



# Macon County Solid Waste Management Plan

April 13, 2006

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## **Executive Summary**

The Solid Waste Planning and Recycling Act (SWPRA) require each Illinois County to prepare, adopt and implement a twenty-year municipal waste management plan. The SWPRA also requires that the adopted plans be reviewed and updated every five years. At each five-year interval, necessary or appropriate revisions shall be submitted to the Illinois Environmental Protection Agency (IEPA) for review and comment.

The Macon County Solid Waste Management Plan (the Plan) was initially adopted February 13, 1991, and the first five year update on April 11, 1996. The recommendations in the Plan are based on the hierarchy of integrated solid waste management system components in the Solid Waste Management Act of 1986. These alternatives are listed from the most to least favored, but are considered pieces of an integrated system. The original planning process determined that incineration for volume reduction was not recommended for Macon County.

Volume reduction at the source  
Recycling and reuse  
Combustion with energy recovery  
Disposal in landfill facilities

This Plan Update has been developed to evaluate and plan for solid waste management programming, facilities and issues within Macon County. Any proposed pollution control facilities that are to be located within Macon County's incorporated or unincorporated area, must be consistent with the Plan.

The recommendations included in the original Plan and the Plan Updates provide direction for Macon County Solid Waste Management Department (MCSWMD) activities. In order to keep the Department's goals current, it is necessary to document the status of each recommendation and to suggest new recommendations or updates where appropriate. Much has changed in the solid waste industry since the original plan was set in place. National, statewide, and local factors influence the industry, and consequently the areas and issues of the Department's focus.

The first step is to revise the information upon which its recommendations are based. This includes annotating the decrease in population and the increase in waste generation and possible changes in composition, considering the realignment of employment, a review of state and federal legislation and considering new solid waste management technologies.

The preparation of this report revealed an error in the waste generation rate calculation in the original Plan. This is supported by other data. Future waste generation rates should be determined by collecting data on amounts disposed (in landfills) and amounts recycled for a total of municipal waste generated in that year and then calculating the generation rate per person per day and the percentage for the annual recycling rate to be reported to the IEPA. Waste composition studies are conducted to better understand what types and quantities of

materials comprise the waste stream. Data from the United States Environmental Protection Agency (USEPA) was used in the original Plan and information from their updated report is included in this document. The last report showed a decrease in the generation of glass and paper waste and large increases in plastics waste. The data obtained from these studies can be used for planning purposes, such as the design of a recycling program (or making adjustments to current programs) or the sizing and design of solid waste disposal facilities.

The most significant state legislation affecting solid waste recently was the “FY2004 Budget Implementation Act”, which increased various waste disposal fees, including the State portion of the solid waste management tipping fee, truck license fees, non-title V Clean Air Act permits, and tire disposal fees. Federal legislation included the adoption of new regulations restricting the siting of landfills near public airports and the extension of landfill gas tax credits. Other bills proposed in Congress relate to interstate and international transport of waste, recycling and waste to energy (WTE) policy.

Contemporary trends in solid waste management include continued reliance on landfills for the ultimate disposal of solid waste, with more engineered systems to improve stabilization; increased use of transfer stations to haul solid waste longer distances, and increased use of rail cars to transport waste in major metropolitan areas; increased use of single stream recycling; increased generation, collection and diversion of electronic waste; increased use of Pay-As-You-Throw (PAYT) systems; and increased use of automation, with customized computer software and electronic tracking to collect data and improve the efficiency of solid waste collection and disposal operations.

In conclusion, progress has been made in improving waste management practices and increasing public awareness of waste disposal options. However, this report demonstrates the County is not as far along as the statistics have shown. The future holds key decisions in landfill and/or transfer station siting, expanding opportunities and participation in recycling, and increasing education across all Department programming. While there is a good foundation of recycling programs, but it is not yet available to all of Macon County’s citizens or used to its full potential. Public education and acceptance plays a big role in achieving all aspects of solid waste management planning and implementation. Ultimately, regardless of what method is chosen for the final disposition of the County’s waste, enforcement programs must be strong to ensure its proper handling.

There is no single solution to managing our solid wastes. Rather the best solution is a combination of the alternatives and ideas described in this Plan. Each alternative method of waste reduction, treatment and disposal must be evaluated on the environmental, economical and political merits. Therefore, we will continue to pursue the optimum management system using these alternatives and the best available technology until better options arise. In keeping with that goal, this Plan Update presents twenty-six (26) system and operational recommendations, which are provided below. Because the Plan is based on an integrated solid waste management system, recommendations that apply generally are listed first, followed by specific component items.

## **New Recommendations**

### **Planning and Systemic**

- ◆ Continue to build a coordinated county wide approach to the management and disposal of all nonhazardous waste generated in Macon County, including the management of recyclable and recoverable materials. The Department should continue to provide centralized management of the plan implementation process and encourage expanded municipal use of programming and support. Increase input from the public in the development of solid waste policies, perhaps through the formation of a citizens advisory group.
- ◆ Place increased emphasis on the proper management of non-residential waste, including construction and demolition debris and industrial waste. Monitor and evaluate emerging technologies that appear to be effective on waste streams similar to Macon County's.
- ◆ The Board shall provide for professional staff necessary to undertake all programs to implement the Solid Waste Plan. As programs are altered, it may be necessary to adjust staffing levels to implement changes.
- ◆ Examine, and where determined appropriate, pursue all reasonable available sources of interim and long-term funding for implementing programs and facilities recommended in the Plan Update. Apply to the Illinois Department of Commerce and Economic Opportunity (DCEO) for grants and loans to be used for capital assistance. Encourage other entities and units of local government to consider other available sources of grants and assistance funds to finance and operate local recycling projects.
- ◆ Any pollution control facility must enter into a Host Community Benefit Agreement with the appropriate units of local government. Careful consideration must be given to build an agreement that will compensate the local community for the environmental impacts, supporting infrastructure, and property value effects that result from the development and operation of pollution control facilities.
- ◆ Finalize the Solid Waste Ordinance based on the current Refuse Ordinance, Siting Fees and other resolutions.
- ◆ Investigate viability of permanent regional options for a Household Hazardous Waste Program and pursue a solution based on the results.
- ◆ Evaluate alternative methods of waste reduction, waste treatment and disposal on individual developing merits.

