



City of Lawrence 2007 Recycling Annual Report



In mid-2007, the City's Solid Waste Division placed two mixed paper recycling bins out in the community. This new service diverted 50 tons of material from the landfill.

Solid Waste Division Waste Reduction and Recycling

ANNUAL RECYCLING REPORT FOR 2007

This report summarizes the materials, quantities, associated revenue, and avoided landfill costs derived from diverting recycled materials from the landfill for 2007. Numeric quantities of materials diverted for recycling by the City of Lawrence Solid Waste Division and other recycling entities are in the attached tables.

TOTAL WASTE DIVERTED FROM LANDFILL BY THE CITY AND PRIVATE SECTORS

In 2007, more than 30,314 tons of materials were recycled through City and private sector efforts in Lawrence representing a 35 percent recycling rate, which is believed to be the highest in Kansas and is higher than the national average (last listed by EPA as 32 percent).

A total of 15,567 tons of grass clippings, leaves and brushy wood waste, Christmas trees, white goods and metals, newspaper, cardboard, mixed paper and office waste paper was recycled through City programs in 2007 for a savings in landfill costs of \$298,108.05. Revenue from the sale of recycled materials was \$228,022.18. The private sector recycling efforts which diverted 14,747 tons of materials from disposal saved the City an additional \$282,405.05 in landfill costs.

The total waste landfilled by the city in 2007 decreased four percent (2,658 tons) from 2006.

In 2007, the City's Solid Waste Division collected an estimated 72,538 tons of municipal solid waste. Of this total, 15,567 tons of material was recycled by the City and 56,971 tons were landfilled. An additional estimated 14,747 tons of material were recycled by the private sector, primarily through the Wal-Mart Community Recycling Center (2,846 tons), University of Kansas (552 tons), 12th & Haskell Bargain Center (499 tons), Lonnie's Recycling (119 tons), other private recycling collectors (831 tons), and in-house recycling by large retail, industrial and warehouse facilities (9,000 tons). Also included in the recycling rate is an estimated 900 tons due to backyard composting and grasscycling.

(Note: The Solid Waste Division also landfilled an estimated 15,732 tons of construction/demolition and industrial process waste in 2007. Those wastestreams are not included in municipal solid waste data.)

TABLE 1 presents Lawrence's historical recycling rate and the tons of waste disposed and recycled per person from 1991 through 2007.

TABLE 2 shows the types and amounts of materials collected by all recycling providers within the city.

TABLE 3 summarizes the 2007 results for the city-operated recycling programs.

TABLE 4 gives a historical comparison of the city-operated recycling programs from 1997 to the present.

TABLE 1
Historic Recycling Rates, Per Capita Disposal and Per Capita Recycling

<u>Year</u>	<u>MSW Generated</u> (Tons)	<u>MSW Recycled</u> (Tons)	<u>Recycling Rate</u> (Percent)	<u>Population</u> (U.S. Census)	<u>MSW Disposed</u> (Tons Per Capita)	<u>MSW Disposed</u> (Lbs./person/day)	<u>MSW Recycled</u> (Tons Per Capita)
1991	50,000 *	2,000 *	4 *	66,630	0.72 *	3.95 *	0.03 *
1995	65,576	18,852	29	71,726	0.65	3.57	0.26
1996	*	*	*	73,137	*	*	*
1997	*	*	*	76,055	*	*	*
1998	69,900	20,000	29	77,488	0.64	3.53	0.26
1999	73,645	21,000	29	78,911	0.67	3.66	0.27
2000	74,792	21,500	29	80,508	0.66	3.63	0.27
2001	78,942	23,278	30	81,780	0.68	3.73	0.28
2002	80,550	25,566	32	83,310	0.66	3.62	0.31
2003	84,273	28,342	34	84,844	0.66	3.61	0.33
2004	87,229	29,640	34	86,448	0.67	3.65	0.34
2005	82,414	27,473	33	88,664	0.62	3.40	0.31
2006	84,727	28,814	34	89,110	0.63	3.44	0.32
2007	87,285	30,314	35	90,311	0.63	3.46	0.34

* Data unavailable

**TABLE 2
 2007 - MATERIALS RECOVERED FOR RECYCLING (1)
 BY CITY OF LAWRENCE, UNIVERSITY OF KANSAS and PRIVATE DROP-OFF AND COLLECTION FACILITIES**

