

McHenry County's Solid Waste Stream Annual Analysis for 2003

Introduction

This annual report is a compilation and analysis of solid waste and recycling data for the year 2003. Much of the data is from the annual reports submitted by each waste hauler at the time of licensing. Prior to 2001, annual recycling surveys were conducted throughout the county to determine the level of waste recovery. Additional data were collected from several units of government and not-for-profit organizations involved in recycling. This report documents the county's status in relationship to the recycling goals stated in the current (adopted) plan.

Plans and Ordinances

McHenry County's Solid Waste Management Plan 10-Year Update was adopted in September of 2002. It supersedes the 1985 Total Solid Waste Management Plan and the 1992 and 1997 updates. The plan and its updates describe the status of municipal waste generation, recycling, and landfill availability. Waste reduction and recycling goals were adopted.

The 1992, Residential Recycling Ordinance was rewritten and adopted by the County as two ordinances, a Residential Recycling Ordinance and a Municipal Waste Hauler Licensing Ordinance, in 2001. These ordinances require that recyclables be kept separate from non-recyclables in the municipal waste stream. Waste haulers are required to report the quantities that they hauled and list their destination. To encourage waste reduction and recycling, the waste haulers are required to offer "variable rate pricing" or "pay as you throw" for residential collection services in unincorporated areas and incorporated areas if the municipality has not contracted with a waste hauler. It is also required that the collection of leaves for composting be offered, at least seasonally.

The 2003 Data

With data from the waste haulers' reports, an analysis of the quantities of discarded materials generated in the county in 2003, can then be constructed. One change in this year's reporting is noteworthy - - this year the septic pumping waste that was land-applied is not included in the waste totals and is not considered as a recyclable quantity. This change was made to be in conformance with the Recycling Measurements Working Group Final Report, July 1997, by the Illinois Counties Solid Waste Management Association.

Overview of the Solid Waste Stream

The term “discarded materials” includes municipal solid waste, recyclable materials, and compostable materials. In 2003, the amount of discarded materials generated in McHenry County was 312,375.02 tons based upon the annual reporting of the waste haulers.

Knowing the quantities of discarded materials generated and their destination, the recycling rate can then be calculated. Using estimated population figures, generation rates in pounds of solid waste per person per day can also be calculated. These data for the year 2003 are presented in Table 1, along with comparable data for each of the previous years beginning in 1997.

Table 1
Solid Waste Stream Overview 1997 - 2003

	1997	1998	1999	2000	2001	2002	2003
Discarded Materials Total (in tons)	251,035	276,587	297,488	293,802	305,708	320,981	312,375
Discard Mat. Recycled (in tons)	55,749	85,189	105,933	105,013	86,685	108,373	89,881 *
Recycling Rate (%)	22.2	30.8	35.6	35.7	28.4	33.8	28.8
Population (est.)	236,082	240,945	259,153	260,077	268,208	281,165	286,091
Disc. Materials (in p/p/d)	5.83	6.29	6.29	6.27	6.25	6.26	6.07

* includes landscape waste that was recycled at composting sites
p/p/d is pounds per person per day

Source: “McHenry County’s Solid Waste Stream Annual Analysis for 2002” and 2003 Waste Haulers’ Annual Reports. Population estimates were reported on NIPC website from Population Estimates Program, U.S. Bureau of the Census, Internet release date, April 9, 2004.

Where did the Waste Come From?

The data were reported by category as to where they were generated. These categories included residential, commercial/institutional, and construction and demolition. The quantity of discarded materials attributed to each sector is tabulated along with its percentage of the total in Table 2.

Table 2
Discarded Materials by Where They Were Generated - 2003

Where Discarded Materials Were Generated	Discarded Materials (in tons)	Percent
Residential	182,870.07	58.54
Commercial/ Institutional	103,901.09	33.26
Construction and Demolition	25,603.86	8.20
Total	312,375.02	100.00

Source: 2003 Waste Haulers' Annual Reports.

Table 3 presents a historical perspective listing discarded materials generated by source categories from 1997 to present.

Table 3
History of Discarded Materials (in tons) by Where They Were Generated

Where Discarded Materials Were Generated	1997	1998	1999	2000	2001	2002	2003
Residential	134,705	153,904	160,331	155,682	188,805	210,224	182,870
Commercial/ Institutional	87,893	93,661	104,996	103,946	95,856	88,735	103,901
Construction and Demolition	28,436	29,022	32,161	34,174	21,047	22,022	25,604
Total	251,035	276,587	297,488	293,802	305,708	320,981	312,375

Source: "McHenry County's Solid Waste Stream Annual Analysis for 2002" and 2003 Waste Haulers' Annual Reports

Where does it go?

These discarded materials end up being collected and transported to one of three possible destinations; 1) landfills (or transfer stations en route to landfills), 2) recycling centers or 3) composting sites.

Discarded materials from McHenry County were transported to destinations as follows in Table 4.

Table 4
Destination of Discarded Materials for 2003

Destination	Discarded Materials (in tons)	Percent
Landfill	222,493.95	71.23
Recycling Center	66,734.11	21.36
Composting Site	23,146.96	7.41
Total	312,375.02	100.00

Source: 2003 Waste Haulers' Annual Reports

Table 5 breaks down the discarded materials, by the sector where they were generated, and then lists where they go.