## **Education and Information**

- ◆ Identify new and support ongoing education and informational activities to encourage waste reduction, reuse, recycling and recovery (buying recycled products) through the County website, newsletters and other publications, community organizations (PTA, park districts and church groups, fraternal groups). Continue to incorporate new information technologies in promotional efforts (e.g. websites, email, etc). Publicize technical programs such as the paint program, white goods collections and recycling programs.
- ◆ Develop partnerships with the business community, agricultural community, waste haulers, institutions, service and professional organizations and other governmental entities to expand the outreach potential for focused educational efforts. Expand opportunities for public outreach at special events (County Fair, Decatur Celebration), by developing plans (emphasizing recycling) to manage their specific waste streams.
- ◆ Continue to develop, implement, and support school education programs that meet Illinois Learning Standards, the education “classroom” of the website, subsidized performances by “envirotainers” and in-class presentations. Identify and utilize applicable public and school education resources to develop customized activities and programs for Macon County.
- ◆ Establish crisis communication procedures so the Department is viewed as a credible point of contact during emergency events and interruptions of service (disaster debris management, garbage strikes).

## **Source Reduction**

- ◆ Consider economic incentives such as a “pay-as-you-throw” garbage collection program.
- ◆ Conduct a “pilot program” of source reduction in County buildings to provide an example in cost savings.

## **Recycling and Reuse**

- ◆ Maintain and expand collection of data on recycling activity in Macon County, and determine indicators that reflect changes in recycling and waste management and develop programs to increase diversion of recyclable materials.
- ◆ Expand drop-off or curbside recycling programs to areas that are not currently served. Encourage increased participation in existing recycling programs. Encourage increased voluntary recycling among institutions, industrial and commercial businesses. Continue to support area recyclers in activities that expand their capabilities of diverting marketable materials from landfills when feasible.
- ◆ Encourage local cities and villages to adopt “pay as you throw” waste collection programs, with curbside recycling. Provide contract and ordinance development support.

- ◆ Depending on the availability of funds and Department priorities, continue to develop programs for residential electronics and other “orphan” wastes, along with commercial and multi-family pilot programs. Establish regular collection programs for difficult to recycle items or bulky waste items.
- ◆ Develop diversion programs to increase processing of construction and demolition (C&D) debris for beneficial uses.
- ◆ Develop a local materials exchange for industrial and commercial businesses.
- ◆ Adopt a recycled product procurement policy to allow for the use of recycled products when the price for, and the quality of recycled alternatives is comparable to that of products using virgin stock.

### **Combustion with Energy Recovery**

- ◆ This option may be revisited at about the ten year mark and compared considering the political and economical feasibility of regionalization.

### **Disposal in Landfill Facilities**

- ◆ Encourage landfill owners to design and implement emerging landfill technologies to extend capacity expectancy, reduce long term toxicity and conserve resources when possible and environmentally appropriate.
- ◆ Continue the Delegation Agreement/Enforcement Grant with IEPA to ensure that land filling occurs in compliance with the most current RCRA Subtitle D regulations and other regulations adopted by the State of Illinois. Seek full reimbursement from the State for this program using new funds available under changes in the Act. Consolidate the current Refuse Ordinance, Siting Fees and other resolutions in an updated Solid Waste Ordinance.
- ◆ Acquire additional landfill capacity to meet Macon County’s long term disposal needs and maintain an environmentally sound and cost effective waste disposal alternative for its’ businesses and residents.
- ◆ Transfer station siting should only be considered after a complete study of its’ economic effects to citizens and business; its’ impact on competition; and various operational scenarios.

## Glossary of Terms

MSW - municipal solid waste

MCSWMD - Macon County Solid Waste Management Department

IEPA - Illinois Environmental Protection Agency

SWPRA - Solid Waste Planning and Recycling Act

RCRA - Resource Conservation and Recovery Act

USEPA - United States Environmental Protection Agency

WTE - waste to energy

PAYT - Pay as you throw

SWP - solid waste plan

DCEO - Department of Commerce and Economic Opportunity, formerly DCCA -  
Department of Commerce and Community Affairs

DOC - Department of Corrections (ATC - Adult Transition Center)

HHW - household hazardous waste

C&D - construction and demolition (debris)

OVVL - Onyx Valley View Landfill

## **Introduction**

The Solid Waste Planning and Recycling Act (SWPRA) requires each Illinois County to prepare, adopt and implement a twenty-year plan for the “management of municipal waste generated within its boundaries”. The Macon County Solid Waste Management Plan (the Plan) was developed by a consultant and a Citizens Advisory Committee and presented to the Macon County Board on February 13, 1991 for adoption. The original Plan based success on attaining the following goals:

- The permitting, monitoring and enforcement programs need to have adequate staff and funds, and need to be managed in a cost efficient manner.
- Solid waste needs to be processed and disposed at the locations and levels required to meet the objectives of the Plan.
- Solid waste needs to be processed and disposed in an environmentally sound manner.
- The public needs to be informed and solicited for input throughout the necessary phases of developing and implementing waste management programs and facilities.
- The governmental entity responsible for implementing the Plan must be identified.

The recommendations in the Plan are based on the hierarchy of integrated solid waste management system components as identified in the Illinois Solid Waste Management Act. These alternatives are listed from the most favored to least favored but are considered pieces of an integrated system.

### **Chosen Waste Management Alternatives:**

Volume reduction at the source.  
Recycling and reuse.  
Combustion with energy recovery.  
Disposal in landfill facilities.

The original planning process determined that incineration for volume reduction was not a recommended waste management tool for Macon County.

The SWPRA also requires that the adopted plans be reviewed and updated every five years. At each five-year interval, necessary or appropriate revisions shall be submitted to the Illinois Environmental Protection Agency (IEPA) for review and comment.

