

MSW RECYCLING: COMMODITIES

This section highlights the commodities that comprise municipal solid waste (MSW) as defined by South Carolina: glass, metal, paper, plastic, banned items, miscellaneous items and commingled recyclables.

Glass, metal, paper and plastic are considered traditional commodities and serve as the foundation of local government recycling programs. Banned items represent five specific items – appliances, lead-acid batteries (i.e., car, truck, boat), used motor oil, waste tires and yard trimmings. With the exception of yard trimmings, these items are prohibited by law from disposal in any landfill. Yard trimmings are banned from disposal in Class 3 landfills, but can be disposed of in Class 1 or Class 2 landfills. Miscellaneous recyclables are numerous and varied (e.g., fluorescent bulbs, cooking oil, mattresses) and are not collected consistently in local government programs throughout South Carolina. Commingled recyclables are material collected in single-stream, dual-stream or similar programs.

The amount of each commodity collected is used to calculate the state's MSW recycling rate. Of the seven categories that comprise MSW, five (metal, paper, plastic, miscellaneous and commingled) had an increase in recycling tonnages from the previous fiscal year (FY). Overall, the amount of MSW collected for recycling grew 10 percent (109,247 tons) to 1,172,768 tons in FY11 (July 1, 2010 to June 30, 2011). Paper was the top commodity recycled, comprising 38 percent of all of the MSW recycled in South Carolina. See Chart 3.1 for a complete breakdown by commodity.

Several changes were made to this year's commodity section. Each of the seven commodities now has a "South Carolina at a Glance" sub-section that provides numbers and facts relating to that commodity. The recycling tables reflect data from local government programs as well as other sources (e.g., commercial, institutional, industrial).

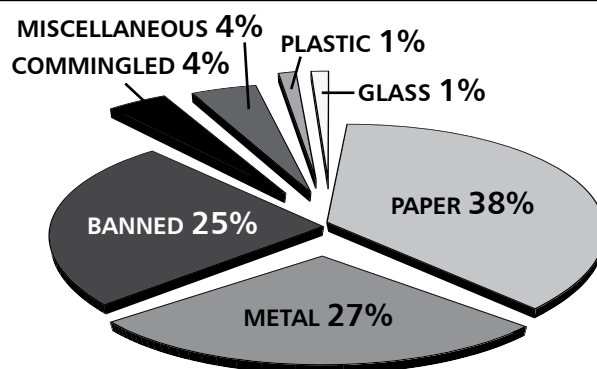
In addition, other sub-sections have been added where appropriate: "Market Information," "National

Perspective" and "Benefits of Recycling." Each of these sub-sections offers information to provide a better understanding of that commodity including comparison to national numbers and trends as well as environmental benefits of recycling.

The "National Perspective" sub-section provides generation and recycling data from the U.S. Environmental Protection Agency's (EPA) "Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2010."

When reviewing the "National Perspective," it is important to remember that Americans generated about 250 million tons of MSW in 2010. Of that amount, about 85 million tons were recycled (65 million tons) or composted (20 million tons) resulting in a nationwide recycling rate of 34 percent.

CHART 3.1: MSW Commodities Collected in FY11 by Percentage*



1. Banned items are appliances, lead-acid batteries, whole tires, used motor oil (from do-it-yourself oil changers) and yard trimmings.
2. Miscellaneous items include: antifreeze; consumer electronics; cooking oil; fluorescent bulbs; food scraps (post-consumer only); hazardous household materials; inkjet and toner cartridges; mattresses; paint; rechargeable batteries; textiles; used motor oil filters; wood packaging; other wood (such as furniture and cabinets); and other non-packaging products.

*COMMODITIES MEASURED BY WEIGHT

COMMODITY: GLASS

South Carolina at a Glance

- The amount of glass recycled decreased from 15,457 tons in FY10 to 12,801 tons in FY11, a drop of 2,656 tons or 17 percent. This does not include any glass that was collected in commingled recycling programs.
- Glass comprised 1 percent of the MSW recycled in FY11.
- On average, each South Carolinian recycled 5.5 pounds of glass in FY11.
- Overall, it is estimated that about 82 percent of the glass recovered is from residential programs while slightly less than 14 percent is from the commercial recycling sector.
- Greenville, Horry and Richland counties accounted for 51 percent of the glass recycled in the state.

National Perspective

- Glass comprised 11.5 million tons (4.6 percent) of the nation's MSW in 2010. Of that amount, 3.1 million (27 percent) tons were recycled.
- Beer and soft drink bottles made up 5.7 million tons of the total amount of glass generated. Of that amount, 2.4 million tons (41.4 percent) were recycled.
- Wine and liquor bottles comprised 1.7 million tons of the total amount of glass generated. Of that amount, 420,000 tons (24.7 percent) were recycled.
- Other bottles and jars accounted for 2 million tons of the total amount of glass generated. Of that amount, 360,000 tons (18.1 percent) were recycled.

Market Information

- Two key markets for glass containers are Strategic Materials, Inc., located in Atlanta, GA and Raleigh, NC, and Reflective Recycling, Inc. in Wilson, NC and Pacolet, SC.
- Glass remains a somewhat difficult commodity to recycle primarily due to low market value, the weight of the material, distance to market and the abrasive effect on the recycling equipment of processors.
- The market value of glass varies by color. The average revenue reported by local governments for clear glass was \$15.43 per ton followed by brown (\$11.50) and green (\$5). The average revenue earned for mixed glass was \$10.67 per ton.

Benefits of Recycling

- Glass bottles and jars are 100 percent recyclable and can be recycled endlessly without any loss in purity or quality.
- Recycled glass is used for up to 70 percent of the raw material used in making new glass.
- Most recovered glass bottles – about 90 percent – is made into new glass bottles.
- For every ton of glass recycled, more than a ton of raw material is saved including 1,300 pounds of sand, 410 pounds of soda ash, 380 pounds of limestone and 160 pounds of feldspar.

SOURCES: U.S. Environmental Protection Agency, Institute of Scrap Recycling Industries

