	1.5%
Total Plastics Packaging	***0.1%***	***1.7%***	***2.2%***	***3.3%***	***4.6%***	***4.9%***	***5.4%***	***5.5%***	***5.3%***	***5.0%***
Other Packaging										
Wood Packaging	2.3%	1.7%	2.6%	3.9%	3.5%	3.6%	3.9%	3.7%	4.3%	3.9%
Other Misc. Packaging	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Total Containers & Pkg	***31.1%***	***36.0%***	***34.7%***	***31.0%***	***31.2%***	***30.1%***	***30.1%***	***29.7%***	***30.2%***	***28.1%***
Total Product Wastes	***62.0%***	***68.8%***	***71.8%***	***70.3%***	***73.4%***	***72.9%***	***70.9%***	***70.1%***	***70.3%***	***64.9%***

Table 23. Products Generated* in the Municipal Waste Stream, 1960 to 2018 (With Detail on Containers and Packaging)

(In percent of total generation)

Products	Percent of Total Generation									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Wastes										
Food^	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	14.2%	15.2%	15.1%	21.6%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.3%	13.2%	13.1%	12.1%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.4%
Total Other Wastes	***38.0%***	***31.2%***	***28.2%***	***29.7%***	***26.6%***	***27.1%***	***29.1%***	***29.9%***	***29.7%***	***35.1%***
Total MSW Generated - %	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Generation before materials are recycled, composted, managed by other food pathways, combusted with energy recovery or landfilled. Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice, and other products packaged in gable top cartons and liquid food aseptic cartons.

^ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 24. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 To 2018 (With Detail On Containers And Packaging)

(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods – recycled	350	940	1,360	3,460	6,580	7,970	9,390	9,880	10,550	10,570
(Detail in Table 15)										
Nondurable Goods – recycled	2,390	3,730	4,670	8,800	17,560	19,770	19,190	16,190	16,290	14,190
(Detail in Table 19)										
Containers and Packaging – recycled										
Glass Packaging										
Beer and Soft Drink Bottles**	90	140	730	1,890	1,530	2,000	2,350	2,230	1,880	1,840
Wine and Liquor Bottles	10	10	20	210	430	250	540	660	710	720
Other Bottles & Jars	Neg.	Neg.	Neg.	520	920	340	240	300	480	500
Total Glass Packaging	***100***	***150***	***750***	***2,620***	***2,880***	***2,590***	***3,130***	***3,190***	**3,070**	**3,060**
Steel Packaging										
Beer and Soft Drink Cans	10	20	50	40	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	20	60	150	590	1,530	1,340	1,540	1,240	1,050	1,120
Other Steel Packaging	Neg.	Neg.	Neg.	60	160	160	350	380	420	510
Total Steel Packaging	***30***	***80***	***200***	***690***	***1,690***	***1,500***	***1,890***	***1,620***	***1,470***	***1,630***
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	10	320	990	830	650	680	670	600	670
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	NA	NA	NA	NA
Foil and Closures	Neg.	Neg.	Neg.	20	30	40	NA	NA	NA	NA
Total Aluminum Pkg	***Neg.***	***10***	***320***	***1,010***	***860***	***690***	***680***	***670***	***600***	***670***
Paper & Paperboard Pkg										
Corrugated Boxes	2,520	2,760	6,390	11,530	20,330	22,100	24,690	28,930	28,780	32,090
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			Neg.	Neg.	Neg.	Neg.	-	-	-	-
Folding Cartons			520	340	410	1,190	-	-	-	-
Other Paperboard Packaging			Neg.	Neg.	Neg.	Neg.	-	-	-	-
Bags and Sacks			Neg.	200	300	320	-	-	-	-
Wrapping Papers			Neg.	Neg.	Neg.	Neg.	-	-	-	-
Other Paper Packaging	220	350	300	Neg.	Neg.	Neg.	-	-	-	-
Subtotal Other Paper & Paperboard Pkg							*2,160*	*2,270*	*1,300*	1,800
Total Paper & Board Pkg	***2,740***	***3,110***	***7,210***	***12,070***	***21,040***	***23,610***	***26,850***	***31,200***	***30,080***	***33,890***
Plastics Packaging										
PET Bottles and Jars			10	140	380	590	780	890	860	910
HDPE Natural Bottles			Neg.	20	210	230	220	230	240	220
Other Containers	Neg.	Neg.	Neg.	20	170	140	300	360	300	310
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks and Wraps			*Neg.*	*60*	*180*	*230*	*450*	*530*	390	420
Other Plastics Packaging	Neg.	Neg.	Neg.	20	90	90	100	140	100	120
Total Plastics Packaging	***Neg.***	***Neg.***	***10***	***260***	***1,030***	***1,280***	***1,850***	***2,150***	***1,890***	***1,980***
Other Packaging										
Wood Packaging	Neg.	Neg.	Neg.	130	1,370	1,830	2,280	2,660	3,030	3,100
Other Misc. Packaging	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Containers & Pkg – recycled	***2,870***	***3,350***	***8,490***	***16,780***	***28,870***	***31,500***	***36,680***	***41,490***	***40,140***	***44,330***

Table 24. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 To 2018 (With Detail On Containers And Packaging)

(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Total Product Wastes – recycled	***5,610***	***8,020***	***14,520***	***29,040***	***53,010***	***59,240***	***65,260***	***67,560***	***66,980***	***69,090***
Composted										
Food - composted										
Food^	Neg.	Neg.	Neg.	Neg.	680	690	970	2,100	2,570	2,590
Yard Trimmings - composted										
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	19,200	21,290	24,420	22,300
Misc. Inorganic Wastes - composted										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***4,200***	***16,450***	***20,550***	***20,170***	***23,390***	***26,990***	***24,890***
Other Food Management										
Other Food Management¥										
Food - animal feed										1,820
Food - bio-based materials/biochemical processing										1,840
Food – codigestion/anaerobic digestion										5,260
Food - donation										4,790
Food - land application										260
Food – sewer/wastewater treatment										3,740
Total Food – other food management										***17,710***
Total MSW Recycled and Composted - Weight	***5,610***	***8,020***	***14,520***	***33,240***	***69,460***	***79,790***	***85,430***	***90,950***	***93,970***	***93,980***
Total MSW Recycled, Composted and Other Food Management - Weight										***111,690***

* Recycling of postconsumer wastes; does not include converting/fabrication scrap. Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.

^ Includes collection of other MSW organics for composting.

¥ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 25. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 To 2018 (With Detail on Containers and Packaging)

(In percent of generation of each product)

Products	Percent of Generation of Each Product									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Recycled										
Durable Goods - recycled	**3.5%**	**6.4%**	**6.2%**	**11.6%**	**16.9%**	**17.7%**	**19.0%**	**18.3%**	**18.6%**	**18.5%**
(Detail in Table 15)										
Nondurable Goods – recycled	**13.8%**	**14.9%**	**13.6%**	**16.9%**	**27.4%**	**31.1%**	**36.0%**	**31.2%**	**32.1%**	**28.1%**
(Detail in Table 19)										
Containers and Packaging – recycled										
Glass Packaging										
Beer and Soft Drink Bottles**	6.4%	2.5%	10.8%	33.5%	26.8%	30.6%	41.4%	41.9%	38.9%	39.6%
Wine and Liquor Bottles	Neg.	Neg.	Neg.	10.3%	22.5%	15.3%	31.8%	36.5%	39.4%	39.8%
Other Bottles & Jars	Neg.	Neg.	Neg.	12.5%	26.9%	14.8%	12.1%	15.1%	14.9%	15.0%
Total Glass Packaging	***1.6%***	***1.3%***	***5.4%***	***22.1%***	***26.1%***	***24.8%***	***33.4%***	***35.0%***	***31.2%***	***31.3%***
Steel Packaging										
Beer and Soft Drink Cans	1.6%	1.3%	9.6%	26.7%	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	Neg.	1.7%	5.3%	23.2%	58.2%	62.9%	67.0%	71.3%	70.9%	70.9%
Other Steel Packaging	Neg.	Neg.	Neg.	30.0%	66.7%	66.7%	79.5%	79.2%	79.2%	81.0%
Total Steel Packaging	***Neg.***	***1.5%***	***5.5%***	***23.9%***	***58.9%***	***63.3%***	***69.0%***	***73.0%***	***73.1%***	***73.8%***
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	10.0%	37.6%	63.9%	54.6%	44.8%	49.6%	54.9%	45.1%	50.4%
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	NA	NA	NA	NA
Foil and Closures	Neg.	Neg.	Neg.	6.1%	7.9%	10.0%	NA	NA	NA	NA
Total Aluminum Pkg	***Neg.***	***1.8%***	***25.2%***	***53.2%***	***44.1%***	***35.8%***	***35.8%***	***36.4%***	***31.9%***	***34.9%***
Paper & Paperboard Pkg										
Corrugated Boxes	34.4%	21.6%	37.4%	48.0%	67.3%	71.5%	85.0%	92.3%	88.4%	96.5%
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			Neg.	Neg.	Neg.	Neg.	-	-	-	-
Folding Cartons			Neg.	Neg.	7.0%	21.5%	-	-	-	-
Other Paperboard Packaging			Neg.	Neg.	Neg.	Neg.	-	-	-	-
Bags and Sacks			Neg.	Neg.	20.1%	28.6%	-	-	-	-
Wrapping Papers			Neg.	Neg.	Neg.	Neg.	-	-	-	-
Other Paper Packaging	7.5%	9.2%	35.3%	Neg.	Neg.	Neg.	-	-	-	-
Subtotal Other Paper & Paperboard Pkg							*25.0%*	*26.4%*	*15.3%*	*20.8%*
Total Paper & Board Pkg	***19.4%***	***14.5%***	***27.4%***	***36.9%***	***52.7%***	***59.6%***	***71.3%***	***78.2%***	***73.3%***	***80.9%***
Plastics Packaging										
PET Bottles and Jars			3.8%	32.6%	22.1%	23.2%	29.2%	29.9%	29.1%	29.1%
HDPE Natural Bottles			Neg.	3.8%	30.4%	28.8%	27.5%	30.3%	31.2%	29.3%
Other Containers	Neg.	Neg.	Neg.	1.4%	9.8%	9.9%	16.4%	18.6%	15.1%	15.6%
Bags and Sacks										
Wraps										

Table 25. Products Recycled,* Composted and Managed by Other Food Pathways in the Municipal Solid Waste Stream, 1960 To 2018 (With Detail on Containers and Packaging)

(In percent of generation of each product)

Products	Percent of Generation of Each Product									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Subtotal Bags, Sacks and Wraps			*Neg.*	*2.4%*	*4.3%*	*5.2%*	*11.5%*	*12.8%*	*9.4%*	10.0%
Other Plastics Packaging	Neg.	Neg.	Neg.	1.0%	3.2%	2.8%	2.2%	2.9%	2.2%	2.7%
Total Plastics Packaging	***Neg.***	***Neg.***	***Neg.***	***3.8%***	***9.2%***	***10.3%***	***13.5%***	***14.6%***	***13.0%***	***13.6%***
Other Packaging										
Wood Packaging	Neg.	Neg.	Neg.	1.6%	15.9%	19.8%	23.3%	27.2%	26.2%	26.9%
Other Misc. Packaging	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Containers & Pkg – recycled	***10.5%***	***7.7%***	***16.1%***	***26.0%***	***38.1%***	***41.3%***	***48.6%***	***53.2%***	***49.4%***	***53.9%***
Total Product Wastes recycled	***10.3%***	***9.6%***	***13.3%***	***19.8%***	***29.7%***	***32.0%***	***36.6%***	***36.8%***	***35.5%***	***36.4%***
Composted										
Composted - Food										
Food^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.7%	5.3%	6.3%	4.1%
Composted – Yard Trimmings										
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	57.5%	61.3%	69.4%	63.0%
Composted – Misc. Inorganic Wastes										
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total - composted	***Neg.***	***Neg.***	***Neg.***	***6.8%***	***25.4%***	***29.9%***	***27.6%***	***29.8%***	***33.8%***	***24.3%***
Other Food Management										
Other Food Management¥										
Food - animal feed										2.9%
Food - bio-based materials/biochemical processing										2.9%
Food – codigestion/anaerobic digestion										8.3%
Food - donation										7.6%
Food - land application										0.4%
Food – sewer/wastewater treatment										5.9%
Total Food – other food management										28.1%
Total MSW Recycled and Composted - %	***6.4%***	***6.6%***	***9.6%***	***16.0%***	***28.5%***	***31.4%***	***34.0%***	***34.7%***	***35.0%***	***32.1%***
Total MSW Recycled, Composted and Other Food Management - %										***38.2%***

* Recycling of postconsumer wastes; does not include converting/fabrication scrap. Details may not add to totals due to rounding.
** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.
‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.
^ Includes collection of other MSW organics for composting.
¥ In 2018, the food waste measurement methodology was expanded to include additional sources of generation and management pathways beyond composting, combustion with energy recovery and landfilling. Please see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data
Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 26. Products Combusted with Energy Recovery* in Municipal Solid Waste, 1960 to 2018
(With Detail on Containers and Packaging)
(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**0**	**60**	**440**	**4,480**	**6,260**	**6,750**	**7,070**	**8,640**	**9,080**	**9,120**
(Detail in Table 16)										
Nondurable Goods	**0**	**90**	**580**	**7,380**	**9,000**	**7,980**	**6,030**	**6,960**	**6,720**	**7,090**
(Detail in Table 20)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	0	20	120	640	810	830	590	610	580	550
Wine and Liquor Bottles	0	10	50	310	290	250	210	230	210	210
Other Bottles & Jars	0	20	100	620	490	350	310	330	540	550
Total Glass Packaging	***0***	***50***	***270***	***1,570***	***1,590***	***1,430***	***1,110***	***1,170***	***1,330***	***1,310***
Steel Packaging										
Beer and Soft Drink Cans	0	10	10	20	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	0	10	50	330	210	140	130	100	80	90
Other Steel Packaging	0	Neg.	Neg.	20	20	10	20	20	20	20
Total Steel Packaging	***0***	***20***	***60***	***370***	***230***	***150***	***150***	***120***	***100***	***110***
Aluminum Packaging										
Beer and Soft Drink Cans	0	Neg.	10	100	130	150	120	110	140	130
Other Cans	0	Neg.	Neg.	Neg.	10	10	10	30	10	20
Foil and Closures	0	Neg.	10	50	70	70	80	100	100	100
Total Aluminum Pkg	***0***	***Neg.***	***20***	***150***	***210***	***230***	***210***	***240***	***250***	***250***
Paper & Paperboard Pkg										
Corrugated Boxes	0	40	210	2,120	1,920	1,610	770	470	740	230
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			20	90	110	90	-	-	-	-
Folding Cartons			70	670	1,050	790	-	-	-	-
Other Paperboard Packaging	0	20	Neg.	50	40	30	-	-	-	-
Bags and Sacks			70	380	230	150	-	-	-	-
Wrapping Papers			Neg.	20	Neg.	Neg.	-	-	-	-
Other Paper Packaging	0	10	10	170	320	250	-	-	-	-
Subtotal Other Paper & Paperboard Pkg							*1,150*	*1,240*	*1,420*	*1,340*
Total Paper & Board Pkg	**0**	**70**	**380**	**3,500**	**3,670**	**2,920**	**1,920**	**1,710**	**2,160**	**1,570**
Plastics Packaging										
PET Bottles and Jars			Neg.	50	260	350	330	410	410	440
HDPE Natural Bottles			Neg.	90	90	100	100	100	100	100
Other Containers	0	Neg.	20	240	300	230	270	310	330	330
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks and Wraps			*30*	*410*	*780*	*770*	*620*	*710*	*740*	*740*
Other Plastics Packaging	0	Neg.	20	340	530	570	770	930	890	850
Total Plastics Packaging	***0***	***Neg.***	***70***	***1,130***	***1,960***	***2,020***	***2,090***	***2,460***	***2,470***	***2,460***