This Plan Update has been developed to evaluate and plan for solid waste management programming, facilities, and issues within Macon County. The Illinois Environmental Protection Act (the Act) requires that pollution control facilities be evaluated against nine criteria. Generally, these criteria pertain to need, location, and design factors. In addition, the Act requires that such a facility meet the following specific criteria:

*(viii) if the facility is to be located within a county where the county board has adopted a solid waste management plan consistent with the planning requirements of the Local Solid Waste Disposal Act or the Solid Waste Planning and Recycling Act, the facility is consistent with that plan;*

Pollution control facilities have an enormous potential impact upon the surrounding area. Therefore, the siting of any new facilities located within the political boundaries of Macon County should be consistent with the Plan, as adopted by the Macon County Board, even though such a facility may be located within an incorporated community. Illinois counties are charged with the responsibility of planning for solid waste management. Any new pollution control facility can impact the planning process and may not be consistent with the planning goals.

The recommendations included in the Plan and the Plan Updates provide direction for Macon County Solid Waste Management Department (MCSWMD) activities. The Department was created to provide for an efficient and environmentally sound solid waste disposal system for the use and benefit of the County's citizens. In order to keep MCSWMD's goals current it is necessary to document the status of each recommendation and to suggest new recommendations or updates where appropriate. Much has changed in the solid waste industry since the original plan was set in place to guide the development of a solid waste system for the county. National, statewide, and local factors influence the industry, and consequently the areas and issues to be focused on by the Department.

To prepare this Update, the information which provides the basis for the recommendations must be revised. This includes using new population figures, analyzing the possible changes in waste generation and composition, reviewing state and federal legislation and considering solid waste management technologies that have emerged and become prevalent. This Plan Update amends the Solid Waste Management Plan with such information.

### **Waste Generation and Composition**

The original Plan estimated that 262,650 tons of solid waste was generated within Macon County in 1992. This figure included all waste streams including: residential, commercial, industrial, construction and demolition debris, and non-liquid/nonhazardous special waste.

Of this total amount of waste generated in the County, 164,000 tons fell into the category of "municipal waste". The Act defines municipal waste as "garbage, general household and commercial waste, industrial lunchroom or office waste, landscape waste, and construction or demolition waste" (415 ILCS 5/3.290). So, municipal waste does not include industrial process and manufacturing waste or special waste. The only industrial waste included is that generated in the offices and lunchrooms of manufacturing facilities, typically a very small percentage.

Because the Illinois goal of 25% recycling applies to municipal waste rather than total waste, it is necessary to estimate "municipal waste" generation, as a subset of the total solid waste generated.

Further calculations in the original Plan developed a daily per capita generation rate of 5.7 pounds of waste. However, this was derived by using only the tonnage disposed (133,000 tons), not the total waste generated (164,000), then managed through reuse, recycling, incineration or disposal in landfill facilities. Factoring the total waste managed correctly yields a generation rate of 6.8

pounds per person per day (p/p/d) for that year.

The annual recycling rate for the County has been determined by collecting data through questionnaires. Recyclers are asked for the tonnage of materials processed from routes in the County. That amount would then be divided by the statistical amount “generated” (5.7 p/p/d/ multiplied by the population) to yield a percentage.

Waste generation in the future should be determined by also collecting the amounts disposed, totaling all waste, and then working the percentage out mathematically. Data obtained from Onyx and Waste Management of amounts of municipal waste received for disposal and the amounts of material reported by recyclers reinforce a corrected generation rate.

Year	Landfilled (tons)	Recycled (tons)	Total Generated (tons)	Generation Rate (p/p/d)	Recycling Rate (%)
2001	114,055	27,443	141,498	6.8	19.4
2002	106,622	36,869	143,490	6.9	25.7
2003	106,950	45,787	152,737	7.3	30.0
2004	167,929	50,800	218,729	10.5	23.0

Overall, Macon County reported a municipal recycling rate of 38.4% for 2003 using the old method. As shown above, 30% is the correct rate. The large increase in 2004's tonnage disposed is due in part to nearly 30,000 tons of demolition debris created by a large urban renewal project and demonstrates the impact that a waste stream change can have.

### **Waste Composition**

Waste composition studies are conducted to better understand what types and quantities of materials comprise the waste stream. The data obtained from these studies can be used for planning purposes, such as the design of a recycling program (or making adjustments to current programs) or the sizing and design of solid waste disposal facilities.

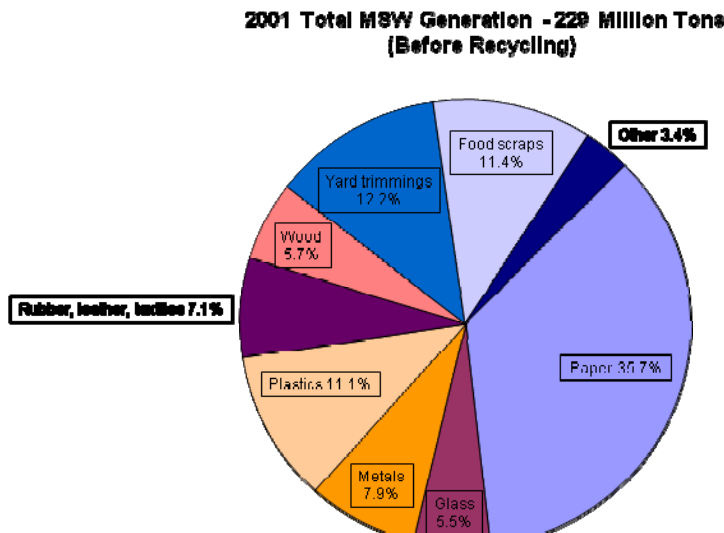
At the time the Plan was compiled, the results from the initial Franklin Associates, Ltd. study were used for comparison to Macon County data. The original Plan indicated that Macon County was heavier in industrial waste than the national average, but industrial waste is not included in the municipal solid waste definition. It is anticipated that due to local employment and population changes that more commercial waste is being generated due to growth in that sector of the economy.