CHART 3.2: Glass Recycling Figures by FY

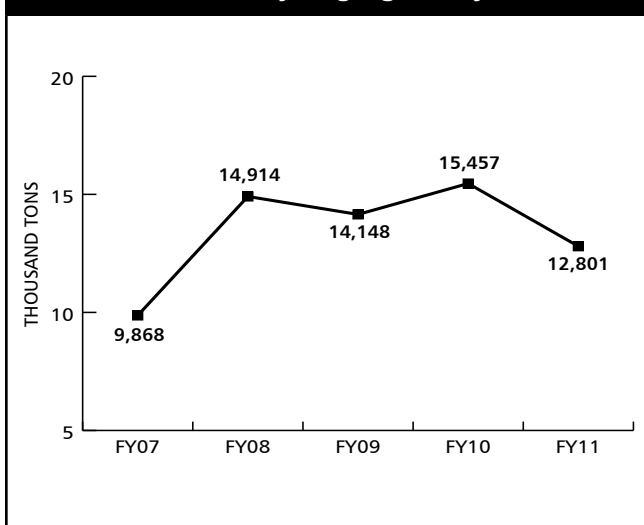


CHART 3.3: Types of Glass Recycled

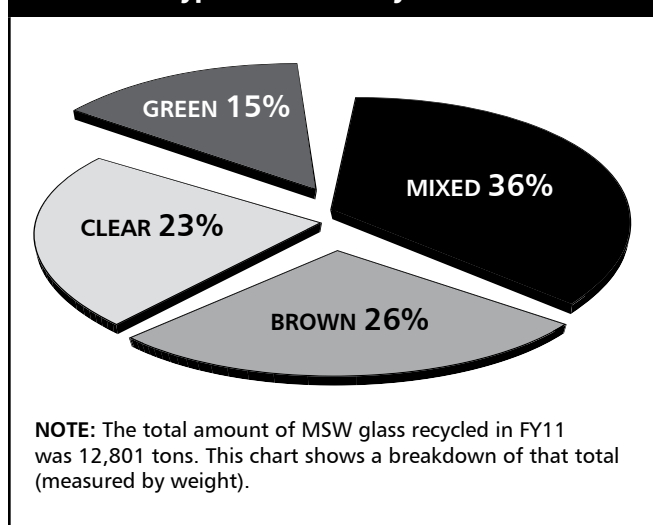


TABLE 3.4: Glass Recycling by County in Tons

COUNTY	BROWN	CLEAR	GREEN	MIXED	TOTAL
Abbeville	0.02	0.03	0.01	0.10	0.16
Aiken	24.06	49.23	76.33	0.19	149.81
Allendale	0.00	0.00	1.13	3.41	4.54
Anderson	0.02	0.71	0.75	398.79	364.90
Bamberg	0.02	0.03	0.01	0.10	0.16
Barnwell	5.99	14.03	0.01	0.10	20.13
Beaufort	219.58	548.93	330.51	2.61	1,101.63
Berkeley	0.00	0.65	0.00	3.02	3.67
Calhoun	0.00	0.00	0.00	0.00	0.00
Charleston	0.04	0.06	0.02	204.67	204.79
Cherokee	23.20	31.20	12.80	0.00	67.20
Chester	8.36	29.33	2.23	26.90	66.82
Chesterfield	0.04	0.06	0.02	0.19	0.31
Clarendon	0.02	0.03	0.01	26.04	26.10
Colleton	0.04	1.19	0.02	0.19	1.44
Darlington	22.45	22.40	0.00	0.02	44.87
Dillon	0.02	0.03	0.01	0.10	0.16
Dorchester	0.04	0.06	0.02	41.59	41.71
Edgefield	0.00	0.01	0.00	0.00	0.01
Fairfield	0.04	0.07	0.02	0.19	0.32
Florence	0.00	0.00	0.00	0.02	0.02
Georgetown	45.60	46.94	90.30	0.10	182.94
Greenville	1,758.16	0.20	0.03	1,329.02	3,087.41
Greenwood	23.46	47.48	0.01	0.12	71.07
Hampton	0.02	24.27	0.01	0.10	24.40
Horry	0.02	0.69	0.01	1,766.40	1,767.12
Jasper	0.25	0.25	0.25	91.96	92.71
Kershaw	13.51	20.90	7.43	112.38	154.22
Lancaster	63.99	75.97	0.01	0.10	140.07
Laurens	4.05	1.03	0.01	0.10	5.64
Lee	0.02	0.03	0.01	0.10	0.16
Lexington	168.32	211.47	115.13	14.91	509.83
Marion	0.00	0.00	0.00	0.02	0.02
Marlboro	0.00	0.01	0.00	0.00	0.01
McCormick	0.02	0.03	0.01	0.10	0.16
Newberry	0.02	0.03	0.01	0.10	0.16
Oconee	71.82	119.32	95.31	0.40	286.85
Orangeburg	3.93	10.62	4.83	2.65	22.03
Pickens	185.33	244.49	141.60	34.92	606.34
Richland	183.80	581.49	836.11	121.87	1,723.27
Saluda	0.00	0.00	0.00	0.00	0.00
Spartanburg	0.02	1.73	0.01	22.70	24.46
Sumter	113.42	14.94	113.41	363.87	605.64
Union	13.64	8.11	0.01	0.10	21.86
Williamsburg	0.00	0.00	0.00	0.00	0.00
York	375.25	791.36	147.36	26.40	1,340.37
STATE TOTAL	3,329.04	2,899.41	1,975.76	4,596.65	12,800.86

NOTE: This table does not include any glass that was collected in commingled recycling programs.

5.5

pounds of glass were recycled per person in South Carolina during FY11.

Glass bottles and jars are

100%

recyclable and can be recycled endlessly.

More than

12.8

thousand tons of glass were recycled in the state during FY11.

S.C. local governments reported earning about

\$34,000

from glass in FY11.

82%

of glass recovered in the state is from residential recycling programs.



COMMODITY: METAL

South Carolina at a Glance

- The amount of metal recycled increased from 293,135 tons in FY10 to 315,078 tons in FY11 – an improvement of more than 7 percent. This is the second consecutive year that the amount of metal recycled increased.
- Metal comprised 28 percent of the MSW recycled in FY11, second only to paper.
- On average, each South Carolinian recycled about 136 pounds of metal in FY11.
- Of the five categories of metal that are measured, four (aluminum, steel, non-ferrous and ferrous) increased while mixed metal dropped.
- The amount of non-ferrous metal recycled increased 190 percent from 3,086 tons in FY10 to 8,957 tons in FY11. In addition, the amount of aluminum recycled increased almost 64 percent from 3,062 tons in FY10 to 5,019 in FY11. Steel increased almost 5 percent from 2,753 tons in FY10 to 2,886 tons in FY11.
- Overall, nearly 86 percent of the metal recovered is from the commercial recycling sector.

Market Information

- South Carolina has robust markets for metal including steel mills, automobile dismantlers and hundreds of scrap yards.
- The average revenue per ton reported by local governments was \$1,132 for aluminum, \$289 for steel, \$147 for scrap metal and \$222 for mixed metal.

National Perspective

- Metals (ferrous, aluminum and non-ferrous) accounted for 22.4 million tons (9 percent) of the nation's MSW in 2010. Of that amount, 7.9 million tons (35 percent) were recycled.
- Overall, aluminum accounted for 3.4 million tons (1.4 percent) of the nation's MSW.
- Aluminum beer and soft drink cans comprised 1.4 million tons of the nation's MSW. Of that amount, 680,000 tons (49.6 percent) were recovered.
- In 2010, Americans generated about 2.7 million tons of steel as containers and packaging in the nation's MSW as well as another 14.2 million tons of ferrous metal (which includes iron and steel).
- Steel cans made up 2.3 million tons of the nation's MSW. Of that amount, 1.5 million tons (67 percent) were recycled.

Benefits of Recycling

- It takes 95 percent less energy to produce an aluminum can from recycled material than raw material. The amount of energy saved in the United States by recycling cans in 2010 was the equivalent of 17 million barrels of crude oil.
- Aluminum cans have up to 68 percent recycled content.
- Recycling steel requires 60 percent less energy than producing steel from iron ore.

SOURCES: U.S. Environmental Protection Agency, Institute of Scrap Recycling Industries

