



CITY OF COLUMBIA/BOONE COUNTY, MISSOURI



ENVIRONMENT AND ENERGY COMMISSION

September 24, 2008

Mayor & City Council
City of Columbia
PO Box 6015
Columbia, MO 65205

Ladies and Gentlemen:

The Environment and Energy Commission (EEC) would like to share a recent report compiled by the League of Women Voters, Columbia-Boone County. The report was shared with the Environment and Energy Commission as a result of the EEC's recent interest in residential and commercial recycling opportunities for the City of Columbia and Boone County.

The report utilizes information from the Department of Natural Resources' analysis of residential material going in to the Columbia landfill. The report also highlights changes that have occurred since the discontinuation of the Bottle Deposit ordinance and the initiation of the Blue Bag recycling system.

Sincerely,

Barbara Buffaloe, Chair
Columbia/Boone County Environment & Energy Commission

Cc: J. Kraig Kahler, Water and Light Director
John Glascock, Public Works Director

COLUMBIA'S RECYCLING SYSTEM SUCCESS

The Department of Natural Resources did an analysis of residential material going into the Columbia landfill in 1996-97 and in 2006-07. The results are reported as percent of the total waste from residences.

In 2002 the citizens of Columbia voted to discontinue a "Bottle Deposit" ordinance which had been in effect for about 25 years. At the same time a "Blue Bag" curbside pickup of recyclable materials was initiated.

Therefore, the DNR study gives us a good look at the effect on recycling that the changes have made.

Three things stand out in the comparisons between the two sample periods. See TABLE 1.

1. Beverage containers going into the landfill have increased by half (+57%).
Non-glass beverage containers have more than doubled (+122%).

Conclusion: The "Blue Bag system is not as efficient as the "Bottle Bill" was for recycling beverage containers.

2. Recyclable materials which are not beverage containers have decreased by about a quarter (-27%).

Conclusion: The "Blue Bag" system is collecting materials which were previously not being collected.

3. About half (42%) of the material going into the landfill from residences is material which the city is prepared to recycle but is not being captured by the recycling system.

Conclusion: The "Blue Bag" system is not collecting a large portion of the recyclable materials.

TABLE 2 shows that there are still materials (23%) which could be recycled but are not included in the city recycling program. Only about a third (34%) of the material going into the landfill can at present be considered appropriate for a landfill. (This does not consider composting and other programs to get to zero waste.)

TABLE 3 shows the percentages of recyclable materials which are being captured by the recycling system at present.

1. We are recycling an eighth (12.5%) of beverage containers.
[This is a little low as some aluminum cans are being recycled for cash.]
2. We are recycling a substantial amount of paper products.
[There are two sources of error in these percentage recycled values.
A: Some of the material is coming from commercial sources rather than just residential sources. The percentage is based only upon residential waste material and does not include commercial wastes paper products which are going into the landfill.
B: Some commercial sources are recycling paper products through private haulers.]
3. There are still over 11,000 pounds of paper in the residential wastes going into the landfill.
4. The current recycling system is catching less than a third (29%) of the recyclable material in the residential waste stream.

The data which we had available to us did not permit a good evaluation of the recycling efficiency of the commercial waste stream.

This study was done by the three of us under the direction of the League of Women Voters Energy Committee.

TABLE 1

| | DNR 2006-2007 % by weight into landfill | DNR 1996-1997 % by weight into landfill | % change 2006 / 1996 |
|---|--|--|-------------------------|
| RECYCLABLE MATERIALS in Residential Waste | | | |
| BEVERAGE CONTAINERS | | | |
| Aluminum cans | 1.37 | 0.5 | 174 |
| PET #1 plastic | 1.96 | 1 | 96 |
| SUBTOTAL NON-GLASS | 3.33 | 1.5 | 122 |
| GLASS | | | |
| Clear bottles | 2.86 | 2.3 | 24 |
| Brown Bottles | 0.89 | 0.7 | 27 |
| Green bottles | 0.47 | 0.3 | 57 |
| SUBTOTAL GLASS | 4.22 | 3.3 | 28 |
| BEVERAGE SUBTOTAL | 7.55 | 4.8 | 57 |
| Beverage containers: all increased as a percentage of the waste stream going into the landfill. | | | |
| PAPER | | | |
| Cardboard | 8.67 | 17 | -49 |
| Newsprint | 3.95 | 7.1 | -44 |
| High Grade Paper | 4.75 | 2 | 138 |
| Magazines | 2.96 | 4.7 | -37 |
| Mixed Paper | 11.06 | 10.8 | 2 |
| SUBTOTAL PAPER | 31.39 | 41.6 | -25 |
| OTHER RECYCLED MATERIALS | | | |
| Food Cans / "tin" | 1.76 | 2.1 | -16 |
| Plastic #2 HDPE | 1.39 | 2.2 | -37 |
| SUBTOTAL OTHER | 3.15 | 4.3 | -27 |
| PAPER + OTHER SUBTOTAL | 34.54 | 45.9 | -25 |
| TOTAL RECYCLABLE MATERIALS | 42.09 | 50.7 | -17 |