The chart below represents the data from the USEPA's most recent waste characterization study.

Comparisons with the original Franklin study show that less glass waste and paper waste are being produced, and the amount of plastic waste has nearly doubled. This reflects the increased use of plastic containers to lower transportation and handling costs. Prices for recovered plastics resins are also consistently higher and the value rises with corresponding increases with the virgin material: Oil. The growth in the number of plastic containers in the waste stream would indicate the need for expanded plastic recycling programs that may have a higher economic return.

**Population and Employment Data**

Population and employment figures are an integral part of the development of waste generation estimates for a given area. Total population, number of households and household size all affect residential waste generation. There have been some studies that indicate that median household income should also be included in figuring rates of waste generation. The economic mix of



commerce and industry and their related number of employees affect the amount of commercial and industrial wastes produced. Baseline waste generation rates can be used in conjunction with changes in population, number of households and employment to produce an indicator of changing waste stream characteristics.

The total county population in the 2000 Census was 114,706 with a total of 46,561 households. The data indicates a county average of 2.39 persons per household. The original Plan projected the county’s population would probably decline through 2000 and perhaps until 2010 and then begin a slow increase. This has been the trend, as demonstrated in the following table:

Description	1990	2000	2010
Total Population	127,000	114,706	117,599
Total number of households	50,800	46,561	54,350
Average household size	2.50	2.39	2.51

Source: Compilation of U.S. Census Data, 2000 CADUS and URS Corporation, 2004

It should be noted that these census figures don't demonstrate the movement of citizens within the County. Along with the decrease in total population, there has been a migration of City residents to smaller communities and into rural areas.

### Employment:

The original Plan utilized employment projections based on data compiled by the Illinois Department of Employment Security. Additional data supported a projected 1.8% decrease in total employment through 2010. However, during the period between 1996 and 2001, total employment in the area declined by 2.3%.

Nationally, manufacturing employment has been falling as a share of the total employment, but the actual number of jobs has remained relatively stable. The fast growth and increase in positions in other employment sectors has altered the overall picture. But in the Macon County area, the actual number of manufacturing jobs has indeed dropped, declining by 10.1% between 1991 and 2001, while the decline was only 3% on a state level. Unforeseen closures in manufacturing (-2252 jobs), retail consolidations and losses (-292) and service industry moves (-150) have obviously adversely affected the employment environment in the County, especially in the last 10 years.

Current employment projections indicate a large increase in wholesale and retail trade and service sectors.

Industrial Sector	1990	1990 Projection for 2010	Current 2010 Projection
Government	10%	11%	5%
Agriculture	3%	3%	2%
Construction	5%	4%	5%
Manufacturing	25%	21%	19%
Transportation, Communications, Utilities	13%*	13%*	8%**
Wholesale and Retail Trade	18%	16%	21%

Finance, Insurance, Real Estate	4%	4%	3%
Services	22%	28%	37%

\*Transportation, Communications, et al Sector included wholesale trade under SIC codes.

\*\*Current 2010 Projections are published under NAICS codes, which add wholesale to retail.

As discussed in the waste generation and composition section, the waste produced by these jobs would be included in the municipal waste stream. It is likely that it would include highly recyclable materials, i.e. cardboard, paper, and plastics.

### **Changes in State and Federal Legislation**

Applicable State legislation passed in the last five years is summarized below:

In June, 2003, Illinois Public Act 93-32, the FY2004 Budget Implementation (State Finance-Revenues) Act”, was signed. It increased various solid waste, air and water permit, and tire sale and disposal fees. Most of these fee changes went into effect on July 1<sup>st</sup> of that same year. The significant portions of Public Act 93-32 related to municipal solid waste management follow:

The state portion of solid waste management tipping fee was increased from \$1.07 per ton to \$2.22 per ton.

Truck license fees were increased 36 % from \$2,800 to \$3,808 per vehicle.

The tax exemption on heavy equipment for landfills and transfer stations was eliminated, resulting in taxes ranging from 5 % to 8.75 % on capital expenditures.

Non-Title V Clean Air Act permit fees (for entities who emit 100 tons or less annually) were increased. For sources permitted to emit less than 25 tons per year, the fee was increased from \$100 to \$200. For sources permitted to emit at least 25 tons per year, but less than 100 tons per year, the fee was increased from \$1,000 to \$1,800. For non-major sources permitted to emit at least 100 tons per year, the fees were increased from \$13.50 to \$18.00 per ton, with a \$2,500 to \$3,500 cap.

The used tire disposal fee was increased from \$1 to \$2 per tire. A \$2 fee was established for the retail sale of all new tires. Additionally, a \$0.50-per-tire fee assessment was established for the sale for both new and used tires until December 31, 2007.

On January 1, 2004, Illinois Public Act 03-165, the “Mercury Fever Thermometer Prohibition Act”, went into effect. It states that no person shall sell distribute, give out, or manufacture thermometers containing liquid mercury and is intended to reduce the amount of mercury disposed of in Illinois landfills.

#### Federal

Federal legislative bills have related to a variety of solid waste issues, including landfill siting, interstate and international transport of solid waste, recycling, and waste to energy policy. Few have been enacted, however a change in the tax code allowed an extension of a credit for

facilities producing qualified fuels from landfill gas.

A facility producing a qualified fuel from landfill gas placed in service after June 30, 1998, and before January 1, 2008—this section applies to fuel produced at the facility during the 5-year period beginning on the date the facility was placed in service or the date of the enactment.

### **Recent Developments in the Solid Waste Industry**

The past five years have seen changes in solid waste technology and management. Such changes are occurring nation-wide. Some examples:

Since reliance on landfills for the ultimate disposal of solid waste continues, new technologies being implemented are for the most part related to land filling, such as bioreactor landfills, leachate recirculation and new construction materials. Few innovative process methods and technologies in waste to energy (WTE) facilities have been implemented due to their relatively higher cost compared to landfills.

