Municipal Solid Waste Generation, Recycling, and Disposal in the United States

Tables and Figures for 2012

U.S. Environmental Protection Agency
Office of Resource Conservation and Recovery

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Table 1

MATERIALS GENERATED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012

(In thousands of tons and percent of total generation)

	Thousands of Tons									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Paper and Paperboard	29,990	44,310	55,160	72,730	87,740	84,840	77,420	71,310	70,020	68,620
Glass	6,720	12,740	15,130	13,100	12,770	12,540	12,150	11,530	11,470	11,570
Metals										
Ferrous	10,300	12,360	12,620	12,640	14,150	15,210	15,950	16,830	16,540	16,800
Aluminum	340	800	1,730	2,810	3,190	3,330	3,410	3,500	3,510	3,580
Other Nonferrous	180	670	1,160	1,100	1,600	1,860	1,940	2,020	2,000	2,000
Total Metals	*10,820*	*13,830*	*15,510*	*16,550*	*18,940*	*20,400*	*21,300*	*22,350*	*22,050*	*22,380*
Plastics	390	2,900	6,830	17,130	25,550	29,380	30,260	31,290	31,840	31,750
Rubber and Leather	1,840	2,970	4,200	5,790	6,670	7,290	7,570	7,440	7,580	7,530
Textiles	1,760	2,040	2,530	5,810	9,480	11,510	12,700	13,110	13,120	14,330
Wood	3,030	3,720	7,010	12,210	13,570	14,790	15,450	15,710	15,780	15,820
Other **	70	770	2,520	3,190	4,000	4,290	4,650	4,700	4,630	4,600
Total Materials in Products	54,620	83,280	108,890	146,510	178,720	185,040	181,500	177,440	176,490	176,600
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,700	32,930	34,300	35,740	36,310	36,430
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	32,900	33,400	33,710	33,960
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	61,760	64,730	68,690	70,980	72,980	73,890	74,290
Total MSW Generated - Weight	88,120	121,060	151,640	208,270	243,450	253,730	252,480	250,420	250,380	250,890
	Percent of Total Generation									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Paper and Paperboard	34.0%	36.6%	36.4%	34.9%	36.0%	33.4%	30.7%	28.5%	28.0%	27.4%
Glass	7.6%	10.5%	10.0%	6.3%	5.2%	4.9%	4.8%	4.6%	4.6%	4.6%
Metals										
Ferrous	11.7%	10.2%	8.3%	6.1%	5.8%	6.0%	6.3%	6.7%	6.6%	6.7%
Aluminum	0.4%	0.7%	1.1%	1.3%	1.3%	1.3%	1.4%	1.4%	1.4%	1.4%
Other Nonferrous	0.2%	0.6%	0.8%	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%	0.8%
Total Metals	*12.3%*	*11.4%*	*10.2%*	*7.9%*	*7.8%*	*8.0%*	*8.4%*	*8.9%*	*8.8%*	*8.9%*
Plastics	0.4%	2.4%	4.5%	8.2%	10.5%	11.6%	12.0%	12.5%	12.7%	12.7%
Rubber and Leather	2.1%	2.5%	2.8%	2.8%	2.7%	2.9%	3.0%	3.0%	3.0%	3.0%
Textiles	2.0%	1.7%	1.7%	2.8%	3.9%	4.5%	5.0%	5.2%	5.2%	5.7%
Wood	3.4%	3.1%	4.6%	5.9%	5.6%	5.8%	6.1%	6.3%	6.3%	6.3%
Other **	0.1%	0.6%	1.7%	1.5%	1.6%	1.7%	1.8%	1.9%	1.8%	1.8%
Total Materials in Products	62.0%	68.8%	71.8%	70.3%	73.4%	72.9%	71.9%	70.9%	70.5%	70.4%
Other Wastes										
Food Waste	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	13.6%	14.3%	14.5%	14.5%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.0%	13.3%	13.5%	13.5%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.6%
Total Other Wastes	38.0%	31.2%	28.2%	29.7%	26.6%	27.1%	28.1%	29.1%	29.5%	29.6%
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 recovery or combustion. 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.

Details may not add to totals due to rounding.

Table 2

RECOVERY* OF MUNICIPAL SOLID WASTE, 1960 TO 2012

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

	Thousands of Tons									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Paper and Paperboard	5,080	6,770	11,740	20,230	37,560	41,960	42,940	44,570	45,900	44,360
Glass	100	160	750	2,630	2,880	2,590	2,810	3,130	3,170	3,200
Metals										
Ferrous	50	150	370	2,230	4,680	5,020	5,330	5,770	5,460	5,550
Aluminum	Neg.	10	310	1,010	860	690	720	680	720	710
Other Nonferrous	Neg.	320	540	730	1,060	1,280	1,340	1,400	1,370	1,360
Total Metals	*50*	*480*	*1,220*	*3,970*	*6,600*	*6,990*	*7,390*	*7,850*	*7,550*	*7,620*
Plastics	Neg.	Neg.	20	370	1,480	1,780	2,140	2,500	2,660	2,800
Rubber and Leather	330	250	130	370	820	1,050	1,270	1,320	1,350	1,350
Textiles	50	60	160	660	1,320	1,830	1,950	2,010	2,020	2,250
Wood	Neg.	Neg.	Neg.	130	1,370	1,830	2,120	2,280	2,350	2,410
Other **	Neg.	300	500	680	980	1,210	1,280	1,330	1,310	1,300
Total Materials in Products	5,610	8,020	14,520	29,040	53,010	59,240	61,900	64,990	66,310	65,290
Other Wastes										
Food Waste	Neg.	Neg.	Neg.	Neg.	680	690	800	970	1,270	1,740
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	21,300	19,200	19,300	19,590
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	4,200	16,450	20,550	22,100	20,170	20,570	21,330
Total MSW Recovered - Weight	5,610	8,020	14,520	33,240	69,460	79,790	84,000	85,160	86,880	86,620
	Percent of Generation of Each Material									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Paper and Paperboard	16.9%	15.3%	21.3%	27.8%	42.8%	49.5%	55.5%	62.5%	65.6%	64.6%
Glass	1.5%	1.3%	5.0%	20.1%	22.6%	20.7%	23.1%	27.1%	27.6%	27.7%
Metals										
Ferrous	0.5%	1.2%	2.9%	17.6%	33.1%	33.0%	33.4%	34.3%	33.0%	33.0%
Aluminum	Neg.	1.3%	17.9%	35.9%	27.0%	20.7%	21.1%	19.4%	20.5%	19.8%
Other Nonferrous	Neg.	47.8%	46.6%	66.4%	66.3%	68.8%	69.1%	69.3%	68.5%	68.0%
Total Metals	*0.5%*	*3.5%*	*7.9%*	*24.0%*	*34.8%*	*34.3%*	*34.7%*	*35.1%*	*34.2%*	*34.0%*
Plastics	Neg.	Neg.	0.3%	2.2%	5.8%	6.1%	7.1%	8.0%	8.4%	8.8%
Rubber and Leather	17.9%	8.4%	3.1%	6.4%	12.3%	14.4%	16.8%	17.7%	17.8%	17.9%
Textiles	2.8%	2.9%	6.3%	11.4%	13.9%	15.9%	15.4%	15.3%	15.4%	15.7%
Wood	Neg.	Neg.	Neg.	1.1%	10.1%	12.4%	13.7%	14.5%	14.9%	15.2%
Other **	Neg.	39.0%	19.8%	21.3%	24.5%	28.2%	27.5%	28.3%	28.3%	28.3%
Total Materials in Products	10.3%	9.6%	13.3%	19.8%	29.7%	32.0%	34.1%	36.6%	37.6%	37.0%
Other Wastes										
Food, Other^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.3%	2.7%	3.5%	4.8%
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	64.7%	57.5%	57.3%	57.7%
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	6.8%	25.4%	29.9%	31.1%	27.6%	27.8%	28.7%
Total MSW Recovered - %	6.4%	6.6%	9.6%	16.0%	28.5%	31.4%	33.3%	34.0%	34.7%	34.5%

* Recovery of postconsumer wastes; does not include converting/fabrication scrap.

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

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

^ Includes recovery of paper and mixed MSW for composting.

Details may not add to totals due to rounding.

Table 3

MATERIALS DISCARDED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012

(In thousands of tons and percent of total discards)

	Thousands of Tons									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Paper and Paperboard	24,910	37,540	43,420	52,500	50,180	42,880	34,480	26,740	24,120	24,260
Glass	6,620	12,580	14,380	10,470	9,890	9,950	9,340	8,400	8,300	8,370
Metals										
Ferrous	10,250	12,210	12,250	10,410	9,470	10,190	10,620	11,060	11,080	11,250
Aluminum	340	790	1,420	1,800	2,330	2,640	2,690	2,820	2,790	2,870
Other Nonferrous	180	350	620	370	540	580	600	620	630	640
Total Metals	*10,770*	*13,350*	*14,290*	*12,580*	*12,340*	*13,410*	*13,910*	*14,500*	*14,500*	*14,760*
Plastics	390	2,900	6,810	16,760	24,070	27,600	28,120	28,790	29,180	28,950
Rubber and Leather	1,510	2,720	4,070	5,420	5,850	6,240	6,300	6,120	6,230	6,180
Textiles	1,710	1,980	2,370	5,150	8,160	9,680	10,750	11,100	11,100	12,080
Wood	3,030	3,720	7,010	12,080	12,200	12,960	13,330	13,430	13,430	13,410
Other **	70	470	2,020	2,510	3,020	3,080	3,370	3,370	3,320	3,300
Total Materials in Products	49,010	75,260	94,370	117,470	125,710	125,800	119,600	112,450	110,180	111,310
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,020	32,240	33,500	34,770	35,040	34,690
Yard Trimmings	20,000	23,200	27,500	30,800	14,760	12,210	11,600	14,200	14,410	14,370
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	57,560	48,280	48,140	48,880	52,810	53,320	52,960
Total MSW Discarded - Weight	82,510	113,040	137,120	175,030	173,990	173,940	168,480	165,260	163,500	164,270
	Percent of Total Discards									
Materials	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Paper and Paperboard	30.2%	33.2%	31.7%	30.0%	28.8%	24.7%	20.5%	16.2%	14.8%	14.8%
Glass	8.0%	11.1%	10.5%	6.0%	5.7%	5.7%	5.5%	5.1%	5.1%	5.1%
Metals										
Ferrous	12.4%	10.8%	8.9%	5.9%	5.4%	5.9%	6.3%	6.7%	6.8%	6.8%
Aluminum	0.4%	0.7%	1.0%	1.0%	1.3%	1.5%	1.6%	1.7%	1.7%	1.7%
Other Nonferrous	0.2%	0.3%	0.5%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%
Total Metals	*13.1%*	*11.8%*	*10.4%*	*7.2%*	*7.1%*	*7.7%*	*8.3%*	*8.8%*	*8.9%*	*9.0%*
Plastics	0.5%	2.6%	5.0%	9.6%	13.8%	15.9%	16.7%	17.4%	17.8%	17.6%
Rubber and Leather	1.8%	2.4%	3.0%	3.1%	3.4%	3.6%	3.7%	3.7%	3.8%	3.8%
Textiles	2.1%	1.8%	1.7%	2.9%	4.7%	5.6%	6.4%	6.7%	6.8%	7.4%
Wood	3.7%	3.3%	5.1%	6.9%	7.0%	7.5%	7.9%	8.1%	8.2%	8.2%
Other **	0.1%	0.4%	1.5%	1.4%	1.7%	1.8%	2.0%	2.0%	2.0%	2.0%
Total Materials in Products	59.4%	66.6%	68.8%	67.1%	72.3%	72.3%	71.0%	68.0%	67.4%	67.8%
Other Wastes										
Food Waste	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	19.9%	21.0%	21.4%	21.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	6.9%	8.6%	8.8%	8.7%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%
Total Other Wastes	40.6%	33.4%	31.2%	32.9%	27.7%	27.7%	29.0%	32.0%	32.6%	32.2%
Total MSW Discarded - %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Discards after materials and compost recovery. In this table, discards include combustion with energy recovery. 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.

Details may not add to totals due to rounding.

Table 4

PAPER AND PAPERBOARD PRODUCTS IN MSW, 2012
(In thousands of tons and percent of generation)

Product Category	Generation (Thousand tons)	Recovery (Thousand tons)	Recovery (Percent of generation)	Discards (Thousand tons)
Nondurable Goods				
Newspapers/Mechanical Papers†	8,380	5,870	70.0%	2,510
Books	860			
Magazines	1,470			
Office-type Papers*	4,750			
Standard Mail**	3,620			
Other Commercial Printing	2,660			
Tissue Paper and Towels	3,510			
Paper Plates and Cups	1,290			
Other Nonpackaging Paper***	4,010			
Subtotal Nondurable Goods excluding Newspaper/Mechanical Papers§	22,170	9,570	43.2%	12,600
Total Paper and Paperboard Nondurable Goods	30,550	15,440	50.5%	15,110
Containers and Packaging				
Corrugated Boxes	29,480	26,810	90.9%	2,670
Gable Top/Aseptic Cartons‡	550			
Folding Cartons	5,490			
Other Paperboard Packaging	70			
Bags and Sacks	960			
Other Paper Packaging	1,460			
Subtotal Containers and Packaging excluding Corrugated Boxes§	8,530	2,110	24.7%	6,420
Total Paper and Paperboard Containers and Packaging	38,010	28,920	76.1%	9,090
Total Paper and Paperboard^	68,560	44,360	64.7%	24,200

† 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 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 recovery and discards were not available.

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

^ Table 4 does not include 10,000 tons of paper used in durable goods and 50,000 tons tissue in disposable diapers (Table 1).

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

Table 5

GLASS PRODUCTS IN MSW, 2012
(In thousands of tons and percent of generation)

Product Category	Generation (Thousand tons)	Recovery (Thousand tons)	Recovery (Percent of generation)	Discards (Thousand tons)
Durable Goods*	2,190	Neg.	Neg.	2,190
Containers and Packaging				
Beer and Soft Drink Bottles**	5,530	2,270	41.0%	3,260
Wine and Liquor Bottles	1,850	630	34.1%	1,220
Other Bottles and Jars	2,000	300	15.0%	1,700
Total Glass Containers	9,380	3,200	34.1%	6,180
Total Glass	11,570	3,200	27.7%	8,370

* 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 6

METAL PRODUCTS IN MSW, 2012
(In thousands of tons and percent of generation)

Product Category	Generation (Thousand tons)	Recovery (Thousand tons)	Recovery (Percent of generation)	Discards (Thousand tons)
Durable Goods				
Ferrous Metals*	14,570	3,940	27.0%	10,630
Aluminum**	1,520	NA		1,520
Lead†	1,420	1,360	96%	60
Other Nonferrous Metals‡	580	Neg.	Neg.	580
Total Metals in Durable Goods	18,090	5,300	29.3%	12,790
Nondurable Goods				
Aluminum	190	Neg.	Neg.	190
Containers and Packaging				
Steel				
Cans	1,850	1,310	70.8%	540
Other Steel Packaging	380	300	78.9%	80
Total Steel Packaging	2,230	1,610	72.2%	620
Aluminum				
Beer and Soft Drink Cans§	1,300	710	54.6%	590
Other Cans	120	NA		120
Foil and Closures	450	NA		450
Total Aluminum Packaging	1,870	710	38.0%	1,160
Total Metals in Containers and Packaging	4,100	2,320	56.6%	1,780
Total Metals	22,380	7,620	34.0%	14,760
Ferrous	16,800	5,550	33.0%	11,250
Aluminum	3,580	710	19.8%	2,870
Other nonferrous	2,000	1,360	68.0%	640

* 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 recovery does not include used beverage cans imported to produce new beverage cans.
Neg. = Less than 5,000 tons or 0.05 percent. NA = Not Available
Details may not add to totals due to rounding.

Table 7

PLASTICS IN PRODUCTS IN MSW, 2012
(In thousands of tons, and percent of generation by resin)

Product Category	Generation (Thousand tons)	Recovery (Thousand tons)	Recovery (Percent of Gen.)	Discards (Thousand tons)
Durable Goods				
PET	350			
HDPE	1,230			
PVC	220			
LDPE/LLDPE	1,980			
PP	3,920			
PS	690			
Other resins	3,070			
Total Plastics in Durable Goods	**11,460**	**770**	**6.7%**	**10,690**
Nondurable Goods‡				
Plastic Plates and Cups§				
LDPE/LLDPE	20			20
PLA	20			20
PP	190			190
PS	830			830
Subtotal Plastic Plates and Cups	1,060	Neg.	Neg.	1,060
Trash Bags				
HDPE	220			220
LDPE/LLDPE	800			800
Subtotal Trash Bags	1,020			1,020
All other nondurables*				
PET	540			
HDPE	520			
PVC	230			
LDPE/LLDPE	1,160			
PLA	20			
PP	1,200			
PS	200			
Other resins	560			
Subtotal All Other Nondurables	4,430	130	2.9%	4,300
Total Plastics in Nondurable Goods, by resin				
PET	540			
HDPE	740			
PVC	230			
LDPE/LLDPE	1,980			
PLA	40			
PP	1,390			
PS	1,030			
Other resins	560			
Total Plastics in Nondurable Goods	**6,510**	**130**	**2.0%**	**6,380**
Plastic Containers & Packaging				
Bottles and Jars**				
PET	2,790	860	30.8%	1,930
Natural Bottles†				
HDPE	780	220	28.2%	560

‡ Nondurable goods other than containers and packaging.

ş 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 2012* . National Association for PET Container Resources. Recovery includes caps, lids, and other material collected with PET bottles and jars.

† White translucent homopolymer bottles as defined in the *2007 United States National Postconsumer Plastics Bottles Recycling Report* . American Chemistry Council and the Association of Postconsumer Plastic Recyclers.

Neg. = negligible, less than 5,000 tons

Table 7 (continued)

PLASTICS IN PRODUCTS IN MSW, 2012

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

Product Category	Generation (Thousand tons)	Recovery (Thousand tons)	Recovery (Percent of Gen.)	Discards (Thousand tons)
Plastic Containers & Packaging, cont.				
Other plastic containers				
HDPE	1,410	290	20.6%	1,120
PVC	40	Neg.		40
LDPE/LLDPE	40	Neg.		40
PP	280	20	7.1%	260
PS	80	Neg.		80
Subtotal Other Containers	**1,850**	**310**	**16.8%**	**1,540**
Bags, sacks, & wraps				
HDPE	700	50	7.1%	650
PVC	50			50
LDPE/LLDPE	2,280	390	17.1%	1,890
PP	640			640
PS	140			140
Subtotal Bags, Sacks, & Wraps	**3,810**	**440**	**11.5%**	**3,370**
Other Plastics Packaging‡				
PET	840	20	2.4%	820
HDPE	670	10	1.5%	660
PVC	330	Neg.		330
LDPE/LLDPE	1,070	Neg.		1,070
PLA	10	Neg.		10
PP	960	20	2.1%	940
PS	300	20	6.7%	280
Other resins	370	Neg.		370
Subtotal Other Packaging	**4,550**	**70**	**1.5%**	**4,480**
Total Plastics in Containers & Packaging, by resin				
PET	3,630	880	24.2%	2,750
HDPE	3,560	570	16.0%	2,990
PVC	420	Neg.		420
LDPE/LLDPE	3,390	390	11.5%	3,000
PLA	10	Neg.		10
PP	1,880	40	2.1%	1,840
PS	520	20	3.8%	500
Other resins	370	Neg.		370
Total Plastics in Cont. & Packaging	**13,780**	**1,900**	**13.8%**	**11,880**
Total Plastics in MSW, by resin				
PET	4,520	880	19.5%	3,640
HDPE	5,530	570	10.3%	4,960
PVC	870	Neg.		870
LDPE/LLDPE	7,350	390	5.3%	6,960
PLA	50	Neg.		50
PP	7,190	40	0.6%	7,150
PS	2,240	20	0.9%	2,220
Other resins	4,000	900	22.5%	3,100
Total Plastics in MSW	**31,750**	**2,800**	**8.8%**	**28,950**

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

‡ Other plastic packaging includes coatings, closures, lids, PET cups, caps, clamshells, egg cartons, produce baskets, trays, shapes, loose fill, etc.
PP caps and lids recovered with PET bottles and jars are included in the recovery estimate for PET bottles and jars.
Other resins include commingled/undefined plastic packaging recovery.
Some detail of recovery by resin omitted due to lack of data.

Table 8

RUBBER AND LEATHER PRODUCTS IN MSW, 2012
(In thousands of tons and percent of generation)

Product Category	Generation (Thousand tons)	Recovery (Thousand tons)	Recovery (Percent of generation)	Discards (Thousand tons)
Durable Goods				
Rubber in Tires*	3,020	1,350	44.7%	1,670
Other Durables**	3,500	Neg.	Neg.	3,500
Total Rubber & Leather Durable Goods	6,520	1,350	20.7%	5,170
Nondurable Goods				
Clothing and Footwear	770	Neg.	Neg.	770
Other Nondurables	240	Neg.	Neg.	240
Total Rubber & Leather Nondurable Goods	1,010	Neg.	Neg.	1,010
Total Rubber & Leather	7,530	1,350	17.9%	6,180

* 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 9

CATEGORIES OF PRODUCTS GENERATED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(In thousands of tons and percent of total generation)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 12)*	9,920	14,660	21,800	29,810	38,870	45,060	47,060	48,770	49,560	50,030
Nondurable Goods *(Detail in Table 15)*	17,330	25,060	34,420	52,170	64,010	63,650	58,690	53,200	51,610	51,340
Containers and Packaging *(Detail in Table 18)*	27,370	43,560	52,670	64,530	75,840	76,330	75,750	75,470	75,320	75,230
***Total Product** Wastes*	54,620	83,280	108,890	146,510	178,720	185,040	181,500	177,440	176,490	176,600
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,700	32,930	34,300	35,740	36,310	36,430
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	32,900	33,400	33,710	33,960
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	61,760	64,730	68,690	70,980	72,980	73,890	74,290
Total MSW Generated - Weight	88,120	121,060	151,640	208,270	243,450	253,730	252,480	250,420	250,380	250,890
	Percent of Total Generation									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 12)*	11.3%	12.1%	14.4%	14.3%	16.0%	17.8%	18.6%	19.5%	19.8%	19.9%
Nondurable Goods *(Detail in Table 15)*	19.7%	20.7%	22.7%	25.0%	26.3%	25.1%	23.2%	21.2%	20.6%	20.5%
Containers and Packaging *(Detail in Table 19)*	31.1%	36.0%	34.7%	31.0%	31.2%	30.1%	30.0%	30.1%	30.1%	30.0%
***Total Product** Wastes*	62.0%	68.8%	71.8%	70.3%	73.4%	72.9%	71.9%	70.9%	70.5%	70.4%
Other Wastes										
Food Waste	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	13.6%	14.3%	14.5%	14.5%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.0%	13.3%	13.5%	13.5%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.6%
Total Other Wastes	38.0%	31.2%	28.2%	29.7%	26.6%	27.1%	28.1%	29.1%	29.5%	29.6%
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 recovery or combustion. Does not include construction & demolition debris, industrial process wastes, or certain other wastes.