Table 26. Products Combusted with Energy Recovery* in Municipal Solid Waste, 1960 to 2018
(With Detail on Containers and Packaging)
(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Packaging										
Wood Packaging	0	10	80	1,370	1,400	1,350	1,330	1,390	1,670	1,650
Other Misc. Packaging	0	Neg.	Neg.	20	50	60	60	70	70	70
Total Containers & Pkg	***0***	***150***	***880***	***8,110***	***9,110***	***8,160***	***6,870***	***7,160***	***8,050***	***7,420***
Total Product Wastes	***0***	***300***	***1,900***	***19,970***	***24,370***	***22,890***	***19,970***	***22,760***	***23,850***	***23,630***
Other Wastes										
Food	0	50	260	4,060	5,820	5,870	6,150	7,380	7,470	7,550
Yard Trimmings	0	90	550	5,240	2,860	2,220	2,510	2,630	2,110	2,570
Miscellaneous Inorganic Wastes	0	10	50	490	680	670	680	780	790	800
Total Other Wastes	***0***	***150***	***860***	***9,790***	***9,360***	***8,760***	***9,340***	***10,790***	***10,370***	***10,920***
Total MSW Combusted with Energy Recovery - Weight	***0***	***450***	***2,760***	***29,760***	***33,730***	***31,650***	***29,310***	***33,550***	***34,220***	***34,550***

* Products and materials combusted with energy recovery estimated at percentage total MSW after recycling and composting. In 2018, 19.6 percent of MSW after recycling and composting was combusted with energy recovery except for major appliances, tires and lead-acid batteries (see Table 16 for details) and food (percentage distribution for food varies by generator sector, see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data). Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 27. Products Combusted with Energy Recovery* in Municipal Solid Waste, 1960 to 2018 (With Detail on Containers and Packaging)

(In percent of total combusted)

Products		Percent of Total Combusted								
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods		**13.3%**	**15.9%**	**15.1%**	**18.6%**	**21.3%**	**24.1%**	**25.8%**	**26.5%**	**26.4%**
(Detail in Table 16)										
Nondurable Goods		**19.9%**	**21.0%**	**24.8%**	**26.7%**	**25.2%**	**20.6%**	**20.7%**	**19.7%**	**20.5%**
(Detail in Table 20)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**		4.5%	4.3%	2.2%	2.4%	2.6%	2.0%	1.8%	1.7%	1.6%
Wine and Liquor Bottles		2.2%	1.8%	1.0%	0.8%	0.8%	0.7%	0.7%	0.6%	0.6%
Other Bottles & Jars		4.4%	3.6%	2.1%	1.5%	1.1%	1.1%	1.0%	1.6%	1.6%
Total Glass Packaging		***11.1%***	***9.8%***	***5.3%***	***4.7%***	***4.5%***	***3.8%***	***3.5%***	***3.9%***	***3.8%***
Steel Packaging										
Beer and Soft Drink Cans		2.2%	0.4%	0.1%	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans		2.2%	1.8%	1.1%	0.6%	0.5%	0.4%	0.3%	0.2%	0.2%
Other Steel Packaging		Neg.	Neg.	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%
Total Steel Packaging		***4.4%***	***2.2%***	***1.2%***	***0.7%***	***0.5%***	***0.5%***	***0.4%***	***0.3%***	***0.3%***
Aluminum Packaging										
Beer and Soft Drink Cans		Neg.	0.4%	0.3%	0.4%	0.5%	0.4%	0.3%	0.3%	0.4%
Other Cans		Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.1%	0.0%	0.0%
Foil and Closures		Neg.	0.4%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%
Total Aluminum Pkg		***Neg.***	***0.7%***	***0.5%***	***0.6%***	***0.7%***	***0.7%***	***0.7%***	***0.6%***	***0.7%***
Paper & Paperboard Pkg										
Corrugated Boxes		8.9%	7.6%	7.1%	5.7%	5.1%	2.6%	1.4%	2.2%	0.7%
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			0.7%	0.3%	0.3%	0.3%	-	-	-	-
Folding Cartons			2.5%	2.3%	3.1%	2.5%	-	-	-	-
Other Paperboard Packaging		4.5%	Neg.	0.2%	0.1%	0.1%	-	-	-	-
Bags and Sacks			2.5%	1.3%	0.7%	0.4%	-	-	-	-
Wrapping Papers			Neg.	0.1%	Neg.	Neg.	-	-	-	-
Other Paper Packaging		2.2%	0.4%	0.6%	1.0%	0.8%	-	-	-	-
Subtotal Other Paper & Paperboard Pkg							*3.9%*	*3.7%*	*4.1%*	*3.8%*
Total Paper & Board Pkg		***15.6%***	***13.8%***	***11.8%***	***10.9%***	***9.2%***	***6.6%***	***5.1%***	***6.3%***	***4.5%***
Plastics Packaging										
PET Bottles and Jars			Neg.	0.2%	0.8%	1.1%	1.1%	1.3%	1.2%	1.3%
HDPE Natural Bottles			Neg.	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%
Other Containers		Neg.	0.7%	0.8%	0.9%	0.7%	0.9%	0.9%	1.0%	1.0%
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks and Wraps			*1.1%*	*1.4%*	*2.3%*	*2.4%*	*2.1%*	*2.1%*	*2.2%*	2.1%
Other Plastics Packaging		Neg.	0.7%	1.1%	1.5%	1.8%	2.6%	2.8%	2.6%	2.5%
Total Plastics Packaging		***Neg.***	***2.5%***	***3.8%***	***5.8%***	***6.4%***	***7.1%***	***7.4%***	***7.2%***	***7.2%***
Other Packaging										
Wood Packaging		2.2%	2.9%	4.6%	4.2%	4.3%	4.5%	4.1%	4.9%	4.8%
Other Misc. Packaging		Neg.	Neg.	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%
Total Containers & Pkg		***33.3%***	***31.9%***	***27.3%***	***27.0%***	***25.8%***	***23.4%***	***21.4%***	***23.4%***	***21.5%***
Total Product Wastes		***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***68.4%***

Table 27. Products Combusted with Energy Recovery* in Municipal Solid Waste, 1960 to 2018 (With Detail on Containers and Packaging)

(In percent of total combusted)

Products		Percent of Total Combusted								
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Wastes										
Food		11.1%	9.4%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	21.9%
Yard Trimmings		20.0%	20.0%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.4%
Miscellaneous Inorganic Wastes		2.3%	1.8%	1.7%	1.9%	2.1%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes		***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***31.6%***
Total MSW Combusted with Energy Recovery - %		***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***	***100.0%***

* Products and materials combusted with energy recovery estimated at percentage total MSW after recycling and composting. In 2018, 19.6 percent of MSW after recycling and composting was combusted with energy recovery except for major appliances, tires and lead-acid batteries (see Table 16 for details) and food (percentage distribution for food varies by generator sector, see https://www.epa.gov/facts-and-figures-about-materials-waste-and-recycling/food-material-specific-data). Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 28. Products Landfilled* in Municipal Solid Waste, 1960 to 2018 (With Detail on Containers and Packaging)

(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**9,570**	**13,660**	**20,000**	**21,870**	**26,030**	**30,340**	**32,890**	**35,420**	**37,240**	**37,410**
(Detail in Table 17)										
Nondurable Goods	**14,940**	**21,240**	**29,170**	**35,990**	**37,450**	**35,900**	**28,030**	**28,660**	**27,690**	**29,160**
(Detail in Table 21)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1,310	5,420	5,890	3,110	3,370	3,710	2,730	2,480	2,370	2,260
Wine and Liquor Bottles	1,070	1,880	2,380	1,510	1,190	1,130	950	920	880	880
Other Bottles & Jars	3,710	4,420	4,680	3,020	2,010	1,600	1,440	1,360	2,200	2,280
Total Glass Packaging	***6,090***	***11,720***	***12,950***	***7,640***	***6,570***	***6,440***	***5,120***	***4,760***	***5,450***	***5,420***
Steel Packaging										
Beer and Soft Drink Cans	630	1,540	460	90	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	3,740	3,470	2,650	1,620	890	650	630	400	350	370
Other Steel Packaging	260	270	240	120	60	70	70	80	90	100
Total Steel Packaging	***4,630***	***5,280***	***3,350***	***1,830***	***950***	***720***	***700***	***480***	***440***	***470***
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	90	520	460	560	650	570	440	590	530
Other Cans	Neg.	60	40	20	40	70	60	100	40	60
Foil and Closures	170	410	370	260	280	290	380	390	400	410
Total Aluminum Pkg	***170***	***560***	***930***	***740***	***880***	***1,010***	***1,010***	***930***	***1,030***	***1,000***
Paper & Paperboard Pkg										
Corrugated Boxes	4,810	9,960	10,480	10,360	7,960	7,220	3,590	1,930	3,020	940
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			770	420	440	410	-	-	-	-
Folding Cartons			3,230	3,290	4,360	3,550	-	-	-	-
Other Paperboard Packaging	3,840	4,810	230	240	160	130	-	-	-	-
Bags and Sacks			3,310	1,860	960	650	-	-	-	-
Wrapping Papers			200	90	Neg.	Neg.	-	-	-	-
Other Paper Packaging	2,720	3,450	540	850	1,350	1,150	-	-	-	-
Subtotal Other Paper & Paperboard Pkg							*5,320*	*5,080*	*5,800*	*5,500*
Total Paper & Board Pkg	*11,370*	*18,220*	*18,760*	*17,110*	*15,230*	*13,110*	*8,910*	*7,010*	*8,820*	*6,440*
Plastics Packaging										
PET Bottles and Jars			250	240	1,080	1,600	1,560	1,680	1,690	1,780
HDPE Natural Bottles			230	420	390	470	480	430	430	430
Other Containers	60	910	870	1,170	1,270	1,050	1,260	1,270	1,360	1,350
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks and Wraps			*1,200*	*2,000*	*3,240*	*3,450*	*2,860*	*2,890*	3,010	3,040
Other Plastics Packaging	60	1,180	770	1,680	2,220	2,550	3,580	3,800	3,640	3,490
Total Plastics Packaging	***120***	***2,090***	***3,320***	***5,510***	***8,200***	***9,120***	***9,740***	***10,070***	***10,130***	***10,090***
Other Packaging										
Wood Packaging	2,000	2,060	3,860	6,680	5,840	6,050	6,160	5,720	6,860	6,780
Other Misc. Packaging	120	130	130	130	190	220	280	300	280	270
Total Containers & Pkg	***24,500***	***40,060***	***43,300***	***39,640***	***37,860***	***36,670***	***31,920***	***29,270***	***33,010***	***30,470***
Total Product Wastes	***49,010***	***74,960***	***92,470***	***97,500***	***101,340***	***102,910***	***92,840***	***93,350***	***97,940***	***97,040***

Table 28. Products Landfilled* in Municipal Solid Waste, 1960 to 2018 (With Detail on Containers and Packaging)

(In thousands of tons)

Products	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Other Wastes										
Food	12,200	12,750	12,740	19,800	24,200	26,370	28,620	30,250	30,630	35,280
Yard Trimmings	20,000	23,110	26,950	25,560	11,900	9,990	11,690	10,800	8,650	10,530
Miscellaneous Inorganic Wastes	1,300	1,770	2,200	2,410	2,820	3,020	3,160	3,210	3,250	3,270
Total Other Wastes	***33,500***	***37,630***	***41,890***	***47,770***	***38,920***	***39,380***	***43,470***	***44,260***	***42,530***	***49,080***
Total MSW Landfilled - Weight	***82,510***	***112,590***	***134,360***	***145,270***	***140,260***	***142,290***	***136,310***	***137,610***	***140,470***	***146,120***

* Landfilling after recycling, composting, other food management pathways and combustion with energy recovery. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 29. Products Landfilled* in Municipal Solid Waste, 1960 to 2018 (With Detail on Containers and Packaging)

(In percent of total landfilled)

Products	Percent of Total Landfilled									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Durable Goods	**11.6%**	**12.1%**	**14.9%**	**15.0%**	**18.6%**	**21.3%**	**24.1%**	**25.7%**	**26.5%**	**25.6%**
(Detail in Table 17)										
Nondurable Goods	**18.1%**	**18.9%**	**21.7%**	**24.8%**	**26.7%**	**25.2%**	**20.6%**	**20.8%**	**19.7%**	**19.9%**
(Detail in Table 21)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1.6%	4.8%	4.4%	2.1%	2.4%	2.6%	2.0%	1.8%	1.7%	1.5%
Wine and Liquor Bottles	1.3%	1.7%	1.8%	1.0%	0.8%	0.8%	0.7%	0.7%	0.6%	0.6%
Other Bottles & Jars	4.5%	3.9%	3.5%	2.1%	1.5%	1.1%	1.1%	1.0%	1.6%	1.6%
Total Glass Packaging	***7.4%***	***10.4%***	***9.6%***	***5.3%***	***4.7%***	***4.5%***	***3.8%***	**3.5%**	**3.9%**	**3.7%**
Steel Packaging										
Beer and Soft Drink Cans	0.8%	1.4%	0.3%	0.1%	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	4.5%	3.1%	2.0%	1.1%	0.6%	0.5%	0.5%	0.3%	0.2%	0.3%
Other Steel Packaging	0.3%	0.2%	0.2%	0.1%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%
Total Steel Packaging	***5.6%***	***4.7%***	***2.5%***	***1.3%***	***0.7%***	***0.5%***	***0.6%***	**0.4%**	**0.3%**	**0.4%**
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	0.1%	0.4%	0.3%	0.4%	0.5%	0.4%	0.3%	0.4%	0.4%
Other Cans	Neg.	0.1%	0.0%	0.0%	Neg.	Neg.	Neg.	0.1%	0.0%	0.0%
Foil and Closures	0.2%	0.4%	0.3%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%
Total Aluminum Pkg	***0.2%***	***0.5%***	***0.7%***	***0.5%***	***0.6%***	***0.7%***	***0.7%***	**0.7%**	**0.7%**	**0.7%**
Paper & Paperboard Pkg										
Corrugated Boxes	5.8%	8.8%	7.8%	7.1%	5.7%	5.1%	2.6%	1.4%	2.1%	0.6%
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			0.6%	0.3%	0.3%	0.3%	-	-	-	-
Folding Cartons			2.4%	2.3%	3.1%	2.5%	-	-	-	-
Other Paperboard Packaging	4.7%	4.3%	0.2%	0.2%	0.1%	0.1%	-	-	-	-
Bags and Sacks			2.5%	1.3%	0.7%	0.4%	-	-	-	-
Wrapping Papers			0.1%	0.1%	Neg.	Neg.	-	-	-	-
Other Paper Packaging	3.3%	3.1%	0.4%	0.6%	1.0%	0.8%	-	-	-	-
Subtotal Other Paper & Paperboard Pkg							*3.9%*	*3.7%*	*4.1%*	*3.8%*
Total Paper & Board Pkg	**13.8%**	**16.2%**	**14.0%**	**11.8%**	**10.9%**	**9.2%**	**6.5%**	**5.1%**	**6.3%**	**4.4%**
Plastics Packaging										
PET Bottles and Jars			0.2%	0.2%	0.8%	1.1%	1.1%	1.2%	1.2%	1.2%
HDPE Natural Bottles			0.2%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%	0.3%
Other Containers	0.1%	0.8%	0.6%	0.8%	0.9%	0.7%	0.9%	0.9%	1.0%	0.9%
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks and Wraps			*0.9%*	*1.4%*	*2.3%*	*2.4%*	*2.1%*	*2.1%*	2.1%	2.1%
Other Plastics Packaging	0.1%	1.0%	0.6%	1.2%	1.5%	1.8%	2.6%	2.8%	2.6%	2.4%
Total Plastics Packaging	***0.1%***	***1.9%***	***2.5%***	***3.8%***	***5.8%***	***6.4%***	***7.1%***	**7.3%**	**7.2%**	**6.9%**
Other Packaging										
Wood Packaging	2.4%	1.8%	2.9%	4.6%	4.2%	4.3%	4.5%	4.2%	4.9%	4.6%
Other Misc. Packaging	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%
Total Containers & Pkg	***29.7%***	***35.6%***	***32.2%***	***27.3%***	***27.0%***	***25.8%***	***23.4%***	***21.4%***	***23.5%***	***20.9%***
Total Product Wastes	***59.4%***	***66.6%***	***68.8%***	***67.1%***	***72.3%***	***72.3%***	***68.1%***	***67.9%***	***69.7%***	***66.4%***
Other Wastes										
Food	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	21.0%	22.0%	21.8%	24.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	8.6%	7.8%	6.2%	7.2%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	1.9%	2.2%	2.3%	2.3%	2.3%	2.3%
Total Other Wastes	***40.6%***	***33.4%***	***31.2%***	***32.9%***	***27.7%***	***27.7%***	***31.9%***	***32.1%***	***30.3%***	***33.6%***
Total MSW Landfilled - %	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

* Landfilling after recycling, composting, other food management pathways and combustion with energy recovery. Does not include construction & demolition debris, industrial process wastes or certain other wastes. Details may not add to totals due to rounding.

