Missouri Department of Natural Resources

THE 2008 MISSOURI WASTE COMPOSITION STUDY

March, 2009

Conducted by:

Midwest Assistance Program, Inc.

The Midwestern Rural Community Assistance Partner

Midwest Assistance Program

serving rural communities since 1979

RCAP NETWORK MEMBER

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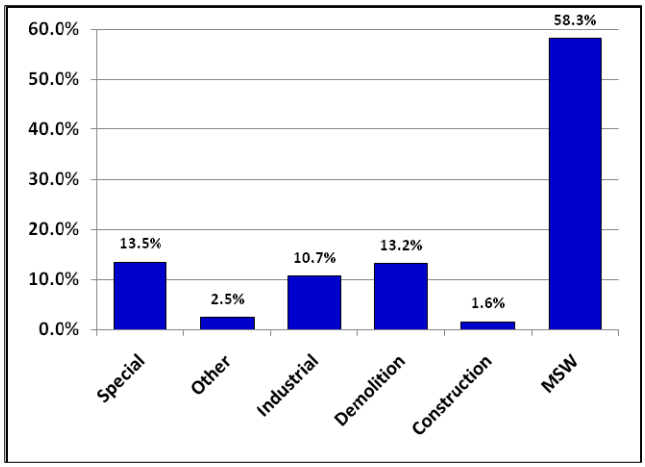
Executive Summary

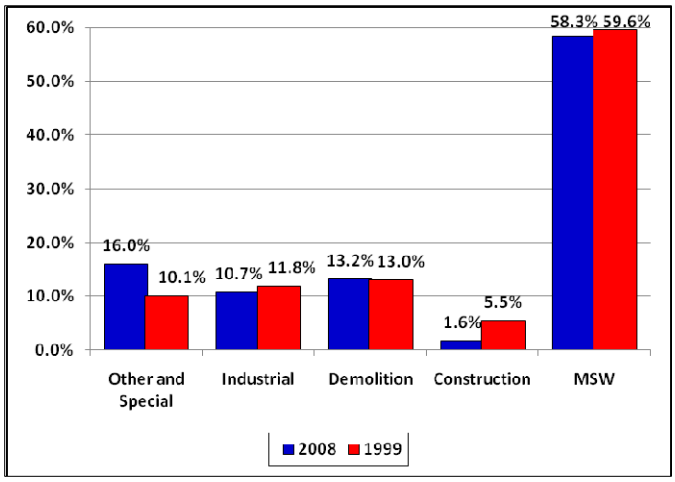
The 2008 Missouri Waste Composition Study was funded by the Missouri Department of Natural Resources Solid Waste Management Program and conducted by the Midwest Assistance Program (MAP). The study observed 67,359 tons of waste received at 15 Missouri landfills and transfer stations during the summer and fall of 2008. Each delivery was classified into one of five waste sectors. Each of the major waste sectors was broken into waste components. The table below depicts the composition percentage of all waste sectors, by weight.

Major Waste Sectors	% of Waste
Special Waste	13.5%
Other Waste	2.5%
Industrial Waste	10.7%
Demolition Waste	13.2%
Construction Waste	1.6%
Municipal Solid Waste (MSW)	58.3%



The previous waste composition study was conducted in 1999 by MAP using the same methodology as 2008. The waste composition has changed slightly over the past nine years. The following table and chart depict the change in the major waste sectors from 1999 to 2008. In 1999 the other waste and special waste sectors were combined.

Sector	1999	2008
Special	N/A	13.5%
Other	10.1%	2.5%
Industrial	11.8%	10.7%
Demolition	13.0%	13.2%
Construction	5.5%	1.6%
MSW	59.6%	58.3%



Waste Sectors

The Special waste sector accounted for 13.5% of the entire waste stream. The components within this sector included the following materials:

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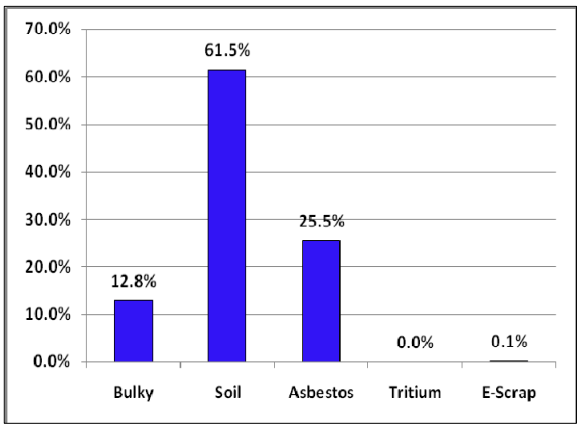
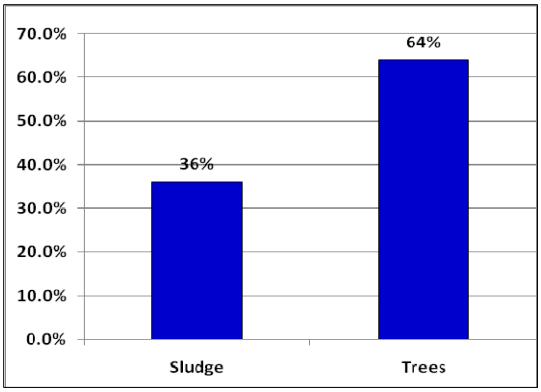
Special Waste Component	% of Sector
Bulky Items	12.8%
Contaminated Soil	61.5%
Asbestos	25.5%
Tritium	0%
E scrap	0.1%