** Other than food products.

Details may not add to totals due to rounding.

Table 10

RECOVERY* OF MUNICIPAL SOLID WASTE, 1960 TO 2012
(In thousands of tons and percent of generation of each category)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 13)*	350	940	1,360	3,460	6,580	7,970	8,530	9,120	9,210	9,270
Nondurable Goods *(Detail in Table 16)*	2,390	3,730	4,670	8,800	17,560	19,770	19,310	19,190	18,830	17,270
Containers and Packaging *(Detail in Table 20)*	2,870	3,350	8,490	16,780	28,870	31,500	34,060	36,680	38,270	38,750
***Total Product** Wastes*	5,610	8,020	14,520	29,040	53,010	59,240	61,900	64,990	66,310	65,290
Other Wastes										
Food, Other^	Neg.	Neg.	Neg.	Neg.	680	690	800	970	1,270	1,740
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	21,300	19,200	19,300	19,590
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	4,200	16,450	20,550	22,100	20,170	20,570	21,330
Total MSW Recovered - Weight	5,610	8,020	14,520	33,240	69,460	79,790	84,000	85,160	86,880	86,620
	Percent of Generation of Each Category									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 13)*	3.5%	6.4%	6.2%	11.6%	16.9%	17.7%	18.1%	18.7%	18.6%	18.5%
Nondurable Goods *(Detail in Table 16)*	13.8%	14.9%	13.6%	16.9%	27.4%	31.1%	32.9%	36.1%	36.5%	33.6%
Containers and Packaging *(Detail in Table 21)*	10.5%	7.7%	16.1%	26.0%	38.1%	41.3%	45.0%	48.6%	50.8%	51.5%
***Total Product** Wastes*	10.3%	9.6%	13.3%	19.8%	29.7%	32.0%	34.1%	36.6%	37.6%	37.0%
Other Wastes										
Food, Other^	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.3%	2.7%	3.5%	4.8%
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	64.7%	57.5%	57.3%	57.7%
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	6.8%	25.4%	29.9%	31.1%	27.6%	27.8%	28.7%
Total MSW Recovered - %	6.4%	6.6%	9.6%	16.0%	28.5%	31.4%	33.3%	34.0%	34.7%	34.5%

* Recovery of postconsumer wastes; does not include converting/fabrication scrap.
** Other than food products.
^ Includes recovery of soiled paper and mixed MSW for composting.
Details may not add to totals due to rounding. Neg. = Less than 5,000 tons or 0.05 percent.

Table 11

CATEGORIES OF PRODUCTS DISCARDED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(In thousands of tons and percent of total discards)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 14)*	9,570	13,720	20,440	26,350	32,290	37,090	38,530	39,650	40,350	40,760
Nondurable Goods *(Detail in Table 17)*	14,940	21,330	29,750	43,370	46,450	43,880	39,380	34,010	32,780	34,070
Containers and Packaging *(Detail in Table 22)*	24,500	40,210	44,180	47,750	46,970	44,830	41,690	38,790	37,050	36,480
***Total Product** Wastes*	49,010	75,260	94,370	117,470	125,710	125,800	119,600	112,450	110,180	111,310
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,020	32,240	33,500	34,770	35,040	34,690
Yard Trimmings	20,000	23,200	27,500	30,800	14,760	12,210	11,600	14,200	14,410	14,370
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	57,560	48,280	48,140	48,880	52,810	53,320	52,960
Total MSW Discarded - Weight	82,510	113,040	137,120	175,030	173,990	173,940	168,480	165,260	163,500	164,270
	Percent of Total Discards									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 14)*	11.6%	12.1%	14.9%	15.1%	18.6%	21.3%	22.9%	24.0%	24.7%	24.8%
Nondurable Goods *(Detail in Table 17)*	18.1%	18.9%	21.7%	24.8%	26.7%	25.2%	23.4%	20.6%	20.0%	20.7%
Containers and Packaging *(Detail in Table 23)*	29.7%	35.6%	32.2%	27.3%	27.0%	25.8%	24.7%	23.5%	22.7%	22.2%
***Total Product** Wastes*	59.4%	66.6%	68.8%	67.1%	72.3%	72.3%	71.0%	68.0%	67.4%	67.8%
Other Wastes										
Food Waste	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	19.9%	21.0%	21.4%	21.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	6.9%	8.6%	8.8%	8.7%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%
Total Other Wastes	40.6%	33.4%	31.2%	32.9%	27.7%	27.7%	29.0%	32.0%	32.6%	32.2%
Total MSW Discarded - %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Discards after materials and compost recovery. In this table, discards include combustion with energy recovery. Does not include construction & demolition debris, industrial process wastes, or certain other wastes.

** Other than food products.

Details may not add to totals due to rounding.

Table 12

PRODUCTS GENERATED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON DURABLE GOODS)
(In thousands of tons and percent of total generation)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods										
Major Appliances	1,630	2,170	2,950	3,310	3,640	3,610	3,690	4,020	4,080	4,190
Small Appliances**				460	1,040	1,180	1,530	1,720	1,770	1,860
Furniture and Furnishings	2,150	2,830	4,760	6,790	8,120	9,340	10,230	10,820	11,130	11,500
Carpets and Rugs**				1,660	2,460	2,960	3,340	3,720	3,830	3,860
Rubber Tires	1,120	1,890	2,720	3,610	4,930	4,910	4,970	4,660	4,740	4,710
Batteries, Lead-Acid	Neg.	820	1,490	1,510	2,280	2,750	2,900	3,020	2,970	2,950
Miscellaneous Durables										
Selected Consumer Electronics***					1,900	2,630	3,160	3,320	3,410	3,420
Other Miscellaneous Durables					14,500	17,680	17,240	17,490	17,630	17,540
Total Miscellaneous Durables	5,020	6,950	9,880	12,470	16,400	20,310	20,400	20,810	21,040	20,960
Total Durable Goods	9,920	14,660	21,800	29,810	38,870	45,060	47,060	48,770	49,560	50,030
Nondurable Goods	17,330	25,060	34,420	52,170	64,010	63,650	58,690	53,200	51,610	51,340
(Detail in Table 15)										
Containers and Packaging	27,370	43,560	52,670	64,530	75,840	76,330	75,750	75,470	75,320	75,230
(Detail in Table 18)										
Total Product Wastes†	54,620	83,280	108,890	146,510	178,720	185,040	181,500	177,440	176,490	176,600
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,700	32,930	34,300	35,740	36,310	36,430
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	32,900	33,400	33,710	33,960
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	61,760	64,730	68,690	70,980	72,980	73,890	74,290
Total MSW Generated - Weight	88,120	121,060	151,640	208,270	243,450	253,730	252,480	250,420	250,380	250,890
	Percent of Total Generation									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods										
Major Appliances	1.8%	1.8%	1.9%	1.6%	1.5%	1.4%	1.5%	1.6%	1.6%	1.7%
Small Appliances**				0.2%	0.4%	0.5%	0.6%	0.7%	0.7%	0.7%
Furniture and Furnishings	2.4%	2.3%	3.1%	3.3%	3.3%	3.7%	4.1%	4.3%	4.4%	4.6%
Carpets and Rugs**				0.8%	1.0%	1.2%	1.3%	1.5%	1.5%	1.5%
Rubber Tires	1.3%	1.6%	1.8%	1.7%	2.0%	1.9%	2.0%	1.9%	1.9%	1.9%
Batteries, Lead-Acid	Neg.	0.7%	1.0%	0.7%	0.9%	1.1%	1.1%	1.2%	1.2%	1.2%
Miscellaneous Durables										
Selected Consumer Electronics***					0.8%	1.0%	1.3%	1.3%	1.4%	1.4%
Other Miscellaneous Durables					6.0%	7.0%	6.8%	7.0%	7.0%	7.0%
Total Miscellaneous Durables	5.7%	5.7%	6.5%	6.0%	6.7%	8.0%	8.1%	8.3%	8.4%	8.4%
Total Durable Goods	11.3%	12.1%	14.4%	14.3%	16.0%	17.8%	18.6%	19.5%	19.8%	19.9%
Nondurable Goods	19.7%	20.7%	22.7%	25.0%	26.3%	25.1%	23.2%	21.2%	20.6%	20.5%
(Detail in Table 15)										
Containers and Packaging	31.1%	36.0%	34.7%	31.0%	31.2%	30.1%	30.0%	30.1%	30.1%	30.0%
(Detail in Table 19)										
Total Product Wastes†	62.0%	68.8%	71.8%	70.3%	73.4%	72.9%	71.9%	70.9%	70.5%	70.4%
Other Wastes										
Food Waste	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	13.6%	14.3%	14.5%	14.5%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.0%	13.3%	13.5%	13.5%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.6%
Total Other Wastes	38.0%	31.2%	28.2%	29.7%	26.6%	27.1%	28.1%	29.1%	29.5%	29.6%
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 recovery or combustion. Does not include construction & demolition debris, industrial process wastes, or certain other wastes.

** Not estimated separately prior to 1990.

† Other than food products.

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

*** Not estimated separately prior to 1999. For more information on consumer electronics see the website http://www.epa.gov/waste/conserve/materials/ecycling/manage.htm which references the report Electronics Management in the U.S. Through 2009. This 2009 electronics report examines a smaller selection of types of electronics.

Table 13

RECOVERY* OF PRODUCTS IN MUNICIPAL SOLID WASTE, 1960 TO 2012
(WITH DETAIL ON DURABLE GOODS)
(In thousands of tons and percent of generation of each product)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods										
Major Appliances	10	50	130	1,070	2,000	2,420	2,470	2,610	2,620	2,680
Small Appliances**				10	20	20	110	120	120	120
Furniture and Furnishings	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	10	10	10	10
Carpets and Rugs**				Neg.	190	250	270	270	270	290
Rubber Tires	330	250	150	440	1,290	1,640	1,980	2,080	2,120	2,100
Batteries, Lead-Acid	Neg.	620	1,040	1,470	2,130	2,640	2,780	2,900	2,850	2,830
Miscellaneous Durables										
Selected Consumer Electronics***					190	360	560	650	850	1,000
Other Miscellaneous Durables					760	640	350	480	370	240
Total Miscellaneous Durables	10	20	40	470	950	1,000	910	1,130	1,220	1,240
Total Durable Goods	350	940	1,360	3,460	6,580	7,970	8,530	9,120	9,210	9,270
Nondurable Goods	2,390	3,730	4,670	8,800	17,560	19,770	19,310	19,190	18,830	17,270
(Detail in Table 16)										
Containers and Packaging	2,870	3,350	8,490	16,780	28,870	31,500	34,060	36,680	38,270	38,750
(Detail in Table 20)										
Total Product Wastes†	5,610	8,020	14,520	29,040	53,010	59,240	61,900	64,990	66,310	65,290
Other Wastes										
Food Waste	Neg.	Neg.	Neg.	Neg.	680	690	800	970	1,270	1,740
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	21,300	19,200	19,300	19,590
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	4,200	16,450	20,550	22,100	20,170	20,570	21,330
Total MSW Recovered - Weight	5,610	8,020	14,520	33,240	69,460	79,790	84,000	85,160	86,880	86,620
	Percent of Generation of Each Product									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods										
Major Appliances	0.6%	2.3%	4.4%	32.3%	54.9%	67.0%	66.9%	64.9%	64.2%	64.0%
Small Appliances**				2.2%	1.9%	1.7%	7.2%	7.0%	6.8%	6.5%
Furniture and Furnishings	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.1%	0.1%	0.1%	0.1%
Carpets and Rugs**				Neg.	7.7%	8.4%	8.1%	7.3%	7.0%	7.5%
Rubber Tires	29.5%	13.2%	5.5%	12.2%	26.2%	33.4%	39.8%	44.6%	44.7%	44.6%
Batteries, Lead-Acid	Neg.	75.6%	69.8%	97.4%	93.4%	96.0%	95.9%	96.0%	96.0%	95.9%
Miscellaneous Durables										
Selected Consumer Electronics***					10.0%	13.7%	17.7%	19.6%	24.9%	29.2%
Other Miscellaneous Durables					5.2%	3.6%	2.0%	2.7%	2.1%	1.4%
Total Miscellaneous Durables	0.2%	0.3%	0.4%	3.8%	5.8%	4.9%	4.5%	5.4%	5.8%	5.9%
Total Durable Goods	3.5%	6.4%	6.2%	11.6%	16.9%	17.7%	18.1%	18.7%	18.6%	18.5%
Nondurable Goods	13.8%	14.9%	13.6%	16.9%	27.4%	31.1%	32.9%	36.1%	36.5%	33.6%
(Detail in Table 16)										
Containers and Packaging	10.5%	7.7%	16.1%	26.0%	38.1%	41.3%	45.0%	48.6%	50.8%	51.5%
(Detail in Table 21)										
Total Product Wastes†	10.3%	9.6%	13.3%	19.8%	29.7%	32.0%	34.1%	36.6%	37.6%	37.0%
Other Wastes										
Food Waste	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.3%	2.7%	3.5%	4.8%
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	64.7%	57.5%	57.3%	57.7%
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	6.8%	25.4%	29.9%	31.1%	27.6%	27.8%	28.7%
Total MSW Recovered - %	6.4%	6.6%	9.6%	16.0%	28.5%	31.4%	33.3%	34.0%	34.7%	34.5%

* Recovery of postconsumer wastes; does not include converting/fabrication scrap.

** Not estimated separately prior to 1990.

† Other than food products.

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

*** Not estimated separately prior to 1999. For more information on consumer electronics see the website http://www.epa.gov/waste/conserve/materials/ecycling/manage.htm which references the report Electronics Management in the U.S. Through 2009. This 2009 electronics report examines a smaller selection of types of electronics.

Table 14

PRODUCTS DISCARDED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON DURABLE GOODS)
(In thousands of tons and percent of total discards)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods										
Major Appliances	1,620	2,120	2,820	2,240	1,640	1,190	1,220	1,410	1,460	1,510
Small Appliances**				450	1,020	1,160	1,420	1,600	1,650	1,740
Furniture and Furnishings	2,150	2,830	4,760	6,790	8,120	9,340	10,220	10,810	11,120	11,490
Carpets and Rugs**				1,660	2,270	2,710	3,070	3,450	3,560	3,570
Rubber Tires	790	1,640	2,570	3,170	3,640	3,270	2,990	2,580	2,620	2,610
Batteries, Lead-Acid	Neg.	200	450	40	150	110	120	120	120	120
Miscellaneous Durables										
Selected Consumer Electronics***					1,710	2,270	2,600	2,670	2,560	2,420
Other Miscellaneous Durables					13,740	17,040	16,890	17,010	17,260	17,300
Total Miscellaneous Durables	5,010	6,930	9,840	12,000	15,450	19,310	19,490	19,680	19,820	19,720
Total Durable Goods	9,570	13,720	20,440	26,350	32,290	37,090	38,530	39,650	40,350	40,760
Nondurable Goods	14,940	21,330	29,750	43,370	46,450	43,880	39,380	34,010	32,780	34,070
(Detail in Table 17)										
Containers and Packaging	24,500	40,210	44,180	47,750	46,970	44,830	41,690	38,790	37,050	36,480
(Detail in Table 22)										
Total Product Wastes†	49,010	75,260	94,370	117,470	125,710	125,800	119,600	112,450	110,180	111,310
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,020	32,240	33,500	34,770	35,040	34,690
Yard Trimmings	20,000	23,200	27,500	30,800	14,760	12,210	11,600	14,200	14,410	14,370
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	57,560	48,280	48,140	48,880	52,810	53,320	52,960
Total MSW Discarded - Weight	82,510	113,040	137,120	175,030	173,990	173,940	168,480	165,260	163,500	164,270
	Percent of Total Discards									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods										
Major Appliances	2.0%	1.9%	2.1%	1.3%	0.9%	0.7%	0.7%	0.9%	0.9%	0.9%
Small Appliances**				0.3%	0.6%	0.7%	0.8%	1.0%	1.0%	1.1%
Furniture and Furnishings	2.6%	2.5%	3.5%	3.9%	4.7%	5.4%	6.1%	6.5%	6.8%	7.0%
Carpets and Rugs**				0.9%	1.3%	1.6%	1.8%	2.1%	2.2%	2.2%
Rubber Tires	1.0%	1.5%	1.9%	1.8%	2.1%	1.9%	1.8%	1.6%	1.6%	1.6%
Batteries, Lead-Acid	Neg.	0.2%	0.3%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Miscellaneous Durables										
Selected Consumer Electronics***					1.0%	1.3%	1.5%	1.6%	1.6%	1.5%
Other Miscellaneous Durables					7.9%	9.8%	10.0%	10.3%	10.6%	10.5%
Total Miscellaneous Durables	6.1%	6.1%	7.2%	6.9%	8.9%	11.1%	11.6%	11.9%	12.1%	12.0%
Total Durable Goods	11.6%	12.1%	14.9%	15.1%	18.6%	21.3%	22.9%	24.0%	24.7%	24.8%
Nondurable Goods	18.1%	18.9%	21.7%	24.8%	26.7%	25.2%	23.4%	20.6%	20.0%	20.7%
(Detail in Table 17)										
Containers and Packaging	29.7%	35.6%	32.2%	27.3%	27.0%	25.8%	24.7%	23.5%	22.7%	22.2%
(Detail in Table 23)										
Total Product Wastes†	59.4%	66.6%	68.8%	67.1%	72.3%	72.3%	71.0%	68.0%	67.4%	67.8%
Other Wastes										
Food Waste	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	19.9%	21.0%	21.4%	21.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	6.9%	8.6%	8.8%	8.7%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%
Total Other Wastes	40.6%	33.4%	31.2%	32.9%	27.7%	27.7%	29.0%	32.0%	32.6%	32.2%
Total MSW Discarded - %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Discards after materials and compost recovery. In this table, discards include combustion with energy recovery.

** Not estimated separately prior to 1990.

*** Not estimated separately prior to 1999. For more information on consumer electronics see the website http://www.epa.gov/waste/conserve/materials/ecycling/manage.htm which references the report Electronics Management in the U.S. Through 2009. This 2009 electronics report examines a smaller selection of types of electronics.

† Other than food products.

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

Table 15

PRODUCTS GENERATED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON NONDURABLE GOODS)
(In thousands of tons and percent of total generation)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	9,920	14,660	21,800	29,810	38,870	45,060	47,060	48,770	49,560	50,030
(Detail in Table 12)										
Nondurable Goods										
Newspapers/Mechanical Papers†	7,110	9,510	11,050	13,430	14,790	12,790	8,800	9,880	9,150	8,380
Directories†**				610	680	660	840	-	-	
Other Paper Nondurable Goods										
Books and Magazines	1,920	2,470	3,390							
Books**				970	1,240	1,100	1,340	990	930	860
Magazines**				2,830	2,230	2,580	2,050	1,590	1,510	1,470
Office-Type Papers***	1,520	2,650	4,000	6,410	7,420	6,620	6,050	5,260	5,100	4,750
Standard Mail§				3,820	5,570	5,830	5,510	4,340	3,750	3,620
Other Commercial Printing†	1,260	2,130	3,120	4,460	7,380	6,440	5,130	2,480	2,710	2,660
Tissue Paper and Towels	1,090	2,080	2,300	2,960	3,220	3,460	3,460	3,490	3,510	3,510
Paper Plates and Cups	270	420	630	650	960	1,160	1,250	1,350	1,340	1,290
Other Nonpackaging Paper	2,700	3,630	4,230	3,840	4,250	4,490	4,630	4,190	3,940	4,010
Total Other Paper Nondurable Goods								23,690	22,790	22,170
Disposable Diapers	Neg.	350	1,930	2,700	3,230	3,410	3,770	3,700	3,630	3,590
Plastic Plates and Cups§			190	650	870	930	780	890	1,030	1,060
Trash Bags**				780	850	1,060	930	980	1,010	1,020
Clothing and Footwear	1,360	1,620	2,170	4,010	6,470	7,890	8,820	9,050	9,020	10,220
Towels, Sheets and Pillowcases**				710	820	980	1,160	1,290	1,310	1,290
Other Miscellaneous Nondurables	100	200	1,410	3,340	4,030	4,250	4,170	3,720	3,670	3,610
Total Nondurable Goods	17,330	25,060	34,420	52,170	64,010	63,650	58,690	53,200	51,610	51,340
Containers and Packaging	27,370	43,560	52,670	64,530	75,840	76,330	75,750	75,470	75,320	75,230
(Detail in Table 18)										
Total Product Wastes‡	54,620	83,280	108,890	146,510	178,720	185,040	181,500	177,440	176,490	176,600
Other Wastes	33,500	37,780	42,750	61,760	64,730	68,690	70,980	72,980	73,890	74,290
Total MSW Generated - Weight	88,120	121,060	151,640	208,270	243,450	253,730	252,480	250,420	250,380	250,890
	Percent of Total Generation									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	11.3%	12.1%	14.4%	14.3%	16.0%	17.8%	18.6%	19.5%	19.8%	19.9%
(Detail in Table 12)										
Nondurable Goods										
Newspapers/Mechanical Papers†	8.1%	7.9%	7.3%	6.4%	6.1%	5.0%	3.5%	3.9%	3.7%	3.3%
Directories†**				0.3%	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%	0.5%	0.4%	0.4%	0.3%
Magazines**				1.4%	0.9%	1.0%	0.8%	0.6%	0.6%	0.6%
Office-Type Papers***	1.7%	2.2%	2.6%	3.1%	3.0%	2.6%	2.4%	2.1%	2.0%	1.9%
Standard Mail§				1.8%	2.3%	2.3%	2.2%	1.7%	1.5%	1.4%
Other Commercial Printing†	1.4%	1.8%	2.1%	2.1%	3.0%	2.5%	2.0%	1.0%	1.1%	1.1%
Tissue Paper and Towels	1.2%	1.7%	1.5%	1.4%	1.3%	1.4%	1.4%	1.4%	1.4%	1.4%
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%	1.8%	1.7%	1.6%	1.6%
Total Other Paper Nondurable Goods								9.5%	9.1%	8.8%
Disposable Diapers	Neg.	0.3%	1.3%	1.3%	1.3%	1.3%	1.5%	1.5%	1.4%	1.4%
Plastic Plates and Cups§			0.1%	0.3%	0.4%	0.4%	0.3%	0.4%	0.4%	0.4%
Trash Bags**				0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%
Clothing and Footwear	1.5%	1.3%	1.4%	1.9%	2.7%	3.1%	3.5%	3.6%	3.6%	4.1%
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%	1.7%	1.5%	1.5%	1.4%
Total Nondurables	19.7%	20.7%	22.7%	25.0%	26.3%	25.1%	23.2%	21.2%	20.6%	20.5%
Containers and Packaging	31.1%	36.0%	34.7%	31.0%	31.2%	30.1%	30.0%	30.1%	30.1%	30.0%
(Detail in Table 19)										
Total Product Wastes‡	62.0%	68.8%	71.8%	70.3%	73.4%	72.9%	71.9%	70.9%	70.5%	70.4%
Other Wastes	38.0%	31.2%	28.2%	29.7%	26.6%	27.1%	28.1%	29.1%	29.5%	29.6%
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 recovery or combustion. 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.
§ Standard Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard (A) Mail by the U.S. Postal Service.
§ Plastic Plates and Cups: Not estimated separately prior to 1980.
‡ Other than food products.
- Detailed data not available. Neg. = Less than 5,000 tons or 0.05 percent.