Table 5
Discarded Materials (in tons) 2003
By Destination and Where Generated

Destination of Discarded Materials	From Residential	From Commercial/ Inst.	From Construction & Demolition	Total
Landfill	117,642.91	80,851.18	23,999.86	222,493.95
Recycling Center	42,080.20	23,049.91	1,604.00	66,734.11
Composting Site	23,146.96	0.00	0.00	23,146.96
Total	182,870.07	103,901.09	25,603.86	312,375.02

Source: 2003 Waste Haulers' Annual Reports

Recycling and Recycling Rates

An analysis of recycled materials is given in Table 6, again breaking down the data to show the amounts generated by each sector.

Table 6
2003 Materials Recycled by Where Generated

Categories Generating Recyclables	Quantity Recycled in Tons	Percent
Residential	65,227.16*	72.57
Commercial/ Institutional	23,049.91	25.64
Construction and Demolition	1,604.00	1.78
Total	89,881.07	100.

* includes landscape waste that was recycled at composting sites

Source: 2003 Waste Haulers' Annual Reports.

Recycling rates were calculated from the annual summaries submitted by waste haulers and not-for-profit recyclers in McHenry County. Landscaping waste (transferred to composting sites) is considered to be a recyclable commodity.

The overall recycling rate for the county is 28.77%. The data can be further broken down to identify the recycling rate for each category Table 7.

Table 7
2003 Recycling Rate by Categories of Where Discarded Materials Were Generated

Categories Generating Discarded Materials	Percent of Total Discarded Materials Recycled
Residential	35.67
Commercial/ Institutional	22.18
Construction and Demolition	6.26
Countywide Average	28.77

Source: 2003 Waste Haulers' Annual Reports

Economic and Environmental Concerns

“Discarded Materials” as defined in the Municipal Waste Hauler Licensing Ordinance includes Municipal Waste (destination landfill), recyclables (destination recycling center) and compostable materials (destination composting site). Each of the three categories of materials with their individual destinations has an associated economic value. To dispose of municipal wastes, the haulers have expenses (in tipping fees) at a landfill. Recyclable materials can be sorted, sold, and reused. Currently the single stream recyclables can be delivered to recycling locations and the hauler is not charged a tipping fee. The sorted materials can then be sold as a commodity. Compost hauled to a composting site is charged a tipping fee. The finished compost has a value and can be sold.

There are environmental consequences to placing waste in a landfill. Many of the materials that end up in landfills have in them embedded energy costs and potential pollutants. Long term monitoring is essential. On the other hand, recycling allows for the reuse of the material and has a substantial savings in energy when compared to the expense of harvesting or mining raw materials and the costs associated with processing them.

Observations and Analysis

In 2003, the estimated population of McHenry County was projected to be a moderate increase over the previous year. The quantity of discarded materials for the county did not increase as might be expected, with an increase in population. This may be attributed to the change made in this year’s report, to not include the quantity of waste from septic systems. The residential sector did show a decrease in tons of waste

generated from 2002 figures however, the commercial/ institutional sector showed a significant increase and construction and demolition had a moderate increase.

The generation of discarded material reported in pounds per day per person was down slightly in 2003. The overall recycling rate from 2002 to 2003 has declined by nearly 15%, which is significant. Again this may be a consequence of not including land-applied septic pumping as recycling. The Solid Waste Management Plan 10-Year Update set the goal of an overall recycling rate of 36% with a break out of 50% residential, 30% commercial/ institutional, and 35% construction and demolition for 2003. The actual 2003 overall recycling rate is 28.8% with a break out of 35% residential, 22.18% commercial/ institutional and 6.26% construction and demolition.

This year the majority of the residential, curbside collection services report that they use the one-sort, single stream or co-mingled recycling system. This simplifies recycling for the homeowner, because all of the recyclables can be placed in one container. This method speeds up collection for the waste haulers, reducing time spent on the roadside, in traffic, with the engine running. The resulting mixed (co-mingled) recyclables are transported to a recycling center. The recyclables can not be marketed until they are sorted. The quality of the recyclables is not as good as if the materials were source sorted because of contamination (liquids wetting the paper materials and incomplete sorting of the different kinds of materials).

Conclusions

The Solid Waste Planning and Recycling Act (415 ILCS 15) sets 25% as the required minimum recycling rate for Counties. In 2003, McHenry County met and exceeded that rate. The recycling rates adopted in the McHenry County Solid Waste Management Plan 10-Year Update were not met.

The per capita generation rate for discarded materials has remained relatively constant for several years. Landfill space is limited. Landfills in a 50 mile radius of McHenry County have a remaining life ranging from 1 to 15 years (Nonhazardous Solid Waste Management and Landfill Capacity in Illinois, Illinois EPA, October 2003). Siting new landfills is expensive and takes time (“Generally, it takes at least three to five years to site and permit new facilities in Illinois, perhaps longer in the Chicago area.” - - Nonhazardous Solid Waste Management and Landfill Capacity in Illinois, Illinois EPA, October 2003). New technologies may become available in the near future, however the costs associated are not known. As disposing of waste becomes more expensive, recycling may gain more importance as a practical way of reducing waste. Recycling saves landfill space and saves energy as recyclables are re-manufactured. Reducing and reusing go hand in hand with recycling.

Prepared by McHenry County
Planning & Development
October 2004