Waste-to-energy remains economically non-competitive with land filling or transfer and landfill systems in most areas. WTE is becoming more competitive in densely populated areas with limited land, and higher energy prices (O'Connell, 2003).

The use of transfer stations is increasing, particularly near major metropolitan areas. In 2003, the Chicago region had 62 active transfer stations moving 4.8 million tons of garbage (IEPA 2004a). Much of this waste is disposed in the Livingston Landfill or exported to Indiana or Wisconsin.

As landfill capacities in major metro areas are exhausted, the use of rail cars to transport MSW may become more common, although rail remains economically uncompetitive due to high infrastructure and labor costs associated with specialized equipment and crews. (Fickes, 2004).

Recycling has been moving to single stream collection, with a trend toward eliminating glass; increased collection and diversion of electronic waste and increased diversion of construction and demolition debris from disposal (Franklin and Associates, 2003).

The use of Pay-As-You-Throw (PAYT) systems, in which the customers pay on the basis of the quantity of waste disposed, are becoming more common. PAYT systems have proven to be effective in increasing diversion rates; however, one possible drawback is an increase in illegal dumping to avoid paying higher fees. (Skumatz, 2001).

The use of customized computer software and electronic tracking methods to collect data and improve the efficiency of solid waste operations is increasing, particularly for such specialized applications as fleet maintenance and scale-house/weighing operations (Bader 2003).

## **Summary**

Waste is a result of all human activity, and here is no single solution to managing our solid wastes. And so, a combination of alternatives can best address waste issues for citizens where they live and as they work. Some actions by state and national legislatures may not directly affect these citizens in their day to day lives, but impact more on the waste management industry, which in turn, is increasing its use of technology to build more cost efficient systems to strengthen their financial return. Therefore, we will all need to continue to pursue the optimum management system using these alternatives and the best available technology until better options arise.

## **Current Implementation Status of 1996 Recommendations**

Since the adoption of the Plan, many changes have affected solid waste management practices in Macon County. The following section summarizes these changes and the status of current implementation. The existing recommendations are listed first, and followed by a description of the Department's efforts. That, in turn, is followed by the recommendations for the future. Some are listed under slightly different headings to more accurately reflect their application.

## **General**

The Department is staffed by four full-time professionals in distinct positions. The Director is responsible for planning, administration, supervision and assistance to other staff members, and represents the Department on matters relating to the State as well as state and national organizations. The first addition to staff was a Solid Waste/Environmental Educator to conduct educational and public information activities. In 1997 the Department integrated the enforcement program (previously run by the Health Department) so all solid waste activities would be consolidated in one office. The Inspector conducts inspections at permitted sites, illegal dumps and illegal burns under the authority of the Act, and enforces the Refuse Ordinance provisions. The position of Recycling Coordinator was added in 1998, to oversee planning, implementation and ongoing management of County-run recycling programs. Although the focus of each position is quite different, they are complementary components of the Department's programs.

## **Additional Recommendations**

- Update the Refuse Ordinance.

An updated ordinance has been drafted. It requires a final review of additional changes and to be brought forward for passage by the Board. It incorporates provisions for hauler licensing and the siting fees ordinance. The host agreement resolution has been incorporated into this Plan.

- Implement and maintain an active hauler licensing program.

In 1997, all solid waste activities were consolidated in one office. The inspector was tasked with the responsibility for Hauler Licensing as required by the 1972 Refuse Ordinance. A truck inspection checklist and procedure was implemented, and while the number of hauling companies has decreased, the program has increased compliance with the Ordinance.

- Pursue more frequent/regular household hazardous waste.

The development of a paint collection and recycling program has increased the frequency of household hazardous waste collection events from approximately every four (4) years to about every other year. Currently, these broader spectrum events are held in cooperation with the IEPA through a state contract.

### **New Recommendations - Planning and Systemic**

- ◆ Continue to build a coordinated county wide approach to the management and disposal of all nonhazardous waste generated in Macon County, including the management of recyclable and recoverable materials. The Department should continue to provide centralized management of the plan implementation process and encourage expanded municipal use of programming and support. Increase input from the public in the development of solid waste policies, perhaps through the formation of a citizens advisory group.
- ◆ Place increased emphasis on the proper management of non-residential waste, including construction and demolition debris and industrial waste. Monitor and evaluate emerging technologies that appear to be effective on waste streams similar to Macon County's.
- ◆ The Board shall provide for professional staff necessary to undertake all programs to implement the Solid Waste Plan. As programs are altered, it may be necessary to adjust staffing levels to implement program changes.
- ◆ Examine, and where determined appropriate, pursue all reasonable available sources of interim and long-term funding for implementing programs and facilities recommended in the Plan Update. Apply to the Illinois Department of Commerce and Economic Opportunity (DCEO) for grants and loans to be used for capital assistance. Encourage other entities and units of local government to consider other available sources of grants and assistance funds to finance and operate local recycling projects.
- ◆ Any pollution control facility must enter into a Host Community Benefit Agreement with the appropriate units of local government. Careful consideration must be given to build an agreement that will compensate the local community for the environmental impacts, supporting infrastructure, and property value effects that result from the development and operation of pollution control facilities.
- ◆ Finalize the Solid Waste Ordinance based on the current Refuse Ordinance, Siting Fees and other resolutions.

- ◆ Investigate the feasibility of a permanent Household Hazardous Waste Program and pursue a solution based on the results.
- ◆ Evaluate alternative methods of waste reduction, waste treatment and disposal on individual merits.

### **Source Reduction**

- Continue education and information.

Departmental efforts in education and public information continue across all program areas. Every contact made by Department staff is considered an educational opportunity. Several activities and modes of communication have been considered, initiated, evaluated, and improved as need and/or opportunity arose. The target audience for programming varies and Department response has been specific or broad based, using both traditional outlets and new technologies.

The Reuse and Recycling Guide is updated and published biennially and is disseminated as an insert in the Herald and Review newspaper Sunday edition. New homeowners receive a copy either by direct mail to unincorporated areas of the County or in Welcome packets from their new municipality. It is also available at city/village halls, Post Offices, Macon County Offices and soon on the County's website. It has also been published in Spanish and disseminated throughout the Hispanic community by LORACIA, an outreach organization.