Table 16

RECOVERY* OF PRODUCTS IN MUNICIPAL SOLID WASTE, 1960 TO 2012
(WITH DETAIL ON NONDURABLE GOODS)
(In thousands of tons and percent of generation of each product)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	350	940	1,360	3,460	6,580	7,970	8,530	9,120	9,210	9,270
(Detail in Table 13)										
Nondurable Goods										
Newspapers/Mechanical Papers†	1,820	2,250	3,020	5,110	8,720	9,360	7,740	7,070	6,630	5,870
Directories†**				50	120	120	180	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	100	260	280							
Books**				100	240	270	390	-	-	-
Magazines**				300	710	960	820	-	-	-
Office-Type Papers***	250	710	870	1,700	4,090	4,110	4,290	-	-	-
Standard Mail§				200	1,830	2,090	2,240	-	-	-
Other Commercial Printing†	130	340	350	700	810	1,440	2,200	-	-	-
Tissue Paper and Towels	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Paper Plates and Cups	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Other Nonpackaging Paper	40	110	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Total Other Paper Nondurable Goods								10,650	10,610	9,570
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	1,250	1,250	1,470
Towels, Sheets and Pillowcases**				120	140	170	200	220	230	230
Other Miscellaneous Nondurables	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	110	130
Total Nondurable Goods	2,390	3,730	4,670	8,800	17,560	19,770	19,310	19,190	18,830	17,270
Containers and Packaging	2,870	3,350	8,490	16,780	28,870	31,500	34,060	36,680	38,270	38,750
(Detail in Table 20)										
Total Product Wastes‡	5,610	8,020	14,520	29,040	53,010	59,240	61,900	64,990	66,310	65,290
Other Wastes	Neg.	Neg.	Neg.	4,200	16,450	20,550	22,100	20,170	20,570	21,330
Total MSW Recovered - Weight	5,610	8,020	14,520	33,240	69,460	79,790	84,000	85,160	86,880	86,620
	Percent of Generation of Each Product									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	3.5%	6.4%	6.2%	11.6%	16.9%	17.7%	18.1%	18.7%	18.6%	18.5%
(Detail in Table 13)										
Nondurable Goods										
Newspapers/Mechanical Papers†	25.6%	23.7%	27.3%	38.0%	59.0%	73.2%	88.0%	71.6%	72.5%	70.0%
Directories†**				8.2%	17.6%	18.2%	21.4%	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	5.2%	10.5%	8.3%							
Books**				10.3%	19.4%	24.5%	29.1%	-	-	-
Magazines**				10.6%	31.8%	37.2%	40.0%	-	-	-
Office-Type Papers***	16.4%	26.8%	21.8%	26.5%	55.1%	62.1%	70.9%	-	-	-
Standard Mail§				5.2%	32.9%	35.8%	40.7%	-	-	-
Other Commercial Printing†	10.3%	16.0%	11.2%	15.7%	11.0%	22.4%	42.9%	-	-	-
Tissue Paper and Towels	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Paper Plates and Cups	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Other Nonpackaging Paper	1.5%	3.0%	Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Total Other Paper Nondurable Goods								45.0%	46.6%	43.2%
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%	14.2%	13.8%	13.9%	14.4%
Towels, Sheets and Pillowcases**				16.9%	17.1%	17.3%	17.2%	17.1%	17.6%	17.8%
Other Miscellaneous Nondurables	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Nondurables	13.8%	14.9%	13.6%	16.9%	27.4%	31.1%	32.9%	36.1%	36.5%	33.6%
Containers and Packaging	10.5%	7.7%	16.1%	26.0%	38.1%	41.3%	45.0%	48.6%	50.8%	51.5%
(Detail in Table 21)										
Total Product Wastes‡	10.3%	9.6%	13.3%	19.8%	29.7%	32.0%	34.1%	36.6%	37.6%	37.0%
Other Wastes	Neg.	Neg.	Neg.	6.8%	25.4%	29.9%	31.1%	27.6%	27.8%	28.7%
Total MSW Recovered - %	6.4%	6.6%	9.6%	16.0%	28.5%	31.4%	33.3%	34.0%	34.7%	34.5%

* Recovery 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.
§ Standard Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard (A) Mail by the U.S. Postal Service.
§ Plastic Plates and Cups: Not estimated separately prior to 1980.
‡ Other than food products.
- Detailed data not available. Neg. = Less than 5,000 tons or 0.05 percent.

Table 17

PRODUCTS DISCARDED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON NONDURABLE GOODS)
(In thousands of tons and percent of total discards)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	9,570	13,720	20,440	26,350	32,290	37,090	38,530	39,650	40,350	40,760
(Detail in Table 14)										
Nondurable Goods										
Newspapers/Mechanical Papers†	5,290	7,260	8,030	8,320	6,070	3,430	1,060	2,810	2,520	2,510
Directories†**				560	560	540	660	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	1,820	2,210	3,110							
Books**				870	1,000	830	950	-	-	-
Magazines**				2,530	1,520	1,620	1,230	-	-	-
Office-Type Papers***	1,270	1,940	3,130	4,710	3,330	2,510	1,760	-	-	-
Standard Mail§				3,620	3,740	3,740	3,270	-	-	-
Other Commercial Printing†	1,130	1,790	2,770	3,760	6,570	5,000	2,930	-	-	-
Tissue Paper and Towels	1,090	2,080	2,300	2,960	3,220	3,460	3,460	-	-	-
Paper Plates and Cups	270	420	630	650	960	1,160	1,250	-	-	-
Other Nonpackaging Paper	2,660	3,520	4,230	3,840	4,250	4,490	4,630	-	-	-
Total Other Paper Nondurable Goods								13,040	12,180	12,600
Disposable Diapers	Neg.	350	1,930	2,700	3,230	3,410	3,770	3,700	3,630	3,590
Plastic Plates and Cups§			190	650	870	930	780	890	1,030	1,060
Trash Bags**				780	850	1,060	930	980	1,010	1,020
Clothing and Footwear	1,310	1,560	2,020	3,490	5,570	6,640	7,570	7,800	7,770	8,750
Towels, Sheets and Pillowcases**				590	680	810	960	1,070	1,080	1,060
Other Miscellaneous Nondurables	100	200	1,410	3,340	4,030	4,250	4,170	3,720	3,560	3,480
Total Nondurable Goods	14,940	21,330	29,750	43,370	46,450	43,880	39,380	34,010	32,780	34,070
Containers and Packaging	24,500	40,210	44,180	47,750	46,970	44,830	41,690	38,790	37,050	36,480
(Detail in Table 22)										
Total Product Wastes‡	49,010	75,260	94,370	117,470	125,710	125,800	119,600	112,450	110,180	111,310
Other Wastes	33,500	37,780	42,750	57,560	48,280	48,140	48,880	52,810	53,320	52,960
Total MSW Discarded - Weight	82,510	113,040	137,120	175,030	173,990	173,940	168,480	165,260	163,500	164,270
	Percent of Total Discards									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	11.6%	12.1%	14.9%	15.1%	18.6%	21.3%	22.9%	24.0%	24.7%	24.8%
(Detail in Table 14)										
Nondurable Goods										
Newspapers/Mechanical Papers†	6.4%	6.4%	5.9%	4.8%	3.5%	2.0%	0.6%	1.7%	1.5%	1.5%
Directories†**				0.3%	0.3%	0.3%	0.4%	-	-	-
Other Paper Nondurable Goods										
Books and Magazines	2.2%	2.0%	2.3%							
Books**				0.5%	0.6%	0.5%	0.6%	-	-	-
Magazines**				1.4%	0.9%	0.9%	0.7%	-	-	-
Office-Type Papers***	1.5%	1.7%	2.3%	2.7%	1.9%	1.4%	1.0%	-	-	-
Standard Mail§				2.1%	2.1%	2.2%	1.9%	-	-	-
Other Commercial Printing†	1.4%	1.6%	2.0%	2.1%	3.8%	2.9%	1.7%	-	-	-
Tissue Paper and Towels	1.3%	1.8%	1.7%	1.7%	1.9%	2.0%	2.1%	-	-	-
Paper Plates and Cups	0.3%	0.4%	0.5%	0.4%	0.6%	0.7%	0.7%	-	-	-
Other Nonpackaging Paper	3.2%	3.1%	3.1%	2.2%	2.4%	2.6%	2.7%	-	-	-
Total Other Paper Nondurable Goods								7.9%	7.4%	7.7%
Disposable Diapers	Neg.	0.3%	1.4%	1.5%	1.9%	2.0%	2.2%	2.2%	2.2%	2.2%
Plastic Plates and Cups§			0.1%	0.4%	0.5%	0.5%	0.5%	0.5%	0.6%	0.6%
Trash Bags**				0.4%	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
Clothing and Footwear	1.6%	1.4%	1.5%	2.0%	3.2%	3.8%	4.5%	4.7%	4.8%	5.3%
Towels, Sheets and Pillowcases**				0.3%	0.4%	0.5%	0.6%	0.6%	0.7%	0.6%
Other Miscellaneous Nondurables	0.1%	0.2%	1.7%	1.9%	2.3%	2.4%	2.5%	2.3%	2.2%	2.1%
Total Nondurables	18.1%	18.9%	21.7%	24.8%	26.7%	25.2%	23.4%	20.6%	20.0%	20.7%
Containers and Packaging	29.7%	35.6%	32.2%	27.3%	27.0%	25.8%	24.7%	23.5%	22.7%	22.2%
(Detail in Table 23)										
Total Product Wastes‡	59.4%	66.6%	68.8%	67.1%	72.3%	72.3%	71.0%	68.0%	67.4%	67.8%
Other Wastes	40.6%	33.4%	31.2%	32.9%	27.7%	27.7%	29.0%	32.0%	32.6%	32.2%
Total MSW Discarded - %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Discards after materials and compost recovery. In this table, discards include 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.
§ Standard Mail: Not estimated separately prior to 1990. Formerly called Third Class Mail and Standard (A) Mail by the U.S. Postal Service.
§ Plastic Plates and Cups: Not estimated separately prior to 1980.
‡ Other than food products.
- Detailed data not available. Neg. = Less than 5,000 tons or 0.05 percent.

Table 18

PRODUCTS GENERATED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON CONTAINERS AND PACKAGING)
(In thousands of tons)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 12)*	9,920	14,660	21,800	29,810	38,870	45,060	47,060	48,770	49,560	50,030
Nondurable Goods *(Detail in Table 15)*	17,330	25,060	34,420	52,170	64,010	63,650	58,690	53,200	51,610	51,340
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1,400	5,580	6,740	5,640	5,710	6,540	6,350	5,670	5,520	5,530
Wine and Liquor Bottles	1,080	1,900	2,450	2,030	1,910	1,630	1,610	1,700	1,770	1,850
Other Bottles & Jars	3,710	4,440	4,780	4,160	3,420	2,290	2,090	1,990	1,990	2,000
Total Glass Packaging	6,190	11,920	13,970	11,830	11,040	10,460	10,050	9,360	9,280	9,380
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	2,240	2,300	1,800	1,850
Other Steel Packaging	260	270	240	200	240	240	240	440	380	380
Total Steel Packaging	4,660	5,380	3,610	2,890	2,870	2,370	2,480	2,740	2,180	2,230
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	100	850	1,550	1,520	1,450	1,390	1,370	1,320	1,300
Other Cans >	Neg.	60	40	20	50	80	70	70	120	120
Foil and Closures	170	410	380	330	380	400	420	460	450	450
Total Aluminum Packaging	170	570	1,270	1,900	1,950	1,930	1,880	1,900	1,890	1,870
Paper & Paperboard Pkg										
Corrugated Boxes	7,330	12,760	17,080	24,010	30,210	30,930	29,710	29,050	29,440	29,480
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			790	510	550	500	490	540	540	550
Folding Cartons			3,820	4,300	5,820	5,530	5,340	5,470	5,540	5,490
Other Paperboard Packaging	3,840	4,830	230	290	200	160	120	90	80	70
Bags and Sacks			3,380	2,440	1,490	1,120	1,170	1,040	750	960
Wrapping Papers			200	110	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Other Paper Packaging	2,940	3,810	850	1,020	1,670	1,400	1,460	1,490	1,670	1,460
Subtotal Other Paper & Paperboard Pkg								8,630	8,580	8,530
Total Paper & Board Pkg	14,110	21,400	26,350	32,680	39,940	39,640	38,290	37,680	38,020	38,010
Plastics Packaging										
PET Bottles and Jars			260	430	1,720	2,540	2,680	2,670	2,740	2,790
HDPE Natural Bottles			230	530	690	800	750	800	770	780
Other Containers	60	910	890	1,430	1,740	1,420	1,900	1,830	1,870	1,850
Bags and Sacks			390	940	1,650	1,640	940	770		
Wraps			840	1,530	2,550	2,810	3,020	3,160		
Subtotal Bags, Sacks, and Wraps			1,230	2,470	4,200	4,450	3,960	3,930	3,880	3,810
Other Plastics Packaging	60	1,180	790	2,040	2,840	3,210	3,720	4,450	4,640	4,550
Total Plastics Packaging	120	2,090	3,400	6,900	11,190	12,420	13,010	13,680	13,900	13,780
Wood Packaging	2,000	2,070	3,940	8,180	8,610	9,230	9,730	9,770	9,700	9,610
Other Misc. Packaging	120	130	130	150	240	280	310	340	350	350
Total Containers & Pkg	27,370	43,560	52,670	64,530	75,840	76,330	75,750	75,470	75,320	75,230
Total Product Wastes†	54,620	83,280	108,890	146,510	178,720	185,040	181,500	177,440	176,490	176,600
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,700	32,930	34,300	35,740	36,310	36,430
Yard Trimmings	20,000	23,200	27,500	35,000	30,530	32,070	32,900	33,400	33,710	33,960
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	61,760	64,730	68,690	70,980	72,980	73,890	74,290
Total MSW Generated - Weight	88,120	121,060	151,640	208,270	243,450	253,730	252,480	250,420	250,380	250,890

* Generation before materials recovery or combustion.

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

> Other Cans rose from 70 thousand tons generated in 2011, in the 2011 report to 120 thousand tons generated in 2011 in this 2012 report because 2011 generation data were estimated based on previous years. These estimated data were replaced with actual data. The 2012 data for other cans is estimated based on the 2011 actual data.

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

† Other than food products.

Details may not add to totals due to rounding.

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

- Detailed data not available.

Table 19

PRODUCTS GENERATED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON CONTAINERS AND PACKAGING)
(In percent of total generation)

	Percent of Total Generation									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 12)*	11.3%	12.1%	14.4%	14.3%	16.0%	17.8%	18.6%	19.5%	19.8%	19.9%
Nondurable Goods *(Detail in Table 15)*	19.7%	20.7%	22.7%	25.0%	26.3%	25.1%	23.2%	21.2%	20.6%	20.5%
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1.6%	4.6%	4.4%	2.7%	2.3%	2.6%	2.5%	2.3%	2.2%	2.2%
Wine and Liquor Bottles	1.2%	1.6%	1.6%	1.0%	0.8%	0.6%	0.6%	0.7%	0.7%	0.7%
Other Bottles & Jars	4.2%	3.7%	3.2%	2.0%	1.4%	0.9%	0.8%	0.8%	0.8%	0.8%
Total Glass Packaging	7.0%	9.8%	9.2%	5.7%	4.5%	4.1%	4.0%	3.7%	3.7%	3.7%
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%	0.9%	0.7%	0.7%
Other Steel Packaging	0.3%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
Total Steel Packaging	5.3%	4.4%	2.4%	1.4%	1.2%	0.9%	1.0%	1.1%	0.9%	0.9%
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	0.1%	0.6%	0.7%	0.6%	0.6%	0.6%	0.5%	0.5%	0.5%
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.03%	0.03%	0.05%	0.05%
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%	0.7%	0.8%	0.8%	0.7%
Paper & Paperboard Pkg										
Corrugated Boxes	8.3%	10.5%	11.3%	11.5%	12.4%	12.2%	12.2%	11.6%	11.8%	11.8%
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%	2.1%	2.2%	2.2%	2.2%
Other Paperboard Packaging	4.4%	4.0%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%
Bags and Sacks			2.2%	1.2%	0.6%	0.4%	0.5%	0.4%	0.3%	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%	0.7%	0.6%
Subtotal Other Paper & Paperboard Pkg								3.4%	3.4%	3.4%
Total Paper & Board Pkg	16.0%	17.7%	17.4%	15.7%	16.4%	15.6%	15.2%	15.0%	15.2%	15.2%
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%	0.8%	0.7%	0.7%	0.7%
Bags and Sacks			0.3%	0.5%	0.7%	0.6%	0.4%	0.3%	0.0%	0.0%
Wraps			0.6%	0.7%	1.0%	1.1%	1.2%	1.3%	0.0%	0.0%
Subtotal Bags, Sacks, and Wraps			0.8%	1.2%	1.7%	1.8%	1.6%	1.6%	1.5%	1.5%
Other Plastics Packaging	0.1%	1.0%	0.5%	1.0%	1.2%	1.3%	1.5%	1.8%	1.9%	1.8%
Total Plastics Packaging	0.1%	1.7%	2.2%	3.3%	4.6%	4.9%	5.2%	5.5%	5.6%	5.5%
Wood Packaging	2.3%	1.7%	2.6%	3.9%	3.5%	3.6%	3.9%	3.9%	3.9%	3.8%
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%	30.0%	30.1%	30.1%	30.0%
Total Product Wastes†	62.0%	68.8%	71.8%	70.3%	73.4%	72.9%	71.9%	70.9%	70.5%	70.4%
Other Wastes										
Food Waste	13.8%	10.6%	8.6%	11.5%	12.6%	13.0%	13.6%	14.3%	14.5%	14.5%
Yard Trimmings	22.7%	19.2%	18.1%	16.8%	12.5%	12.6%	13.0%	13.3%	13.5%	13.5%
Miscellaneous Inorganic Wastes	1.5%	1.5%	1.5%	1.4%	1.4%	1.5%	1.5%	1.5%	1.5%	1.6%
Total Other Wastes	38.0%	31.2%	28.2%	29.7%	26.6%	27.1%	28.1%	29.1%	29.5%	29.6%
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 recovery or combustion.

** 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.

† Other than food products.

** Not estimated separately prior to 1980. Paper wraps not reported separately after 1996.
Details may not add to totals due to rounding.
Neg. = Less than 5,000 tons or 0.05 percent.

Table 20

RECOVERY* OF PRODUCTS IN MUNICIPAL SOLID WASTE, 1960 TO 2012
(WITH DETAIL ON CONTAINERS AND PACKAGING)
(In thousands of tons)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 13)*	350	940	1,360	3,460	6,580	7,970	8,530	9,120	9,210	9,270
Nondurable Goods *(Detail in Table 16)*	2,390	3,730	4,670	8,800	17,560	19,770	19,310	19,190	18,830	17,270
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	90	140	730	1,890	1,530	2,000	2,260	2,350	2,270	2,270
Wine and Liquor Bottles	10	10	20	210	430	250	320	540	600	630
Other Bottles & Jars	Neg.	Neg.	Neg.	520	920	340	230	240	300	300
Total Glass Packaging	100	150	750	2,620	2,880	2,590	2,810	3,130	3,170	3,200
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	1,410	1,540	1,270	1,310
Other Steel Packaging	Neg.	Neg.	Neg.	60	160	160	190	350	300	300
Total Steel Packaging	30	80	200	690	1,690	1,500	1,600	1,890	1,570	1,610
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	10	320	990	830	650	670	680	720	710
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	10	NA	NA	NA
Foil and Closures	Neg.	Neg.	Neg.	20	30	40	40	NA	NA	NA
Total Aluminum Pkg	Neg.	10	320	1,010	860	690	720	680	720	710
Paper & Paperboard Pkg										
Corrugated Boxes	2,520	2,760	6,390	11,530	20,330	22,100	22,760	24,690	26,800	26,810
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Folding Cartons			520	340	410	1,190	1,880	-	-	-
Other Paperboard Packaging			Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Bags and Sacks			Neg.	200	300	320	440	-	-	-
Wrapping Papers			Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Other Paper Packaging	220	350	300	Neg.	Neg.	Neg.	Neg.	-	-	-
Subtotal Other Paper & Paperboard Pkg								2,160	1,860	2,110
Total Paper & Board Pkg	2,740	3,110	7,210	12,070	21,040	23,610	25,080	26,850	28,660	28,920
Plastics Packaging										
PET Bottles and Jars			10	140	380	590	730	780	800	860
HDPE Natural Bottles			Neg.	20	210	230	220	220	220	220
Other Containers	Neg.	Neg.	Neg.	20	170	140	280	300	290	310
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks, and Wraps			Neg.	60	180	230	390	450	430	440
Other Plastics Packaging	Neg.	Neg.	Neg.	20	90	90	110	100	60	70
Total Plastics Packaging	Neg.	Neg.	10	260	1,030	1,280	1,730	1,850	1,800	1,900
Wood Packaging	Neg.	Neg.	Neg.	130	1,370	1,830	2,120	2,280	2,350	2,410
Other Misc. Packaging	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Containers & Pkg	2,870	3,350	8,490	16,780	28,870	31,500	34,060	36,680	38,270	38,750
Total Product Wastes†	5,610	8,020	14,520	29,040	53,010	59,240	61,900	64,990	66,310	65,290
Other Wastes										
Food Waste	Neg.	Neg.	Neg.	Neg.	680	690	800	970	1,270	1,740
Yard Trimmings	Neg.	Neg.	Neg.	4,200	15,770	19,860	21,300	19,200	19,300	19,590
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	4,200	16,450	20,550	22,100	20,170	20,570	21,330
Total MSW Recovered - Weight	5,610	8,020	14,520	33,240	69,460	79,790	84,000	85,160	86,880	86,620

* Recovery 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.

† Other than food products.