CHART 3.5: Metal Recycling Figures by FY

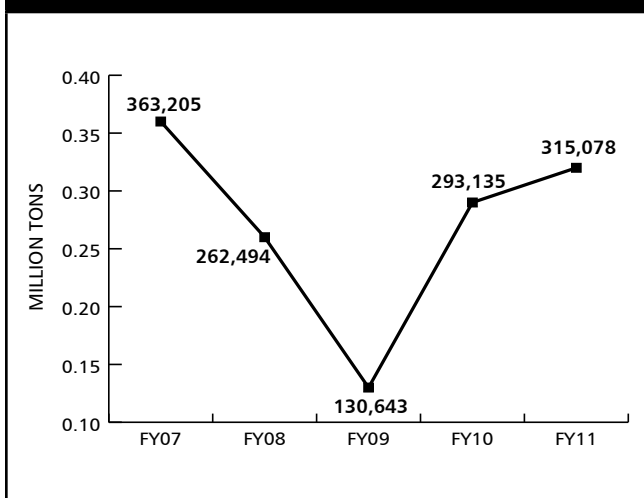


CHART 3.6: Types of Metal Recycled

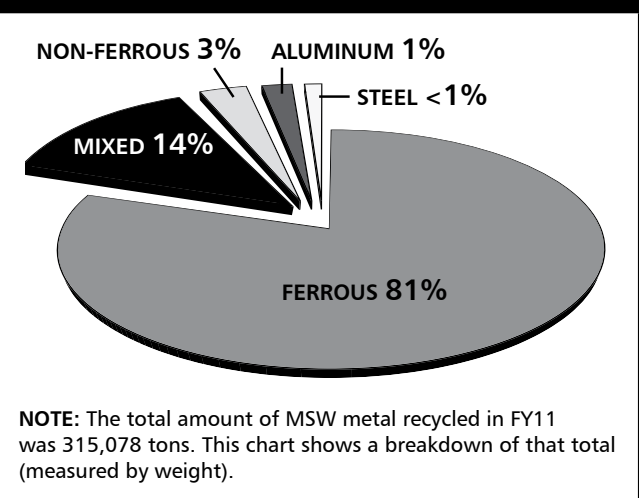


TABLE 3.7: Metal Recycling by County in Tons

COUNTY	ALUMINUM	STEEL	NON-FERROUS	FERROUS	MIXED	TOTAL
Abbeville	4.78	0.00	2.00	34.43	254.47	295.68
Aiken	27.12	9.34	0.78	349.66	2,744.48	3,131.37
Allendale	1.50	9.34	0.00	2.61	20.53	33.98
Anderson	150.10	21.66	6.54	37.28	1,625.00	1,840.58
Bamberg	0.59	0.00	0.00	2.63	2.94	6.16
Barnwell	2.91	0.00	0.00	2.63	177.27	182.81
Beaufort	331.57	75.49	300.83	5,036.25	1,648.46	7,392.60
Berkeley	202.20	30.24	1.73	26.11	562.25	822.53
Calhoun	2.42	0.00	0.00	2.61	46.68	51.71
Charleston	55.00	54.98	125.60	34,872.94	340.13	35,448.65
Cherokee	7.35	27.20	0.16	2.61	213.43	250.75
Chester	6.42	32.25	0.25	91.65	82.26	212.83
Chesterfield	5.95	0.00	0.16	25.16	118.77	150.04
Clarendon	1.14	9.34	0.29	2.63	266.62	280.02
Colleton	13.40	5.92	0.38	2.66	1,334.99	1,357.35
Darlington	28.54	0.24	0.34	42.83	692.92	764.87
Dillon	1.07	0.00	0.05	2.63	167.35	171.10
Dorchester	19.05	22.08	1,076.21	14,091.27	584.01	15,792.62
Edgefield	28.25	9.34	32.75	317.78	307.33	695.45
Fairfield	6.21	0.00	0.00	2.73	203.59	212.53
Florence	18.33	23.23	22.79	12,440.20	214.09	12,718.64
Georgetown	9.59	0.00	0.00	2.71	712.54	724.84
Greenville	156.54	158.44	1,523.43	47,190.80	291.21	49,320.42
Greenwood	42.40	26.23	131.20	6,794.35	384.58	7,378.76
Hampton	1.00	0.00	0.00	2.71	103.26	106.97
Horry	366.08	307.49	1,232.97	1,850.87	4,888.45	8,645.86
Jasper	11.65	9.86	15.39	110.84	308.72	456.46
Kershaw	9.18	9.34	0.09	2.63	8.12	29.36
Lancaster	3.35	2.00	5.05	2.71	824.95	838.06
Laurens	10.37	0.00	12.69	6,048.39	141.23	6,212.68
Lee	4.80	13.79	0.00	2.63	262.34	283.56
Lexington	46.38	13.90	1,305.60	45,005.01	650.15	47,021.04
Marion	1.61	0.24	0.09	8.61	3,042.72	3,053.27
Marlboro	4.26	12.34	73.50	565.68	2.68	658.46
McCormick	115.92	9.34	0.00	94.82	18.13	238.21
Newberry	10.37	0.00	0.11	2.63	408.84	421.95
Oconee	19.67	11.82	65.32	541.17	117.65	755.63
Orangeburg	5.91	0.00	14.94	8,407.86	335.48	8,764.19
Pickens	150.35	0.32	28.09	338.66	1,726.61	2,244.03
Richland	193.25	1,597.69	499.76	34,972.91	1,040.53	38,304.14
Saluda	111.96	0.00	0.00	37.10	237.29	386.35
Spartanburg	2,518.50	37.99	1,690.53	25,951.36	11,261.77	41,460.15
Sumter	77.23	247.62	656.81	11.02	2,805.64	3,798.32
Union	3.01	0.00	0.00	2.63	214.34	219.98
Williamsburg	16.82	3.69	5.27	63.53	148.39	237.70
York	215.41	93.53	125.71	8,923.96	2,346.99	11,705.60
STATE TOTAL	5,019.49	2,886.28	8,957.41	254,324.89	43,890.18	315,078.24

NOTE: This table does not include any metal that was collected in commingled recycling programs.

136
pounds of metal
were recycled
per person in
South Carolina
during FY11.

Metal made up
28%
of all MSW
recycled in the
state during
FY11.

More than
315
thousand tons
of metal were
recycled in the
state during
FY11.

S.C. local
governments
reported an
average of
\$1,132
per ton for
aluminum in
FY11.

It takes
60%
less energy to
make steel
from recycled
material than
from iron ore.



COMMODITY: PAPER

South Carolina at a Glance

- The total amount of paper recycled increased nearly 25 percent – from 353,173 tons in FY10 to about 440,363 tons in FY11.
- Paper is the No.1 recycled material by weight accounting for 39 percent of all of the MSW recycled.
- On average, each South Carolinian recycled 190 pounds of paper in FY11.
- Cardboard continued to be the top category comprising 302,670 tons (69 percent) of all paper collected.
- Cardboard, magazines, paperboard and mixed paper improved from the previous FY. Mixed paper jumped the most from 39,091 tons in FY10 to 96,226 tons in FY11. Each of the other categories fell with newspaper dropping the most from 27,063 tons in FY10 to 16,255 tons in FY11.
- About two-thirds of all paper recovered is from the commercial recycling sector.

Market Information

- Two key markets for paper are Pratt Industries and Sonoco Recycling. Both companies have multiple locations in the state.
- The average revenue reported by local governments for cardboard was \$126 per ton. Office paper revenue was \$136 per ton. Newspaper revenue was \$79 per ton in FY11.

SOURCES: U.S. Environmental Protection Agency, American Forest & Paper Association, Institute of Scrap Recycling Industries

National Perspective

- Paper and paperboard products comprised the largest segment of the nation's MSW accounting for 71 million tons (29 percent). Of that amount, 45 million tons (63 percent) were recycled.
- Cardboard made up more than half (about 25 million tons) of all the paper recovered.
- The amount of paper recovered averaged 334 pounds per person.
- Eighty-five percent of cardboard containers and 72 percent of the newspapers were recovered.
- More paper is recovered than glass, plastic and aluminum combined.
- Since 1990, Americans have recycled nearly 1 billion tons of paper and paperboard.

Benefits of Recycling

- Recycling one ton of paper saves enough energy to power the average American home for six months.
- Nearly 77 percent of all U.S. paper makers use some recovered paper to make new products.
- More than 5,000 products can be made from recycled paper including copy paper, masking tape, money, hospital gowns, dust masks, egg cartons, coffee filters, car insulation, lamp shades and animal bedding.
- Recycling 1 ton of paper saves 7,000 gallons of water in the production of new paper.