** Includes carbonated drinks and non-carbonated water, teas, flavored drinks and ready-to-drink alcoholic coolers and cocktails.

‡ Includes milk, juice and other products packaged in gable top cartons and liquid food aseptic cartons.

Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available - Detailed data not available.

Table 30. Selected Examples of Source Reduction Practices

Source Reduction Practice	MSW Product Categories			
	Durable Goods	Nondurable Goods	Containers & Packaging	Organics (Wood, Yard Waste, Food, etc.)
Product or Packaging Redesign				
Materials reduction	▪ Downgauge metals in appliances ▪ Use fewer materials in electronics	▪ Use paperless purchase orders ▪ Use concentrated products	▪ Implement container lightweighting ▪ Use right size packaging ▪ Eliminate unnecessary layers of packaging ▪ Use refillable/reusable containers, including use of flexible pouches for refills for rigid containers	▪ Optimize food packaging (size and design) to maximize consumption of product ▪ Trayless dining in cafeterias ▪ Smaller plates and portions in food service settings ▪ Standardized food product date labeling
Materials substitution	▪ Use of composites in appliances and electronic circuitry		▪ Replace rigid or heavy packaging with lighter or more compact options, e.g., cereal in bags. coffee in brick packs ▪ Use life cycle data to choose material with lower lifecycle impact	▪ Marketing, sale and consumption of off-grade produce
Lengthen product lifespan	▪ Use high mileage tires ▪ Design for upgrades (e.g., add computer memory or processing capacity, battery upgrades)	▪ Perform regular servicing ▪ Consider purchasing warranties to make repair more affordable ▪ Extend warranties	▪ Design for secondary use ▪ Use Reusable packaging	▪ Use intelligent packaging that extends shelf life and prevents spoilage of food products
Consumer and Business Practices				
	▪ Purchase long-lived products ▪ Perform regular servicing ▪ Perform repair ▪ Buy fewer items	▪ Perform repair ▪ Use duplex printing ▪ Share products ▪ Reduce unwanted mail ▪ Purchase concentrated products ▪ Buy fewer items	▪ Purchase products in bulk (less packaging) ▪ Use reusable bags and containers ▪ Buy fewer items	▪ Implement xeriscaping ▪ Perform backyard composting, vermi-composting and grasscycling ▪ Donate food from businesses ▪ Businesses can use just in time ordering/inventory control ▪ Businesses can avoid food spoilage by changing: – Storage and transportation – Supply chain management ▪ Adjust menus to reduce frequently uneaten or wasted items ▪ Avoid spoilage by monitoring and tracking food and purchases and use ▪ Perform proper food storage and preparation ▪ Repurpose (e.g., older bread can be made into croutons)

Table 30. Selected Examples of Source Reduction Practices

Source Reduction Practice	MSW Product Categories			
	Durable Goods	Nondurable Goods	Containers & Packaging	Organics (Wood, Yard Waste, Food, etc.)
Reuse				
By Design	▪ Document materials and methods for disassembly/ repair/reuse ▪ Use materials and systems that exhibit modularity, and standardization to facilitate reuse and repair – Minimize connections between parts and/or make connections more accessible for ease of repair and replacement of parts – Use mechanical connections with bolts and screws instead of glues, to facilitate repair – Minimize connections to increase ease of repair or part replacement – Provide adequate tolerances to allow for removal and replacement or repair of parts without affecting adjacent components	▪ Use reusable shipping or mailing envelopes	▪ Use reusable pallets ▪ Use returnable secondary packaging ▪ Use reusable/refillable dispensers for cleaning products ▪ Use reusable service ware in food service ▪ Use durable reusable water bottles instead of disposable bottles	
Secondary	▪ Borrow or rent for temporary use ▪ Give to charity ▪ Buy or sell at garage sales	▪ Donate clothing, books ▪ Waste paper scratch pads	▪ Use reusable grocery sacks ▪ Reuse glass and plastic bottles and jars	

Table 31. Households with Residential Food Collection Programs in the U.S., 2018*

State	Curbside Households with Access	Drop off Households with Access
Alaska	—	500
California	2,752,008	41,730
Colorado	293,325	601,295
Connecticut	—	28,364
District of Columbia	—	255,000
Idaho	73,738	—
Illinois	148,448	207,000
Iowa	83,601	—
Maine	926	23,012
Maryland	18,425	—
Massachusetts	45,319	412,103
Michigan	47,419	—
Minnesota	186,828	1,087,016
New Hampshire	—	5,244
New Jersey	21,521	
New York	790,090	3,159,035
North Carolina	—	509,000
Ohio	443	—
Oregon	188,441	—
Pennsylvania	3,600	—
Texas	403,000	—
Vermont	19,767	93,840
Virginia	3,025	25,166
Washington	980,578	253,622
Wisconsin	23,176	—
Households with Access to Collection	**6,083,678**	**6,701,927**
Total U.S. Households	**126,224,000**	**126,224,000**
	4.82%	**5.31%**

*Table presents 2017 data, the most recent data as of July 2020.

Source: Streeter, V.; Platt B. 2017. Residential Food Waste Collection Access in the U.S. BioCycle December. Supplemented with additional Internet research. U.S. Census Bureau (2018) Historical Household Tables, Table HH-1. Households by Type: 1940 to Present.

Table 32. Material Recovery Facilities (MRF), 2018*

Region	Number	Estimated Throughput (tons per day)
NORTHEAST	128	22,528
SOUTH	142	23,718
MIDWEST	139	18,016
WEST	123	26,867
U.S. Total	***532***	***91,129***

*Number of facilities and throughput include bale and ship operations receiving fiber, mainly old corrugated cardboard (OCC), that bale and ship with no additional processing. Throughput is the tons of waste processed by the facility.

Source: Governmental Advisory Associates, Inc. Data provided August 2019.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Table 33. Municipal Waste-To-Energy Projects, 2018

Region	Number Operational	Design Capacity (tons per day)
NORTHEAST	37	44,807
SOUTH	19	32,194
MIDWEST	14	11,524
WEST	5	6,530
U.S. Total*	***75***	***95,055***

*WTE includes mass burn, modular and refuse-derived fuel combustion facilities.

Source: "The 2018 ERC Directory of Waste-to-Energy Facilities." Energy Recovery Council (ERC). 2018.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Table 34. Landfill Facilities, 2018

Region	Number of Landfills
NORTHEAST	105
SOUTH	491
MIDWEST	345
WEST	328
U.S. Total	***1,269***

Source: U.S. EPA. Landfill Methane Outreach Program (LMOP) Facility-level database. Data represents MSW landfills open July 2019.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Table 35. Generation, Recycling, Composting, Combustion with Energy Recovery and Landfilling of Municipal Solid Waste, 1960 to 2018

(In thousands of tons and percent of total generation)

	Thousands of Tons									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	88,120	121,060	151,640	208,270	243,450	253,730	251,050	262,110	268,660	292,360
Recycling	5,610	8,020	14,520	29,040	53,010	59,240	65,260	67,560	66,980	69,090
Composting*	Neg.	Neg.	Neg.	4,200	16,450	20,550	20,170	23,390	26,990	24,890
Other food management**										17,710
Combustion with energy recovery¥	0	450	2,760	29,760	33,730	31,650	29,310	33,550	34,220	34,550
Discards to landfill, other disposal†	82,510	112,590	134,360	145,270	140,260	142,290	136,310	137,610	140,470	146,120
	Pounds per Person per Day									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	2.68	3.25	3.66	4.57	4.74	4.69	4.45	4.48	4.53	4.90
Recycling	0.17	0.22	0.35	0.64	1.03	1.10	1.16	1.15	1.13	1.16
Composting*	Neg.	Neg.	Neg.	0.09	0.32	0.38	0.36	0.40	0.45	0.42
Other food management**										0.30
Combustion with energy recovery¥	0.00	0.01	0.07	0.65	0.66	0.59	0.52	0.57	0.58	0.58
Discards to landfill, other disposal†	2.51	3.02	3.24	3.19	2.73	2.62	2.41	2.36	2.37	2.44
Population (thousands)	179,979	203,984	227,255	249,907	281,422	296,410	309,051	320,897	325,147	327,167
	Percent of Total Generation									
	1960	1970	1980	1990	2000	2005	2010	2015	2017	2018
Generation	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Recycling	6.4%	6.6%	9.6%	14.0%	21.8%	23.3%	26.0%	25.8%	24.9%	23.6%
Composting*	Neg.	Neg.	Neg.	2.0%	6.7%	8.1%	8.0%	8.9%	10.1%	8.5%
Other food management**										6.1%
Combustion with energy recovery¥	0.0%	0.4%	1.8%	14.2%	13.9%	12.5%	11.7%	12.8%	12.7%	11.8%
Landfilling and other disposal†	93.6%	93.0%	88.6%	69.8%	57.6%	56.1%	54.3%	52.5%	52.3%	50.0%

* Composting of yard trimmings, food and other MSW organic material. Does not include backyard composting.

** Includes the following management pathways: animal feed, bio-based materials/biochemical processing, codigestion/anaerobic digestion, donation, land application, and sewer/wastewater treatment

¥ Includes combustion with energy recovery of MSW in mass burn or refuse-derived fuel form, and combustion with energy recovery of source separated materials in MSW (e.g., wood pallets and tire-derived fuel). 2018 includes 30,190 MSW, 1,650 wood, and 2,710 tires (1,000 tons)

† Landfilling after recycling, composting, other food management, and combustion with energy recovery.

Details may not add to totals due to rounding.

Source population: U.S. Census Bureau Population Division (NST-EST2016-01) December 2018.

Figure 1. Municipal Solid Waste in the Universe of Subtitle D Wastes

The Subtitle D Waste included in this report as Municipal Solid Waste (MSW), which includes:

- Containers and packaging such as soft drink bottles and corrugated boxes
- Durable goods such as furniture and appliances
- Nondurable goods such as newspapers, trash bags and clothing
- Other wastes such as food and yard trimmings.

Subtitle D Wastes not included as MSW in this report are:

- Municipal sludges
- Industrial nonhazardous process wastes
- Construction and demolition debris*
- Land clearing debris
- Transportation parts and equipment
- Agricultural wastes
- Oil and gas wastes
- Mining wastes
- Auto bodies
- Grease and oils (non-food)

*Construction and demolition debris are included in this report, but are outside of the scope of MSW.

Figure 2. Definition of Terms

The materials flow methodology produces an estimate of total municipal solid waste (MSW) generation in the United States, by material categories and by product categories.

Generation refers to the weight of materials and products as they enter the waste management system from residential, commercial and institutional sources and before recycling, composting, combustion or landfilling take place. Preconsumer (industrial) scrap is not included in the generation estimate. Source reduction activities, such as backyard composting of yard trimmings, take place ahead of generation.

Source reduction as used in this report refers to activities that reduce the amount of wastes before they enter the municipal solid waste management system. Reuse is a source reduction activity involving the recovery or reapplication of a package, used product or material in a manner that retains its original form or identity. Reuse of products such as refillable glass bottles and reusable plastic food storage containers is considered to be source reduction, not recycling.

Recycling is defined as the recovery of useful materials, such as paper, glass, plastic and metals, from the MSW stream, along with the transformation of the materials, to make new products to reduce the amount of virgin raw materials needed to meet consumer demands.

Composting is the decomposition of organic materials by aerobic microorganisms. Composting facilities manage the amount of moisture and oxygen and mixture of organic materials for optimal composting conditions. The composting process emits heat, water vapor and biogenic carbon dioxide, reducing the raw organic materials in mass and volume to create compost.[1]

Combustion with energy recovery is often called "waste-to-energy," and as used in this report refers to confined and controlled burning with energy recovery, which not only decreases the volume of solid waste destined for landfills, but can also recover energy from the waste burning process.

Landfilling refers to the MSW remaining after recycling, composting and combustion with energy recovery. These materials presumably would be landfilled in a discrete area of land or excavation that receives household waste. Some MSW, however, is littered, stored or disposed onsite; or burned onsite, particularly in rural areas. There are no good estimates for these other disposal practices available, but the total amounts of MSW involved are assumed to be small.

For the analysis of municipal solid waste in this report, products are divided into three basic categories: durable goods, nondurable goods and containers and packaging. The durable goods and nondurable goods categories generally follow the definitions of the U.S. Department of Commerce.

Durable goods are those products that last three years or more. Products in this category include major and small appliances, furniture and furnishings, carpets and rugs, tires, lead-acid batteries, consumer electronics and other miscellaneous durables.

Nondurable goods are those products that last less than three years. Products in this category include newspapers, books, magazines, office papers, directories, mail, other commercial printing, tissue paper and towels, paper and plastic plates and cups, trash bags, disposable diapers, clothing and footwear, towels, sheets and pillowcases, other nonpackaging paper and other miscellaneous nondurables.

Containers and packaging are assumed to be discarded the same year the products they contain are purchased. Products in this category include bottles, containers, corrugated boxes, milk cartons, folding cartons, bags, sacks, and wraps, wood packaging and other miscellaneous packaging.

[1] Platt, B., Goldstein, N. 2014. State of Composting in the U.S. *BioCycle* 55(6): 19. http://www.biocycle.net/2014/07/16/state-of-composting-in-the-us/.