The yearly schedule for paint collections is printed in bookmark format which has proven popular and convenient for the public and the growing number of locations where it is available. Haulers have been very helpful in providing information about the program.

E-mail "alerts" of special collections and events have been very successful in effecting an exponential spread of the information. Special events, projects and contests are scheduled in association with local, state and national events. The Department was instrumental in establishing a community based environmental protection organization that grew out of cooperative efforts to recognize America Recycles Day (November 15) and Earth Day (April 22). This has expanded opportunities to educate in business and industrial settings, added contacts with community groups, and broadened the educational audience. A Department website was established and is currently under reconstruction as part of a County-wide webpage.

Traditional communications have been applied where they are most appropriate. The Department has expanded the direct mail database for use in announcing program opportunities and special disposal options. Local newspapers have been very cooperative with public service announcements and increasingly with associated feature stories. Advertising has been placed in print, radio and television, again generating feature coverage.

The educational newsletter was reincarnated with a new name and format. Currently

printed and mailed, it will eventually be translated to electronic format to reinforce the idea of waste reduction. The mailing list includes public officials, community organizations, clubs (4H, Girl Scouts), environmental groups as well as school administrators and teachers.

Development of a 4-H project book and workshops, Girl Scout presentations, and involvement with environmental clubs have been very successful and are consistently being enhanced and modified to update educational opportunities.

The school education program has been developed, implemented, modified, and is currently being expanded. All formal education programming is aligned with the Illinois State Learning Standards with grade specific programs. The multi-media activities include classroom presentations, printed materials, hands-on demonstrations, models and projects. An “environmental literacy” program was recently introduced to target preschool students with a variety of age appropriate books and games.

Funding is made available for school programming by the mechanism of “mini-grants”. These monies can be used to offset costs for recycling equipment, special outside presentations, waste reduction activities, field trips and starting or expanding school recycling programs. School recycling programs have expanded to more rural districts through a cooperative partnership with the Retired Seniors and Volunteer Program (RSVP), a division of Dove, Inc. Fifteen (15) outlying schools are serviced for paper, with options for aluminum and plastics recycling. Bins and totes were supplied by the Department, the consolidation of materials within the schools is mostly done by students, and the collection and transportation for processing is provided by members of the County’s more mature population. An incentive and recognition program is in its first year to encourage and honor individuals and schools for their dedication to the principles of reduce, reuse, recycle and rebuy.

- Consider “pay by the bag” garbage collection program.

The largest towns in Macon County operate contract-franchise or franchise systems for residential waste collection and billing is direct from the area hauler. The City of Decatur contracts curbside recycling separately and collects fees through the water bills. A “pay by the bag” system was discussed with Decatur officials during the last full contract discussions, however, the billing method for such a program was perceived as an issue and most hauling companies do not have the staffing needed. A tiered program of rates was introduced, giving residents the option of once a week waste removal at a lower cost.

### **New Recommendations - Source Reduction**

- ◆ Consider economic incentives such as a “pay-as-you-throw” garbage collection program.
- ◆ Conduct a “pilot program” of source reduction in County buildings to provide an example in cost savings.

## **New Recommendations - Education and Information**

- ◆ Identify new and support ongoing education and informational activities to encourage waste reduction, reuse, recycling and recovery (buying recycled products) through the County website, newsletters and other publications, community organizations (PTA, park districts and church groups, fraternal groups). Continue to incorporate new information technologies in promotional efforts (e.g. websites email, etc). Publicize technical programs such as the paint program, white goods collections and recycling programs.
- ◆ Develop partnerships with the business community, agricultural community, waste haulers, institutions, service and professional organizations and other governmental entities to expand the outreach potential for focused educational efforts. Expand opportunities for public outreach at special events (County Fair, Decatur Celebration, Farm Progress), by developing plans (emphasizing recycling) to manage their waste stream.
- ◆ Continue to develop, implement, and support school education programs that meet Illinois Learning Standards, the education “classroom” of the website, subsidized performances by “enviroainers” and in-class presentations. Identify and utilize applicable public and school education resources to develop customized activities and programs for Macon County.
- ◆ Establish crisis communication procedures so the Department is viewed as a credible point of contact during emergency events and interruptions of service (disaster debris management, contract disputes).

## **Recycling and Reuse**

- Attempt to increase participation in recycling programs.
- Establish new drop-off or curbside recycling services.
- Encourage increased voluntary recycling among multi-family dwellings, institutions, commercial and industrial businesses. Consider a mandatory commercial recycling ordinance if necessary.

Recycling programs throughout the County have grown over time. Seven (7) of the twelve (12) incorporated municipalities currently have curbside recycling programs that collect at least three recyclables from residents. Several villages required an integrated approach in their waste management request for proposals and instituted curbside collection as part of the contracts. Five villages and six townships are served by a County drop-off program established in 2000-2001 through a grant from the Department of Commerce and Community Affairs (now DCEO). This program is a cooperative effort between the Department and local officials. Other locales have indicated interest in participating in an expansion of the drop-off program. The Department offers grant funds and technical assistance to encourage the remaining villages and townships to implement either drop-off or curbside recycling.

Two (2) recyclable material processing centers have been developed in the County by

private companies. The hauling company which holds the curbside contract for the City of Decatur has developed a facility to handle residential recyclables. Another company has grown into a regional provider of fiber, non-ferrous and plastics collection and processing, especially to the commercial sector. These facilities pursued industrial, institutional and smaller commercial and business recycling opportunities and process the majority of the commercial and residential recyclables in the County. Grant funding from the Department and the State has allowed for expansion of services and updating of equipment. Other hauling companies, offering collection by subscription or as an additional service, ship some recyclables to facilities outside the county.

A number of “specialty” recycling outlets have developed. Collection of nickel-cadmium and other rechargeable batteries has been instituted at retail stores. Clean construction and demolition debris recycling is available at a privately owned and operated facility in Decatur.