Material (Tons)	City of Lawrence Recycling Programs	WalMart Community Recycling Center	University of Kansas Campus Recycling	12th and Haskell Bargain Center	Lonnie's Recycling Center	Other Private Collectors (2)	Total Community Recycling
Newspapers	865	465	143	78			1,551
Corrugated Cardboard	1,061	912	185	95			2,253
Office Paper	33	100	160			333	626
Mixed Paper	50	221	33	62			366
Magazines		336	10				346
White Ledger							0
Telephone Directories			2				2
Total Paper Materials	2,009	2,034	533	235	0	333	5,144
HDPE Natural		42	1				43
HDPE Colored		45					45
PET		44	9				53
Plastic Film		45					45
Mixed Plastics				45			45
Total Plastic Materials	0	176	10	45	0	0	231
Steel Cans		66	5	50			121
White Goods and Metals	91			60	16		167
Aluminum Cans		19	4	76	97		196
Total Metal Materials	91	85	9	186	113	0	484
Glass Containers		490		10			500
Batteries		61		23	6	498	588
Total Misc. Items	0	551	0	33	6	498	1,088
Grass, Leaves, Brush	13,437						13,437
Christmas Trees	30						30
Total Compostables	13,467	0	0	0	0	0	13,467
TOTAL TONS	15,567	2,846	552	499	119	831	20,414

(1) Includes materials collected by private curbside recyclable collection businesses which drop the material off at city or private drop-off locations listed. Does not include in-house recycling by business and industry (e.g. cardboard collected for baling on-site and picked up by brokers for delivery to paper plants, such as supermarkets, big box stores, etc.) nor security shred services.

(2) Shredding services estimated 300 tons based on City Hall (88 tons reported in 2006); others include County Offices, law enforcement, hospitals, schools, financial institutions, etc. Deffenbaugh reports 33 tons from school drop-offs. Lawrence Battery Company reports 498 tons of batteries

TABLE 3
2007 - Materials Recovered for Recycling Through City-Operated Programs

<u>Material</u>	<u>Quantity (Tons)</u>	<u>Revenue from Sales</u>	<u>Avoided Disposal Costs</u>
Grass, Leaves and Brush (1)	13,437	N/A	\$257,318.55
Newspaper	865	\$86,887.42	\$16,564.75
Corrugated Cardboard	1,061	\$126,872.90	\$20,318.15
Office Paper	33	\$5,532.94	\$631.95
Mixed paper	50	\$4,329.82	\$957.50
White Goods & Metals	91	\$4,399.10	\$1,742.65
Christmas Trees	30 (2,421 trees)	N/A	\$574.50
Total	15,567 Tons	\$228,022.18	\$298,108.05

(1) Includes brush collected with yard waste on Mondays, Forestry Division drop-off collections, and right-of-way debris

TABLE 4
2007 - Materials Recovered for Recycling Through City Programs - Annual Comparison

<u>Material</u>	<u>1997</u>	<u>1998</u>	<u>1999</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	<u>2006</u>	<u>2007</u>
Grass, Leaves and Brush	7,667	7,986	6,149	5,421	6,522	9,363	11,123	11,756	12,658	12,082	13,437
Newspaper	606	866	852	790	950	704	790	822	1,038	866	865
Corrugated Cardboard	347	425	451	510	509	641	655	772	920	939	1,061
Office Paper	2	7	8	11	13	19	16	31	29	29	33
Mixed Paper	N/A	N/A	N/A	2	1	1	2	1	1	1	50
White Goods and Metals	59	36	108	111	158	80	147	142	161	111	91
Christmas Trees	53	46	50	36	39	38	33	23	25	32	30
TOTAL TONS	8,734	9,366	7,618	6,881	8,192	10,846	12,766	13,547	14,832	14,060	15,567

MATERIALS RECOVERED THROUGH CITY PROGRAMS

GRASS CLIPPINGS, LEAVES AND BRUSH

The City of Lawrence's Solid Waste Division provides separate citywide collection services for grass clippings, leaves and brush from Lawrence residences on Mondays from approximately March until mid-December. Brush is also collected through the Forestry Division's Saturday drop-off collection and from city right-of-way tree trimmings. These materials are processed at the City's composting facility. In 2007, 13,437 tons of grass clippings, leaves and brush were collected and composted resulting in a savings of \$257,318.55 in avoided disposal costs.

Beginning in 2005, by Ordinance, only cans, carts and compostable kraft paper bags could be used for yard trimmings for curbside collection. Plastic bags were no longer allowed for the containerization of yard waste. This policy for yard waste containers: (a) increased collection efficiency by reducing collection time; (b) improved worker safety by eliminating the need to cut open plastic bags with box cutters; and (c) yielded higher quality compost by reducing plastic contamination.

Compliance with the yard waste container policy has been fantastic in 2007 and is currently above 99 percent of homes which set out yard waste.

NEWSPAPERS

Eleven city-sponsored drop boxes for newspaper recycling are located throughout Lawrence. In 2007, 865 tons were collected and recycled. Diverting these materials from the landfill resulted in savings of \$16,564.75 in avoided disposal costs. The sales of old newspapers provided revenue of \$86,887.42.

CORRUGATED CARDBOARD

The City's Solid Waste Division serves over 550 Lawrence businesses with cardboard recycling services in addition to providing seven public drop boxes for corrugated cardboard. In 2007, 1,061 tons of materials were collected for recycling resulting in revenue of \$126,872.90 and an avoided disposal cost of \$20,318.15.

OFFICE PAPER

Office waste paper is collected from approximately 140 businesses and schools. This program diverted 33 tons of paper from the landfill in 2007. Revenue derived from the sale of the paper was \$5,532.94 and avoided landfill costs were \$631.95.

MIXED PAPER

A mixed paper collection program was started in mid-2007 with two drop-off sites co-located with newspaper and cardboard drop-off boxes (four additional sites will be added in 2008). This new program recovered 50 tons of mixed paper resulting in an avoided disposal savings of \$957.50. Revenues from the sale of the material was \$4,329.82.

CHRISTMAS TREES

Following Christmas, three collection days were scheduled whereby the Solid Waste Division crews collected Christmas trees curbside for recycling from Lawrence residents. Thirty (30) tons were collected, processed and used as erosion control and wildlife habitat enhancement at the closed landfill north of Riverfront Park. Diverting Christmas trees from the landfill provided \$574.50 in avoided disposal costs.

WHITE GOODS & METALS

Bulky item pickup for appliances like refrigerators, washers and dryers is provided by appointment by the City's Solid Waste Division to Lawrence residents. Metal appliances and other collected metals are sold to local metal salvage yards. In 2007, ninety-one (91) tons were recovered and sold for revenue of \$4,399.10 and provided an avoided disposal cost of \$1,742.65.

USED MOTOR OIL

A total of 5,611 gallons of used oil was collected at the City's Maintenance Garage in 2007 of which 4,250 gallons were recycled through oil recyclers. One thousand, three hundred and sixty-one (1,361) gallons were burned for heat at the garage. Recycling the 4,250 gallons of used oil generated revenue of \$1,253.00 in 2007.

TIRES

A total of 2,616 tires were collected for proper disposal by the City's Solid Waste Division in 2007. The Solid Waste Division provides Lawrence residents free pickup for up to five passenger tires per year, per household. Tires were collected by TireTown for shredding and monofill in Leavenworth County at the cost of \$ 3,681.00.

FREON

Three hundred and ninety-five (395) refrigerators and other freon-containing units were collected for recycling by the City's Solid Waste Division in 2007. Eighty-two (82) pounds of Freon were captured by trained Solid Waste Division maintenance personnel with EPA-approved equipment. The Freon was sent for reclamation to approved facilities. Federal regulations require Freon to be removed from appliances prior to salvaging. By moving this responsibility in-house, the city has greater regulatory control of the extraction process and saves money.

HOUSEHOLD HAZARDOUS WASTE

Over 185,997 pounds (93 tons) of hazardous waste generated by Douglas County households and small businesses were diverted from the Hamm regional landfill in 2007. Three thousand, one hundred and eighteen (3,118) households used the program which included scheduled drop off appointments, homebound pickups, and abandoned and orphan waste collection services.

In 2007, the Small Quantity Generator program provided technical assistance and environmentally-preferred disposal options for hazardous waste to 92 small businesses and schools.