CHART 3.8: Paper Recycling Figures by FY

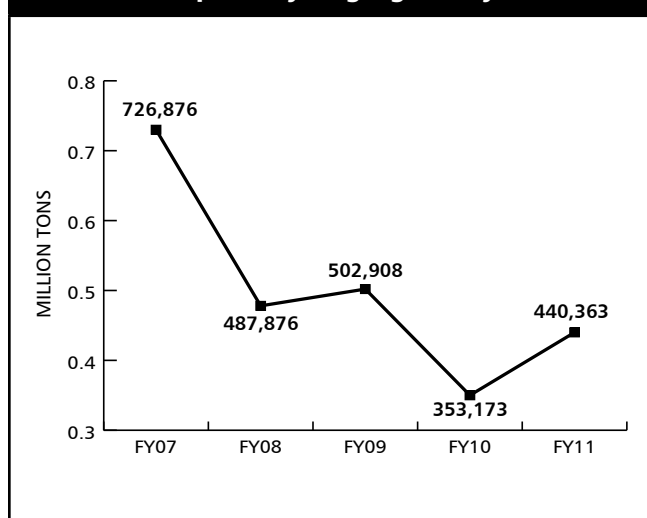


CHART 3.9: Types of Paper Recycled

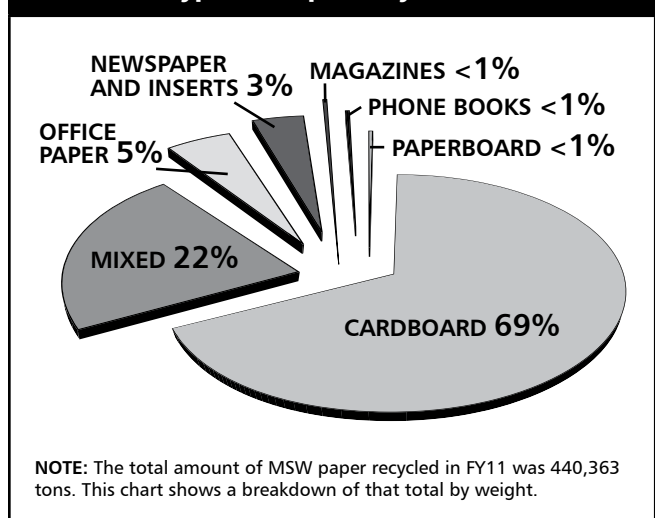


TABLE 3.10: Paper Recycling by County in Tons

COUNTY	CARDBOARD	MAGAZINES	NEWSPAPER AND INSERTS	OFFICE PAPER	PAPERBOARD	PHONE BOOKS	MIXED	TOTAL
Abbeville	475.06	0.15	0.13	4.61	0.01	0.03	131.94	611.93
Aiken	6,531.12	0.19	1,195.93	186.56	0.02	0.09	1,856.44	9,770.35
Allendale	61.90	0.07	0.07	6.93	0.00	0.05	5.63	74.65
Anderson	8,107.71	9.06	20.77	194.91	3.77	2.91	1,558.02	9,897.14
Bamberg	165.25	0.09	0.10	0.52	0.01	0.03	0.44	166.44
Barnwell	818.35	0.09	0.10	0.98	0.01	0.03	98.04	917.60
Beaufort	7,113.65	11.90	1,234.20	883.65	0.01	0.56	1,559.94	10,803.10
Berkeley	4,894.52	4.65	5.65	50.00	1.00	0.07	19.90	4,975.79
Calhoun	381.03	0.07	0.07	4.05	0.00	0.03	0.43	385.68
Charleston	19,656.20	0.27	65.18	589.67	0.01	7.16	9,905.38	30,223.87
Cherokee	3,207.90	0.07	1.07	58.78	0.00	0.04	540.77	3,808.63
Chester	901.88	1.09	146.41	2.32	0.01	1.03	4.18	1,056.92
Chesterfield	1,222.79	0.10	1.21	10.05	0.01	0.06	1.81	1,236.03
Clarendon	1,031.08	0.09	0.10	9.19	0.01	0.05	681.64	1,722.16
Colleton	1,353.00	0.10	153.12	3.20	0.01	0.03	1.13	1,510.59
Darlington	2,692.48	4.69	215.41	44.90	0.01	0.11	9.78	2,967.38
Dillon	664.62	0.09	71.50	13.50	0.01	0.03	0.44	750.19
Dorchester	3,959.33	0.37	1.69	92.06	0.01	0.09	1,353.76	5,407.31
Edgefield	2,177.48	3.96	187.77	98.88	0.01	1.14	155.59	2,624.83
Fairfield	723.34	0.13	0.20	149.44	0.02	0.07	98.96	972.16
Florence	3,777.65	1.12	416.60	52.89	0.00	0.45	54.41	4,303.12
Georgetown	2,034.05	4.68	699.61	54.00	0.01	0.07	1.12	2,793.54
Greenville	36,425.66	11.18	375.44	877.16	0.02	0.83	52,205.50	89,895.78
Greenwood	7,030.06	3.75	507.56	189.81	432.05	3.38	658.07	8,824.68
Hampton	412.53	7.88	20.25	16.66	0.01	0.07	1.12	458.52
Horry	27,087.34	22.83	5,056.55	1,866.34	1.01	130.83	234.38	34,399.28
Jasper	1,069.38	0.63	60.15	11.61	0.25	0.25	5.78	1,148.05
Kershaw	4,466.06	0.09	179.91	16.11	0.01	0.05	0.44	4,662.57
Lancaster	2,825.97	0.12	509.65	19.03	0.01	0.07	136.65	3,491.50
Laurens	1,833.12	0.94	77.20	21.11	0.81	0.23	156.56	2,089.98
Lee	140.50	0.09	20.60	7.58	0.01	0.05	0.44	169.27
Lexington	15,001.51	0.08	107.73	2,890.39	0.00	14.41	1,490.81	19,504.93
Marion	1,250.14	0.09	0.09	7.23	300.00	0.07	58.44	1,616.06
Marlboro	597.29	4.11	78.90	24.76	0.01	0.09	31.11	736.29
McCormick	761.96	0.09	71.23	8.19	0.01	0.05	38.10	879.63
Newberry	1,069.29	0.29	0.10	5.09	0.01	0.28	280.57	1,355.63
Oconee	3,972.28	21.90	365.93	220.05	0.03	0.11	648.23	5,228.52
Orangeburg	5,401.04	0.59	174.43	18.14	0.01	0.28	195.97	5,790.46
Pickens	9,718.40	3.62	0.39	198.66	0.01	0.07	1,894.84	11,815.99
Richland	26,220.65	171.49	2,742.05	6,276.28	1,818.00	69.21	1,832.37	39,130.05
Saluda	1,287.78	0.07	80.30	1.84	0.00	0.03	133.72	1,503.74
Spartanburg	56,312.31	0.15	0.33	6,067.71	0.01	0.49	15,510.48	77,891.47
Sumter	3,973.06	1.19	9.99	131.38	0.01	0.54	1,337.84	5,454.01
Union	1,032.38	0.09	0.10	2.74	0.01	0.03	201.05	1,236.40
Williamsburg	965.55	0.07	12.57	14.08	0.00	19.09	3.11	1,014.47
York	21,865.68	99.71	1,386.49	444.78	128.81	30.25	1,130.55	25,086.27
STATE TOTAL	302,670.33	393.26	16,254.82	21,847.81	2,686.05	284.88	96,225.87	440,363.02

NOTE: This table does not include any paper that was collected in commingled recycling programs.

190

pounds of paper were recycled per person in South Carolina during FY11.

Paper made up **39%**

of all MSW recycled in the state during FY11.

About **440**

thousand tons of paper were recycled in the state during FY11.

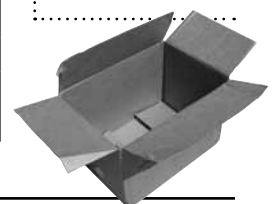
S.C. local governments reported an average of **\$126** per ton for cardboard in FY11.

Nationally, **85%**

of all cardboard containers are recovered.

Paper makes up **29%**

of all MSW generated in the United States.



COMMODITY: PLASTIC

South Carolina at a Glance

- The amount of plastic recycled increased from 15,841 tons in FY10 to 17,673 tons in FY11 – reflecting a 12 percent increase.
- Plastic represented about 1 percent of the MSW recycled in FY11.
- On average, each South Carolinian recycled 7.6 pounds of plastic in FY11.
- Nearly 48 percent of the plastic recovered is from the commercial recycling sector while about 33 percent is from residential collection programs.

Market Information

- South Carolina has access to numerous plastic recyclers and processors as well as several large end users in the Southeast including Wellman, DAK Americas, Mumford Industries, Mohawk Industries, Custom Polymers and Envision Plastics.
- The demand for post-consumer plastic exceeds the amount of material being recovered. Obstacles for local governments to collect more plastic continue to be the low weight and value of the material as well as the cost of and distance to market.
- Typically, most residential programs only accept bottles made of PET (e.g., soft drink, water) and HDPE (e.g., milk, detergent, shampoo). These types of bottles can be identified by their shape – any type of bottle, jug or jar that has a screw cap.
- The average revenue reported by local governments for PET was \$438 per ton, commingled PET and HDPE was \$130 per ton and HDPE commingled \$418 per ton.

SOURCES: U.S. Environmental Protection Agency, Association of Post-Consumer Plastics Recyclers, National Association for PET Container Resources, Institute of Scrap Recycling Industries, American Chemistry Council

National Perspective

- Plastic comprised about 31 million tons (12.4 percent) of the nation’s MSW in 2010. Of that amount, nearly 2.6 million tons (8.2 percent) was recycled.
- PET and HDPE bottles comprise more than 96 percent of the plastic bottle market and about 99 percent of the bottles recycled.
- The recycling rate for PET bottles was 29 percent and HDPE bottles (natural only) was 28 percent in 2010.
- The recycling rate of non-bottle, rigid plastic jumped 72 percent in 2010. The recovery of items such as carts, crates, tubs and lids increased the amount of material collected to almost 827 million pounds. PP accounted for 363 million pounds (nearly 44 percent) of the material recovered.

Benefits of Recycling

- Using recycled plastic instead of raw material saves 80-90 percent of the energy to make new products.
- Recycled plastic has significant value and is used to provide a raw material for many products. The primary market for recycled PET bottles is fiber for carpet and textiles. The primary market for HDPE bottles is bottles. Natural HDPE is used for non-food bottles such as detergent, motor oil and household cleaners. Colored HDPE is used to make pipe and lawn/garden products. PP is used for pallets, buckets and crates.
- Plastic bottle caps can be recycled as well. Generally, caps are made out of HDPE and PP – both of which have high market demand. PP can be used to make potted plant containers, injection-molded automobile parts and covers as well as other packaging.