Materials which are not beverage containers: almost all decreased as a percentage of the residential waste stream going into the landfill.

About half (42%) of the residential waste stream going into the landfill consists of materials which are recyclables but are not getting recycled in Columbia's system.

TABLE 2

| | DNR 2006-2007 % by weight into landfill | DNR 1996-1997 % by weight into landfill | % change 2006 / 1996 |
|--|--|--|-------------------------|
| POTENTIALLY RECYCLABLE MATERIALS | | | |
| Other Aluminum | 0.25 | 0.4 | -37 |
| Non Ferrous Metals | 0.02 | 0.5 | -96 |
| Ferrous Metal | 1.19 | 1.8 | -34 |
| Plastic Film | 6.78 | 0 | NA |
| Other Plastics | 8.5 | 9.3 | -9 |
| Textiles | 5.07 | 5.4 | -6 |
| Electronic waste | 2.04 | 0 | NA |
| TOTAL POTENTIALLY RECYCLABLE | 23.85 | 17.4 | 37 |
| There is a portion (24%) of the waste stream going into the landfill which is recyclable material but are types of material not being recycled at present. | | | |
| NON RECYCLABLE MATERIALS | | | |
| ORGANICS | | | |
| Food Waste | 19.06 | 13.1 | 45 |
| Wood Waste | 1.02 | 3.7 | -72 |
| Diapers | 4.67 | 3.3 | 42 |
| Other Organics | 3.28 | 2.7 | 21 |
| SUBTOTAL | 28.03 | 22.8 | 23 |
| OTHER | | | |
| Other glass | 0.25 | 0.4 | -37 |
| Oil Filters | 0.05 | 0 | NA |
| Fines | 0.89 | 1.1 | -19 |
| Other Inorganics | 4.3 | 7.6 | -43 |
| Household hazardous wastes | 0.55 | 0 | NA |
| SUBTOTAL | 6.04 | 9.1 | -34 |
| TOTAL NON RECYCLABLE | 34.07 | 31.9 | 7 |
| GRAND TOTAL | 100.01 | 100 | |

TABLE 3

| Material Recycled | Percent Recycled from Residential Waste | Total Tons Recycled | Tons of Residential Waste Going into Landfill | Tons in Residential Waste + Recycled |
|--------------------------------|---|---------------------|---|--------------------------------------|
| Cardboard | 32.7 | 1537 | 3165 | 4702 |
| News Print | 61.1 | 2210 | 1405 | 3615 |
| Office Paper | 18.8 | 402 | 1734 | 2136 |
| Mixed Paper | 19.6 | 1246 | 5117 | 6363 |
| SUBTOTAL PAPER | 32.1 | 5395 | 11421 | 16816 |
| PET (#1 plastic bottles) | 14.8 | 124 | 715 | 839 |
| HDPE (#2 plastic) | 13.6 | 80 | 507 | 587 |
| SUBTOTAL PLASTIC | 14.3 | 204 | 1223 | 1427 |
| Aluminum Cans | 8.9 | 49 | 500 | 549 |
| Tin/Steel Cans | 12.3 | 90 | 642 | 732 |
| SUBTOTAL METAL | 10.8 | 139 | 1142 | 1281 |
| BEVERAGE TOTAL (PET + Al cans) | 12.5 | 173 | 1215 | 1388 |
| TOTAL | 29.4 | 5738 | 13786 | 19524 |

The recycling rate for glass bottles can not be calculated because they are not weighed, though they are crushed and used for gravel.