‡ 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 21

RECOVERY* OF PRODUCTS IN MUNICIPAL SOLID WASTE, 1960 TO 2012
(WITH DETAIL ON CONTAINERS AND PACKAGING)
(In percent of generation of each product)

	Percent of Generation of Each Product									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods *(Detail in Table 13)*	3.5%	6.4%	6.2%	11.6%	16.9%	17.7%	18.1%	18.7%	18.6%	18.5%
Nondurable Goods *(Detail in Table 16)*	13.8%	14.9%	13.6%	16.9%	27.4%	31.1%	32.9%	36.1%	36.5%	33.6%
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	6.4%	2.5%	10.8%	33.5%	26.8%	30.6%	35.6%	41.4%	41.1%	41.0%
Wine and Liquor Bottles	Neg.	Neg.	Neg.	10.3%	22.5%	15.3%	19.9%	31.8%	33.9%	34.1%
Other Bottles & Jars	Neg.	Neg.	Neg.	12.5%	26.9%	14.8%	11.0%	12.1%	15.1%	15.0%
Total Glass Packaging	1.6%	1.3%	5.4%	22.1%	26.1%	24.8%	28.0%	33.4%	34.2%	34.1%
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%	62.9%	67.0%	70.6%	70.8%
Other Steel Packaging	Neg.	Neg.	Neg.	30.0%	66.7%	66.7%	79.2%	79.5%	78.9%	78.9%
Total Steel Packaging	Neg.	1.5%	5.5%	23.9%	58.9%	63.3%	64.5%	69.0%	72.0%	72.2%
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	10.0%	37.6%	63.9%	54.6%	44.8%	48.2%	49.6%	54.5%	54.6%
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	14.3%	NA	NA	NA
Foil and Closures	Neg.	Neg.	Neg.	6.1%	7.9%	10.0%	9.5%	NA	NA	NA
Total Aluminum Pkg	Neg.	1.8%	25.2%	53.2%	44.1%	35.8%	38.3%	35.8%	38.1%	38.0%
Paper & Paperboard Pkg										
Corrugated Boxes	34.4%	21.6%	37.4%	48.0%	67.3%	71.5%	76.6%	85.0%	91.0%	90.9%
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Folding Cartons			Neg.	Neg.	7.0%	21.5%	35.2%	-	-	-
Other Paperboard Packaging			Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Bags and Sacks			Neg.	Neg.	20.1%	28.6%	37.6%	-	-	-
Wrapping Papers			Neg.	Neg.	Neg.	Neg.	Neg.	-	-	-
Other Paper Packaging	7.5%	9.2%	35.3%	Neg.	Neg.	Neg.	Neg.	-	-	-
Subtotal Other Paper & Paperboard Pkg								25.0%	21.7%	24.7%
Total Paper & Board Pkg	19.4%	14.5%	27.4%	36.9%	52.7%	59.6%	65.5%	71.3%	75.4%	76.1%
Plastics Packaging										
PET Bottles and Jars			3.8%	32.6%	22.1%	23.2%	27.2%	29.2%	29.2%	30.8%
HDPE Natural Bottles			Neg.	3.8%	30.4%	28.8%	29.3%	27.5%	28.6%	28.2%
Other Containers	Neg.	Neg.	Neg.	1.4%	9.8%	9.9%	14.7%	16.4%	15.5%	16.8%
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks, and Wraps			Neg.	2.4%	4.3%	5.2%	9.8%	11.5%	11.1%	11.5%
Other Plastics Packaging	Neg.	Neg.	Neg.	1.0%	3.2%	2.8%	3.0%	2.2%	1.3%	1.5%
Total Plastics Packaging	Neg.	Neg.	Neg.	3.8%	9.2%	10.3%	13.3%	13.5%	12.9%	13.8%
Wood Packaging	Neg.	Neg.	Neg.	1.6%	15.9%	19.8%	21.8%	23.3%	24.2%	25.1%
Other Misc. Packaging	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Containers & Pkg	10.5%	7.7%	16.1%	26.0%	38.1%	41.3%	45.0%	48.6%	50.8%	51.5%
Total Product Wastes†	10.3%	9.6%	13.3%	19.8%	29.7%	32.0%	34.1%	36.6%	37.6%	37.0%
Other Wastes										
Food Waste	Neg.	Neg.	Neg.	Neg.	2.2%	2.1%	2.3%	2.7%	3.5%	4.8%
Yard Trimmings	Neg.	Neg.	Neg.	12.0%	51.7%	61.9%	64.7%	57.5%	57.3%	57.7%
Miscellaneous Inorganic Wastes	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Total Other Wastes	Neg.	Neg.	Neg.	6.8%	25.4%	29.9%	31.1%	27.6%	27.8%	28.7%
Total MSW Recovered - %	6.4%	6.6%	9.6%	16.0%	28.5%	31.4%	33.3%	34.0%	34.7%	34.5%

* Recovery 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.

† Other than food products.

‡ 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 22

PRODUCTS DISCARDED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON CONTAINERS AND PACKAGING)
(In thousands of tons)

	Thousands of Tons									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	9,570	13,720	20,440	26,350	32,290	37,090	38,530	39,650	40,350	40,760
(Detail in Table 14)										
Nondurable Goods	14,940	21,330	29,750	43,370	46,450	43,880	39,380	34,010	32,780	34,070
(Detail in Table 17)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1,310	5,440	6,010	3,750	4,180	4,540	4,090	3,320	3,250	3,260
Wine and Liquor Bottles	1,070	1,890	2,430	1,820	1,480	1,380	1,290	1,160	1,170	1,220
Other Bottles & Jars	3,710	4,440	4,780	3,640	2,500	1,950	1,860	1,750	1,690	1,700
Total Glass Packaging	6,090	11,770	13,220	9,210	8,160	7,870	7,240	6,230	6,110	6,180
Steel Packaging										
Beer and Soft Drink Cans	630	1,550	470	110	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.
Cans	3,740	3,480	2,700	1,950	1,100	790	830	760	530	540
Other Steel Packaging	260	270	240	140	80	80	50	90	80	80
Total Steel Packaging	4,630	5,300	3,410	2,200	1,180	870	880	850	610	620
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	90	530	560	690	800	720	690	600	590
Other Cans	Neg.	60	40	20	50	80	60	70	120	120
Foil and Closures	170	410	380	310	350	360	380	460	450	450
Total Aluminum Pkg	170	560	950	890	1,090	1,240	1,160	1,220	1,170	1,160
Paper & Paperboard Pkg										
Corrugated Boxes	4,810	10,000	10,690	12,480	9,880	8,830	6,950	4,360	2,640	2,670
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			790	510	550	500	490	-	-	-
Folding Cartons			3,300	3,960	5,410	4,340	3,460	-	-	-
Other Paperboard Packaging	3,840	4,830	230	290	200	160	120	-	-	-
Bags and Sacks			3,380	2,240	1,190	800	730	-	-	-
Wrapping Papers			200	110	Neg.	Neg.	Neg.	-	-	-
Other Paper Packaging	2,720	3,460	550	1,020	1,670	1,400	1,460	-	-	-
Subtotal Other Paper & Paperboard Pkg								6,470	6,720	6,420
Total Paper & Board Pkg	11,370	18,290	19,140	20,610	18,900	16,030	13,210	10,830	9,360	9,090
Plastics Packaging										
PET Bottles and Jars			250	290	1,340	1,950	1,950	1,890	1,940	1,930
HDPE Natural Bottles			230	510	480	570	530	580	550	560
Other Containers	60	910	890	1,410	1,570	1,280	1,620	1,530	1,580	1,540
Bags and Sacks										
Wraps										
Subtotal Bags, Sacks, and Wraps			1,230	2,410	4,020	4,220	3,570	3,480	3,450	3,370
Other Plastics Packaging	60	1,180	790	2,020	2,750	3,120	3,610	4,350	4,580	4,480
Total Plastics Packaging	120	2,090	3,390	6,640	10,160	11,140	11,280	11,830	12,100	11,880
Wood Packaging	2,000	2,070	3,940	8,050	7,240	7,400	7,610	7,490	7,350	7,200
Other Misc. Packaging	120	130	130	150	240	280	310	340	350	350
Total Containers & Pkg	24,500	40,210	44,180	47,750	46,970	44,830	41,690	38,790	37,050	36,480
Total Product Wastes†	49,010	75,260	94,370	117,470	125,710	125,800	119,600	112,450	110,180	111,310
Other Wastes										
Food Waste	12,200	12,800	13,000	23,860	30,020	32,240	33,500	34,770	35,040	34,690
Yard Trimmings	20,000	23,200	27,500	30,800	14,760	12,210	11,600	14,200	14,410	14,370
Miscellaneous Inorganic Wastes	1,300	1,780	2,250	2,900	3,500	3,690	3,780	3,840	3,870	3,900
Total Other Wastes	33,500	37,780	42,750	57,560	48,280	48,140	48,880	52,810	53,320	52,960
Total MSW Discarded - Weight	82,510	113,040	137,120	175,030	173,990	173,940	168,480	165,260	163,500	164,270

* Discards after materials and compost recovery. In this table, discards include 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.

† Other than food products.

‡ 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.

- Detailed data not available.

Table 23

PRODUCTS DISCARDED* IN THE MUNICIPAL WASTE STREAM, 1960 TO 2012
(WITH DETAIL ON CONTAINERS AND PACKAGING)
(In percent of total discards)

	Percent of Total Discards									
Products	**1960**	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Durable Goods	11.6%	12.1%	14.9%	15.1%	18.6%	21.3%	22.9%	24.0%	24.7%	24.8%
(Detail in Table 14)										
Nondurable Goods	18.1%	18.9%	21.7%	24.8%	26.7%	25.2%	23.4%	20.6%	20.0%	20.7%
(Detail in Table 17)										
Containers and Packaging										
Glass Packaging										
Beer and Soft Drink Bottles**	1.6%	4.8%	4.4%	2.1%	2.4%	2.6%	2.4%	2.0%	2.0%	2.0%
Wine and Liquor Bottles	1.3%	1.7%	1.8%	1.0%	0.9%	0.8%	0.8%	0.7%	0.7%	0.7%
Other Bottles & Jars	4.5%	3.9%	3.5%	2.1%	1.4%	1.1%	1.1%	1.1%	1.0%	1.0%
Total Glass Packaging	7.4%	10.4%	9.6%	5.3%	4.7%	4.5%	4.3%	3.8%	3.7%	3.8%
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%	0.5%	0.3%	0.3%
Other Steel Packaging	0.3%	0.2%	0.2%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%
Total Steel Packaging	5.6%	4.7%	2.5%	1.3%	0.7%	0.5%	0.5%	0.5%	0.4%	0.4%
Aluminum Packaging										
Beer and Soft Drink Cans	Neg.	0.1%	0.4%	0.3%	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%
Other Cans	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	Neg.	0.1%	0.1%
Foil and Closures	0.2%	0.4%	0.3%	0.2%	0.2%	0.2%	0.2%	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%	4.1%	2.6%	1.6%	1.6%
Other Paper & Paperboard Pkg										
Gable Top/Aseptic Cartons‡			0.6%	0.3%	0.3%	0.3%	0.3%	-	-	-
Folding Cartons			2.4%	2.3%	3.1%	2.5%	2.1%	-	-	-
Other Paperboard Packaging	4.7%	4.3%	0.2%	0.2%	0.1%	0.1%	0.1%	-	-	-
Bags and Sacks			2.5%	1.3%	0.7%	0.5%	0.4%	-	-	-
Wrapping Papers			0.1%	0.1%	Neg.	Neg.	Neg.	-	-	-
Other Paper Packaging	3.3%	3.1%	0.4%	0.6%	1.0%	0.8%	0.9%	-	-	-
Subtotal Other Paper & Paperboard Pkg								3.9%	4.1%	3.9%
Total Paper & Board Pkg	13.8%	16.2%	14.0%	11.8%	10.9%	9.2%	7.8%	6.6%	5.7%	5.5%
Plastics Packaging										
PET Bottles and Jars			0.2%	0.2%	0.8%	1.1%	1.2%	1.1%	1.2%	1.2%
HDPE Natural Bottles			0.2%	0.3%	0.3%	0.3%	0.3%	0.4%	0.3%	0.3%
Other Containers	0.1%	0.8%	0.6%	0.8%	0.9%	0.7%	1.0%	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%	1.6%	1.8%	2.1%	2.6%	2.8%	2.7%
Total Plastics Packaging	0.1%	1.8%	2.5%	3.8%	5.8%	6.4%	6.7%	7.2%	7.4%	7.2%
Wood Packaging	2.4%	1.8%	2.9%	4.6%	4.2%	4.3%	4.5%	4.5%	4.5%	4.4%
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%	24.7%	23.5%	22.7%	22.2%
Total Product Wastes†	59.4%	66.6%	68.8%	67.1%	72.3%	72.3%	71.0%	68.0%	67.4%	67.8%
Other Wastes										
Food Waste	14.8%	11.3%	9.5%	13.6%	17.3%	18.5%	19.9%	21.0%	21.4%	21.1%
Yard Trimmings	24.2%	20.5%	20.1%	17.6%	8.5%	7.0%	6.9%	8.6%	8.8%	8.7%
Miscellaneous Inorganic Wastes	1.6%	1.6%	1.6%	1.7%	2.0%	2.1%	2.2%	2.3%	2.4%	2.4%
Total Other Wastes	40.6%	33.4%	31.2%	32.9%	27.7%	27.7%	29.0%	32.0%	32.6%	32.2%
Total MSW Discarded - %	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Discards after materials and compost recovery. In this table, discards include 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.
† Other than food products.
‡ 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. Details may not add to totals due to rounding.
- Detailed data not available.

Table 24

SELECTED EXAMPLES OF SOURCE REDUCTION PRACTICES

Source Reduction Practice	MSW Product Categories			
	Durable Goods	**Nondurable Goods**	**Containers & Packaging**	**Organics**
Redesign				
Materials reduction	• Downgauge metals in appliances	• Paperless purchase orders • Concentrates	• Container lightweighting	• Xeriscaping
Materials substitution	• Use of composites in appliances and electronic circuitry		• Cereal in bags • Coffee brick	
Lengthen life	• High mileage tires • Electronic components reduce moving parts	• Regular servicing • Look at warranties • Extend warranties	• Design for secondary use • Reusable packaging	• Avoid spoilage by changing packaging • Avoid spoilage by changing storage and transportation • Avoid spoilage by changing supply chain management
Consumer Practices				
	• Purchase long lived products	• Repair • Duplexing • Sharing • Reduce unwanted mail • Purchasing concentrated products	• Purchasing products in bulk • Reusable bags	• Food donation • Avoid spoilage by monitoring and tracking food purchases and use
Reuse				
By design	• Modular design	• Envelopes	• Reusable pallets • Returnable secondary packaging	
Secondary	• Borrow or rent for temporary use • Give to charity • Buy or sell at garage sales	• Clothing • Waste paper scratch pads	• Loosefill • Grocery sacks • Dairy containers • Glass and plastic jars	
Reduce/Eliminate Toxins				
	• Eliminate PCBs	• Soy ink, waterbased • Waterbased solvents • Reduce mercury	• Replace lead foil on wine bottles	
Reduce Organics				
Food scraps				• Backyard composting • Vermi-composting
Yard trimmings				• Backyard composting • Grasscycling

Table 25. Residential food waste collection and composting programs in the U.S., 2012

State	Households Served
California	1,269,724
Colorado	19,014
Iowa	39,400
Massachusetts	3,600
Michigan	43,500
Minnesota	38,665
Ohio	73,813
Oregon	213,728
Pennsylvania	3,400
Vermont	2,700
Washington	770,458
Total U.S. Households Served	2,478,002
Total U.S. Households	114,991,725
Households served percent of total households	2%

BioCycle March 2013. Residential Food Waste Collection In The U.S. — BioCycle Nationwide Survey. Supplemental tables. Additional web search to supplement *BioCycle* survey.
In addition, New York City initiated a pilot program in 2012. In 2013, over 30,000 households were served.

Table 26

MATERIAL RECOVERY FACILITIES (MRF), 2012

Region	Number	Estimated Throughput (tpd)
NORTHEAST	153	27,186
SOUTH	195	24,754
MIDWEST	153	23,118
WEST	132	23,391
U.S. Total	**633**	**98,449**

Source: Governmental Advisory Associates, Inc. Data provided July 2011.

Table 27

MUNICIPAL WASTE-TO-ENERGY PROJECTS, 2012

Region	Number Operational	Design Capacity (tpd)
NORTHEAST	40	46,704
SOUTH	22	31,896
MIDWEST	16	11,393
WEST	8	6,171
U.S. Total*	86	96,164

* Projects on hold or inactive were not included.
WTE includes mass burn, modular, and refuse-derived fuel combustion facilities.

Source: "The 2010 ERC Directory of Waste-to-Energy Plants." Energy Recovery Council (ERC). December 2010.

Table 28

LANDFILL FACILITIES, 2012

Region	Number of Landfills
NORTHEAST	128
SOUTH	668
MIDWEST	394
WEST	718
U.S. Total	1,908

Source: *BioCycle* October 2010. Latest report available.

Table 29

Jobs Created through Reuse, Recycling, and Disposal
(jobs per 10,000 tons per year managed)

Type of Operation	Jobs per 10,000 TPY
Product Reuse	
Computer Reuse	296
Textile Reclamation	85
Misc. Durables Reuse	62
Wooden Pallet Repair	28
Recycling-based Manufacturers	**25**
Paper Mills	18
Glass Product Manufacturers	26
Plastic Product Manufacturers	93
Conventional Materials Recovery Facilities	**10**
Composting	**4**
Landfill and Incineration	**1**

Source: Institute for Local Self-Reliance. Washington, DC. 1997.

Table 30

GENERATION, MATERIALS RECOVERY, COMPOSTING, COMBUSTION, AND DISCARDS OF MUNICIPAL SOLID WASTE, 1960 TO 2012
(In thousands of tons and percent of total generation)

	Thousands of Tons									
	1960	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Generation	88,120	121,060	151,640	208,270	243,450	253,730	252,480	250,420	250,380	250,890
Recovery for recycling	5,610	8,020	14,520	29,040	53,010	59,240	61,900	64,990	66,310	65,290
Recovery for composting*	Neg.	Neg.	Neg.	4,200	16,450	20,550	22,100	20,170	20,570	21,330
Total Materials Recovery	5,610	8,020	14,520	33,240	69,460	79,790	84,000	85,160	86,880	86,620
Discards after recovery	82,510	113,040	137,120	175,030	173,990	173,940	168,480	165,260	163,500	164,270
Combustion with energy recovery**	0	400	2,700	29,700	33,730	31,620	31,550	29,260	29,260	29,260
Discards to landfill, other disposal†	82,510	112,640	134,420	145,330	140,260	142,320	136,930	136,000	134,240	135,010

	Pounds per Person per Day									
	1960	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Generation	2.68	3.25	3.66	4.57	4.74	4.69	4.55	4.44	4.40	4.38
Recovery for recycling	0.17	0.22	0.35	0.64	1.03	1.10	1.12	1.15	1.17	1.14
Recovery for composting*	Neg.	Neg.	Neg.	0.09	0.32	0.38	0.40	0.36	0.36	0.37
Total Materials Recovery	0.17	0.22	0.35	0.73	1.35	1.48	1.52	1.51	1.53	1.51
Discards after recovery	2.51	3.03	3.31	3.84	3.39	3.21	3.03	2.93	2.87	2.87
Combustion with energy recovery**	0.00	0.01	0.07	0.65	0.66	0.58	0.57	0.52	0.51	0.51
Discards to landfill, other disposal†	2.51	3.02	3.24	3.19	2.73	2.63	2.46	2.41	2.36	2.36
Population (thousands)	179,979	203,984	227,255	249,907	281,422	296,410	304,060	309,051	311,592	313,914

	Percent of Total Generation									
	1960	**1970**	**1980**	**1990**	**2000**	**2005**	**2008**	**2010**	**2011**	**2012**
Generation	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Recovery for recycling	6.4%	6.6%	9.6%	14.0%	21.8%	23.3%	24.5%	25.9%	26.5%	26.0%
Recovery for composting*	Neg.	Neg.	Neg.	2.0%	6.7%	8.1%	8.8%	8.1%	8.2%	8.5%
Total Materials Recovery	6.4%	6.6%	9.6%	16.0%	28.5%	31.4%	33.3%	34.0%	34.7%	34.5%
Discards after recovery	93.6%	93.4%	90.4%	84.0%	71.5%	68.6%	66.7%	66.0%	65.3%	65.5%
Combustion with energy recovery**	0.0%	0.3%	1.8%	14.2%	13.9%	12.5%	12.5%	11.7%	11.7%	11.7%
Discards to landfill, other disposal†	93.6%	93.1%	88.6%	69.8%	57.6%	56.1%	54.2%	54.3%	53.6%	53.8%

* Composting of yard trimmings, food waste and other MSW organic material. Does not include backyard composting.
** Includes combustion 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). 2012 includes 26,850 MSW, 510 wood, and 1,900 tires (1,000 tons)
† Discards after recovery minus combustion with energy recovery. Discards include combustion without energy recovery.
Details may not add to totals due to rounding.

Figure 1 - A. Municipal solid waste in the universe Subtitle D wastes.

Subtitle D Wastes

The Subtitle D Waste included in this report is Municipal Solid Waste which includes:

Containers and packaging such as sft 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 waste and yard trimmings.

Subtitle D Wastes not included in this report are:

Municipal sludges	Agricultural wastes
Industrial nonhazardous process wastes	Oil and gas wastes
Construction and demolition debris	Mining wastes
Land clearing debris	Auto bodies
Transportation parts and equipment	Fats, grease, and oils

Figure 1- B. Definition of terms

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

The term ***generation*** as used in this report refers to the weight of materials and products as they enter the waste management system from residential, commercial, institutional, and industrial sources and before materials recovery or combustion takes place. Preconsumer (industrial) scrap is not included in the generation estimates. Source reduction activities (e.g., backyard composting of yard trimmings) take place *ahead of* generation.

Source reduction activities reduce the amount or toxicity 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, reusable plastic food storage containers, or refurbished wood pallets is considered to be source reduction, not recycling.

Recovery of materials as estimated in this report includes products and yard trimmings removed from the waste stream for the purpose of recycling (including composting). For recovered products, recovery equals reported purchases of postconsumer recovered material (e.g., glass cullet, old newspapers) plus net exports (if any) of the material. Thus, recovery of old corrugated containers (OCC) is the sum of OCC purchases by paper mills plus net exports of OCC. If recovery as reported by a data source includes converting or fabrication (preconsumer) scrap, the preconsumer scrap is *not* counted towards the recovery estimates in this report. Imported secondary materials are also not counted in recovery estimates in this report. For some materials, additional uses, such as glass used for highway construction or newspapers used to make insulation, are added into the recovery totals.

Combustion of MSW with energy recovery, often called “waste-to-energy,” is estimated in Chapter 3 of this report. Combustion of separated materials–wood and rubber from tires–is included in the estimates of combustion with energy recovery in this report.

Discards include MSW remaining after recovery for recycling (including composting). These discards presumably would be combusted without energy recovery or landfilled, although some MSW is littered, stored or disposed onsite, or burned onsite, particularly in rural areas. No good estimates for these other disposal practices are available, but the total amounts of MSW involved are presumed to be small.

For the analysis of municipal solid waste, 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 3 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 3 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.