Figure 3. Paper and Paperboard Products Generated in MSW, 2018

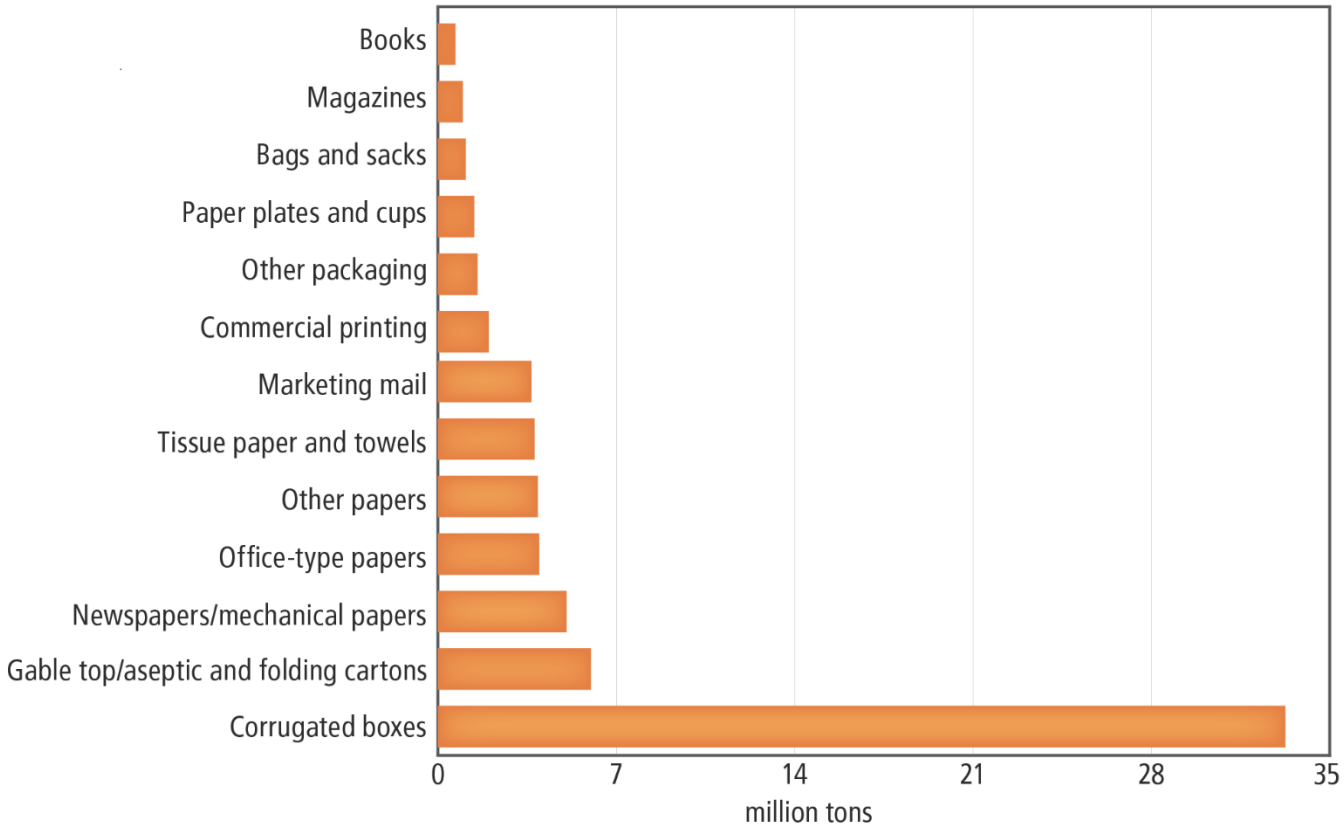


Figure 4. Paper and Paperboard Generation and Recycling, 1960 to 2018

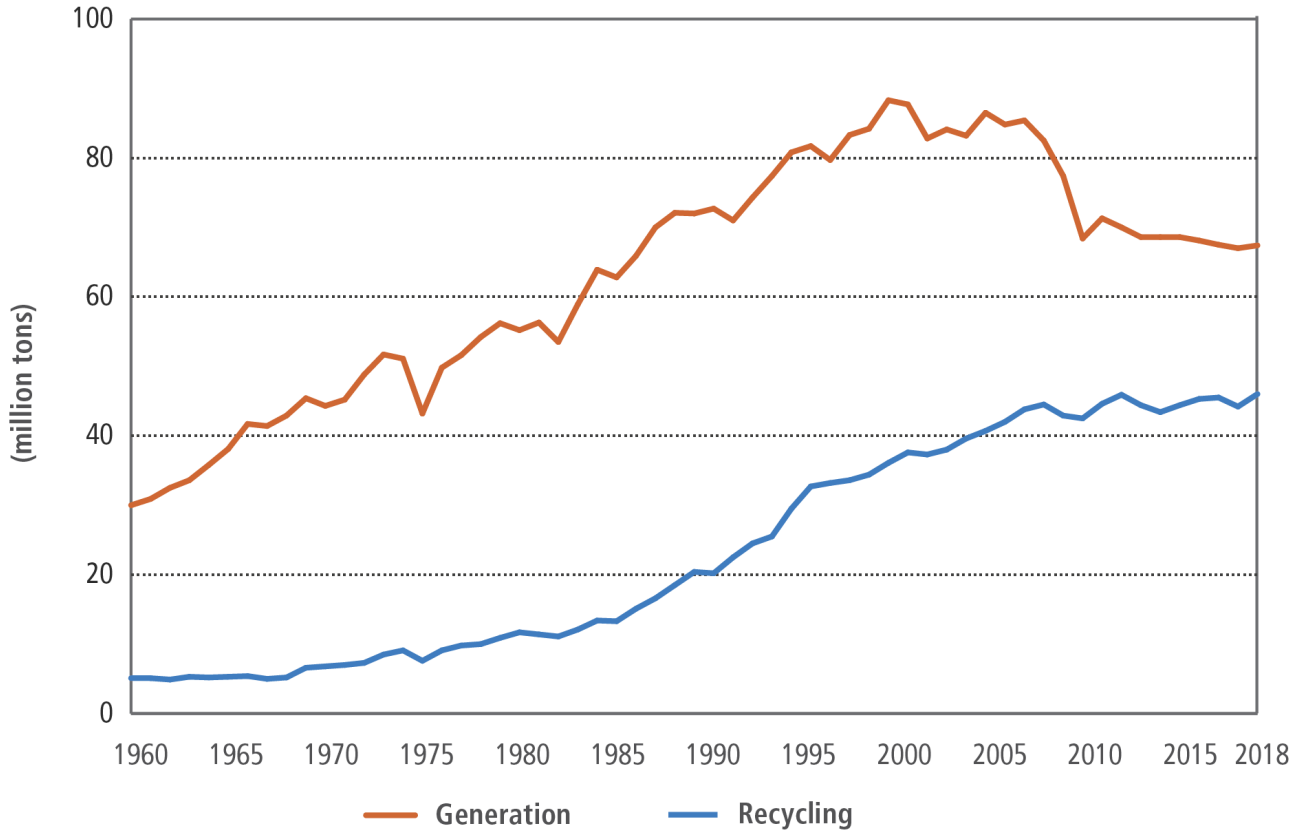


Figure 5. Glass Products Generated in MSW, 2018

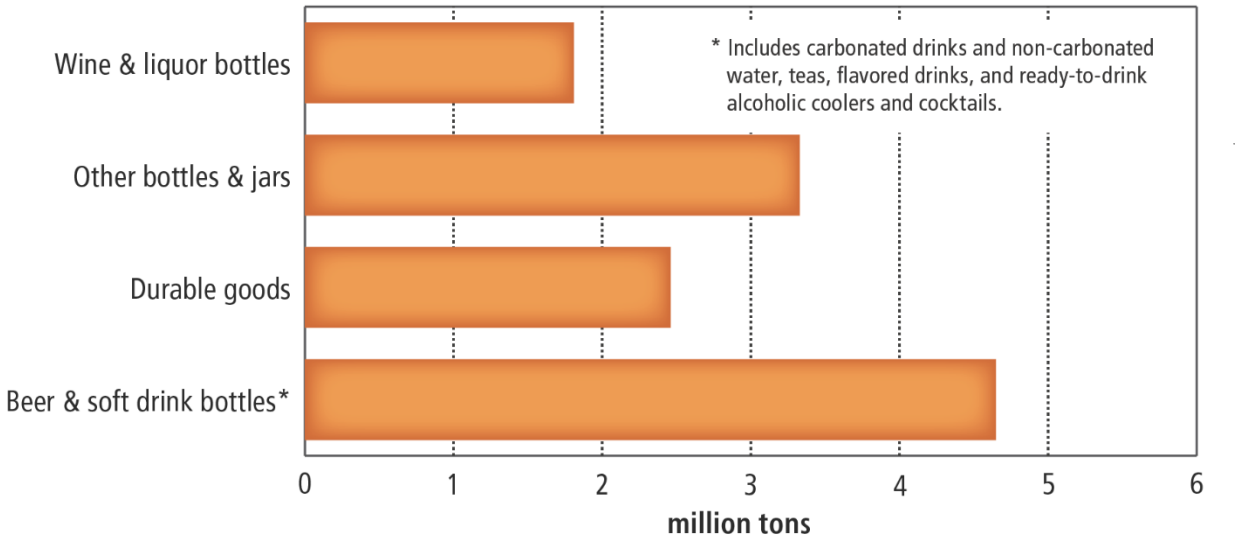


Figure 6. Glass Generation and Recycling, 1960 to 2018

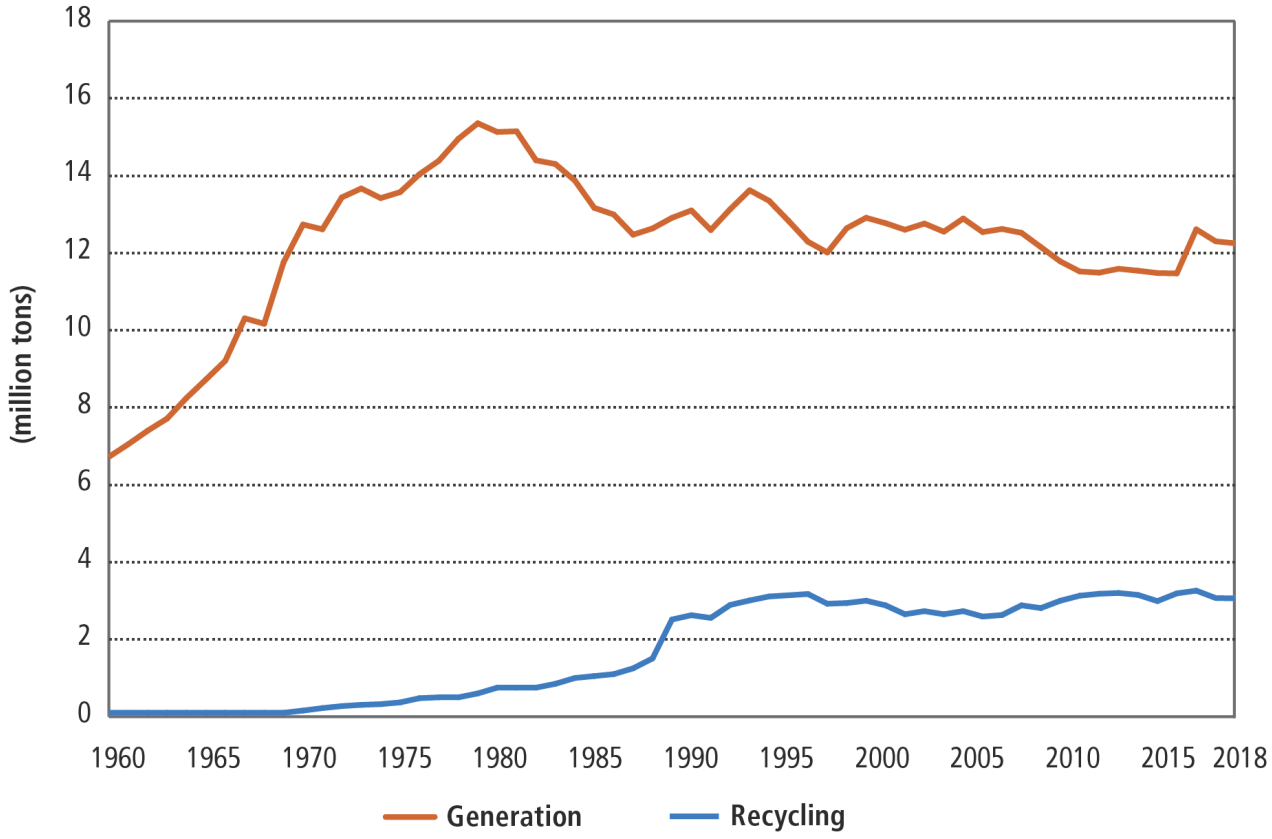


Figure 7. Metal Products Generated in MSW, 2018

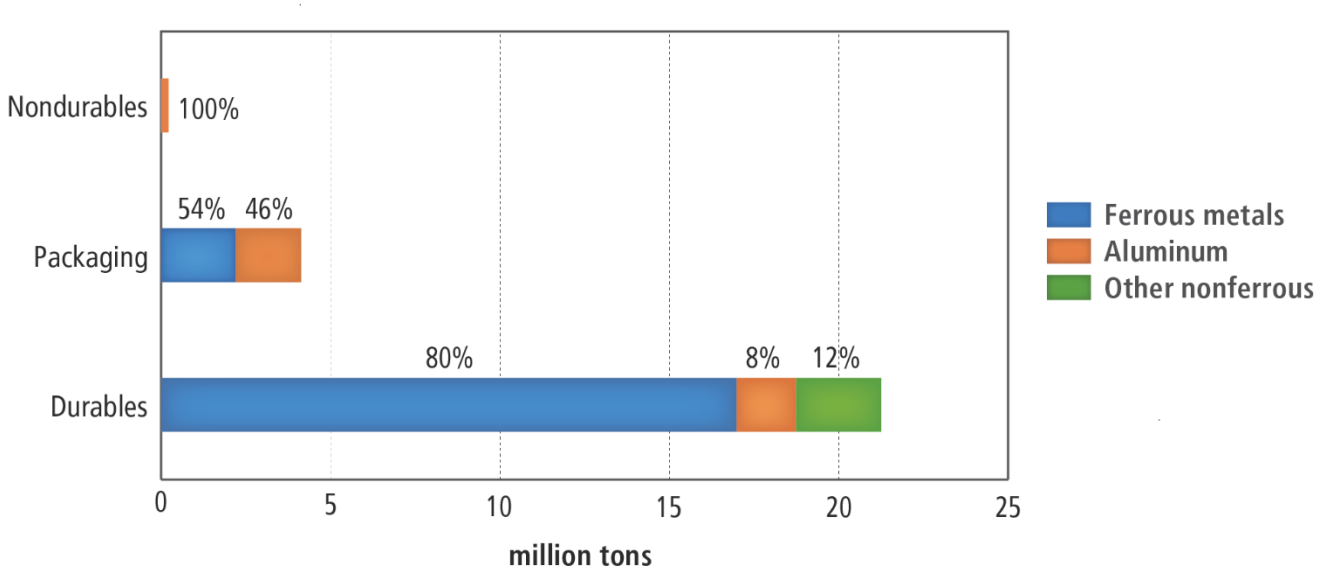


Figure 8. Metals Generation and Recycling, 1960 to 2018