Most apartment buildings, condominiums and townhomes that have more than six (6) units per building do not receive the same trash and recycling services as single family homes. These properties are generally considered commercial businesses and contract with a disposal service under commercial ordinances or other requirements. This limits the recycling options for residents. Another impediment is the amount of space needed for containers in a limited area, without reducing the parking available. Obviously, participation in recycling by multifamily homes helps increase the diversion of recyclables from the landfill. Identifying the factors to consider when developing a multifamily recycling program is important and it is critical to know how to modify these factors to make for a successful program at different facilities. Further development of multifamily recycling should be explored in pilot projects.

Landscape waste is processed at two (2) privately owned and operated permitted compost facilities. The Macon County Compost Facility (permitted until November 2008) is also permitted to transfer landscape waste. Decatur Compost, Inc. is a standard windrow composting operation (permitted until January 2009). A compost facility located at the landfill has been closed. Active facilities are inspected once a month for operational compliance with the Act, regulations and facility specific permits. Curbside collection of landscape waste is provided to residents in the City of Decatur, and is available by subscription in other areas. Home management of landscape waste is encouraged in education programs.

- Develop special collection programs (i.e. paint, oil, white goods, household hazardous waste, etc.)

Special collection programs for items such as paint, white goods (appliances), and household hazardous waste are developed to provide opportunities for citizens to properly dispose of these items correctly and in the safest manner. Some of these things are legally banned from being tipped in landfill facilities; others are removed from the disposal stream to limit the toxicity of the land filled waste. The industry refers to these types of wastes as “orphan wastes”. Many issues need to be considered as plans are developed to assist residents. Drop-off and curbside collections are an alternative or

could be a complement to one day collection events. The costs to operate a permanent program will vary and depend on transportation, space, staffing requirements and processing fees. While the residential household is exempt from hazardous waste regulations, it cumulatively represents the largest generator of hazardous waste. Reducing the toxicity of the waste disposed in our County will lessen future landfill impacts and improve the safety of refuse collection personnel. A user fee to reduce the overall program costs and assure accessibility for all residents is another option to consider. The Department has determined to hold one special collection per year, rotating the type of orphan waste received, expenses depend on the type of waste and whether a cooperative program is available from IEPA or other agencies. A list of special collections and their cosponsors follows:

Tires	1997	MCSWMD/ADM
Tires	1998	IEPA
Paint	1999	MCSWMD
HHW	2000	IEPA
Electronics	2001	MCSWMD
Electronics	2002	MCSWMD
White Goods	2003	MCSWMD
HHW	2003	IEPA
Tires	2004	IEPA
HHW	2005	IEPA

In 1999 and into 2000, the Department began the implementation of a paint collection and recycling program. The collections are held on a regular schedule during the summer months, although calls for an extended schedule are increasing. Some processing takes place as the work load allows. The majority of processing, with labor provided by the Department of Corrections Adult Transition Center, takes place in the off season. Latex paint is sorted, and good paint is bulked and made available to the public for a small processing fee, or donated to not-for-profit groups. Waste paint is bulked into 55 gallon drums and disposed of through a IEPA contractor. The program removes an average of 5,000 gallons (annually) of paint from garages, basements and sheds and returns approximately 36% as inexpensive paint available to the community. The Department demonstrated that it can effectively operate a waste paint collection program. Expanding this program to include household hazardous waste is the next logical step.

The development of a white goods program has not achieved the same level of implementation. It was initially developed as a cooperative program providing service to citizens and training for the local plumbers and pipefitters union. Two (2) collections were held, in Maroa and Macon. Three (3) roll-off containers of Freon containing appliances were removed to the Highway Department yard and vacated by Union trainees on the following class day. Four (4) roll-offs of other materials were removed directly from the collection sites to the salvage yard. The program was successful, but unsustainable due to enrollment fluctuations. Variations of the same program are being investigated.

A great deal of attention has been given to the development of electronics collections at all levels of government. Two (2) collections were held, subsidized by the Department,

but requiring a “copay” (\$1) fee for video display units (VDU). In June 2001, the collection netted 38,000 pounds of electronic equipment. The November 2002 collection retrieved 53,840 pounds of electronic waste.

- Adopt a recycled product procurement policy.

A recycled procurement policy has been drafted. However, the purchasing authority for County Departments lies with the elected office holders, not a central storeroom. Therefore the implementation of such a policy will not be County wide.

Overall, Macon County reported a municipal recycling rate of 23% for 2004. This figure does not include the tires collected at the special collection.

### **New Recommendations - Recycling and Reuse**

- ◆ Maintain and expand collection of data on recycling activity in Macon County, and determine indicators that reflect changes in recycling and waste management and develop programs to increase diversion of recyclable materials.
- ◆ Expand drop-off or curbside recycling programs to areas that are not currently served. Encourage increased participation in existing recycling programs. Encourage increased voluntary recycling among institutions, industrial and commercial businesses. Continue to support area recyclers in activities that expand their capabilities of diverting marketable materials from landfills when feasible.
- ◆ Encourage local cities and villages to establish volume based pricing. Provide contract and ordinance development support.
- ◆ Depending on the availability of funds and Department priorities, continue to further the development of collections for residential electronics and other “orphan” wastes, along with commercial and multi-family pilot programs. Establish regular collection programs for difficult to recycle items or bulky waste items.
- ◆ Develop diversion programs to increase processing of C&D for beneficial uses.
- ◆ Develop a local materials exchange for industrial and commercial businesses.
- ◆ Adopt a recycled product procurement policy to allow for the use of recycled products when the price for, and the quality of recycled alternatives is comparable to that of products using virgin stock.

### **Combustion with Energy Recovery**

- Re-evaluate the MRF/dRDF concept.
- Recognize new WTE markets that are being developed.

A 1994 study concluded that such a waste to energy (WTE) project was not a viable option for our area at that time. However, the study also recommended reconsidering the option in five to ten years anticipating a scarcity of landfills and increased tipping

fees, improving its' viability. Most new landfills are designed as large regional facilities, so the amount of capacity has actually increased without greatly increasing tipping fees. However they are more widely spread out, increasing the associated hauling costs.