CHART 3.11: Plastic Recycling Figures by FY

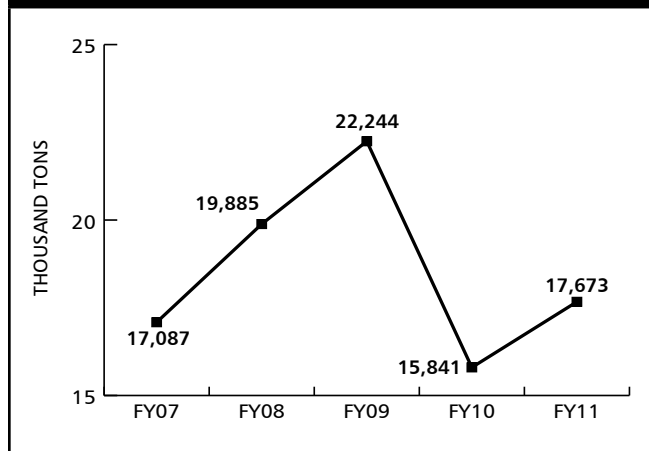


CHART 3.12: Types of Plastic Recycled

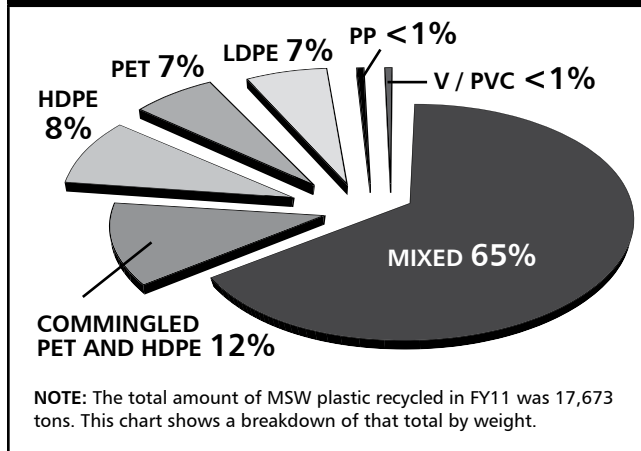


TABLE 3.13: Plastic Recycling by County in Tons

COUNTY	PET	HDPE	COMMINGLED PET & HDPE	V / PVC	LDPE	PP	MIXED	TOTAL
Abbeville	12.54	14.48	0.00	0.03	0.00	0.00	42.26	69.31
Aiken	63.94	40.67	0.03	0.06	41.73	0.00	173.94	320.37
Allendale	0.05	1.39	13.04	0.00	0.00	0.00	0.00	14.48
Anderson	14.13	4.17	38.55	0.03	41.46	0.00	179.07	277.40
Bamberg	0.21	5.85	0.00	0.03	0.00	0.00	0.18	6.27
Barnwell	0.30	0.28	0.00	0.03	10.19	0.00	42.80	53.60
Beaufort	0.23	0.05	316.22	0.03	1.73	0.00	89.62	407.88
Berkeley	2.57	9.00	0.00	0.00	54.40	0.00	179.26	245.23
Calhoun	0.05	13.95	0.00	0.00	0.00	0.00	24.07	38.07
Charleston	1.71	12.37	161.64	0.06	73.46	0.00	321.77	571.01
Cherokee	0.11	0.23	6.00	0.00	7.56	0.00	341.13	355.03
Chester	0.40	0.32	86.89	0.03	5.91	0.00	23.70	117.25
Chesterfield	0.89	1.49	0.00	0.06	24.78	0.00	15.01	42.22
Clarendon	0.46	2.02	0.00	0.03	13.79	0.00	66.42	82.72
Colleton	0.73	4.10	0.00	0.06	19.92	0.00	17.14	41.95
Darlington	4.13	1.36	26.92	0.00	25.13	0.00	15.31	72.85
Dillon	0.52	0.94	0.00	0.03	13.67	0.00	7.02	22.18
Dorchester	0.59	2.11	2.50	0.06	13.54	4.00	282.29	305.09
Edgefield	0.06	1.39	43.09	0.00	0.00	0.00	818.35	862.89
Fairfield	0.45	0.22	45.35	0.06	2.93	0.00	7.69	56.70
Florence	44.45	22.69	0.00	0.00	37.12	0.00	57.63	161.89
Georgetown	72.71	65.14	0.00	0.03	12.56	0.00	18.30	168.74
Greenville	6.18	203.06	1.21	0.10	84.61	0.00	3,273.86	3,569.02
Greenwood	102.66	17.44	44.52	0.03	28.40	0.00	10.73	203.78
Hampton	0.21	0.03	0.00	0.03	0.00	0.00	7.50	7.77
Horry	444.34	274.21	0.00	0.03	113.03	0.00	1,005.29	1,836.90
Jasper	0.05	1.89	0.00	0.00	0.00	0.00	33.13	35.07
Kershaw	0.58	2.42	37.00	0.03	19.73	0.00	6.39	66.15
Lancaster	0.42	0.53	211.87	0.03	13.37	0.00	16.89	243.11
Laurens	16.32	0.56	5.95	0.03	16.67	0.00	29.49	69.01
Lee	0.21	1.41	2.44	0.03	0.00	0.00	5.62	9.71
Lexington	5.18	3.80	283.82	0.00	103.04	0.00	190.98	586.82
Marion	0.29	0.73	0.00	0.00	16.55	0.00	2.19	19.76
Marlboro	0.06	13.39	4.86	0.00	0.00	0.00	43.70	62.01
McCormick	0.21	1.41	10.54	0.03	0.00	0.00	2.25	14.44
Newberry	0.38	0.73	0.00	0.03	9.96	0.00	27.66	38.76
Oconee	7.85	0.42	0.00	0.13	12.22	0.00	178.95	199.57
Orangeburg	0.40	25.95	33.10	0.03	14.39	0.00	78.04	151.91
Pickens	21.67	43.24	156.85	0.06	15.75	0.00	192.97	430.54
Richland	35.44	398.54	47.77	0.03	232.92	0.00	813.43	1,528.13
Saluda	0.05	0.01	27.66	0.00	0.00	0.00	7.50	35.22
Spartanburg	4.13	5.71	525.64	0.03	96.93	0.00	2,031.28	2,663.72
Sumter	129.64	109.59	1.33	0.03	19.00	0.00	145.00	404.59
Union	13.56	6.52	0.00	0.03	13.48	0.00	31.78	65.37
Williamsburg	0.05	10.90	0.00	0.00	4.14	0.00	5.25	20.34
York	229.00	199.57	0.54	39.15	0.00	0.00	650.31	1,118.57
STATE TOTAL	1,240.09	1,526.28	2,135.33	40.49	1,214.06	4.00	11,513.14	17,673.39

NOTE: This table does not include any plastic that was collected in commingled recycling programs.

7.6
pounds of
plastic were
recycled per
person in South
Carolina in FY11.

33%
of MSW plastic
recycled was
from residential
collection
programs in
FY11.

About
1%
of all MSW
recycled in the
state was plastic
in FY11.

S.C. local
governments
reported an
average of
\$438
per ton for PET
in FY11.



COMMODITIES: BANNED ITEMS

South Carolina at a Glance

- Banned items are appliances (e.g., refrigerators, stoves, air conditioners, water heaters, washers, dryers), lead-acid batteries, used motor oil, whole tires and yard trimmings. With the exception of yard trimmings, these items are prohibited by law from disposal in any landfill. Yard trimmings are banned from disposal in Class 3 landfills, but can be disposed of in Class 1 or Class 2 landfills. While each of these items are discussed here, a detailed summary of the state's used motor oil recycling program that targets do-it-yourself oil changers is in Section 4.
- There are advanced recycling fees on all banned items except yard trimmings. Consumers pay the fee at the point of purchase. The fees – managed in the Solid Waste Trust Fund – provide the revenue for South Carolina's overall solid waste management program (compliance, enforcement, technical assistance, education and planning) as well as grant programs to local governments, colleges/universities and schools.
- Most banned items are collected at drop-off recycling centers or left with retailers after buying new products.
- The overall amount of banned items recycled fell from 314,175 tons in FY10 to 294,895 tons in FY11, a drop of 19,280 tons (6 percent).
- Banned items comprised the third-most recycled MSW commodity (25 percent) in FY11, trailing only paper and metal.
- On average, each South Carolinian recycled nearly 128 pounds of banned items in FY11.
- The amount of lead-acid batteries, whole tires and yard trimmings recycled all dropped while used motor oil and appliances increased. Appliances improved the most – from 16,797 tons in FY10 to 19,415 tons in FY11 – nearly a 16 percent increase.
- Waste tire recycling fell, partly due to poor reporting by tire processors. Several counties reported a drop in lead-acid battery recycling due to theft.