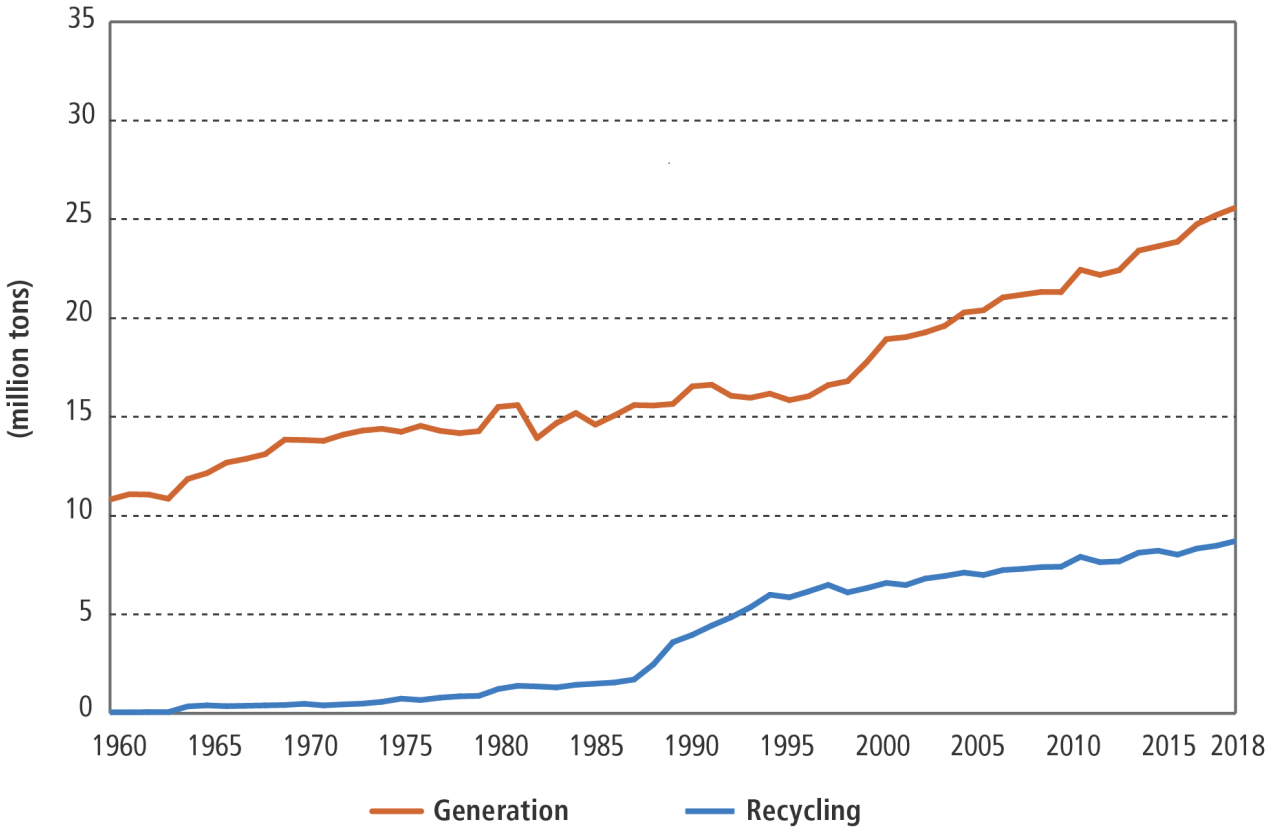


Figure 9. Plastics Products Generated in MSW, 2018

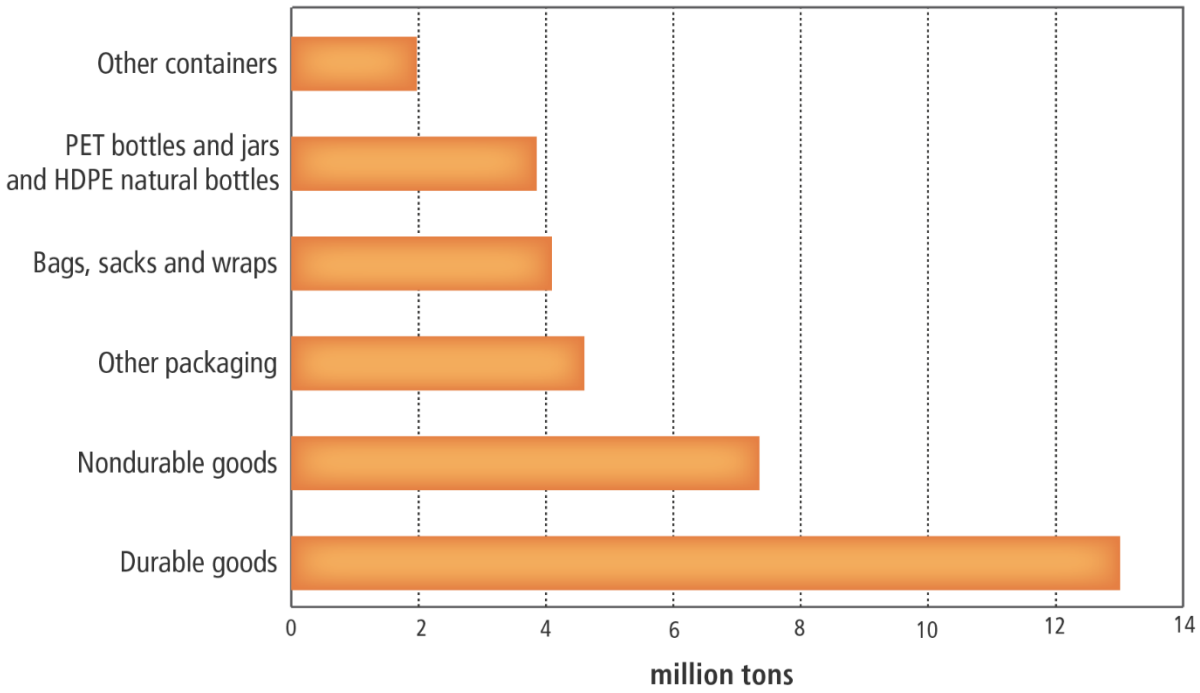


Figure 10. Plastics Generation and Recycling, 1960 to 2018

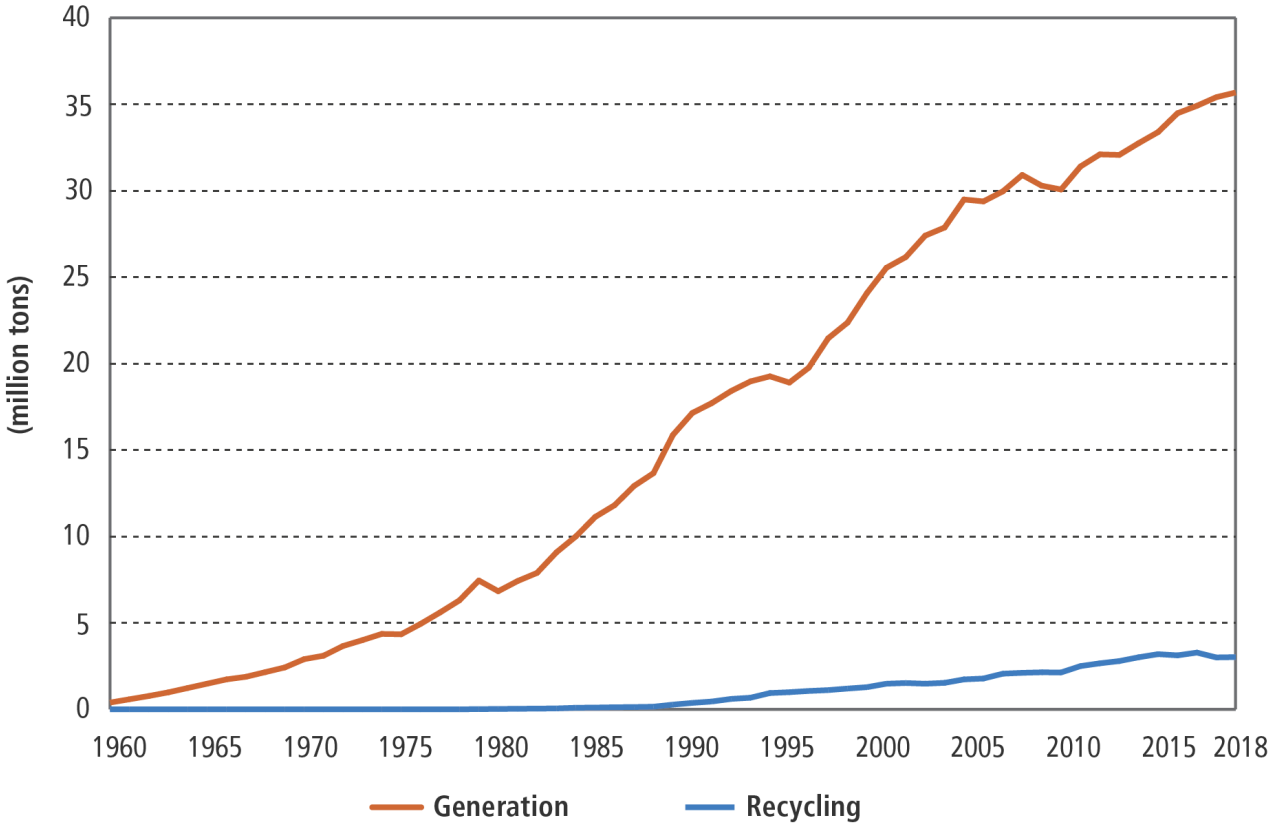
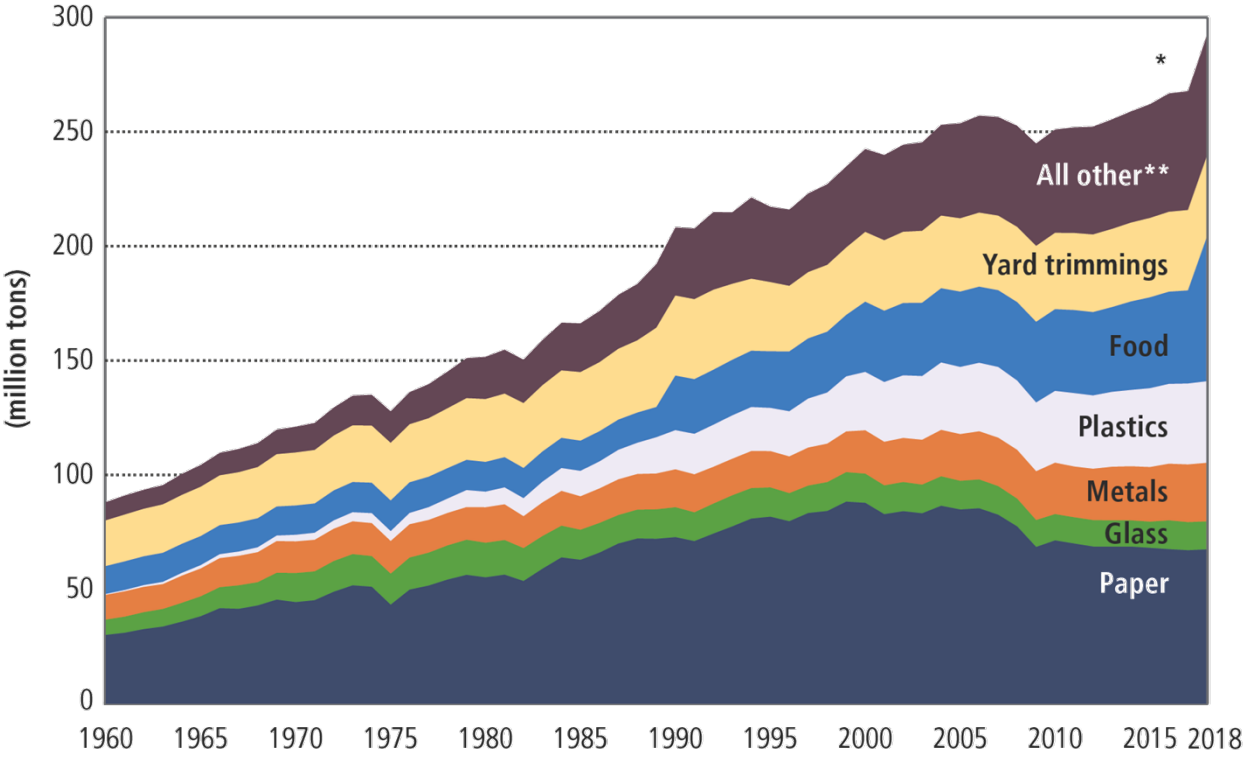


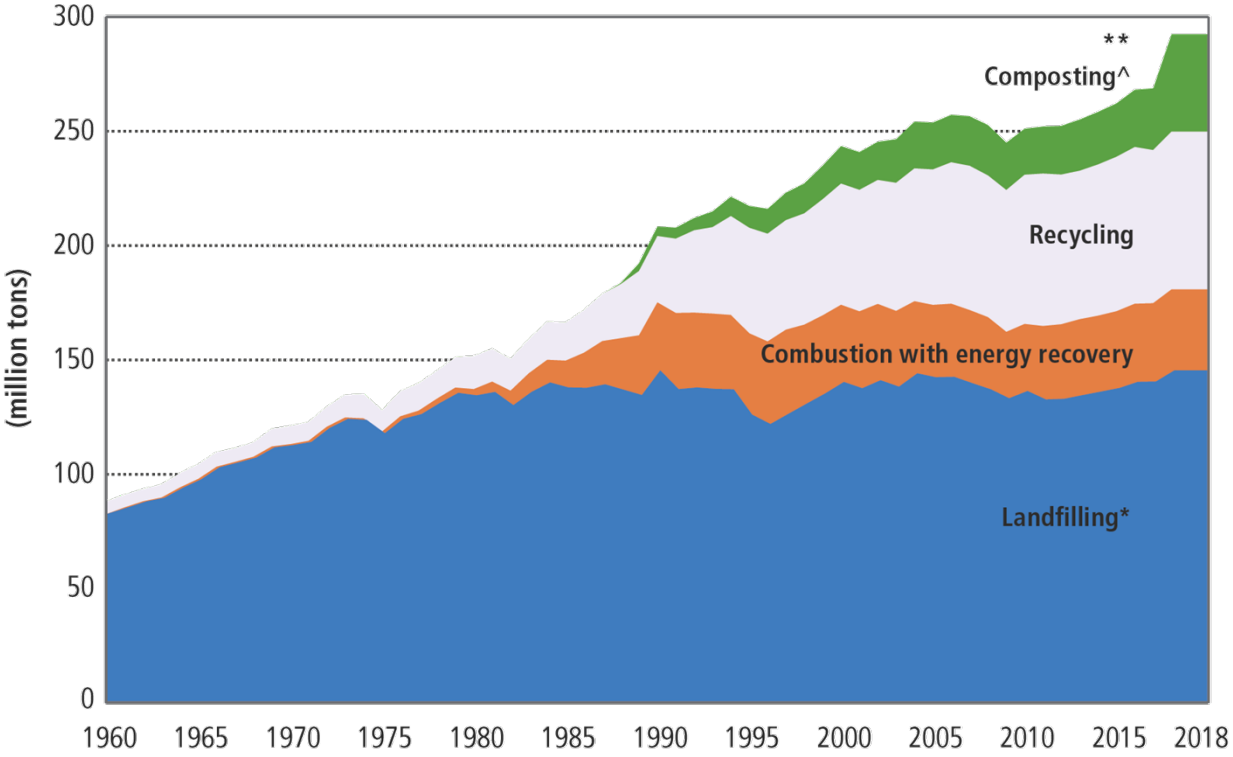
Figure 11. Generation of Materials in MSW, 1960 to 2018*



* Generation rose considerably from 2017 to 2018 mainly because EPA enhanced its food measurement methodology to more fully account for all the ways wasted food is managed throughout the food system.