The Archer Daniel Midland Corporation continues to use scrap tires as a fuel for their co-generation plant in Decatur.

### **New Recommendations - Combustion with Energy Recovery**

- ◆ This option may be revisited at about the ten year mark and compared considering the political and economical feasibility of regionalization.

### **Disposal in Landfill Facilities**

- Scenario 2: Macon County Landfill request for expansion is granted:
  - Select site (s) acceptable for development of a landfill.
  - Review and decide on ownership/operation options.
  - Develop RFP for landfill development and/or operation.

The former Macon County Landfill was granted siting, and IEPA issued a permit for expansion in 1996. The infrastructure for a gas to energy facility was installed as upgrades were made for the expansion. The facility was acquired by Superior, Inc. in 1998, and then by Onyx Inc. in 2000. A slurry wall was installed surrounding the pre-Subtitle D areas of fill and intersecting the composite liner over the construction seasons of 2000 - 2001.

The renamed Onyx Valley View Landfill (OVVL) is the only permitted facility for landfill disposal in the County today. The current estimated capacity could serve disposal needs for approximately 5 years. In the event that no landfill expansion or new landfill was granted siting by the County, refuse haulers will be faced with temporarily transporting waste to other facilities. The trip to any of these facilities is approximately twenty-five (25) miles one way. Temporary hauling of refuse using the collection trucks would be necessary. Ultimately, Macon County would face a decision to approve a waste transfer facility to consolidate waste into transfer vehicles. Transferring waste outside the County will increase costs for businesses and residents.

The County has begun the planning process for the next facility. A subcommittee of the County Board was formed to consider site selection, facility types, and ownership and operating options. The County adopted landfill siting guidelines and a siting fees resolution. During the last siting process, the siting guidelines were not applied because it was an expansion of an existing facility. The minimum standards from the Act and Regulations were applied under the authority of the permitting process. The County has the option of enacting more stringent conditions at the time of siting and they would be based on the specifics of the application. The resolutions should be rescinded and the siting fees resolution incorporated into a comprehensive solid waste ordinance, with

provisions for hauler licensing. At this time a resolution for the creation/ expansion of landfills has not been adopted and is not recommended.

The OVVL landfill is inspected at least twice a month for compliance with the Illinois Environmental Protection Act (the Act), promulgated regulations, and current permits. Inspections include active operations (quality of daily cover, receipt of banned materials, etc.), record keeping and areas of interim cover (quality of cover, leachate outbreaks, stormwater retention, etc.).

There are five closed landfills in the County requiring regular monitoring. Remediation activities were conducted by IEPA contractors at Waste Hauling and BATH, Inc., over the construction seasons of 2002 and 2003. Work at the Rhode's Landfill was started by private contractors shortly thereafter. All three were capped in keeping with Resource Conservation and Recovery Act (RCRA) Subtitle D regulations. Gas collection and venting systems were installed at Waste Hauling and BATH. The Corley Landfill (City of Decatur Water Dept. monofill) received its final closure designation in 2003. Department enforcement personnel are responsible for semi-annual inspections at these sites and at the Waste Control Landfill.

The delegation agreement with IEPA also authorizes inspections of illegal dumping and burning. The number of inspections done annually cannot not be considered an annual incidence rate. Some sites have been a location for dumping for years, but are remote; or neighboring properties change owners who object to the nuisance. Recent increased enforcement activities also provide expanded educational opportunities to increase compliance, which is the ultimate goal of the enforcement program. Violations of the Act, Regulations or permits are handled under the provisions of the Act. Not all violations will result in prosecutions, but a number of civil and/or criminal remedies are available. All inspections are entered into a database to track the progress of a site and the need for re-inspections to ensure continuing compliance. Associated with the delegation agreement is a grant from IEPA, increased this year to \$46,271 per state fiscal year, after remaining static for six (6) years.

Assisting townships with the proper disposal of illegally dumped wastes, including a program to handle tires, has improved the situation for those government entities. Ongoing efforts to spread the understanding of the provisions of the Act and proper waste management include increased communications with Fire Departments and local officials, building relationships with local industry, broadcast advertising and the development of a "Litter Law Digest" for local law enforcement.

### **New Recommendations - Disposal in Landfill Facilities**

- ◆ Continue source reduction, reuse, recycling and composting programs to reduce dependence on land filling.
- ◆ Continue the Delegation Agreement/Enforcement Grant with IEPA to ensure that land filling occurs in compliance with the most current RCRA Subtitle D regulations and other regulations adopted by the State of Illinois.
- ◆ Encourage landfill owners to design and implement emerging landfill technologies to

extend capacity expectancy, reduce long term toxicity and conserve resources when possible and environmentally appropriate.

- ◆ Acquire additional landfill capacity to meet Macon County's long term disposal needs and maintain an environmentally sound and cost effective waste disposal alternative for its' businesses and residents.
- ◆ Transfer station siting should only be considered after a complete study of its' economic effects to citizens and business; its' impact on competition; and various operational scenarios.

## **Conclusion**

In conclusion, progress has been made in improving waste management practices and increasing public awareness of waste disposal options. However, this report demonstrates the County is not as far along as the statistics have shown. The future holds key decisions in landfill and/or transfer station siting, expanding opportunities and participation in recycling, and increasing education across all Department programming. While there is a good foundation of recycling programs, it is not yet available to all of Macon County's citizens or used to its' full potential. Public education and acceptance plays a big role in achieving all aspects of solid waste management planning and implementation. Ultimately, regardless of what method is chosen for the final disposition of the County's waste, enforcement programs must be strong to ensure its' proper handling.

There is no single solution to managing our solid wastes. Rather the best solution is a combination of the alternatives and ideas described in this Plan. Each alternative method of waste reduction, treatment and disposal must be evaluated on the environmental, economical and political merits. Therefore we will continue to pursue the optimum management system using these alternatives and the best available technology until better options arise.