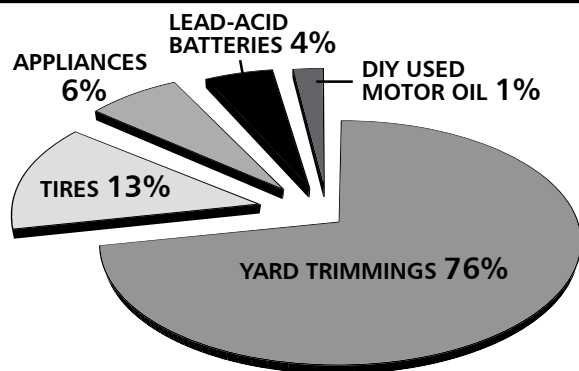
National Perspective

- Major appliances comprised about 4 million tons (1.6 percent) of the nation's MSW. Of that amount, 2.6 million tons (65 percent) were recovered.
- Lead-acid batteries made up about 3.2 million tons (1.3 percent) of the nation's MSW. Of that amount, a little more than 3 million tons (96 percent) were recovered.
- Yard trimmings resulted in about 33.4 million tons (13.4 percent) of the nation's MSW. Of that amount, 19.2 million tons (57.5 percent) were recovered.
- Waste tires accounted for about 5.2 million tons (2.1 percent) of the nation's MSW. Of that amount, about 1.8 million tons (35.5 percent) were recovered.

Market Information

- Appliances are easily recycled and a valuable commodity. There is a nationwide infrastructure to recycle appliances and other products that contain steel.
- There are a number of vendors – including one on state-term contract – for used motor oil collection and recycling in South Carolina. Most vendors pay for used motor oil.
- Lead-acid batteries have numerous markets. Generally, a scrap metal recycler will accept lead-acid batteries, extract the lead and then sell the empty casings to plastic recyclers. Some large lead-acid battery manufacturers and distributors also have set up their own recycling services.
- There are adequate markets for waste tires in South Carolina and the region. Recycled tires are used to produce tire shreds and crumbs for many products, made into rubberized asphalt, employed in civil engineering applications or for energy recovery.
- The average revenue earned by local governments for lead-acid batteries was nearly \$205 per ton and nearly \$187 per ton for used motor oil.

CHART 3.14: Types of Banned Items



NOTE: The total amount of MSW banned items recycled in FY11 was 294,895 tons. This chart shows a breakdown of that total by weight.

Benefits of Recycling

- Recycling lead-acid batteries is an environmental success story. More than 97 percent of all battery lead is recycled. The typical new lead-acid battery contains 60 to 80 percent recycled lead and plastic (PP). When a battery is collected, it is sent to a permitted recycler where, under strict environmental regulations, the lead and plastic are reclaimed and sent to a new battery manufacturer.
- Crumb rubber from recycled tires can make pavements last longer and can be used as a lightweight, durable replacement for many other materials. The Asphalt Rubber Technology Service at Clemson University can assist businesses and industries find ways to make their products and services better through the incorporation of crumb rubber.

SOURCE: U.S. Environmental Protection Agency

TABLE 3.15: Banned Items by County in Tons

COUNTY	APPLIANCES	DIY USED MOTOR OIL	LEAD-ACID BATTERIES	TIRES	YARD TRIMMINGS	TOTAL
Abbeville	0.00	28.00	5.97	269.10	0.09	303.16
Aiken	52.54	161.00	1,348.10	460.06	0.18	2,021.88
Allendale	0.00	8.00	0.79	126.98	0.00	135.77
Anderson	54.44	123.00	656.51	974.07	76.09	1,884.11
Bamberg	0.00	14.00	0.92	227.50	405.58	648.00
Barnwell	2.34	28.00	34.76	142.48	0.09	207.67
Beaufort	4,786.71	91.00	281.79	1,164.19	7,882.85	14,206.54
Berkeley	31.52	171.00	175.34	847.69	1,415.00	2,640.55
Calhoun	14.15	21.00	2.59	107.82	0.00	145.56
Charleston	1,534.17	150.00	1,408.02	2,577.43	45,273.13	50,942.75
Cherokee	174.32	29.00	82.26	1,151.47	889.00	2,326.05
Chester	0.00	40.00	11.11	130.03	149.09	338.23
Chesterfield	0.00	30.00	27.88	392.47	0.18	450.53
Clarendon	0.00	35.00	40.35	250.01	0.09	325.45
Colleton	5.85	35.00	73.03	426.55	0.18	540.61
Darlington	21.92	42.00	32.96	677.76	0.00	774.64
Dillon	0.00	26.00	17.99	425.38	0.09	469.46
Dorchester	639.84	133.00	64.20	798.21	14,789.31	16,424.56
Edgefield	83.86	48.00	11.72	245.63	0.00	389.11
Fairfield	0.00	28.00	9.69	395.99	500.00	933.68
Florence	1,059.94	90.00	139.03	1,175.10	6,807.00	9,271.07
Georgetown	0.00	64.00	42.02	427.22	3,112.83	3,646.07
Greenville	1,219.80	201.00	2,150.99	7,664.79	47,366.28	58,602.86
Greenwood	21.92	51.00	29.99	606.03	6.59	715.53
Hampton	33.28	21.00	6.68	284.76	1,815.73	2,161.45
Horry	122.68	200.00	1,687.24	3,528.39	39,468.92	45,007.23
Jasper	1.65	22.00	55.35	313.29	0.00	392.29
Kershaw	101.18	93.00	56.59	294.43	14.09	559.29
Lancaster	39.72	57.00	58.20	665.90	319.89	1,140.71
Laurens	10.00	41.00	24.63	246.80	2.59	325.02
Lee	0.00	17.00	4.71	171.27	2,156.44	2,349.42
Lexington	1,430.07	340.00	228.12	760.80	4,243.93	7,002.92
Marion	100.00	18.00	27.73	263.15	765.00	1,173.88
Marlboro	0.00	13.00	2.40	60.69	0.00	76.09
McCormick	31.84	14.00	5.14	88.29	0.09	139.36
Newberry	21.92	36.00	29.21	234.44	1,954.85	2,276.42
Oconee	789.14	65.00	264.20	1,025.72	2,942.12	5,086.18
Orangeburg	21.92	69.00	53.95	840.92	0.09	985.88
Pickens	2,534.16	132.00	311.55	877.28	8,858.08	12,713.07
Richland	154.25	114.00	1,878.78	1,275.78	6,921.55	10,344.36
Saluda	62.20	33.00	30.74	167.96	0.00	293.90
Spartanburg	848.76	227.00	262.11	1,854.42	16,742.87	19,935.16
Sumter	2,941.52	96.00	180.82	611.08	1,616.57	5,445.99
Union	0.00	20.00	16.96	165.74	0.09	202.79
Williamsburg	345.26	28.00	9.64	421.92	6.23	811.05
York	121.78	203.00	337.19	1,289.03	6,188.40	8,136.40
STATE TOTAL	19,414.65	3,506.00	12,176.93	37,106.02	222,691.18	294,894.79

128

pounds of banned items were recycled per person in South Carolina in FY11.

25%

of all MSW recycled in the state during FY11 was banned items.

About 16%

more appliances were recycled in the state during FY11 than in FY10.

S.C. local governments reported an average of

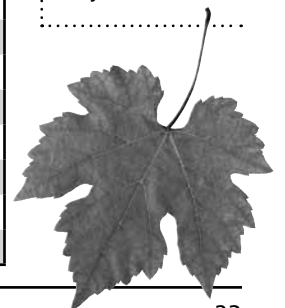
\$205

per ton for lead-acid batteries recycled in FY11.

S.C. local governments reported an average of

\$187

per ton for used motor oil recycled in FY11.



COMMODITIES: **MISCELLANEOUS ITEMS**

South Carolina at a Glance

- Miscellaneous items are materials that are not part of any other commodity category. These items vary widely and include antifreeze, cooking oil, fluorescent bulbs, rechargeable batteries and mattresses. Two additional items – hazardous household materials and consumer electronics – are highlighted on page 26.
- The amount of miscellaneous items recycled increased from 42,093 tons in FY10 to 44,525 tons in FY11 – an increase of nearly 6 percent.
- Miscellaneous items comprised about 4 percent of the MSW recycled in FY11.

TABLE 3.16: Miscellaneous Items by County in Tons

COUNTY	ANTIFREEZE	CONSUMER ELECTRONICS	COOKING OIL	FLUORESCENT BULBS	FOOD SCRAPS	HAZARDOUS HOUSEHOLD MATERIALS	INKJET/TONER CARTRIDGES	MATTRESSES
Abbeville	0.26	86.41	0.17	1.10	0.00	0.00	0.04	0.00
Aiken	13.61	225.03	0.00	10.62	0.00	3.80	9.29	0.00
Allendale	0.14	21.70	0.00	0.02	0.00	0.00	0.04	0.00
Anderson	1.50	58.22	1.98	5.31	0.01	0.00	0.96	0.00
Bamberg	0.14	16.29	0.00	0.02	0.00	0.00	0.02	0.00
Barnwell	1.02	47.44	0.00	0.02	0.00	0.00	0.02	0.00
Beaufort	12.30	156.39	492.90	5.87	146.35	0.00	4.70	30.21
Berkeley	9.32	73.79	3.97	8.45	0.00	0.00	0.54	0.00
Calhoun	0.14	49.57	0.00	2.36	0.00	0.00	0.70	0.00
Charleston	55.04	478.29	41.91	11.79	1,336.60	12.40	3.07	0.00
Cherokee	0.26	60.99	0.17	2.37	0.00	0.00	1.04	0.00
Chester	0.14	13.52	0.00	0.53	0.00	0.00	0.06	0.00
Chesterfield	0.38	11.56	0.34	1.88	0.00	0.00	0.05	0.00
Clarendon	0.26	62.15	0.17	0.05	0.00	0.00	0.06	0.00
Colleton	0.40	16.28	9.33	0.02	0.00	0.00	0.44	0.00
Darlington	0.14	72.27	0.00	0.90	0.00	0.00	0.37	0.00
Dillon	0.26	8.38	0.17	0.28	0.00	0.00	0.04	0.00
Dorchester	0.14	100.93	0.25	0.12	0.00	0.00	0.29	0.00
Edgefield	6.47	41.90	0.17	2.10	0.00	0.00	0.27	11.03
Fairfield	0.14	56.82	21.00	0.72	0.00	0.00	0.12	0.00
Florence	0.48	48.49	2.32	0.19	0.00	0.00	0.38	0.00
Georgetown	0.60	31.01	0.34	1.08	0.00	41.00	0.16	0.00
Greenville	81.02	428.58	16.78	31.86	5.00	0.00	5.64	0.00
Greenwood	1.34	87.06	4.50	5.37	0.00	0.00	0.34	0.00
Hampton	0.26	85.70	0.17	0.05	0.00	0.00	0.14	0.00
Horry	78.64	822.31	1,307.79	10.26	0.00	30.40	3.97	76.43
Jasper	2.43	15.05	29.12	2.02	0.00	0.00	1.21	0.00
Kershaw	0.70	154.94	0.17	0.05	0.00	0.00	0.56	0.00
Lancaster	0.14	19.77	0.00	0.39	0.00	0.00	0.12	0.00
Laurens	1.78	49.16	0.00	0.93	12.00	0.00	0.11	0.00
Lee	0.34	7.56	0.00	0.02	0.00	0.00	0.04	0.00
Lexington	0.84	192.03	27.15	2.71	0.00	0.00	1.69	0.00
Marion	3.14	16.34	0.00	0.02	0.00	0.00	0.02	0.00
Marlboro	0.50	19.19	1.82	0.27	0.00	0.00	0.25	2.00
McCormick	0.26	23.63	0.17	0.05	0.00	0.29	0.06	0.00
Newberry	0.14	49.58	0.00	0.16	0.00	0.00	0.02	0.00
Oconee	19.72	21.89	564.96	5.29	0.00	0.00	2.37	0.00
Orangeburg	0.36	39.96	569.83	0.12	21.87	0.00	0.02	0.00
Pickens	9.20	447.28	111.85	7.85	23.77	0.00	0.14	0.00
Richland	4.34	550.66	28.08	9.91	0.00	60.00	7.15	9.00
Saluda	0.84	12.59	0.17	0.05	0.00	0.00	0.04	0.00
Spartanburg	8.62	147.12	0.17	7.60	0.00	0.00	0.82	0.00
Sumter	8.59	194.62	5.15	3.55	96.87	0.00	3.26	0.00
Union	0.26	6.46	0.17	0.05	0.00	0.00	0.05	0.00
Williamsburg	0.14	17.97	22.10	0.02	0.00	0.00	0.02	0.00
York	393.28	579.59	166.18	22.18	17.50	2.70	23.09	0.00
STATE TOTAL	720.02	5,726.46	3,431.52	166.57	1,659.97	150.59	73.77	128.67

South Carolina at a Glance *(continued)*

- Nearly 78 percent of the miscellaneous items recovered were from commercial and industrial sources.
- On average, each South Carolinian recycled 19 pounds of miscellaneous items in FY11.
- Electronics, cooking oil, food scraps, hazardous household materials, textiles, used oil filters and wood packaging all had increases in FY11 from the previous FY. Antifreeze, fluorescent bulbs, inkjet and toner cartridges, mattresses, paint, rechargeable batteries and other wood all decreased.

44%

more electronics were recycled in FY11 than in the previous fiscal year due to more recycling programs.

78%

of miscellaneous items recycled in the state during FY11 came from commercial and industrial sources.

19

pounds of miscellaneous items were recycled by each person in the state during FY11.

COUNTY	PAINT	RECHARGEABLE BATTERIES	TEXTILES	USED MOTOR OIL FILTERS	WOOD PACKAGING	OTHER WOOD	OTHER ITEMS	TOTAL MISC.
Abbeville	0.00	0.27	45.00	1.83	42.53	29.91	0.53	208.05
Aiken	0.07	2.64	0.00	19.96	1,072.71	126.05	4.53	1,488.31
Allendale	0.00	0.11	0.00	0.28	12.56	0.00	0.12	34.97
Anderson	2.43	9.54	150.01	10.78	664.02	180.02	309.50	1,394.26
Bamberg	0.00	0.16	0.00	0.28	0.03	0.01	0.24	17.19
Barnwell	0.00	0.23	0.00	2.93	0.03	0.01	0.81	52.51
Beaufort	0.00	3.83	184.60	28.56	648.33	1.01	80.05	1,795.14
Berkeley	7.90	2.72	0.00	94.58	715.39	0.00	181.51	1,098.16
Calhoun	0.00	0.15	0.00	1.17	1.08	0.00	0.14	55.31
Charleston	72.84	11.43	0.00	103.84	1,092.95	5.32	113.29	3,338.77
Cherokee	0.00	1.11	0.00	9.25	1,482.63	0.00	24.45	1,582.27
Chester	0.00	0.37	0.00	1.46	27.45	0.01	1.96	45.50
Chesterfield	0.00	0.49	0.00	2.55	25.03	0.02	3.60	45.90
Clarendon	0.00	0.37	0.00	4.94	12.56	0.01	1.92	82.49
Colleton	0.00	0.39	0.00	5.58	0.03	0.02	2.32	34.81
Darlington	0.00	0.69	0.00	9.45	172.20	0.11	307.23	563.36
Dillon	0.00	0.33	0.00	1.85	0.03	0.01	1.97	13.32
Dorchester	0.00	1.86	0.00	12.63	372.96	276.02	268.46	1,033.65
Edgefield	0.00	0.28	0.00	14.97	74.13	22.61	0.43	174.36
Fairfield	0.00	0.24	0.00	4.44	0.10	0.13	0.55	84.26
Florence	0.00	1.40	0.00	10.26	248.77	0.00	5.36	317.64
Georgetown	0.00	0.63	0.00	3.18	0.10	0.12	306.37	384.59
Greenville	16.94	9.65	911.00	199.90	4,347.93	54.60	559.15	6,668.04
Greenwood	0.00	16.91	0.00	0.40	1,807.06	6.51	3.33	1,932.82
Hampton	0.00	0.22	0.00	2.42	71.73	0.12	0.43	161.24
Horry	0.12	88.42	0.00	239.05	1,086.03	0.62	378.92	4,122.96
Jasper	0.25	1.40	0.00	10.50	20.56	2.00	0.12	84.66
Kershaw	0.00	0.63	0.00	5.41	144.86	0.01	2.39	309.72
Lancaster	0.00	0.94	0.00	11.63	674.49	0.12	1.51	709.11
Laurens	0.00	1.71	0.00	0.28	70.43	0.01	74.11	210.51
Lee	0.00	0.20	0.00	5.70	12.56	0.01	0.12	26.55
Lexington	0.00	3.06	66.37	39.65	883.23	89.91	43.61	1,350.25
Marion	0.00	0.10	0.00	15.43	0.03	0.00	1.65	36.73
Marlboro	0.00	0.33	0.00	3.87	60.93	0.11	0.12	89.39
McCormick	0.00	0.01	0.00	0.94	16.46	0.01	0.43	42.31
Newberry	0.00	0.38	0.00	4.41	75.63	0.01	1.52	131.85
Oconee	0.00	2.20	127.30	16.07	886.49	422.38	3.13	2,071.80
Orangeburg	5.23	0.93	0.00	6.87	181.03	2.51	73.53	902.26
Pickens	35.50	1.34	45.00	9.06	670.99	133.62	8.83	1,504.43
Richland	0.10	5.94	48.76	18.33	936.96	58.03	24.89	1,762.15
Saluda	2.12	0.21	0.00	5.08	400.03	0.00	0.43	421.56
Spartanburg	11.29	5.45	0.00	24.86	1,780.72	0.37	72.27	2,059.29
Sumter	0.00	1.09	38.40	19.40	177.85	105.14	2.15	656.07
Union	1.00	0.30	0.00	1.24	50.88	0.31	2.68	63.40
Williamsburg	0.00	0.35	0.00	4.14	0.03	0.00	0.12	44.89
York	13.57	3.96	788.67	240.03	2,670.32	0.12	397.47	5,318.64
STATE TOTAL	169.36	184.96	2,405.16	1,229.43	23,692.85	1,517.91	3,268.24	44,525.46

HHM & E-SCRAP

Hazardous household materials (HHM) and consumer electronics (also known as e-scrap) are highlighted in this report because they comprise significant parts of MSW as well as pose a potential risk to human health and the environment. In addition, legislation was passed in May 2010 to properly manage electronics generated by residents. This section highlights efforts to properly manage or recycle these materials.

Hazardous Household Materials

HHM is defined by the U.S. Environmental Protection Agency as “leftover household products that contain corrosive, toxic, ignitable or reactive ingredients.” Examples of HHM include paint, cleaners, pool

chemicals as well as lawn and garden products. While businesses are required to properly recycle or dispose of these items, households are encouraged to do the same. Improper disposal of HHM can pose a threat to human health and the environment. Examples of improper disposal of HHM can include pouring it down the drain, on the ground or into storm sewers. In an effort to keep HHM out of the environment and to ensure proper handling of the various items, several local governments offer some type of HHM collection program for residents.

Four counties and one municipality have permanent collection sites or weekly curbside collection for HHM. Another four counties and two municipalities offer HHM collection events. For many local governments, the greatest obstacle to HHM collection is funding. There is significant cost related to the collection and sorting as well as the recycling, incineration or proper disposal of HHM. Some local governments set aside funding or seek grants to offset costs.

DHEC offers educational materials – such as fact sheets and the “S.C. Smart Gardener Handbook” – for households about methods to reduce and properly manage HHM. Topics include choosing non-toxic or less toxic options, buying only the amount needed and encouraging reuse of unwanted materials. DHEC also offers technical assistance to local governments looking to manage HHM and guidance on setting up single-day collection events.

E-scrap

In May 2010, South Carolina passed legislation that requires residents to recycle desktop, laptop, notebook and tablet computers, computer monitors, printers and televisions. The legislation specifically outlined that residents “may not knowingly place or discard” these products “in any waste stream that is to be disposed of in a solid waste landfill.” This ban, which received robust statewide media coverage went into effect on July 1, 2011.

Local governments responded to the ban during FY11 by developing or improving collection programs. By the end of FY11, there were programs in about 35 of the state’s 46 counties either through curbside programs, drop-off sites or single-day collection events. Unsurprisingly, given the attention and response to this issue, the amount of e-scrap recycled increased 44 percent from 3,977 tons in FY10 to 5,726 tons in FY11.

S.C. HHM Collection Programs

Below is the list of programs* and the amount of HHM collected in FY11.

- **BEAUFORT COUNTY:** Single-day collection events and permanent paint collection sites (74.6 tons)
- **CHARLESTON COUNTY:** Permanent collection site (85.12 tons)
- **CHESTER COUNTY:** Single-day collection events (4.27 tons)
- **CITY OF NORTH AUGUSTA:** Single-day collection events (3.8 tons)
- **CITY OF SIMPSONVILLE:** Permanent collection site (paint only, no record of amount)
- **GEORGETOWN COUNTY:** Permanent collection site (41 tons)
- **HORRY COUNTY:** Permanent collection site (41.7 tons)
- **RICHLAND COUNTY:** Single-day collection event (60 tons)
- **SPARTANBURG COUNTY:** Single-day collection event (35.23 tons)
- **TOWN OF SURFSIDE:** Weekend collection events (sent to Horry County)
- **YORK COUNTY:** Single-day collection events and a permanent collection site (72.36 tons)

Anderson County and the City of Aiken also have programs to manage HHM, but did not collect enough material to send to market in FY11.

* This list includes all HHM collected in South Carolina in FY11. Only that listed in Table 3.16 was recycled. The rest was disposed of properly and does not count towards the state’s recycling rate.

COMMODITY: **COMMINGLED RECYCLABLES**

South Carolina at a Glance

- The amount of commingled recyclables recovered increased from 29,648 tons in FY10 to 47,432 tons in FY11 – an improvement of nearly 60 percent. Most of this increase is attributed to residential recycling, although the number of counties collecting commingled materials only increased by one – to 15 in FY11.
- Commingled recyclables account for 4 percent of the MSW recycled in FY11.
- On average, each South Carolinian recycled more than 20 pounds of commingled recyclables in FY11.
- Three counties – Charleston, Lexington and Richland – recycled 22,895 tons of commingled recyclables, accounting for about 48 percent of the total collected. Charleston County collected the most – more than 10,600 tons.

Market Information

- The average revenue reported by local governments for commingled recyclables was \$7.13 per ton.
- One downside to commingled collection programs is a loss in revenue for recovered material compared to marketing clean, separate commodities. Commingled material has to be sorted mechanically or by hand – a process that adds to the cost. This cost, however, can be offset by reduced collection costs (e.g., labor, vehicles) as well as increased participation and recovery.
- Commingling improves collection efficiency. Programs, for example, can replace a curbside recycling bin with a 96-gallon roll cart and reduce the frequency of collection (i.e., once every two weeks).

National Perspective

- Collecting commingled recyclables is a growing nationwide trend. There are several ways to collect commingled material. In single-stream recycling programs, paper products and containers (e.g., aluminum cans, glass bottles, plastic bottles) are collected in one container and sorted later for market. In other programs, often called dual-stream recycling, paper is collected separately from other recyclables. Other variations of collecting mixed recyclables also exist.
- There are several benefits to commingled recycling. One of the significant benefits is that more types of materials can be collected – thus increasing the amount of material collected and potential revenue from the sale of those materials. Studies also have shown that commingled recycling frequently increases participation in programs.
- As a result of the recyclables being mixed prior to marketing, it is difficult to track and report individual amounts for specific types of material. Instead, a total amount is often provided. These amounts are counted as MSW and included in the state's MSW recycling rate.

TABLE 3.17: Commingled Recyclables by County

COUNTY	TONS
Abbeville	0.00
Aiken	0.00
Allendale	0.00
Anderson	1,561.34
Bamberg	0.00
Barnwell	0.00
Beaufort	3,071.94
Berkeley	3,876.16
Calhoun	0.00
Charleston	10,661.11
Cherokee	0.00
Chester	31.17
Chesterfield	232.67
Clarendon	0.00
Colleton	0.00
Darlington	165.81
Dillon	0.00
Dorchester	1,090.40
Edgefield	0.00
Fairfield	0.00
Florence	1,188.61
Georgetown	0.00
Greenville	2,534.18
Greenwood	0.00
Hampton	0.00
Horry	429.54
Jasper	315.00
Kershaw	239.00
Lancaster	0.00
Laurens	0.00
Lee	0.00
Lexington	4,086.75
Marion	620.99
Marlboro	0.00
McCormick	0.00
Newberry	0.00
Oconee	0.00
Orangeburg	149.70
Pickens	3,301.00
Richland	8,146.83
Saluda	0.00
Spartanburg	3,261.58
Sumter	0.00
Union	0.00
Williamsburg	10.00
York	2,458.44
STATE TOTAL	47,432.22