** "All other" includes primarily wood, rubber and leather, and textiles.

Figure 12. Recycled, Composted, Managed By Other Food Pathways, Combustion with Energy Recovery and Landfilling of Materials in MSW, 1960 to 2018

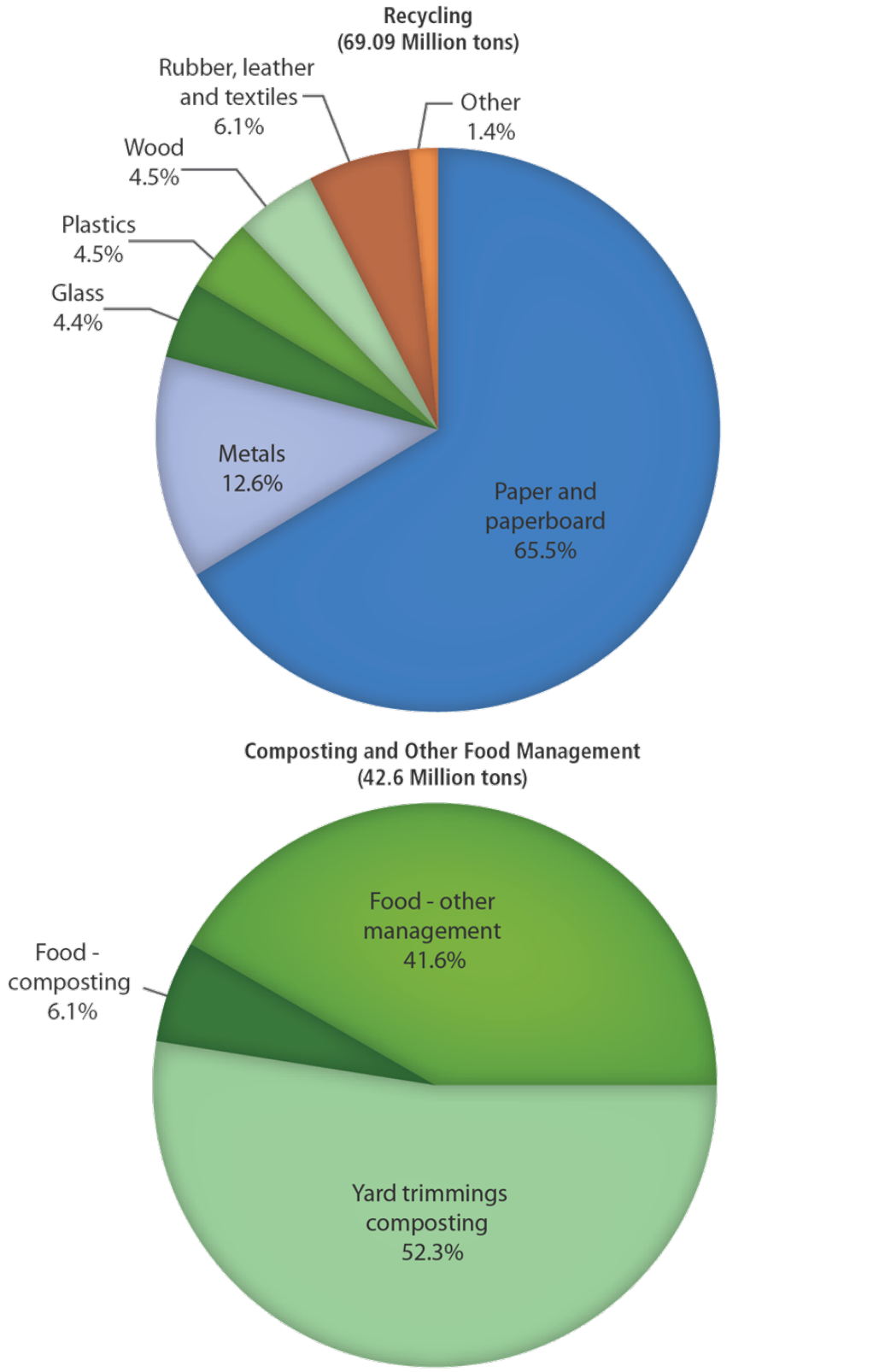


^ In this figure composting and other food management pathways are combined.

* Landfilling after composting, food waste management, recycling and combustion with energy recovery. Includes combustion without energy recovery. The top line measures generation, because generation = recycling + composting + combustion with energy recovery + landfilling.

** MSW generation rose considerably from 2017 to 2018 mainly because EPA enhanced its food measurement methodology to more fully account for all the ways wasted food is managed throughout the food system.

Figure 13. Materials Recycling, Composting and Other Food Management in MSW,* 2018



* In percent by weight of total recycling and composting and other food management

Figure 14. Materials Generated, Combusted with Energy Recovery and Landfilled in MSW, 2018

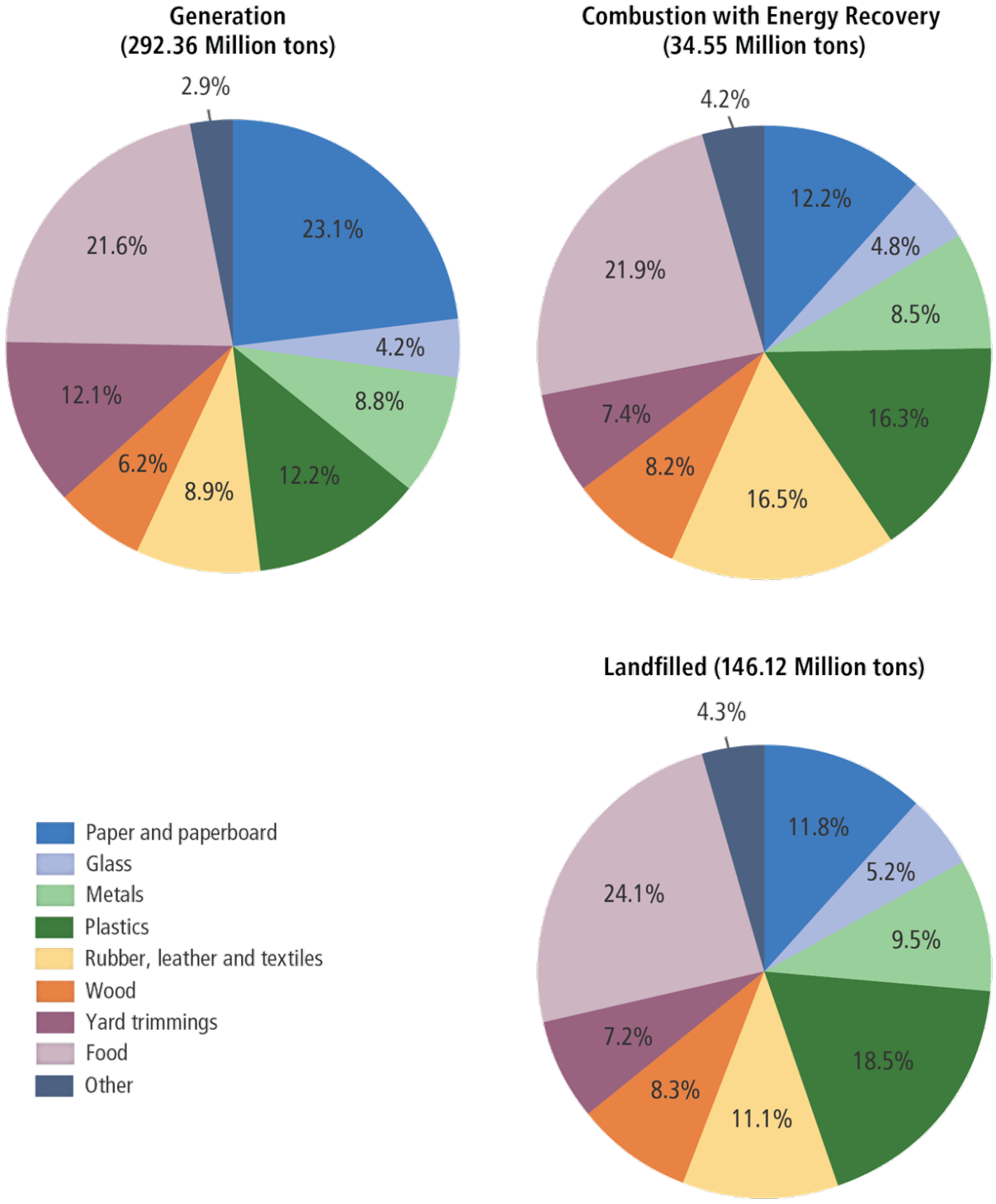
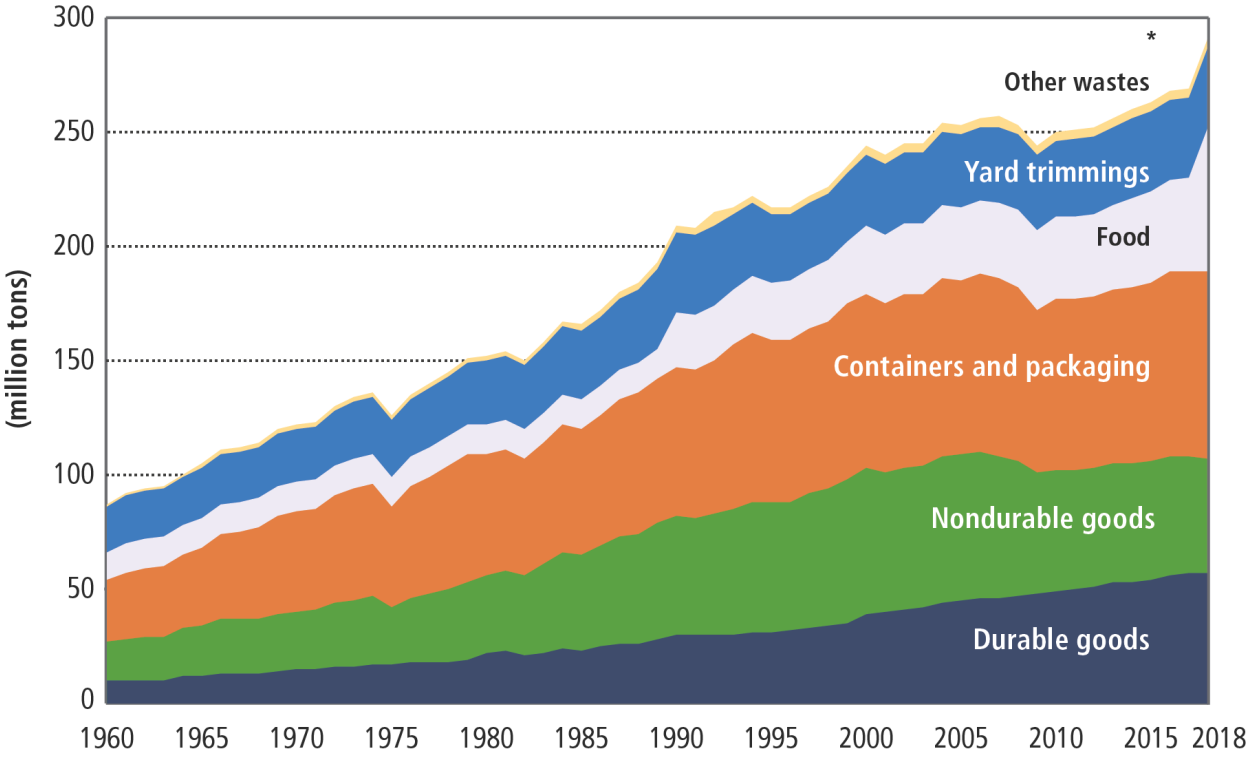


Figure 15. Generation of Products in MSW, 1960 to 2018*



* Generation rose considerably from 2017 to 2018 mainly because EPA enhanced its food measurement methodology to more fully account for all the ways wasted food is managed throughout the food system.

Figure 16. Nondurable Goods Generated, Recycled, Combusted with Energy Recovery and Landfilled in Municipal Solid Waste, 2018

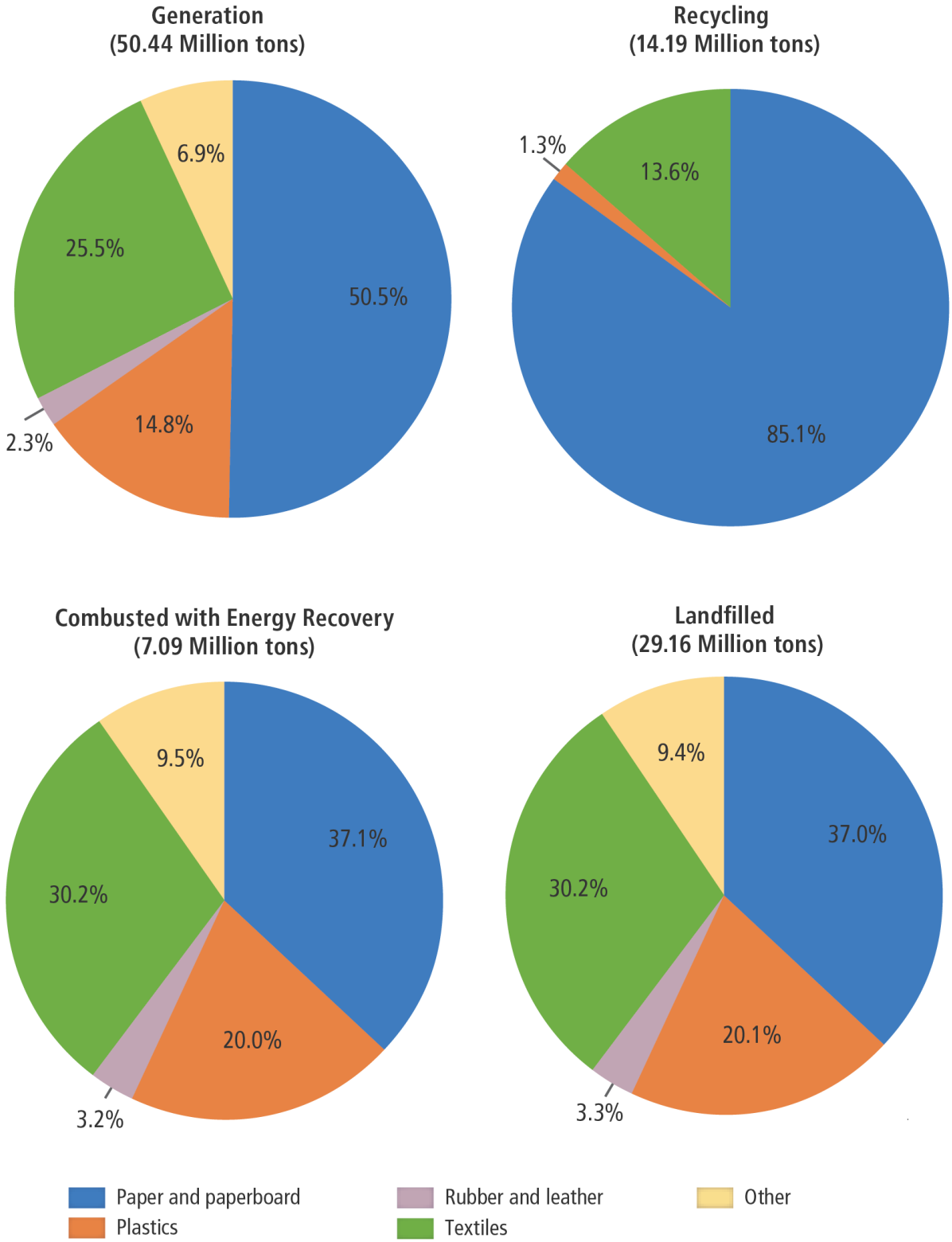
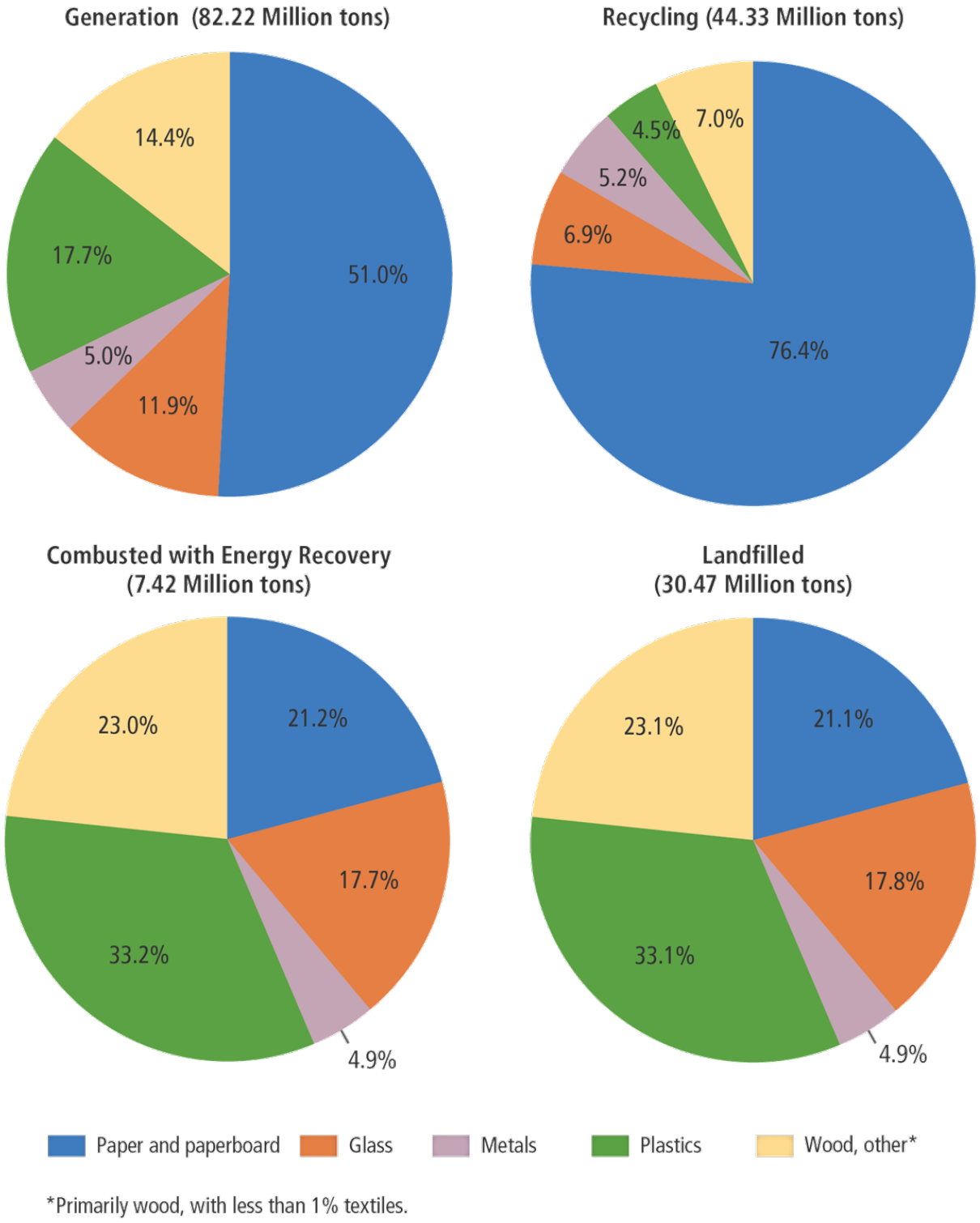