Figure 2. Paper and paperboard products generated in MSW, 2012

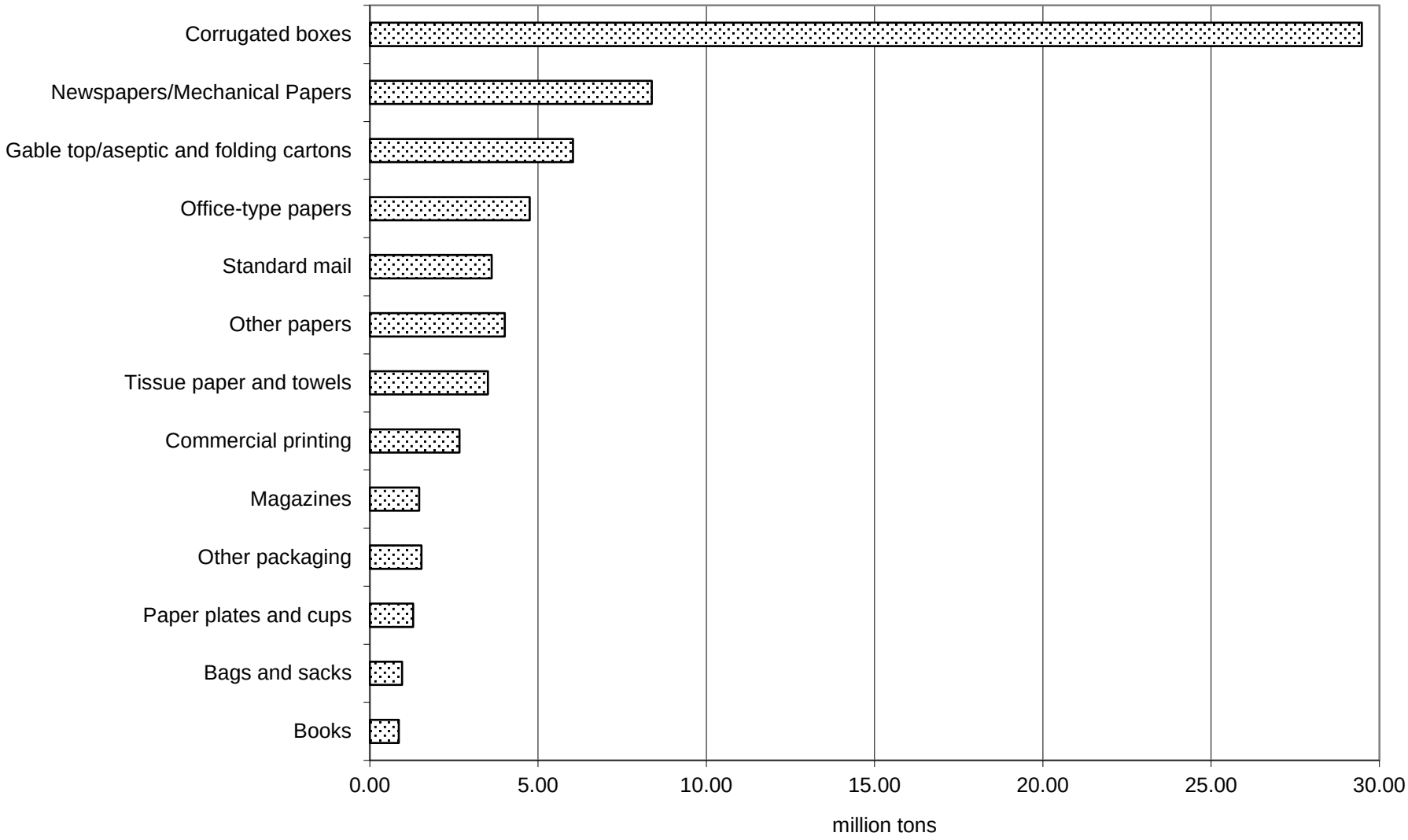


Figure 3. Paper and paperboard generation and recovery, 1960 to 2012

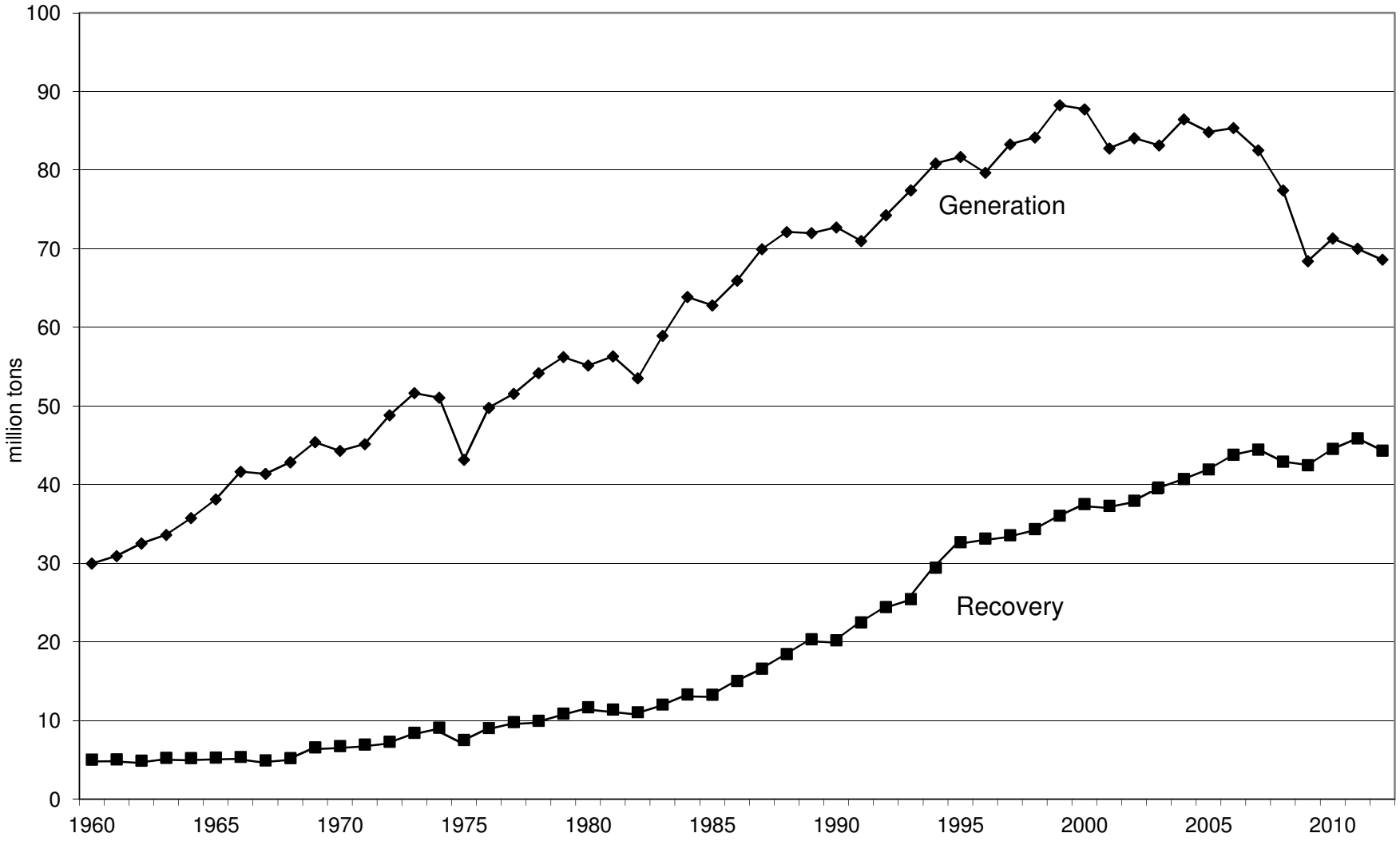


Figure 4. Glass products generated in MSW, 2012

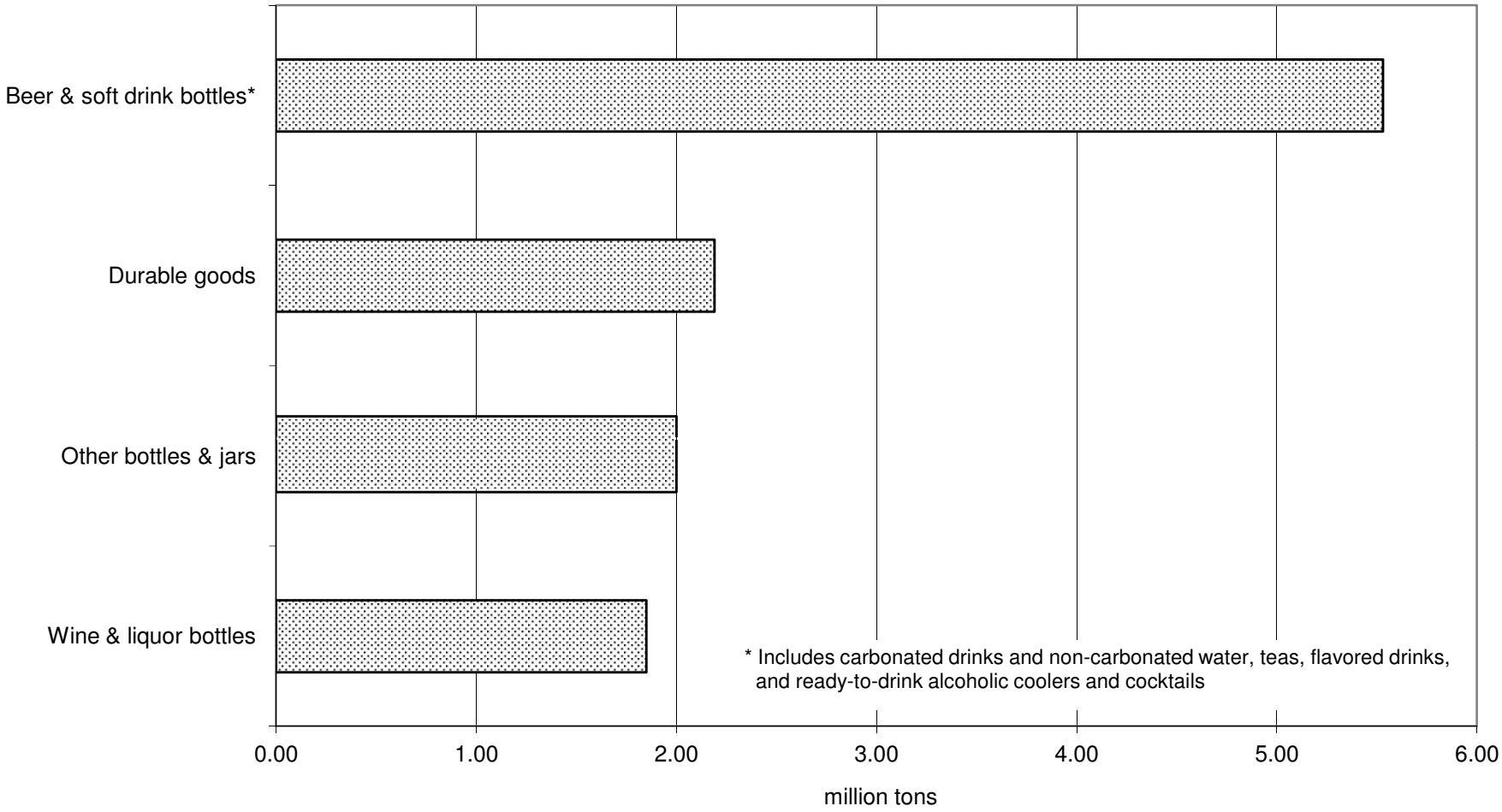


Figure 5. Glass generation and recovery, 1960 to 2012

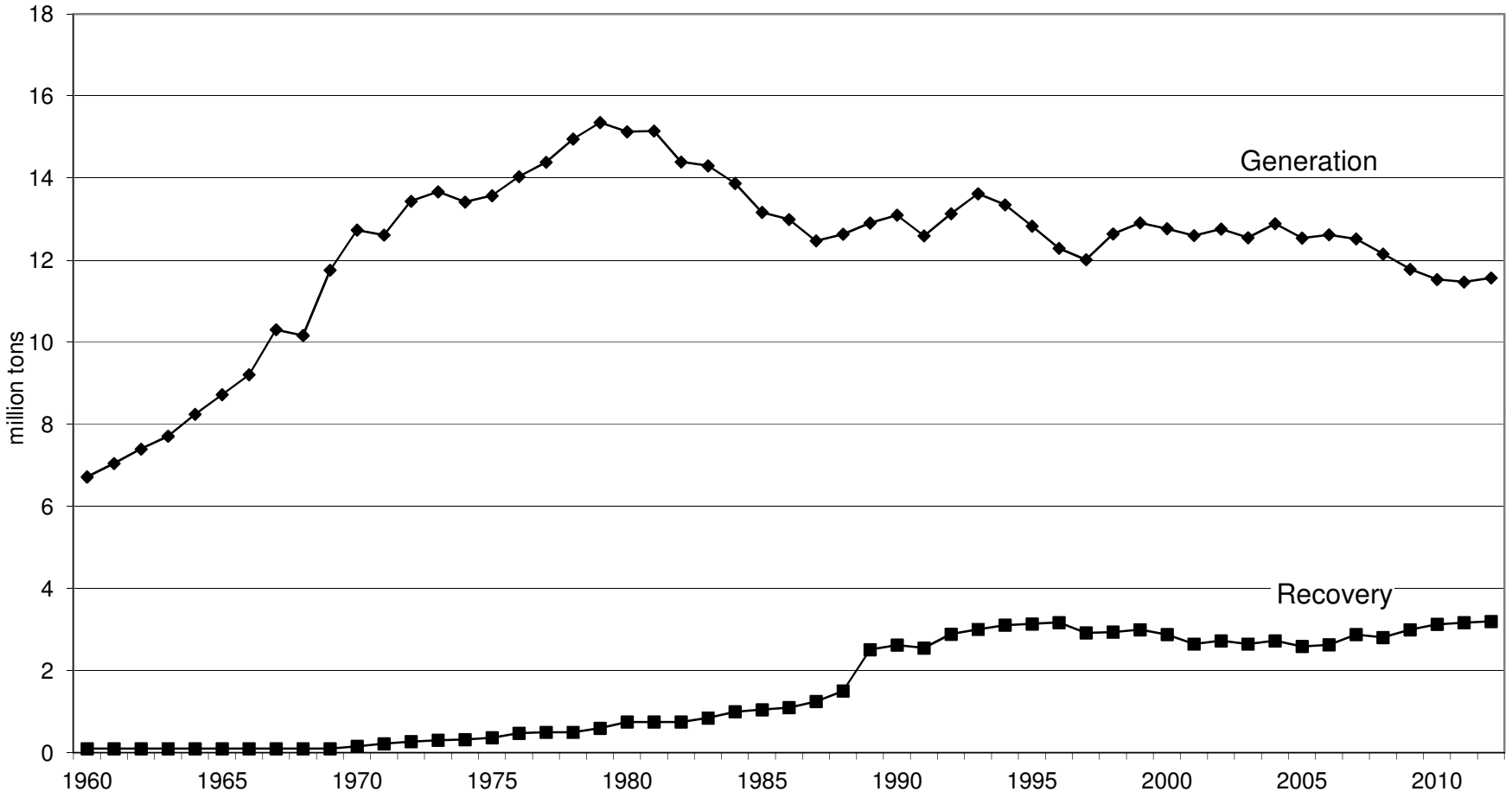


Figure 6. Metal products generated in MSW, 2012

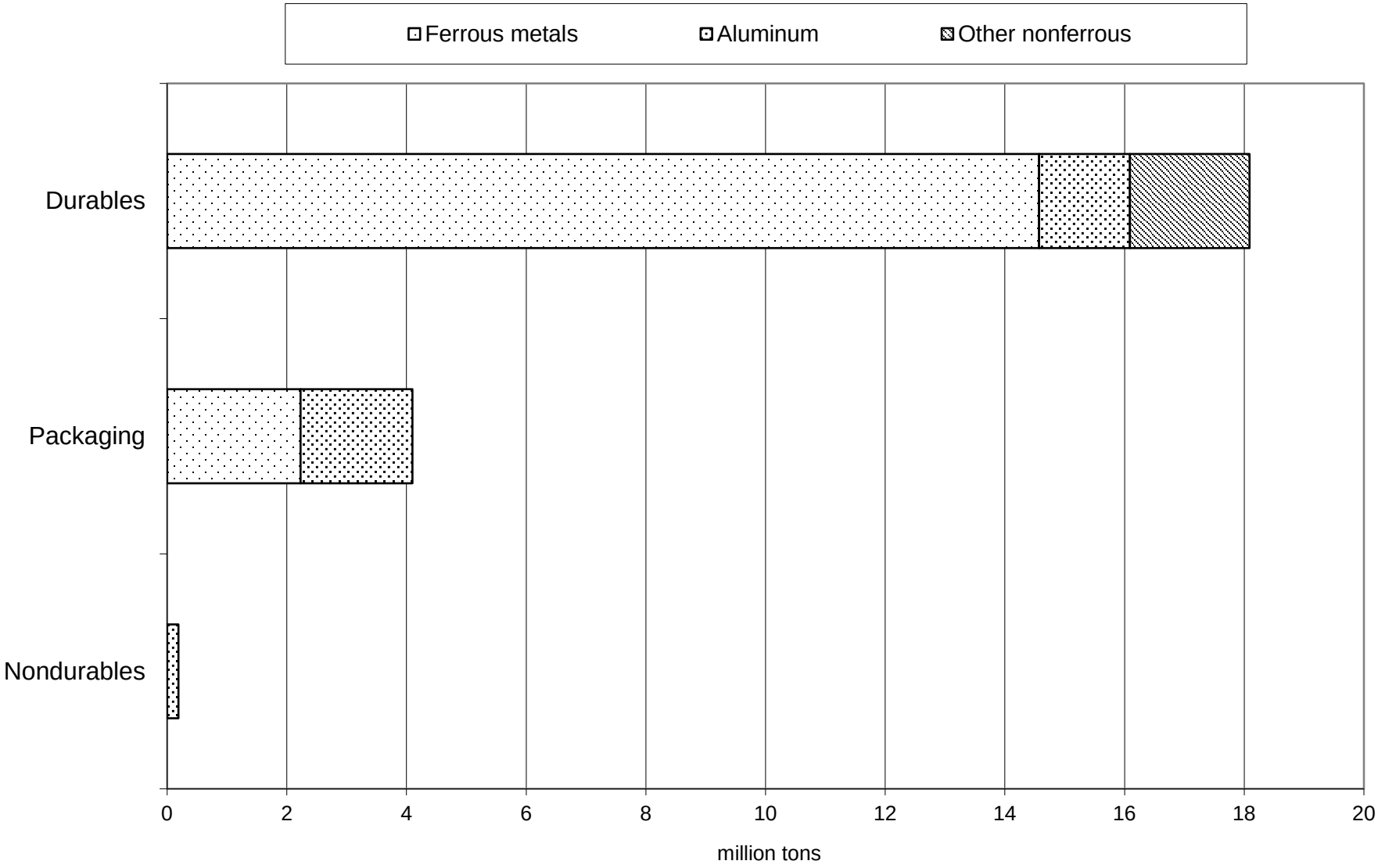


Figure 7. Metals generation and recovery, 1960 to 2012

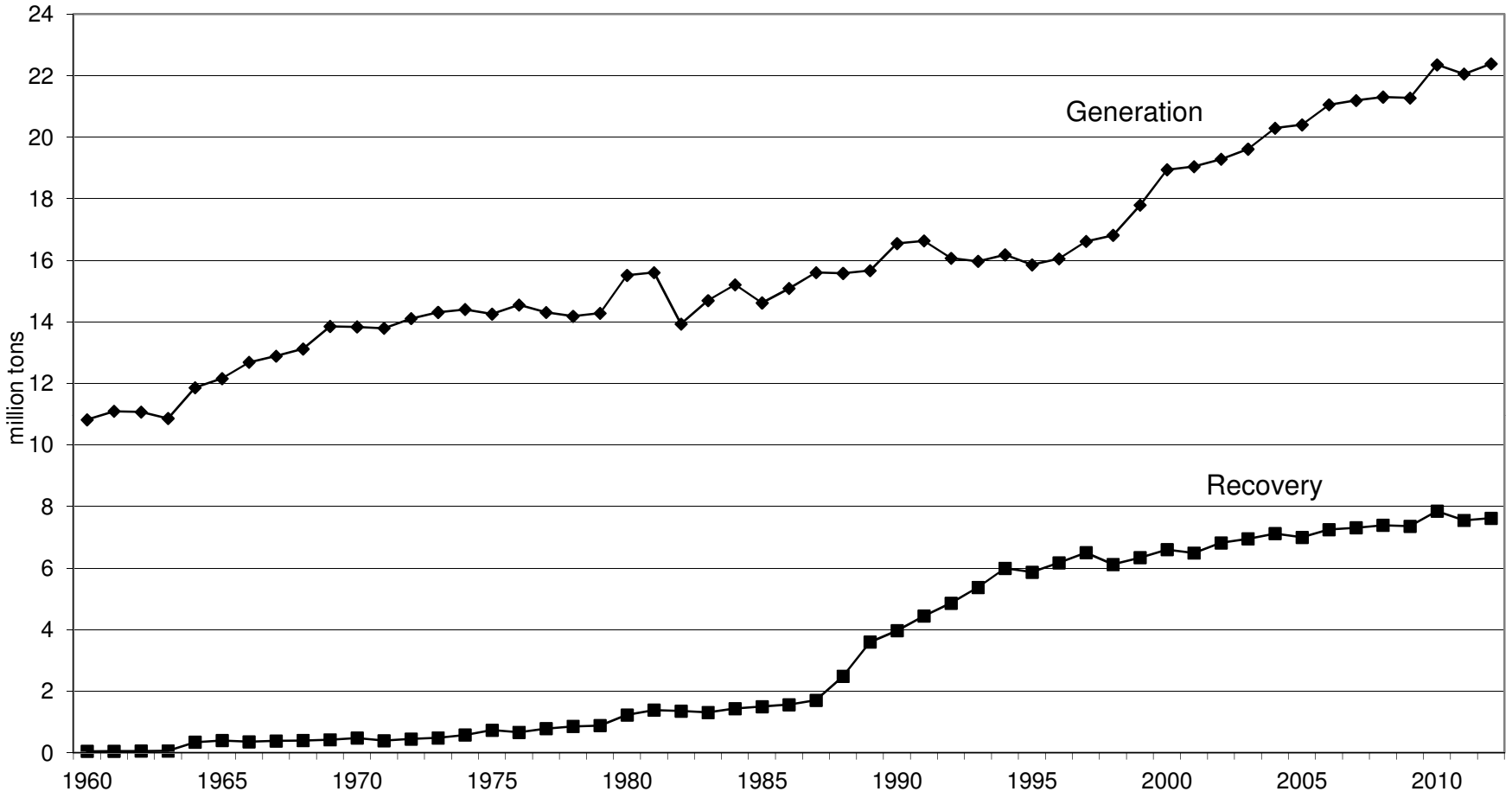


Figure 8. Plastics products generated in MSW, 2012

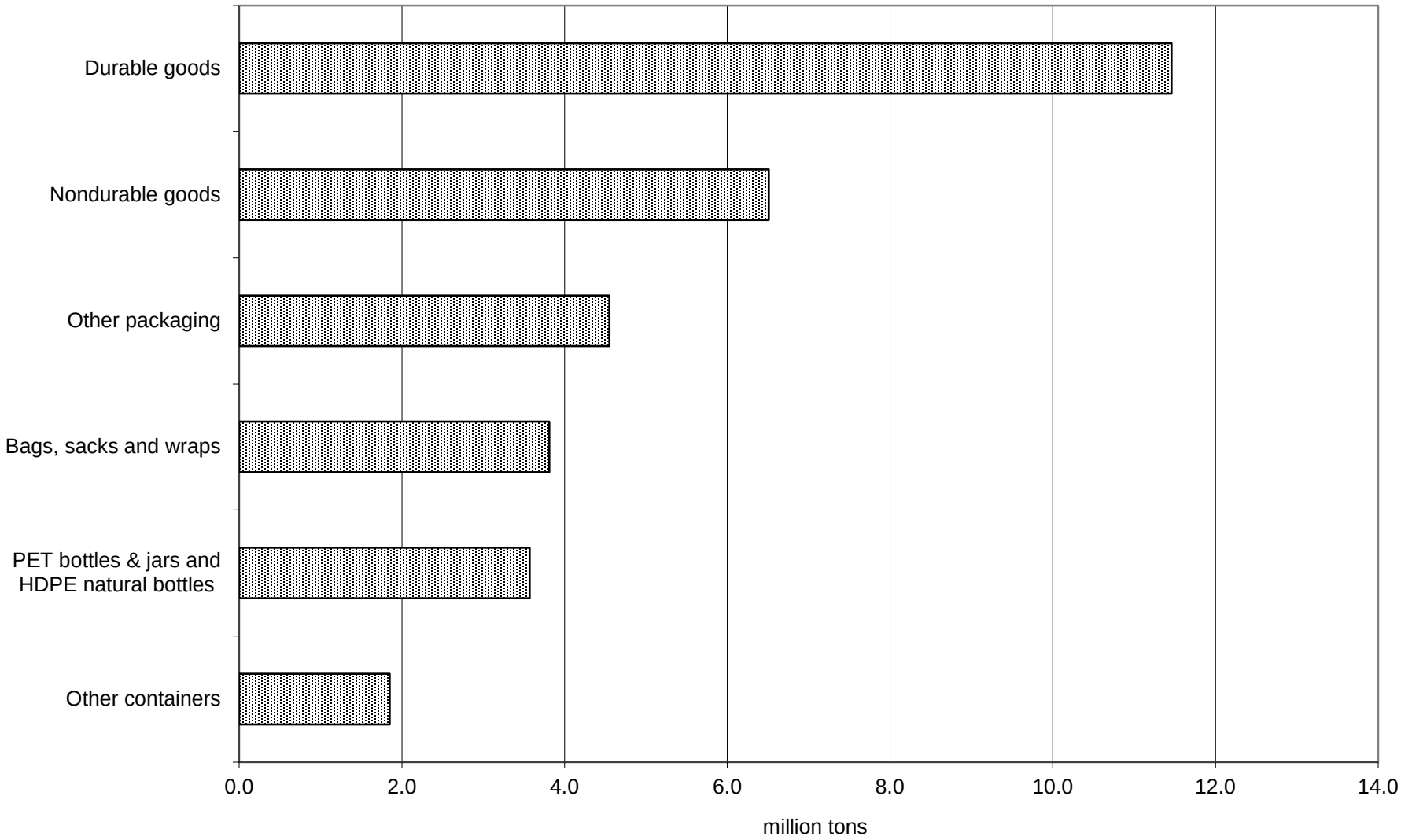


Figure 9. Plastics generation and recovery, 1960 to 2012