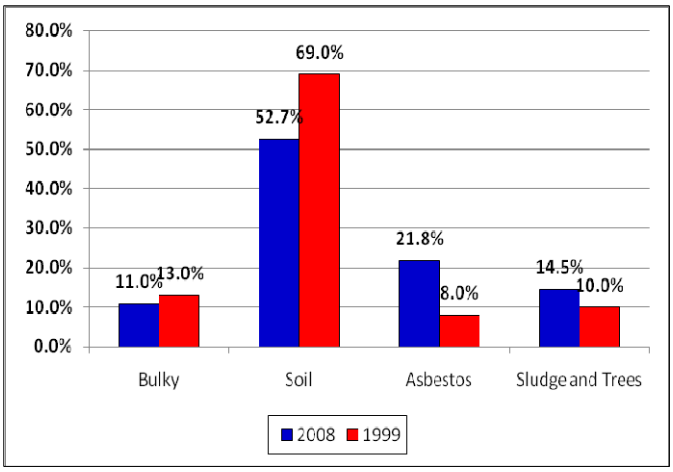
The 'Other' waste sector accounted for 2.5% of the entire waste stream. The components within this sector included the following materials:

Other Waste Component	% of Sector
Sludge	36%
Tree Trunks and limbs	64%



The other waste and special waste sectors were combined in the 1999 study. If the Special and Other waste sectors are combined in the 2008 study they account for 16% of the entire waste stream. Changes in these waste sectors between 1999 and 2008 are depicted below:

Special and Other	1999	2008
Bulky Items	13%	11%
Contaminated Soil	69%	52.7%
Asbestos	8%	21.8%
Sludge and Trees	10%	14.5%



The Industrial waste sector accounted for 10.7% of the entire waste stream. The other waste component was primarily auto fluff and foundry sand. The components within this sector included the following materials:

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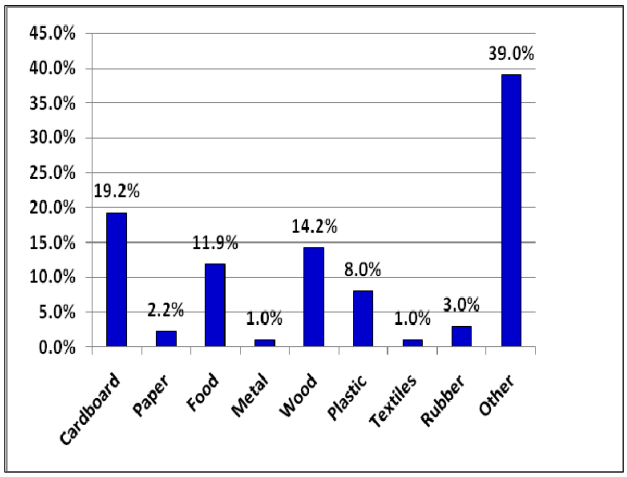
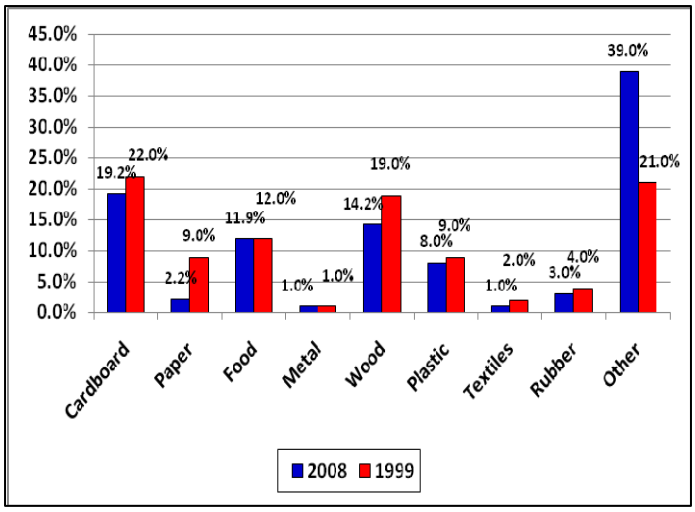
Industrial Component	% of Sector
Cardboard	19.2%
Paper	2.2%
Food	11.9%
Metal	1%
Wood	14.2%
Plastic	8%
Textiles	1%
Rubber	3%
Other	39%



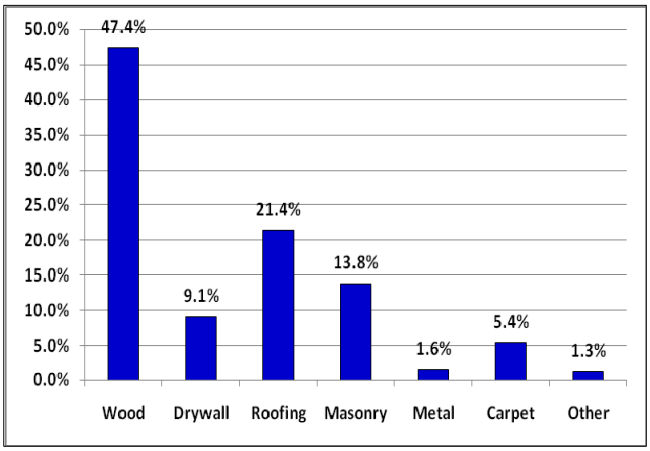
Changes in the industrial waste components between 1999 and 2008 are depicted below:

Industrial Waste	1999	2008
Cardboard	22%	19.2%
Paper	9%	2.2%
Food	12%	11.9%
Metal	1%	1%
Wood	19%	14.2%
Plastic	9%	8%
Textiles	2%	1%
Rubber	4%	3%
Other	21%	39%



The Demolition waste sector accounted for 13.2% of the entire waste stream. The components within this sector included the following materials:

Demolition Component	% of Sector
Wood	47.4%
Drywall	9.1%
Roofing	21.4%
Masonry	13.8%
Metal	1.6%
Carpet	5.4%
Other	1.3%



Changes in the Demolition waste components between 1999 and 2008 are depicted below:

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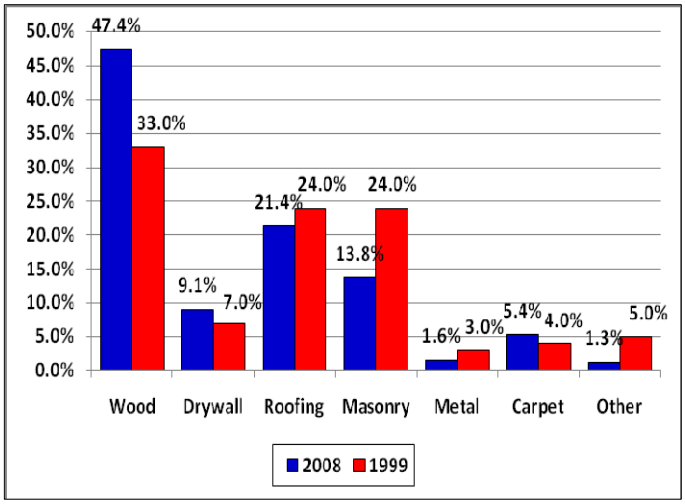
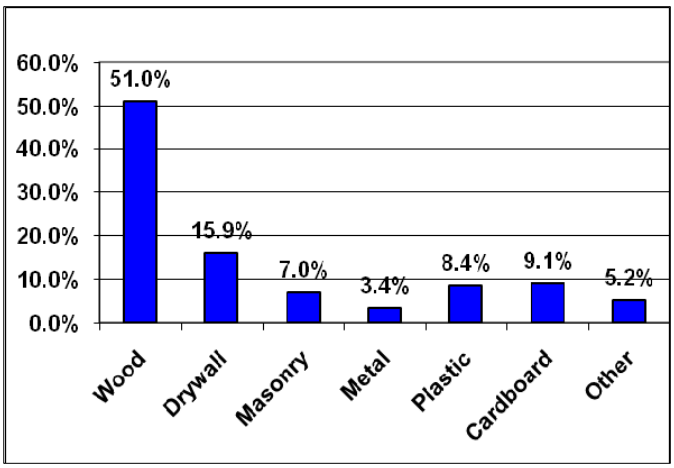
Demolition Waste	1999	2008
Wood	33%	47.4%
Drywall	7%	9.1%
Roofing	24%	21.4%
Masonry	24%	13.8%
Metal	3%	1.6%
Carpet	4%	5.4%
Other	5%	1.3%



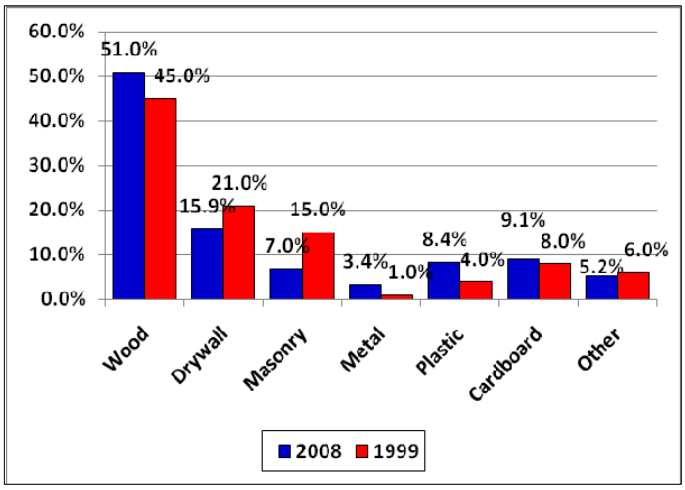
The Construction waste sector accounted for only 1.6% of the entire waste stream. The components within this sector included the following materials:

Construction Component	% of Sector
Wood	51%
Drywall	15.9%
Masonry	7%
Metal	3.4%
Plastic	8.4%
Cardboard	9.1%
Other	5.2%



Changes in the Construction waste components between 1999 and 2008 are depicted below:

Const. Waste	1999	2008
Wood	45%	51%
Drywall	21%	15.9%
Masonry	15%	7%
Metal	1%	3.4%
Plastic	4%	8.4%
Cardboard	8%	9.1%
Other	6%	5.2%



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The following table lists the estimated waste sectors and components for 1999 and 2008. The MSW portion was determined through the study conducted in 2006-2007 which can be viewed in its entirety at http://www.dnr.mo.gov/env/swmp . The percentages for all major waste sectors and components observed during this study and previous studies were applied to the tonnage received in 1999 (4,488,623 tons) and 2007 (6,364,557 tons).

Waste Sector & Components	Observed Tonnage 2008	Estimated % of all Waste 2008	Estimated 2007 Tonnage	Estimated % of all Waste 1999	Estimated 1998 Tonnage
MSW	**39806**	**58.3%**	**3710537**	**59.6%**	**2675219**
MSW Paper	13208	19.61%	1247854	22.1%	991986
MSW Glass	2136	3.17%	201853	3.4%	152613
MSW Metal	2372	3.52%	224116	4.1%	184034
MSW Plastics	6775	10.06%	640068	8.6%	386022
MSW Organics	12406	18.42%	1172159	18.5%	830395
MSW Inorganics	1626	2.41%	153616	2.8%	125681
MSW Special Waste	750	1.11%	70871	N/A	0
Construction	**1014**	**1.6%**	**101833**	**5.5%**	**246874**
Wood	518	0.77%	48903	2.5%	112216
Drywall	161	0.24%	15249	1.3%	58352
Masonry	71	0.11%	6689	0.8%	35909
Metal	34	0.05%	3212	0.1%	4489
Plastic	85	0.13%	8050	0.2%	8977
Cardboard	93	0.14%	8739	0.5%	22443
Other	53	0.08%	4998	0.3%	13466
Demolition	**8565**	**13.2%**	**840122**	**13.0%**	**583521**
Wood	4058	6.02%	383419	4.3%	193011
Drywall	781	1.16%	73808	0.9%	40398
Roofing	1832	2.72%	173040	3.1%	139147
Masonry	1180	1.75%	111439	3.2%	143636
Metal	133	0.20%	12594	0.4%	17954
Carpet	466	0.69%	43999	0.5%	22443
Other	116	0.17%	10912	0.6%	26932
Industrial	**7433**	**10.7%**	**681008**	**11.8%**	**529658**
Cardboard	1424	2.11%	134577	2.6%	116704
Paper	167	0.25%	15788	1.0%	44886
Food	888	1.32%	83851	1.5%	67329
Metal	71	0.11%	6727	0.2%	8977
Wood	1063	1.58%	100432	2.2%	98750
Plastic	609	0.90%	57491	1.1%	49375
Textiles	69	0.10%	6557	0.3%	13466
Rubber	220	0.33%	20786	0.5%	22443
Other	2922	4.34%	276071	2.4%	107727
Other	**1531**	**2.5%**	**159114**	**1.0%**	**44886**
Sludge	548	0.81%	51813	0.4%	17954
Tree Trunks	983	1.46%	92827	0.6%	26932
Special	**9015**	**13.5%**	**859215**	**9.1%**	**408465**
Bulky	1155	1.71%	109106	1.40%	62841
Contaminated Soil	5548	8.24%	524204	6.70%	300738
Asbestos	2301	3.42%	217418	1.00%	44886
Tritium	0	0.00%	0	0.00%	0
E-scrap	11	0.02%	1039	0.00%	**0**
TOTALS	**67364**	**100%**	**6364557**	**100%**	**4488623**

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