Figure 17. Containers and Packaging Materials Generated, Recycled, Combusted with Energy Recovery and Landfilled in Municipal Solid Waste, 2018



*Primarily wood, with less than 1% textiles.

Figure 18. Containers and Packaging Products Generated, Recycled, Combusted with Energy Recovery and Landfilled in Municipal Solid Waste, 2018

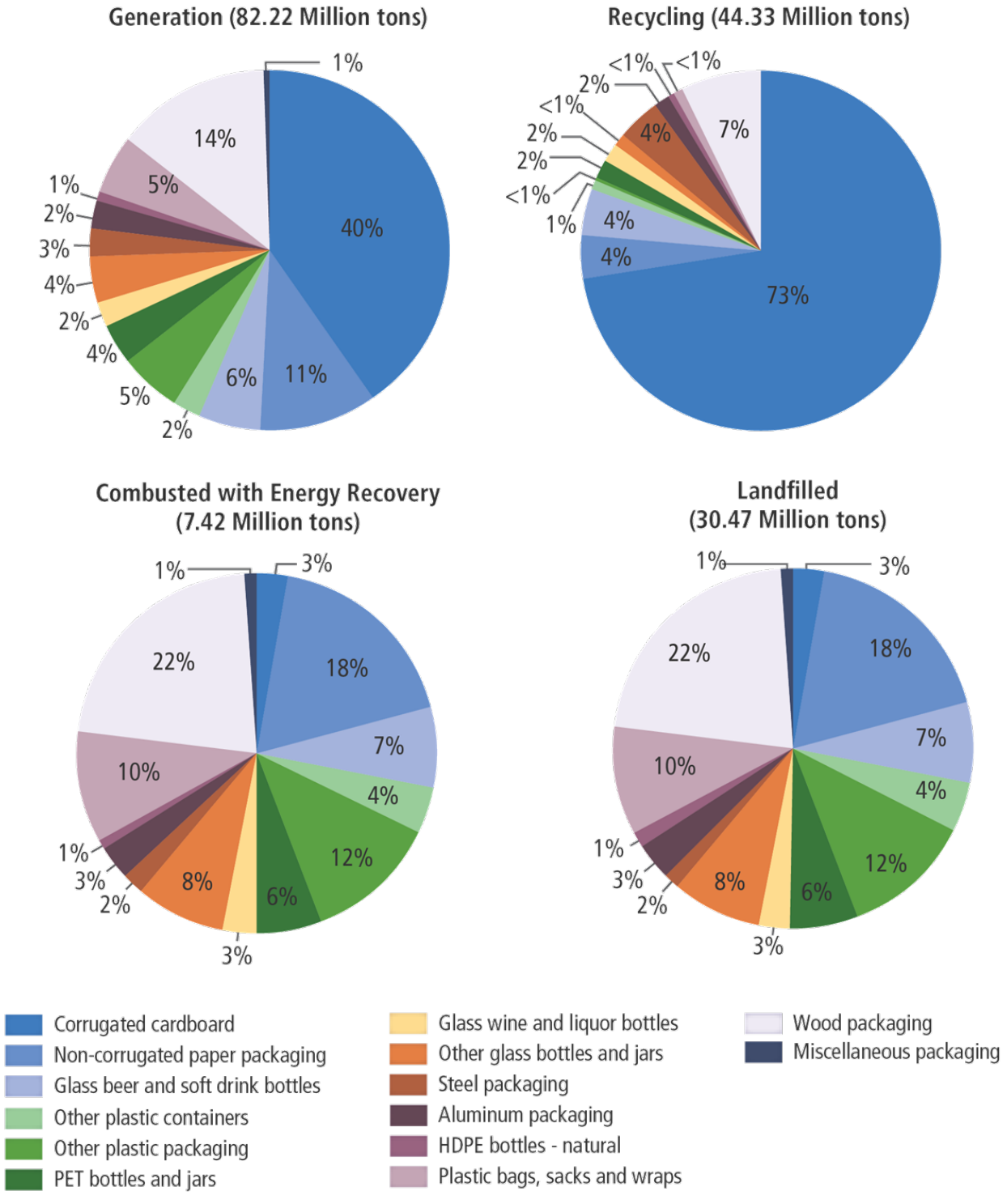


Figure 19. Diagram of Solid Waste Management

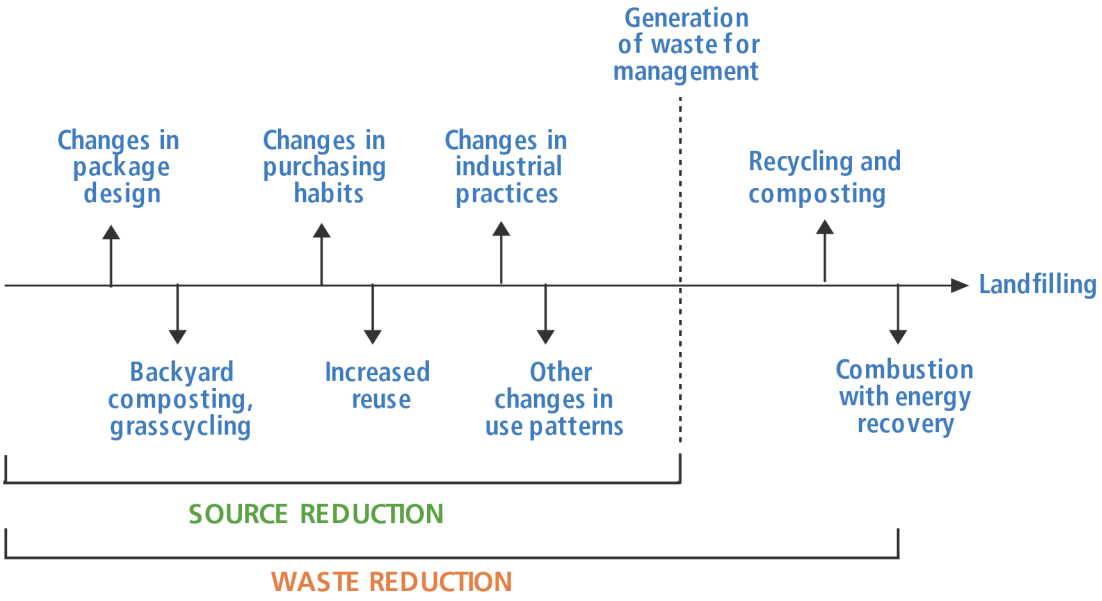
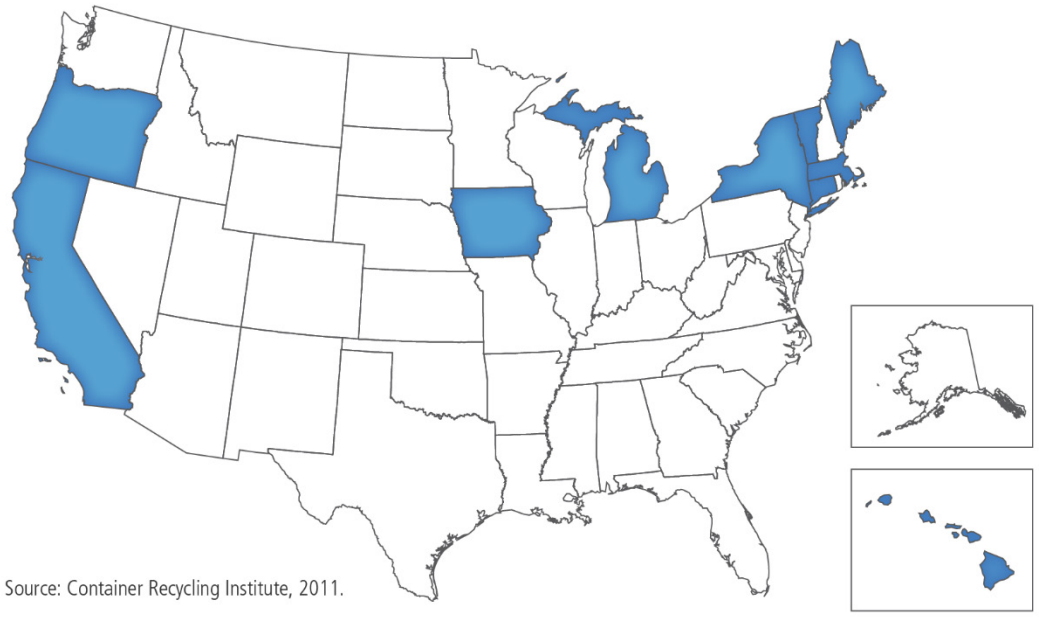
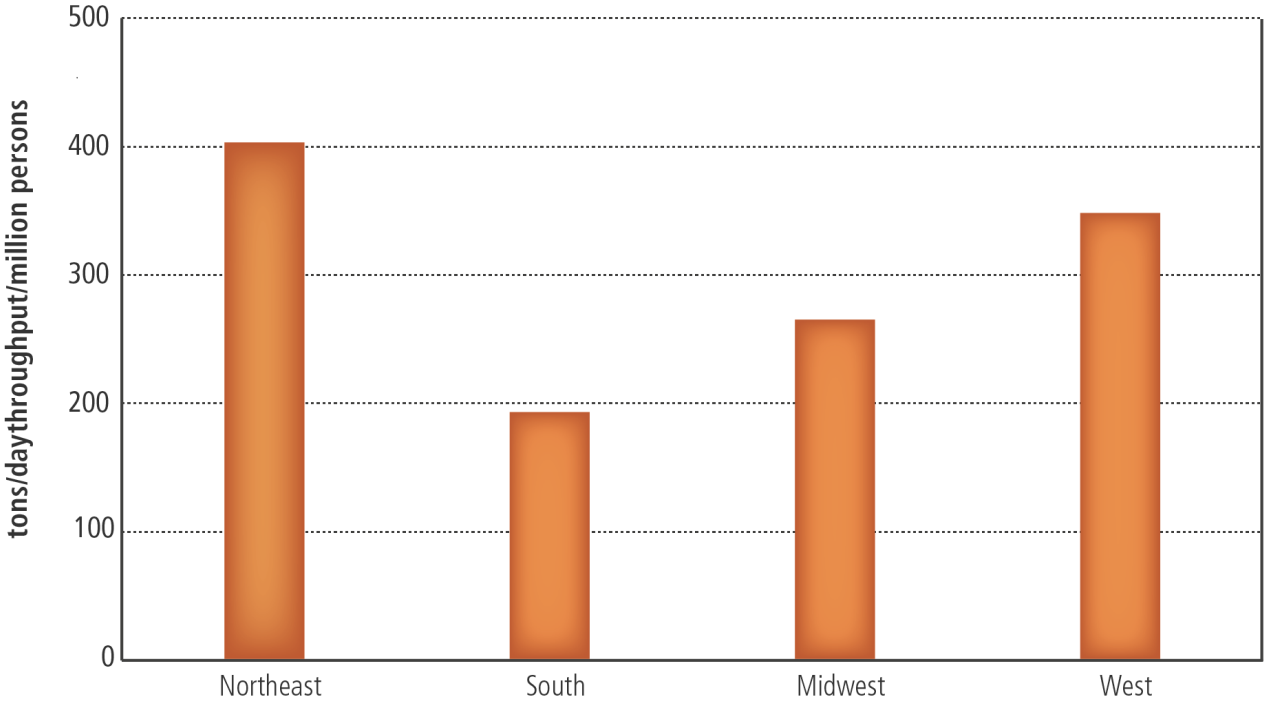


Figure 20. States with Bottle Deposit Rules



Source: Container Recycling Institute, 2011.