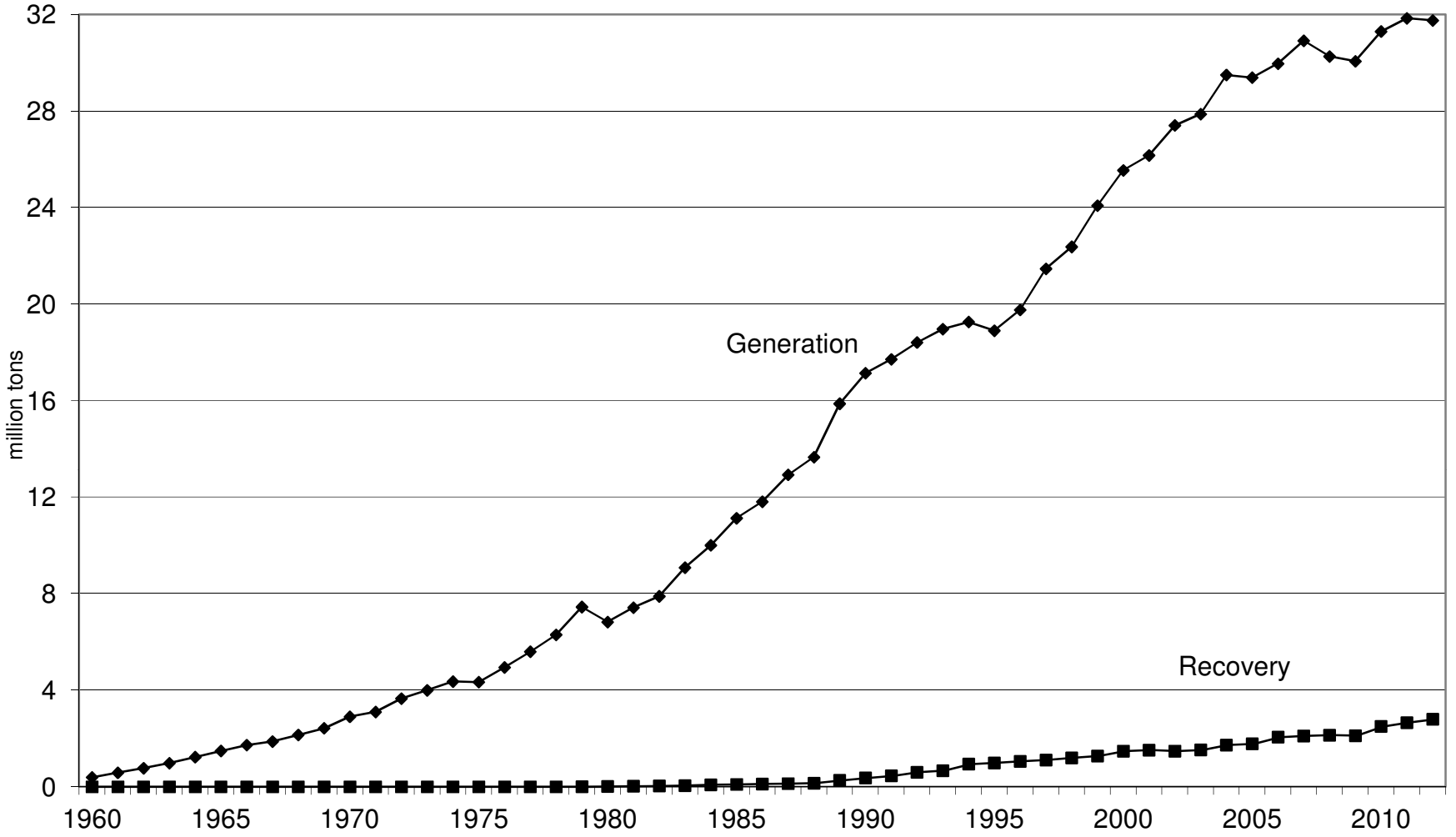


Figure 10. Generation of materials in MSW, 1960 to 2012

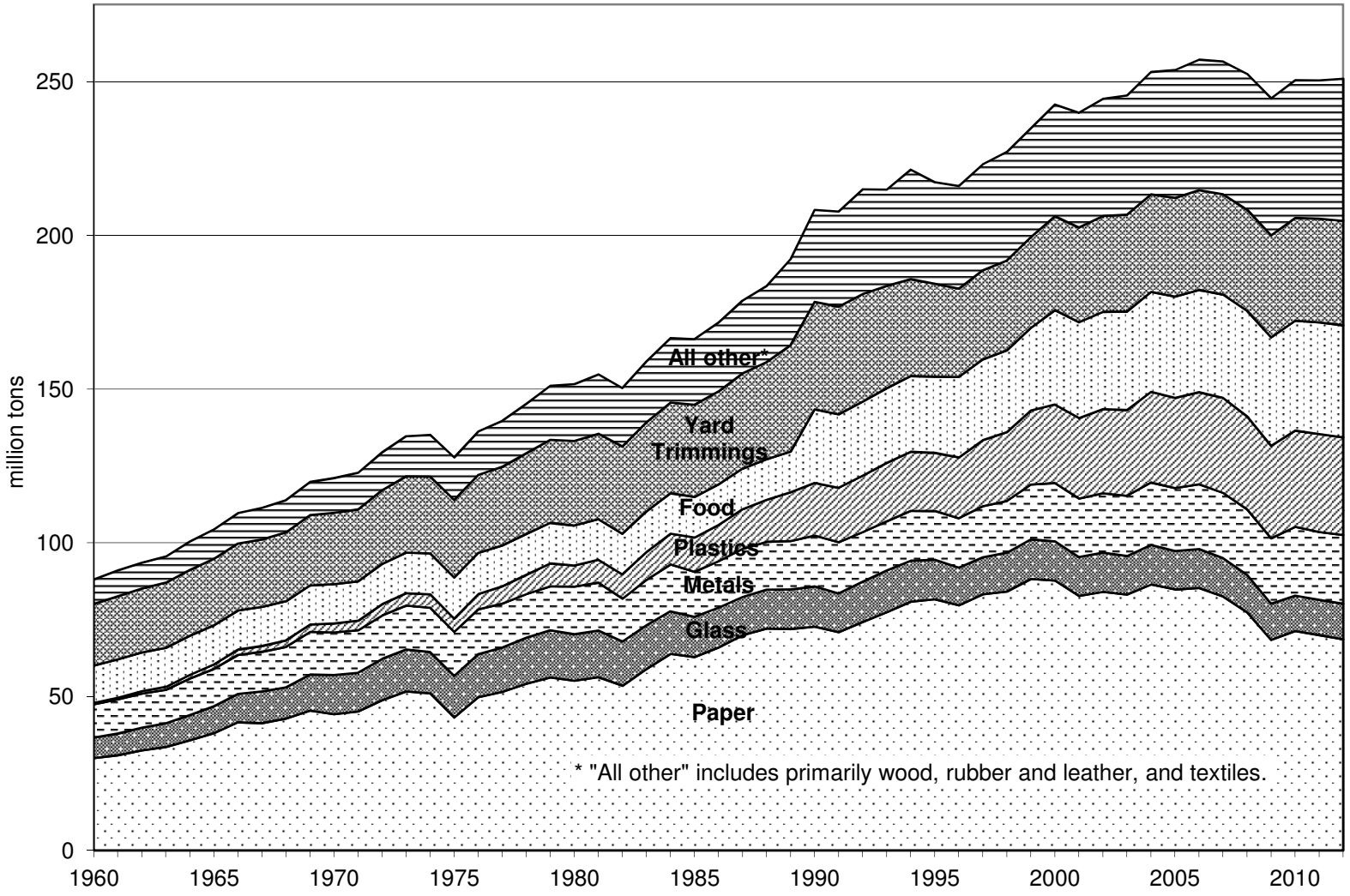


Figure 11. Recovery and discards of materials in MSW, 1960 to 2012

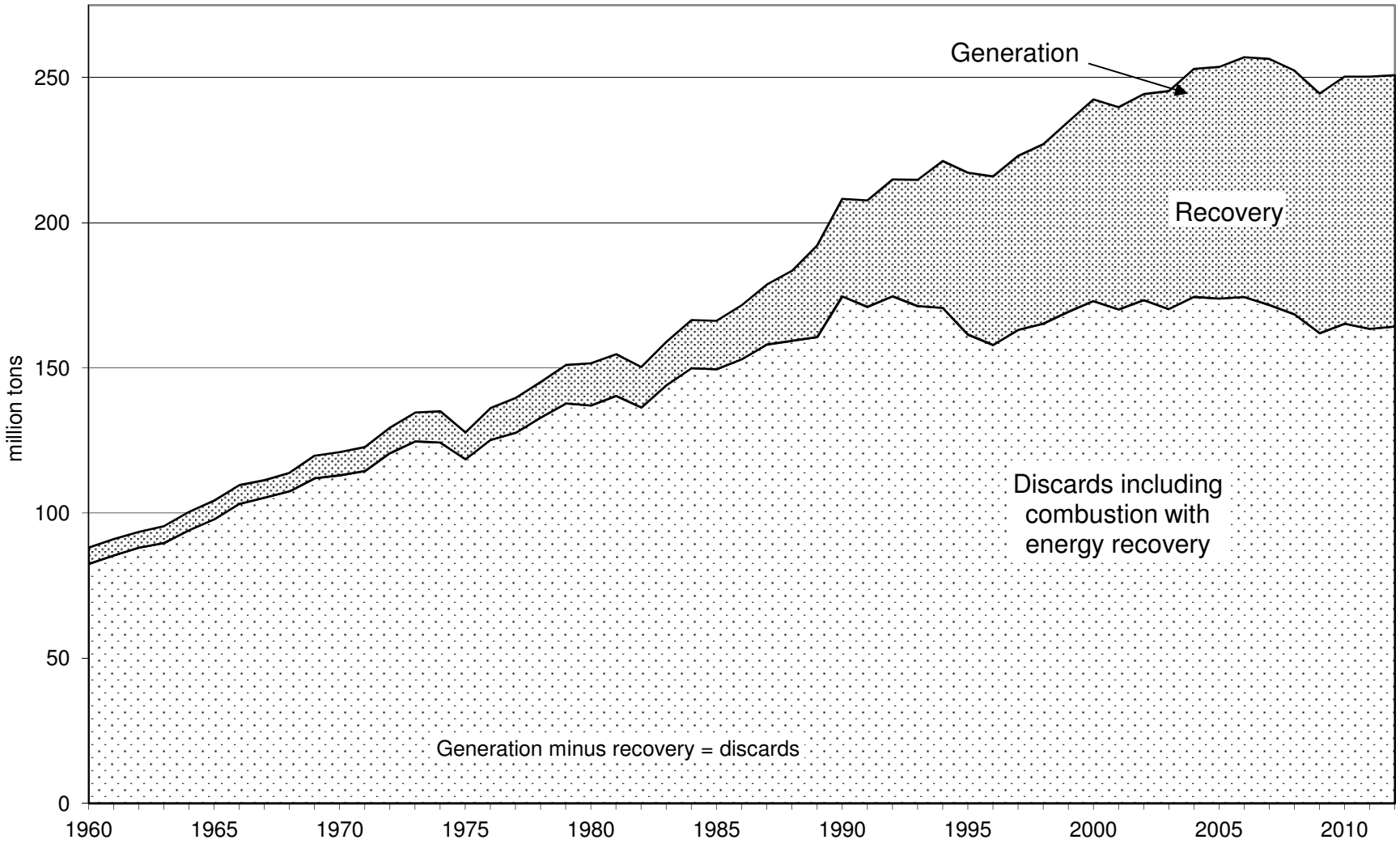
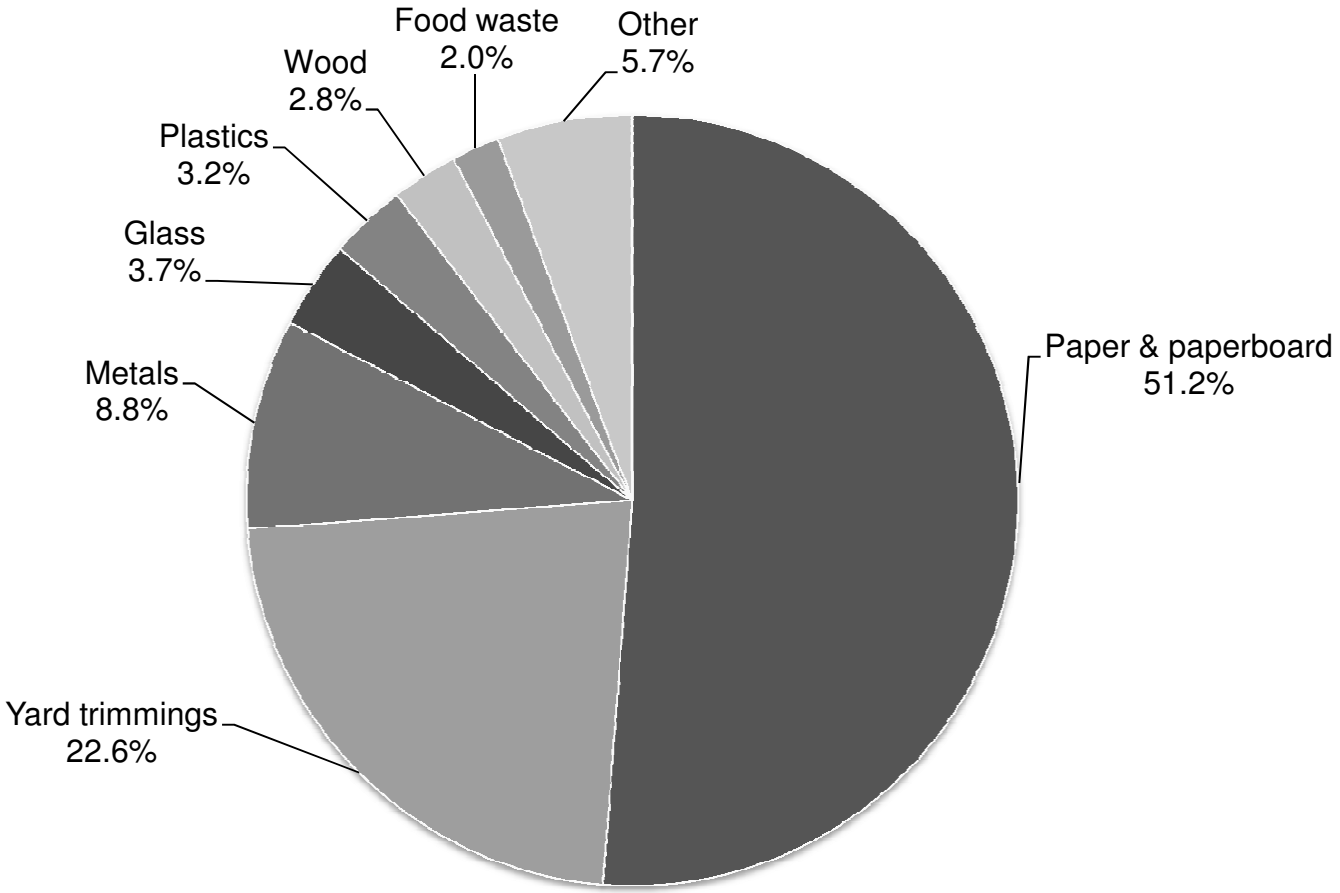
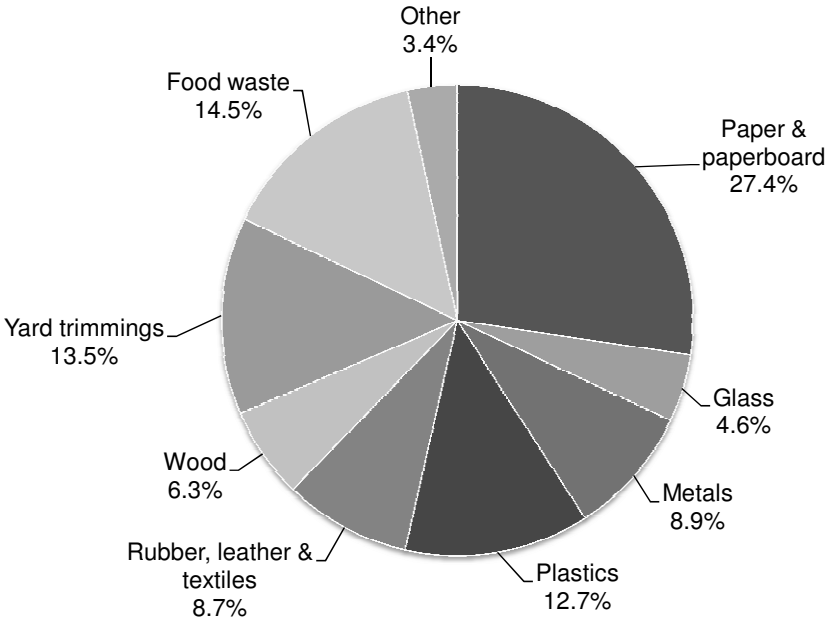


Figure 12. Materials recovery in MSW,* 2012
86.62 Million tons

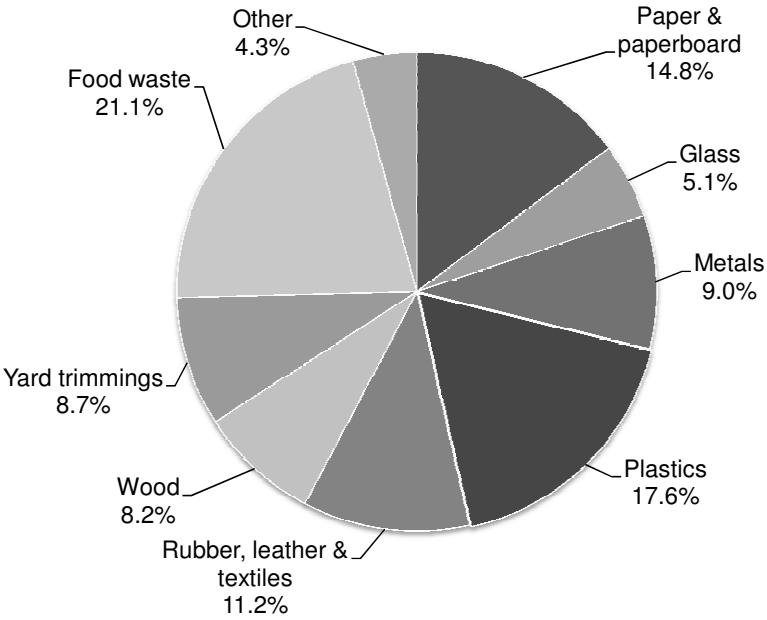


* In percent by weight of total recovery

Figure 13. Materials generated and discarded* in municipal solid waste, 2012 (In percent of total generation and discards)



Generation (250.89 Million tons)



Discards (164.27 Million tons)

*Discards in this figure include combustion with energy recovery.

Figure 14. Generation of products in MSW, 1960 to 2012

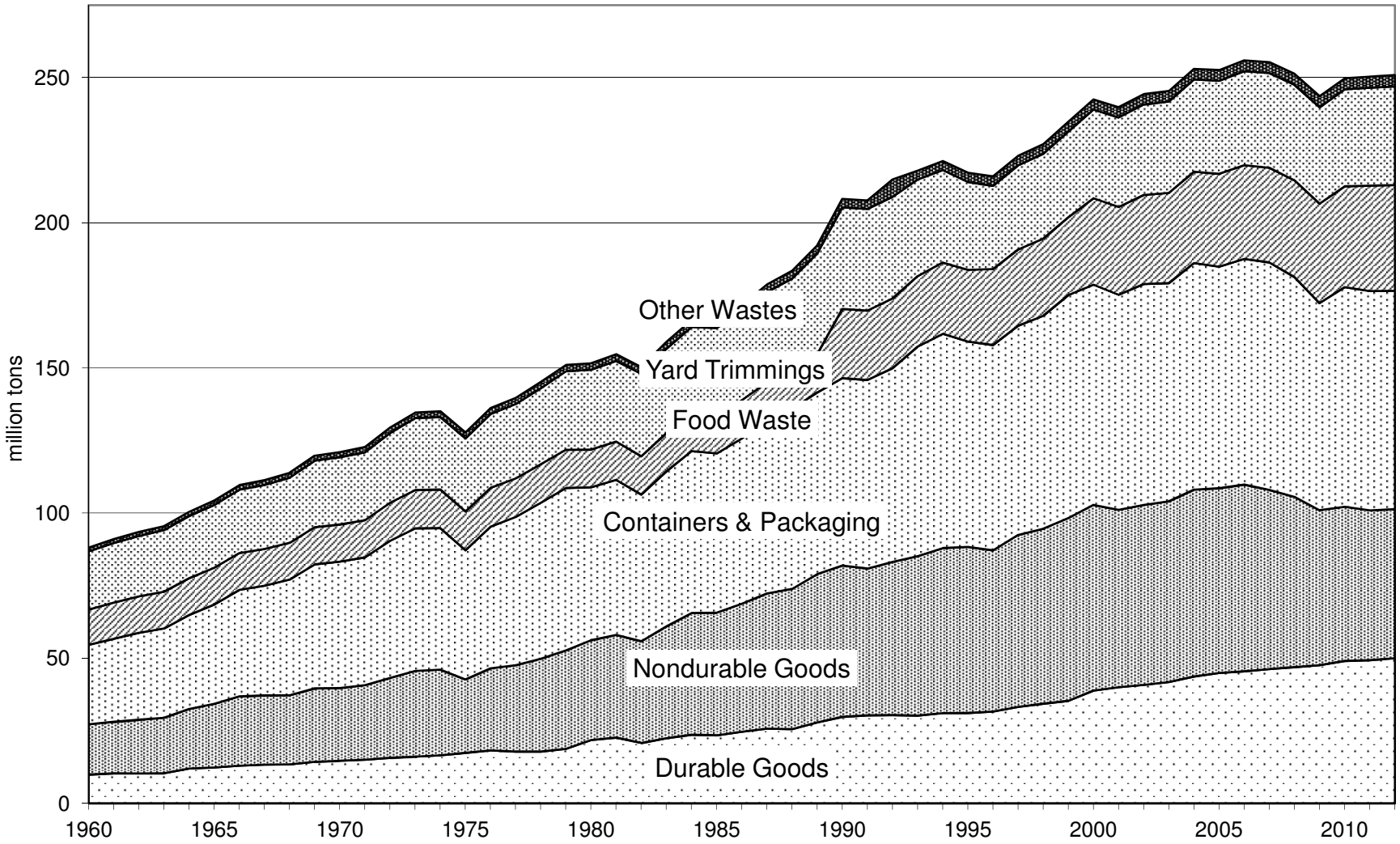
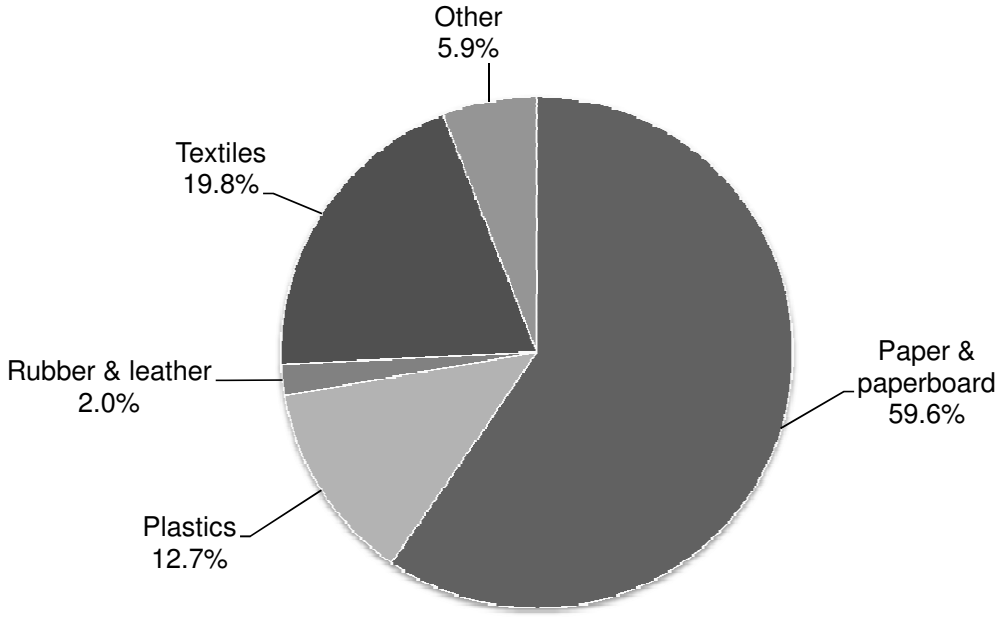
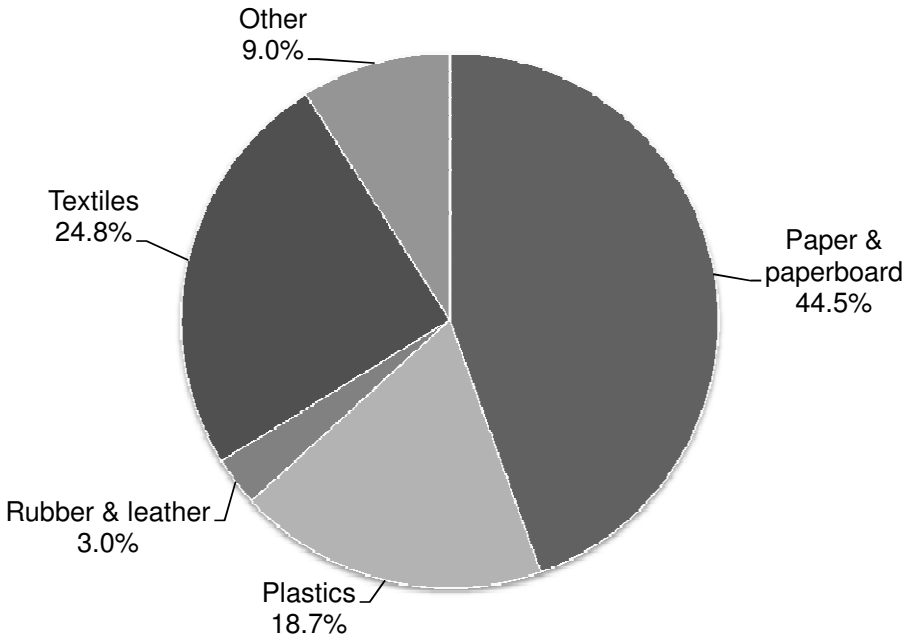


Figure 15. Nondurable goods generated and discarded* in municipal solid waste, 2012 (In percent of total generation and discards)



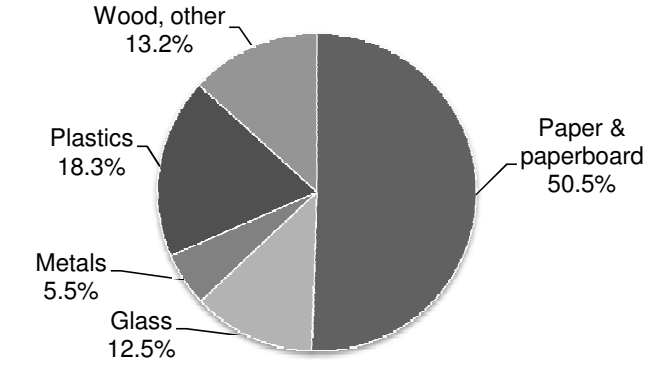
Generation (51.34 Million tons)



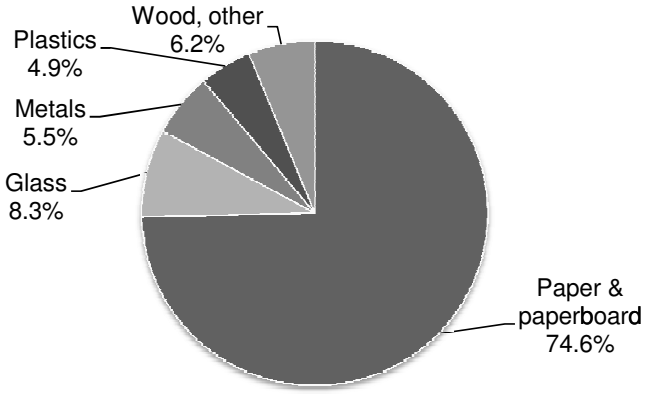
Discards (34.07 Million tons)

*Discards in this figure include combustion with energy recovery.

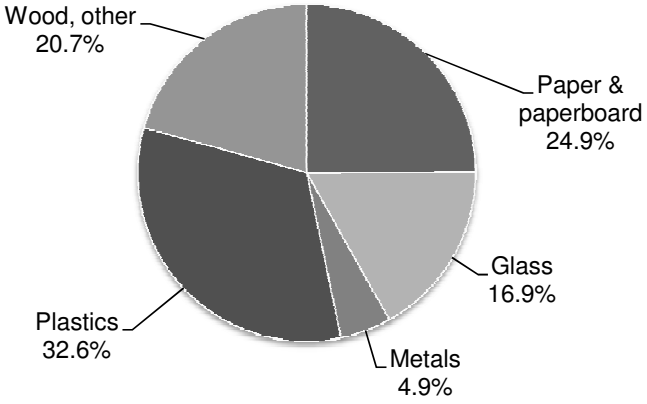
Figure 16. Containers and packaging materials generated, recovered, and discarded* in municipal solid waste, 2012
(In percent of total generation, recovery, and discards)



Generation (75.23 Million tons)



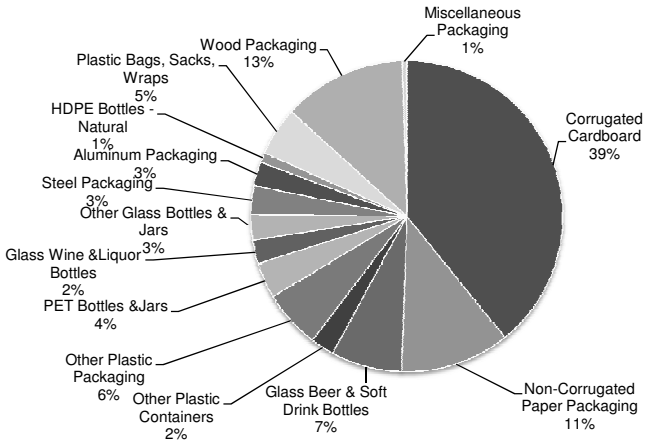
Recovery (38.75 Million tons)



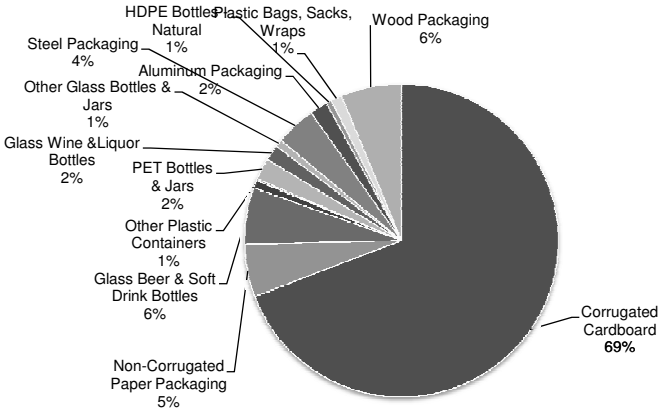
Discards (36.48 Million tons)

*Discards in this figure include combustion with energy recovery.

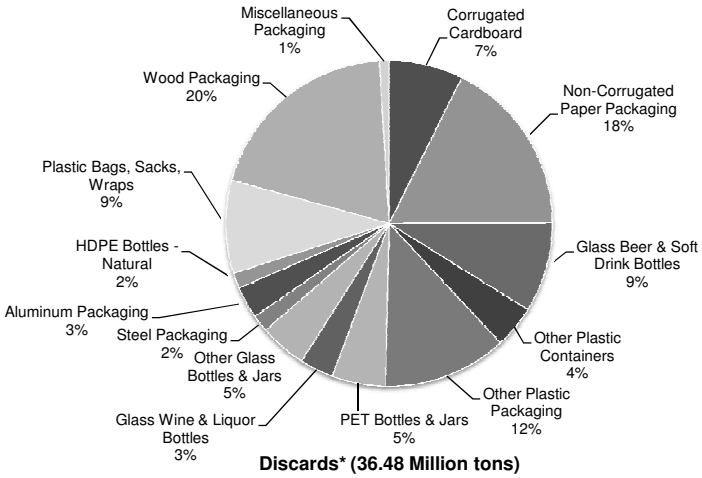
Figure 17. Containers and packaging generated, recovered, and discarded* in municipal solid waste, 2012
(In percent of total generation, recovery, and discards)



Generation (75.23 Million tons)



Recovery (38.75 Million tons)



Discards* (36.48 Million tons)

*Discards in this figure include combustion with energy recovery

Figure 18. Diagram of solid waste management

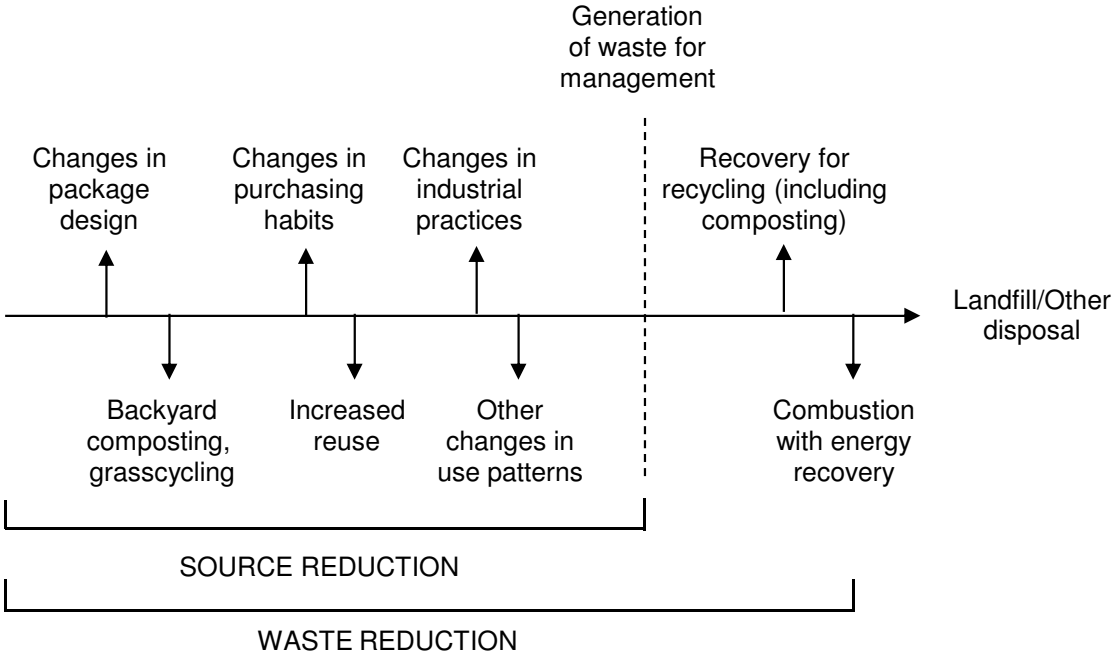
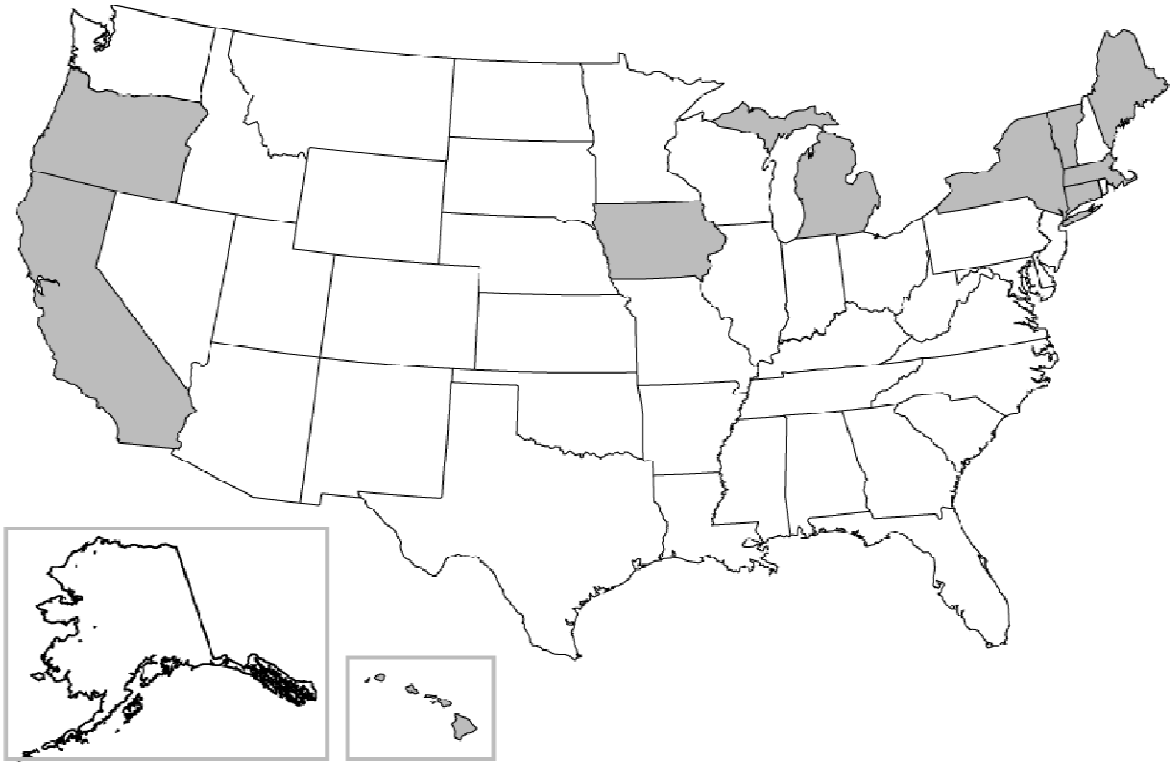
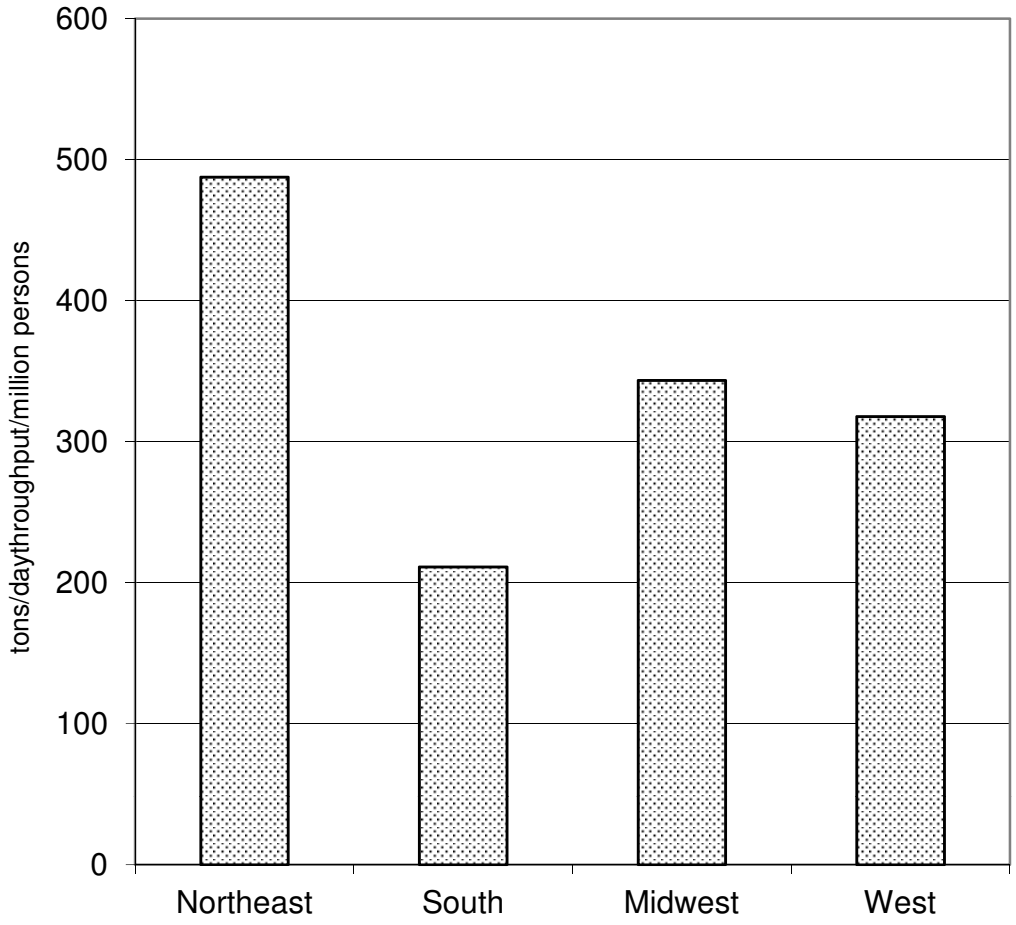


Figure 19. States With Bottle Deposit Rules



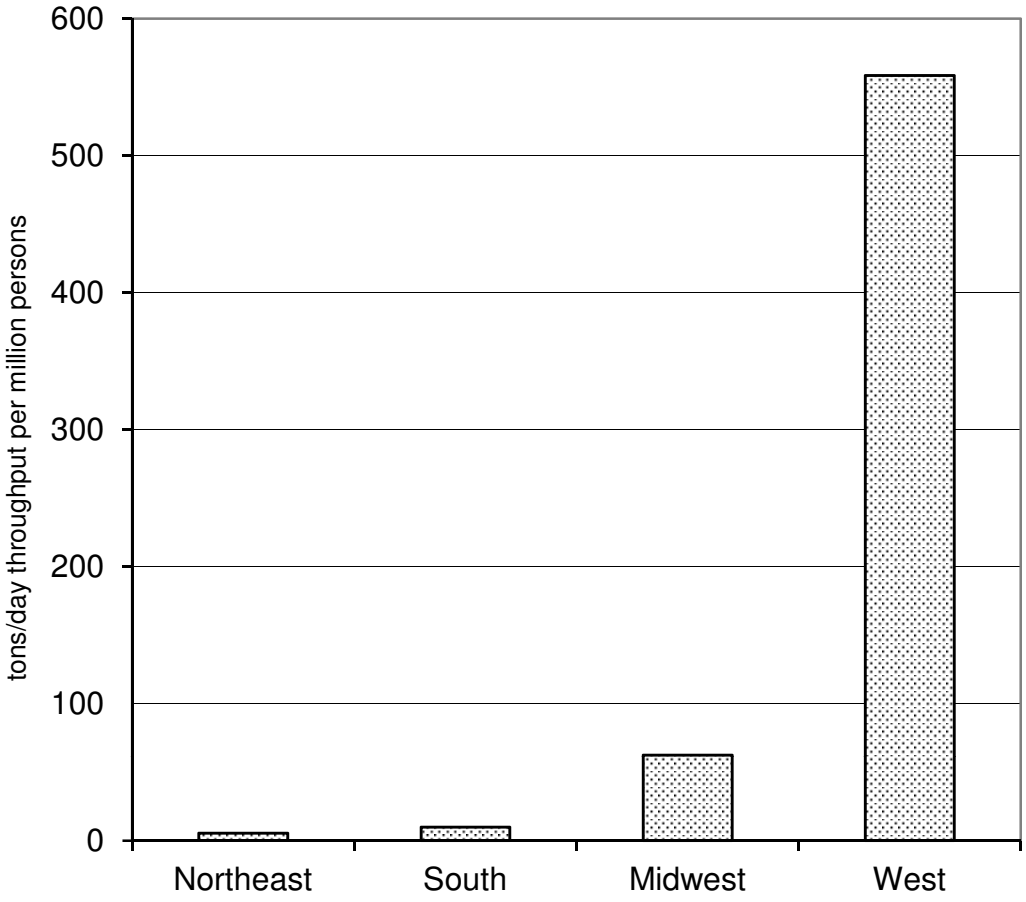
Source: Container Recycling Institute, 2011.

Figure 20. Estimated MRF throughput, 2012 (Tons per day per million persons)



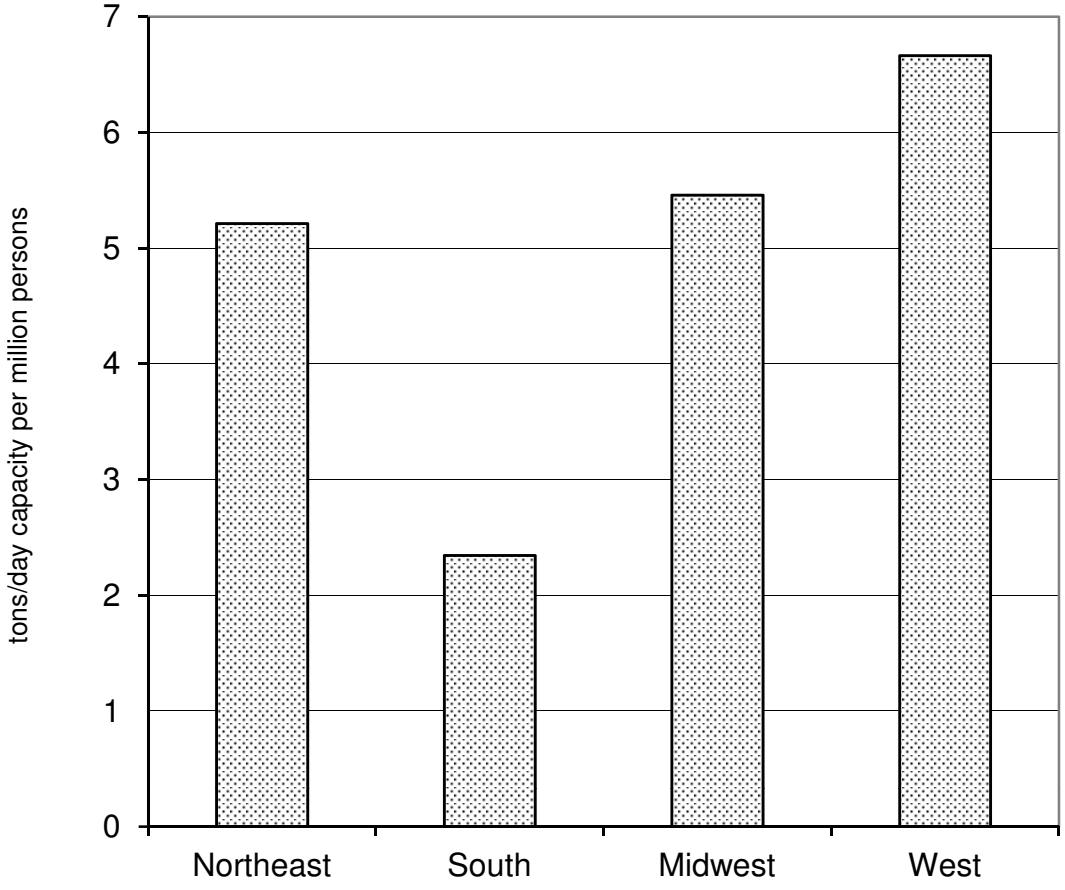
Source: U.S. Census Bureau, Governmental Advisory Associates, Inc. Data provided July 2011.

Figure 21. Mixed waste processing estimated throughput, 2012 (tons per day per million persons)



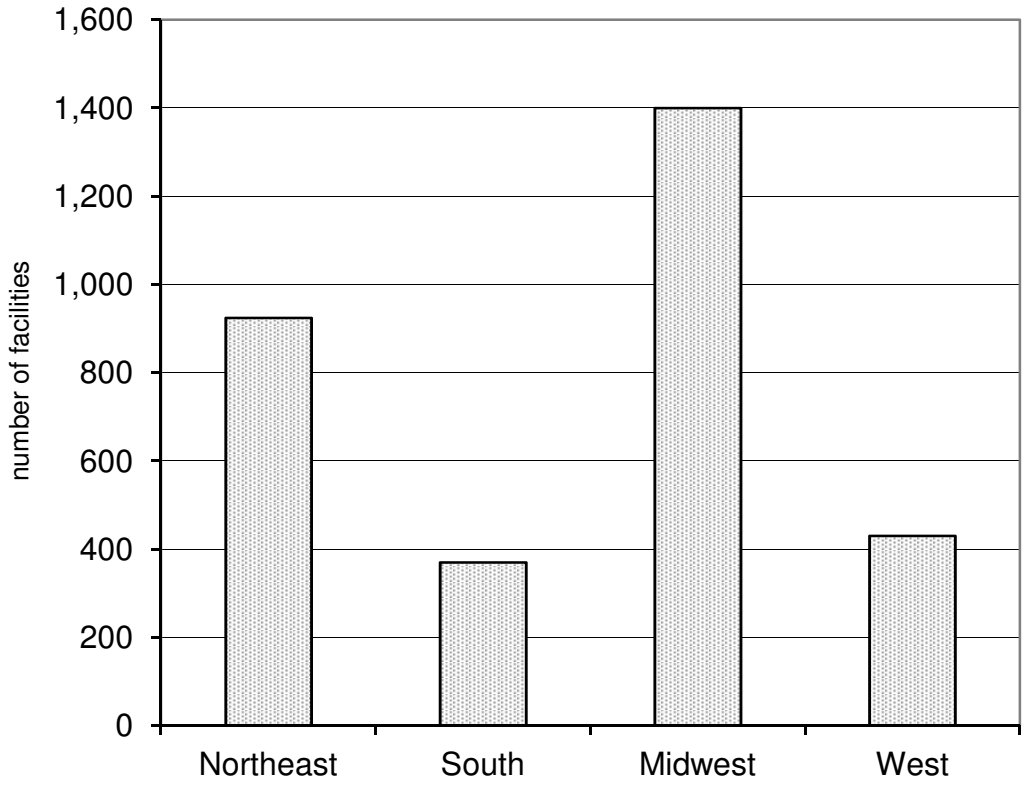
Source: U.S. Census Bureau; Governmental Advisory Associates, Inc. Data provided July 2011.

Figure 22. MSW composting capacity, 2012 (Capacity in tons per day per million persons)



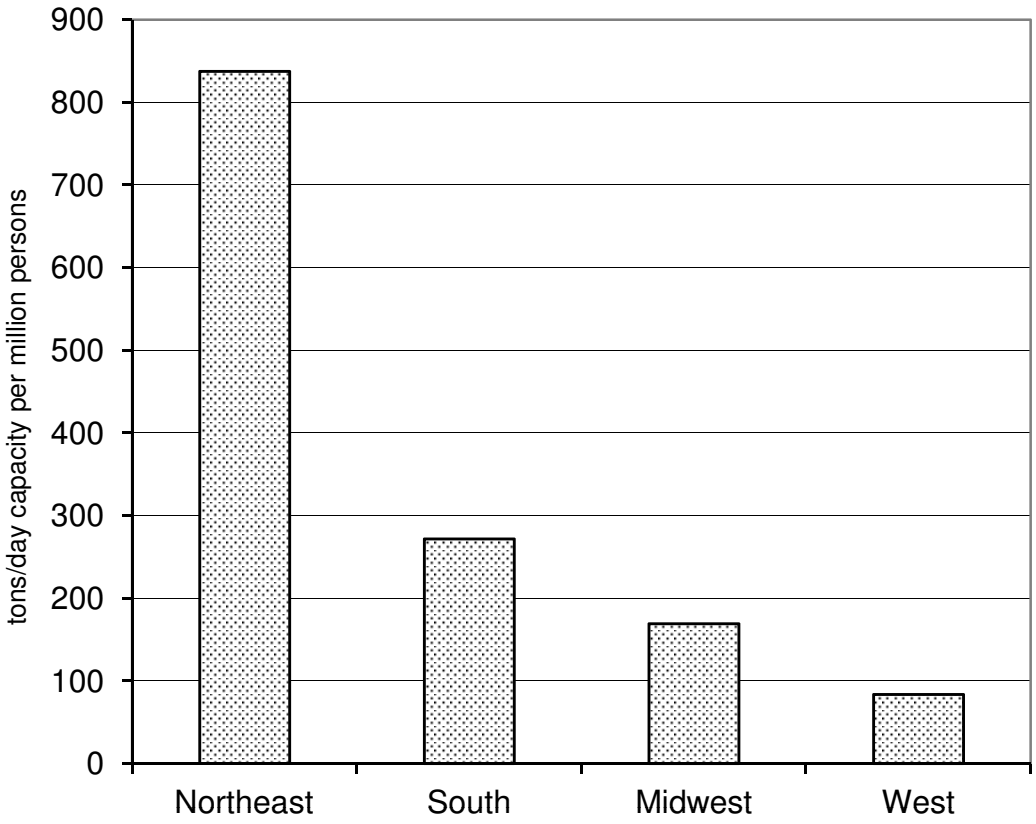
Source: U.S. Census Bureau; *BioCycle,* November 2011, Medina County, Ohio and West Wendover, Nevada websites.

Figure 23. Yard trimmings composting facilities, 2012
(In number of facilities)



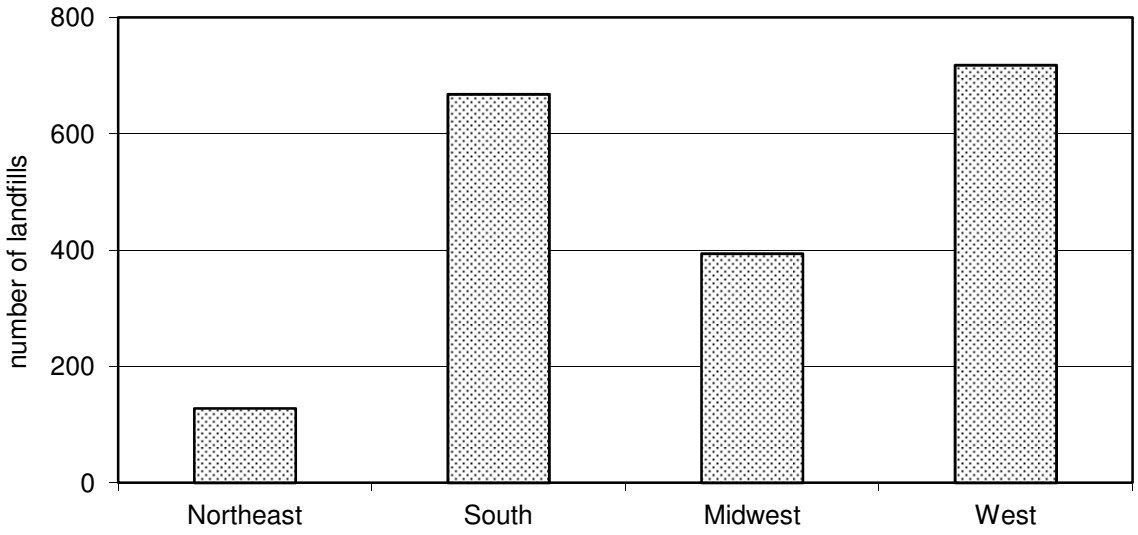
Source: Internet search: includes data for 47 states and the District of Columbia.

Figure 24. Municipal waste-to-energy capacity, 2012 (Capacity in tons per million persons)



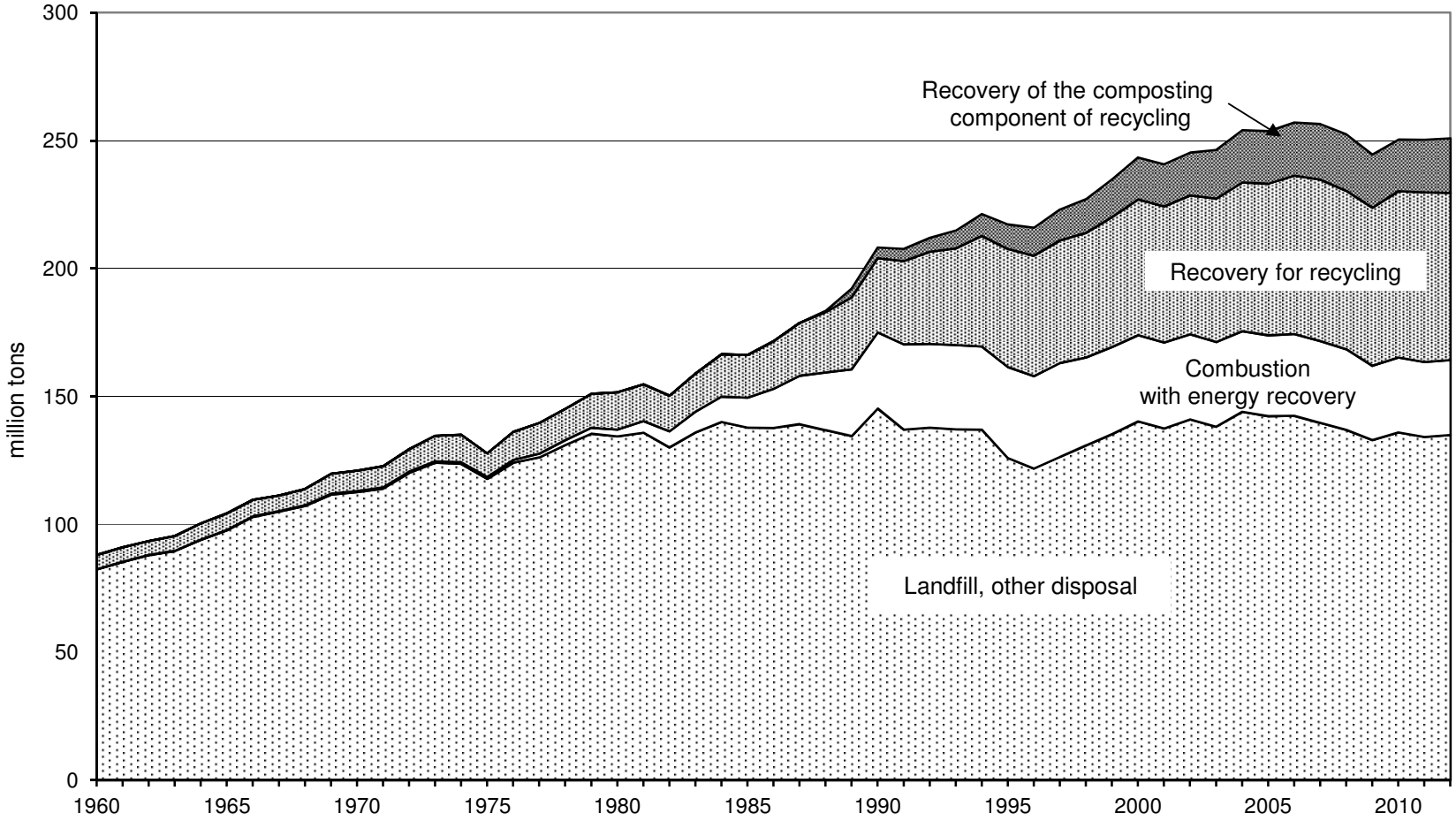
Source: U.S. Census Bureau, December 2012. Energy Recovery Council (ERC), December 2010.

Figure 25. Number of landfills in the U.S., 2012



Source: *BioCycle* October 2010. Latest report available.

Figure 26. Municipal solid waste management, 1960 to 2012



Appendix A:

Municipal Solid Waste Generation, Recycling, and Disposal in the United States: Facts and Figures

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Consumer Electronics Methodology

February 2014

CONSUMER ELECTRONICS

Summary

Consumer electronic products include electronic products used in residences and commercial establishments such as businesses and institutions. Consumer electronics include video and audio equipment and information products. Video products include standard televisions (TV), projection TV, high density TV, liquid crystal display TV, VCR decks, camcorders, laserdisc players, and digital versatile disc players (DVD). Audio products include rack audio systems, compact audio systems, portable compact discs (CD), portable headset audio, total CD players, and home radios. Information products include cordless/corded telephones, mobile telephones, telephone answering machines, facsimile (fax) machines, personal computers, computer printers, computer monitors, modems, and fax modems. Certain other electronic products such as separate audio components are excluded because of data limitations.

Consumer electronic generation is estimated by calculating the annual apparent consumption. Apparent consumption equals U.S. manufacturer shipments plus U.S. imports minus U.S. exports. Consumer electronics are categorized as durables, with an estimated average useful life of 3 to 23 years, depending on the product (see the table below). Therefore, current year generation is based on a rolling average of previous year's shipments. The year in which a particular electronic item enters the municipal solid waste stream is determined from the estimated life span of the item. Average weights for consumer electronics were estimated after collecting information from retail websites, consumer electronic magazines, and weighing available items.

The generation methodology combines data from two sources for domestic shipments: (1) The Consumer Electronics Association (CEA); and (2) the U.S. Department of Commerce trade data. CEA data reflect shipments of consumer electronics to retail outlets. The U.S. Census Bureau's *Current Industrial Reports* include trade data (shipments, imports, and exports) from the U.S. Department of Commerce.

The methodology for estimating electronics recovery follows the methodology used in the EPA report "Electronics Waste Management in the United States Through 2009" May 2011.

State level data collected from 31 state agency websites represented about 68 percent of the US population in 2011. To fill in the two data gaps (1) states without data and (2) commercial recovery missed from the states' reporting mechanism similar assumptions used in the May 2011 report were applied.

Per capita factors developed from available data applied to population in states without data were used to estimate recovery in states where data were not identified.

The assumption to estimate the commercial recovery missed by the states' data collection efforts is that commercial recovery accounts for 67 percent of total recovery. This assumption is applied to the states' residential data to estimate commercial recovery (i.e., residential recovery/.33 – residential recovery = commercial recovery).

Figure is a flow chart illustrating estimates of consumer electronics discards. Each block of the diagram contains a reference number corresponding to the following remarks.

1. Domestic shipments of consumer electronics.
2. Net imports of consumer electronics.
3. Apparent consumption of consumer electronics = domestic shipments of consumer electronics (1) + net imports of consumer electronics (2).
4. Temporary diversion based on estimated useful life for consumer electronics.

Estimated Life of Selected Consumer Electronics (in years)	
	Temporary Diversion Primary and Secondary Use
Video Products	
Direct View Color TV	7 - 23
Projection TV	7 - 15
HDTV	7 - 23
LCD Color TV	9 - 15
Plasma	7 - 15
TV/VCR Combination	10 - 12
Videocassette Players	7 - 10
VCR Decks, DVD Players, Camcorders	7 - 10
Audio Products	
Home and Portable Audio Products	3 - 15
Home Information Products	
Mobile Telephones	3 - 7
Cordless/Corded Telephones	3 - 8
Telephone Answering Machines	3 - 8
Fax Machines	3 - 8
Personal Computers	3 - 18
Personal Computers Laptop	2 - 8
Computer Printers	4 - 14
Aftermarket Computer Monitors	5 - 13
Personal Computers Monitors - Flat panel	3 - 14
Keyboards	3 - 6
Mouse Devices	3 - 6

5. Generation of consumer electronics = apparent consumption of consumer electronics adjusted for temporary diversion based useful life.

6. Recovery of consumer electronics.

7. Discards of consumer electronics = generation of consumer electronics (5) – recovery of consumer electronics (6).

Data Gaps

- Certain other electronic products such as separate audio components are excluded because of data limitations.
- Some newer electronic products such as GPS units and tablets have not been added to the product list. Data availability is unknown.
- Recovery data are not available for all states.
- Most state agency accounting of recovery does not include recovery through the commercial sector.

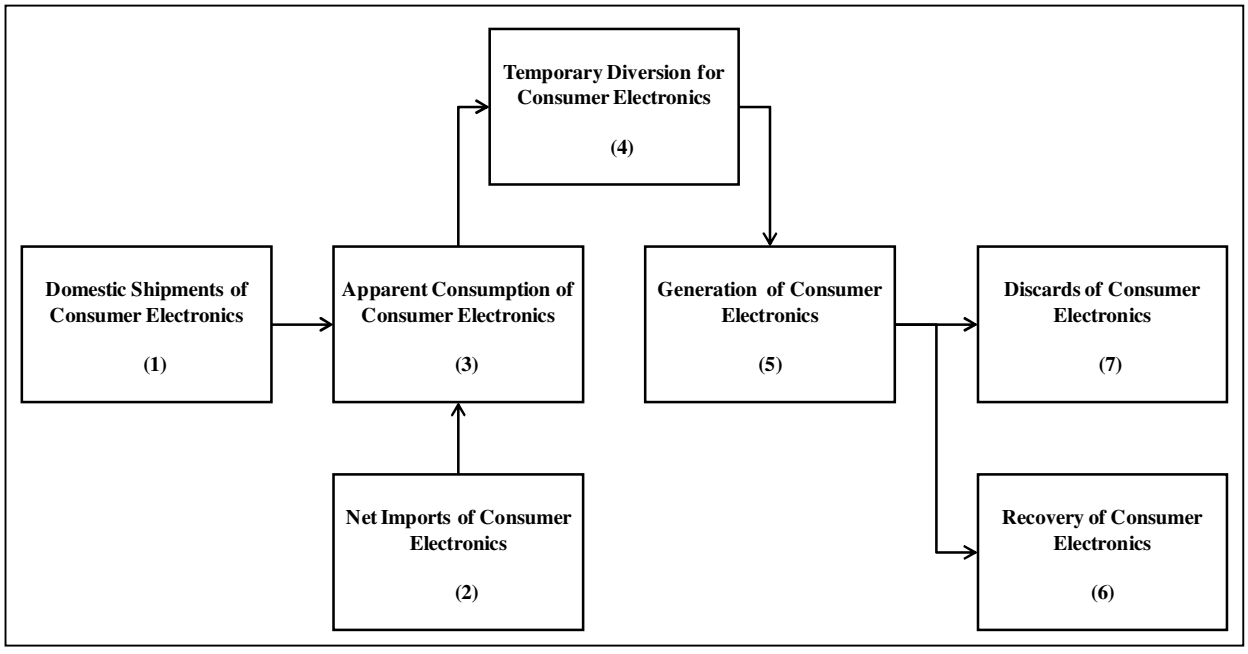

Figure 1. Material Flow Methodology Consumer Electronics