Figure 21. Estimated MRF Throughput, 2018*
(Tons per day per million persons)

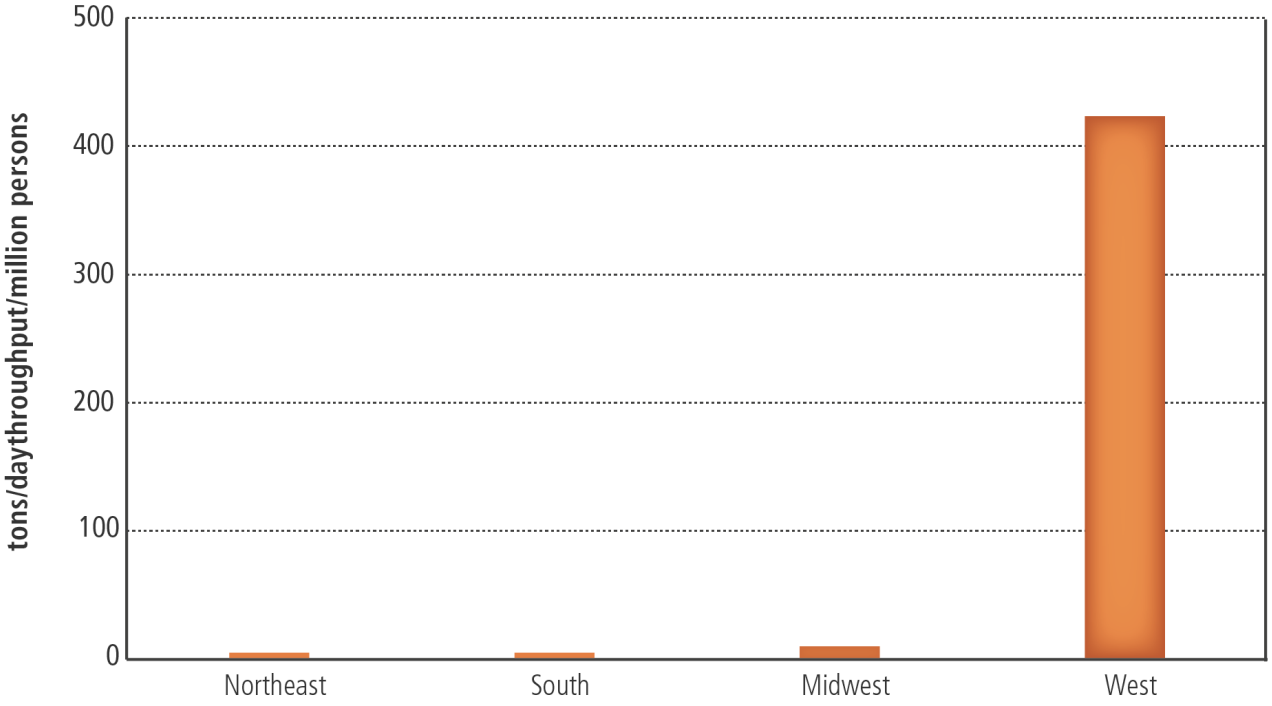


***Throughput is the tons of waste processed.**

Source: U.S. Census Bureau, Governmental Advisory Associates, Inc. Data provided August 2019
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Figure 22. Mixed Waste Processing Estimated Throughput, 2018*

(Tons per day per million persons)

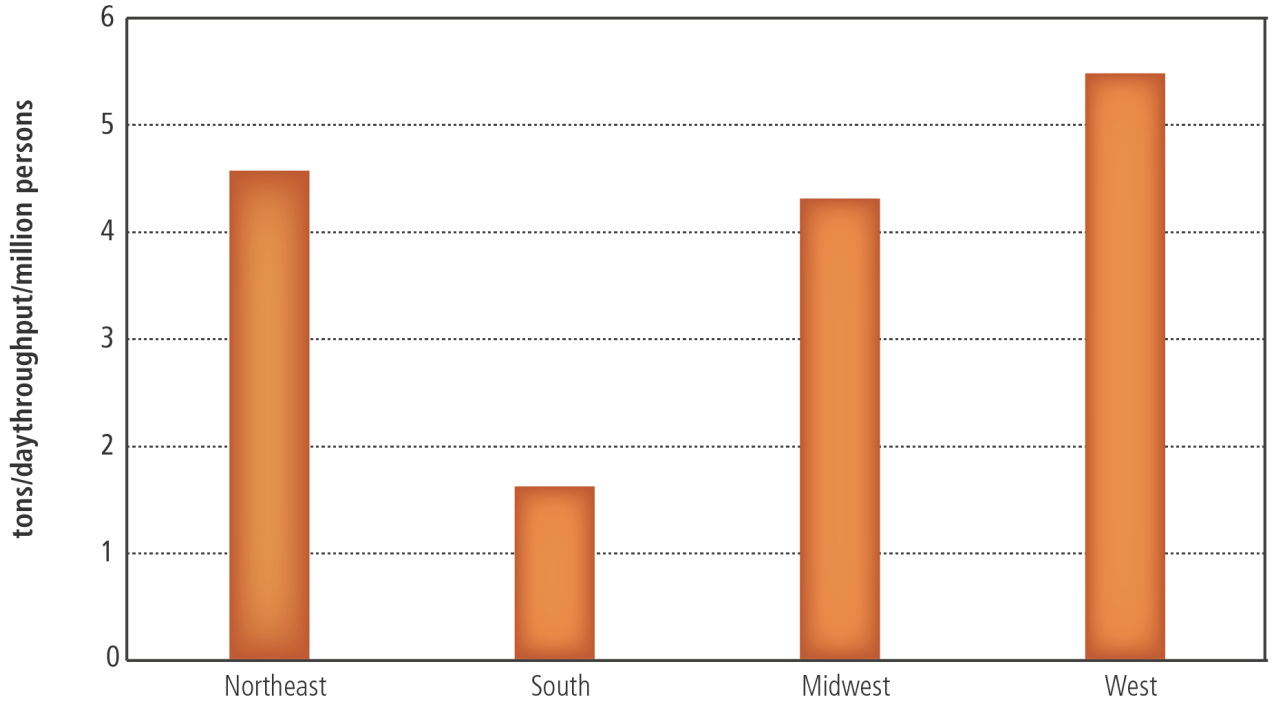


***Throughput is the tons of waste processed.**

Source: U.S. Census Bureau; Governmental Advisory Associates, Inc. Data provided August 2019.
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont
South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia
Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin
West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Figure 23. MSW Composting Throughput, 2018*

(Tons per day per million persons)



***Throughput is the tons of waste processed.**

Source: U.S. Census Bureau; BioCycle, November 2011, BioCycle October 2017, Mariposa County, CA; Marlborough, MA; Nantucket, MA; Faribault County, MN; Gallatin County, MT; Delaware County, NY; Medina County, OH; Rapid City, SD; Sevier County, TN websites.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

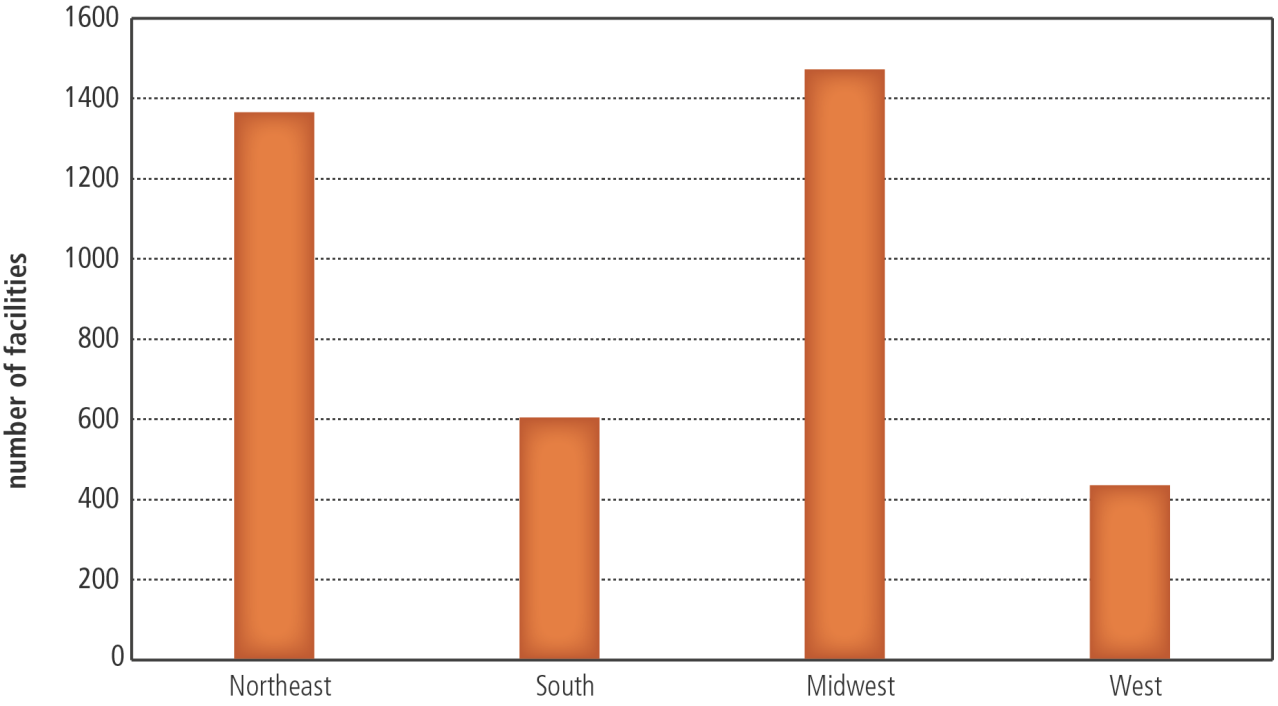
South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Figure 24. Yard Trimmings Composting Facilities, 2018*

(In number of facilities)



Source: Goldstein, N. "The State of Organics" BioCycle, October 2017. United States composting facilities data reported for 2015-2017. Facilities composting yard trimmings, yard trimmings and food waste, and mixed organics. Excludes 740 facilities composting manure, biosolids, mixed MSW, or not defined.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

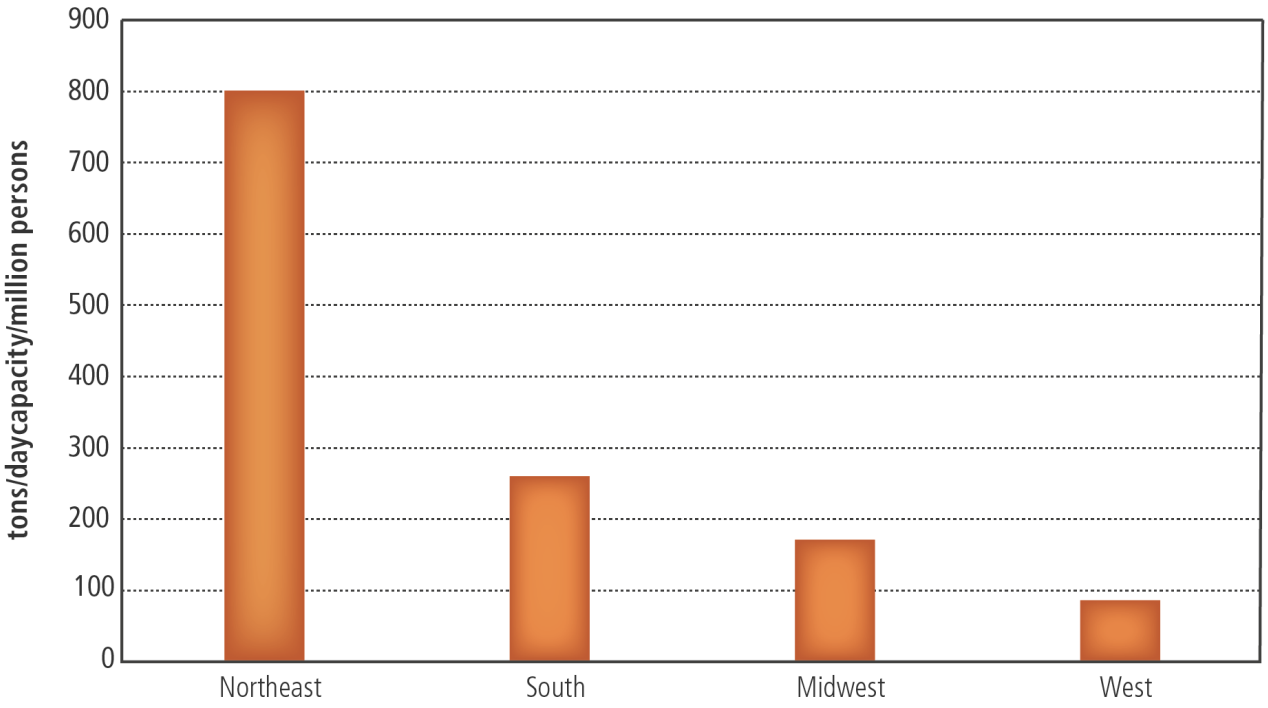
South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

* Latest data available.

Figure 25. Municipal Waste-To-Energy Capacity, 2018
(Tons per day per million persons)



Source: U.S. Census Bureau, Energy Recovery Council (ERC). 2018.

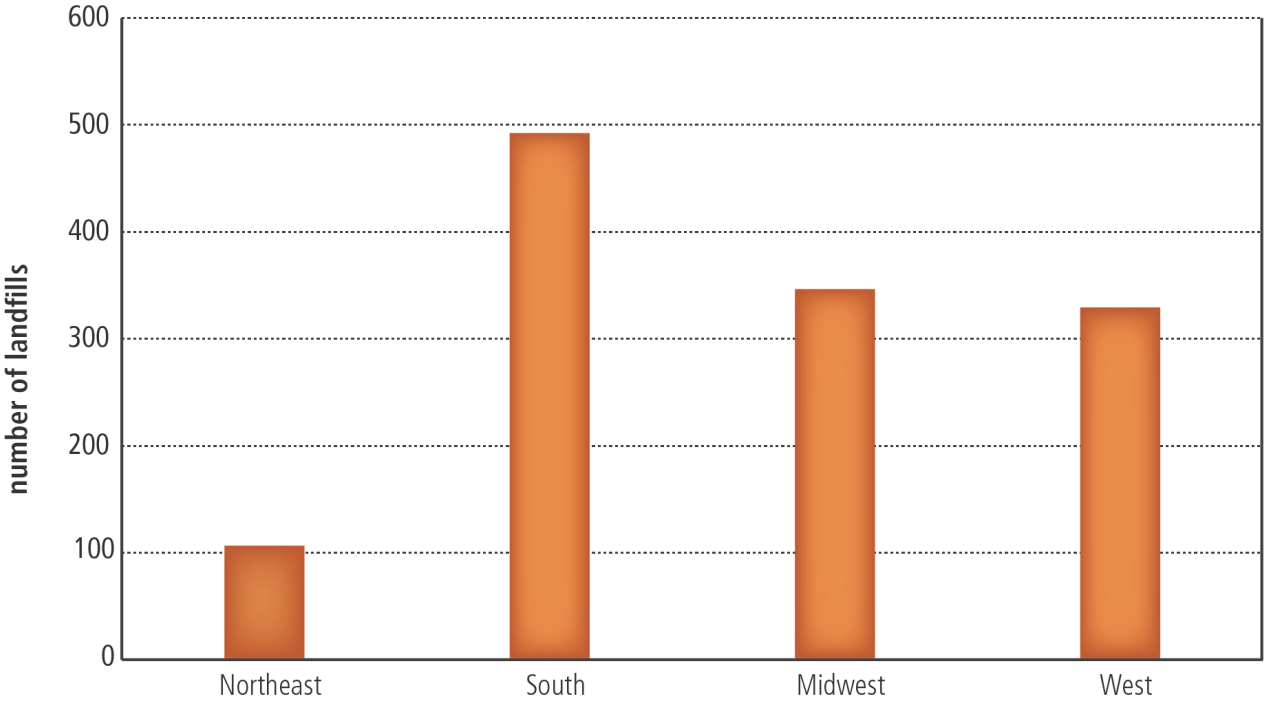
Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Figure 26. Number of Landfills in the U.S., 2018



Source: U.S. EPA. Landfill Methane Outreach Program (LMOP) Facility-level database. Data represents MSW landfills open July 2019.

Northeast: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont

South: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, West Virginia

Midwest: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

West: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming