

Solid Waste Management in Northeastern Illinois

**A Regional Update
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northeastern illinois planning commission

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Introduction

In the Preface to our 1986 Regional Solid Waste Policy Plan, we said:

The disposal of solid waste is one of the "invisible" public services. For most people, interest in solid waste management ceases when the garbage is picked up. The quality of the system is measured in terms of punctuality, noise, damage to garbage cans, the size of the monthly fee, and the number of phone calls it takes to get the old washing machine removed. The individual citizen is not too concerned about where the waste goes, as long as it is not nearby and the cost is not too high.¹

Much has changed since we made that statement. Decisions on how and where to dispose of waste have become much more visible and volatile as local officials have responded to public concerns about actual or perceived dangers to public health and environmental quality. Recycling, which was then provided by nonprofit organizations in limited areas, has become an almost universally-expected public service. Solid waste management policy-making and operations have become an arena of extensive intergovernmental cooperation and partnership between local government and the private sector.

The purpose of this report is to provide an update on waste management practices and issues in northeastern Illinois. The subjects covered include recycling programs, household hazardous waste management, incineration, and landfilling. The emphasis is on the steps being taken by county and municipal governments, many of them acting jointly, to assure that dependable, cost-effective, safe, environmentally responsible means of waste disposal are available into the future.

The area covered by this report is a nine-county region. This includes the six counties in NIPC's jurisdiction - Cook, DuPage, Kane, Lake, McHenry, and Will - plus Grundy, Kankakee, and Kendall counties. These counties constitute one of seven substate regions designated by the Illinois Environmental Protection Agency for reporting purposes. NIPC has served as the convener of regular coordinating meetings among the directors of county and intergovernmental solid waste planning bodies in the region. Most of the information in this report is drawn from those discussions.

Waste Generation

One of the more difficult aspects of reporting on solid waste management is estimating the amount of waste being managed. No uniform reporting requirements have been established with respect to waste generation. Information on the amounts of material collected, recycled, incinerated, and landfilled is thus compiled by dozens of different private firms and reported to dozens of different governmental bodies. Much of this information, although reliable, is not comparable. The best we can do is suggest the overall magnitude of the region's discards.

In August 1997 we surveyed the thirteen solid waste planning agencies in the region with respect to waste volumes, recycling levels, and landfill destinations in their jurisdictions. Their estimates of waste

generation are compiled in Table 1. The combined tonnage reported by the three intergovernmental agencies in suburban Cook County was increased by twenty percent to reflect those portions of the county not included in their memberships.

Table 1: Estimated Municipal Solid Waste Generation by County, in Tons, 1996

County	Est. 1996 Population	Est. 1996 MSW (Tons)
Cook	5,096,540	5,864,838
City of Chicago	2,721,547	3,898,890
Suburban Area	2,374,993	2,506,968
DuPage	859,310	926,895
Grundy	35,712	39,840
Kane	370,361	561,881
Kankakee	101,949	126,639
Kendall	47,894	47,048
Lake	582,983	739,044
McHenry	230,555	238,376
Will	427,818	412,942
Total	7,753,122	9,498,523

Source: Survey of County and Intermunicipal Solid Waste Agencies, 1997

The combined per capita generation rate in 1996 was about 6.7 pounds per day. This represents about a two percent increase over the 6.6 pounds per day estimated for 1990.² This translates to an increase in waste generation of about 530 thousand tons. We would prefer, of course, to see the per capita rate decline as more actions are taken by individuals and firms to reduce waste. But a two percent increase is probably within the range of estimating error. The actual amount may well have declined. Several of the planning areas surveyed did report lower per capita rates.

Available data do not allow an analysis of the total waste stream by source. Applying the percentages which we calculated for 1990, we estimate that the 1996 waste stream included 4.65 million tons of residential waste (49 percent of the total), 3.04 million tons of commercial waste (32 percent), 380 thousand tons of industrial non-process waste such as lunchroom waste (4 percent), 1.42 million tons of construction/demolition debris (15 percent), and 1.23 million tons of landscape waste (13 percent).

Local Government Organization

From the standpoint of the homeowner or businessperson, waste collection and recycling are responsibilities of the closest unit of government; the village, city, or county. While the functions of these local governments with respect to solid waste management have been refined by legislative and judicial action, they have remained fundamentally the same over the past decade.

While a few municipalities (including the City of Chicago) pick up residential waste and recyclable materials with municipal trucks and crews, most collection is done by private firms. Municipal oversight of this private collection is exercised in several ways:

- * contracts with single haulers, with fees for collection, recycling, and disposal paid by the municipality out of general or designated revenues
- * franchises granted to one or more haulers, with fees paid by the homeowner
- * terms-of-service requirements, such as the availability of curbside recycling, attached to each private hauler's business license. This technique has also been used by several counties to assure the availability of recycling service in unincorporated areas.

A few municipalities do not regulate collection, but require each homeowner to contract directly for service.

With respect to disposal, no municipally-owned disposal facilities (landfill or incinerator) remain in operation in the region. Several pending facilities are discussed below. Two landfills (Mallard Lake in DuPage County and Settlers Hill in Kane County) are still in operation on county-owned land. Several local governments own processing facilities for recyclable materials. The bulk of waste processing and disposal is thus still performed by private firms. Private disposal facilities are subject to county regulation with respect to public health and nuisance requirements. Several of the counties also exercise regulatory responsibility over landfill operations under delegation-of-authority agreements with the Illinois Environmental Protection Agency. Siting and expansion of disposal facilities is also subject to review and approval by the host community, while processing facilities are subject to local zoning.

What has changed substantially in the last decade is the degree of intergovernmental activity in these areas. The Illinois Solid Waste Planning and Recycling Act of 1988 assigned to counties the responsibility for developing countywide solid waste management plans and recycling programs. The City of Chicago was defined as a separate county for planning purposes. The law provided for the establishment of an advisory structure including, among other interests, the municipalities in each county. This reflected the fact that in several counties in northeastern Illinois, plans were already being prepared on an intermunicipal or county-municipal basis. It also reflected the reality that, in the urbanized counties, most of the waste was generated within incorporated areas and the municipalities had responsibility for assuring its disposal. In most cases, the municipalities became full partners with the counties in the development of their plans.

In several parts of the region, these joint planning efforts evolved into intermunicipal or county-municipal joint action agencies. These assumed responsibility for supporting the functions of their member governments and for direct provision of services and management of relationships with the private sector. Four such agencies have been formed:

- * the Solid Waste Agency of Northern Cook County (SWANCC)
- * the West Cook County Solid Waste Agency (WCCSWA)
- * the South Cook County Solid Waste Agency (SCCSWA)
- * the Solid Waste Agency of Lake County (SWALCO)

Each of these is established under the state Intergovernmental Cooperation Act as a joint action agency of its member local governments. The three suburban Cook County agencies were spun off by the Northwest Municipal Conference, the West Central Municipal Conference, and the South Suburban Mayors and Managers Associations respectively, and their memberships generally overlap their parent organizations. While legally subject to Cook County for planning purposes, they function with full autonomy in operation. The joint action agencies are funded by a combination of member contributions, surcharges and host fees levied against disposal facilities within their operating areas, and charges to their members for direct services.

SWALCO is a county-municipal agency with a governing board comprising representatives of Lake County and 35 municipalities. The County Board retains the legal responsibility for adopting the countywide plan, but has delegated the power to prepare the plan to the agency. The unique financial relationship between SWALCO and the county, involving an exchange of local host fees and the county landfill surcharge, is described below.

DuPage County has also formalized an intergovernmental approach to planning and coordination. The County Board exercises its authority to adopt the countywide plan and oversee its implementation on the advice of a Solid Waste Committee comprising six board members and six municipal representatives. The municipal representatives are appointed by the County Board President on the recommendation of the DuPage Mayors and Managers Conference. The committee is staffed by the county Solid Waste Department.

The counties and joint action agencies have focussed their activities on developing and coordinating recycling programs and on public education and outreach. Each of them is staffed for these responsibilities. They have also assisted their members in negotiating hauling and disposal contracts and franchises, and have sought means of assuring long-term availability of disposal capacity. These programs will be described in more detail below.

Recycling

The growth of recycling is a striking example of a good idea whose time came. A decade ago, collection of recyclable materials was limited to a few communities and was provided primarily by environmentally-conscious non-profit organizations. As environmental awareness grew among the

general population, recycling was a relatively inexpensive and noncontroversial way of responding. Most communities began by establishing drop-off sites and then moved to curbside collection. Curbside collection of recyclable materials from single-family and small multi-family residences is now practically a universal service. Multi-family residential and commercial recycling are not as fully developed but are subjects of significant effort by county and intergovernmental agencies.

The Solid Waste Planning and Recycling Act of 1988 established a goal of 25 percent waste diversion by recycling for all county solid waste management plans.³ The survey of solid waste planning agencies in the nine counties found that in 1996, the regionwide average was 26 percent (Table 2). This is significantly higher than the statewide rate of 21 percent reported by IEPA.⁴ Over two million tons of recyclable materials and landscape waste were removed from the waste stream by recycling and composting programs in 1996. Removal rates in the several planning jurisdictions ranged from 17 to 40 percent. These represent percentages of the total municipal solid waste stream. Within the single-family residential component, recycling diversion rates in the 40 percent range are increasingly common. The overall rates are depressed by uneven diversion levels in the commercial and construction/demolition sectors. Efforts to increase these levels are described below.

Table 2: Waste Diverted to Recycling and Composting by County, in Tons, 1996

County	Tons Diverted	Percent Diverted	Lbs/Capita
Cook	1,449,536	24.3	570
City of Chicago	813,974	23.4	598
Suburban Area	635,562	25.5	538
DuPage	239,092	25.8	558
Grundy	14,741	37.0	826
Kane	211,096	37.6	1140
Kankakee	24,113	19.0	473
Kendall	12,300	26.1	514
Lake	293,193	39.7	1006
McHenry	55,944	23.6	485
Will	70,584	17.1	330
Total	2,373,598	26.1	612

Source: Survey of County and Intermunicipal Solid Waste Agencies, 1997

Residential Recycling

As was suggested above, most of the progress in recycling has come in the single-family residential sector. As of early 1998, curbside collection of recyclable materials was provided by 255 municipalities in the nine-county area under their collection contracts or franchises. All of the municipalities in the SWANCC area and in DuPage, Grundy, Kane, Kendall, and McHenry counties provided curbside collection⁵.

Collection contracts typically establish the types of materials to be collected and the frequency and price of service. They sometimes provide for a rebate to the municipality of a share of revenues from the sale of materials above a certain level. Materials to be collected almost always include newsprint, steel and aluminum cans, glass containers, and one or two types of plastic containers. Many municipalities have gone beyond this to include other plastics, aluminum foil and containers, chipboard, magazines, corrugated board, and junk mail.

McHenry County was the first to seek universal curbside recycling service in its unincorporated area. A county ordinance enacted in 1993 required that haulers make recycling service available to their residential customers as a condition of their business license. Similar ordinances were subsequently adopted in other counties. The Grundy County ordinance was adopted in 1995 and is applicable to all residences in the unincorporated area. It specifically includes service to mobile home parks, which encompass a substantial percentage of the county's unincorporated population. The ordinance also requires that owners of rental property make recycling service available to their tenants. The Kane County ordinance requires haulers to provide recycling service to all residential customers including multifamily buildings and rural residences. The hauler must provide containers and pick up the materials included in the nearest municipal curbside program. DuPage and Kendall counties and SWANCC also provide for unincorporated collection.

The most visible residential recycling program in the region has been the City of Chicago's blue bag program. The program was initiated in 1995 after the City concluded that this technique would be more cost-effective than a more typical curbside collection program. The program serves all residences of four or fewer units. Recyclable materials and landscape waste are placed by residents in blue plastic bags and collected by city crews with other waste. The loads are delivered to one of four processing facilities where the bags are separated and opened and the materials sorted by type. The mixed waste is also sorted to remove reject materials (e.g. tires, propane tanks) and clean paper, aluminum, and ferrous materials. Glass is recovered only from the blue bags. The residual waste is then reloaded in transfer trailers for shipment to landfills. Each of the four sorting facilities has a capacity of 2,400 tons per day. The program was the subject of an intensive media campaign to encourage participation, which opponents contended would be lower than a normal curbside program. By mid-1997, the blue bags and mixed-waste sorting were achieving a combined 25 percent diversion rate.

Recycling in multi-family buildings of more than four to six units has not been universally established in the nine counties. Waste hauling from these units is typically not subject to municipal contracts or

franchises, and collection of recyclable materials presents particular problems for both the property manager and the hauler. The City of Chicago and McHenry County require that recycling be made available by haulers to all multi-family residential accounts. SWALCO has conducted a pilot program in a 400-unit complex in Grayslake.

Recycling was made available to multi-family residents in fifteen communities in west Cook County in 1996. The program covered 43,000 units which housed 57 percent of the multi-family population in WCCSWA's membership area. Each participating community provided for multi-family collection as part of a comprehensive hauling contract or through a mandatory multi-family recycling ordinance. A model ordinance prepared by the agency required owners of multi-family properties to provide a certain volume of recycling capacity (expressed in cubic yards per week) based on the number and size of dwelling units. Each hauler was then required to make recycling service available to its multi-family customers unless it knew that a customer had contracted with another recycler.

A unique multi-family program was created by the City of Chicago in cooperation with the Chicago Housing Authority and Waste Management. They agreed to conduct a pilot recycling program in the Lathrop Homes public housing complex. Volunteers from the VISTA program used a truck provided by the not-for-profit Resource Center to operate a mobile buy-back center. Waste Management agreed to pay double the going rate for up to 25 thousand tons of materials, with payment made by vouchers which could be used at neighborhood retailers. The pilot project was developed because CHA facilities are not covered by the blue bag program

Commercial Recycling

The next major challenge for recycling is the commercial sector. We estimated that, in 1990, commercial waste represented 32 percent of municipal solid waste in the nine-county area. This would amount to just over three million tons of waste generated in 1996 by offices, wholesale and retail establishments, and institutions (including schools and government offices). In some communities, commercial waste may exceed 40 percent of the total. Because this waste stream includes a high percentage of paper and cardboard, effective recycling can greatly reduce the amount of material going into landfills. However, commercial recycling presents particular challenges. Waste collection is typically done by contract between each individual business and a hauler, with little or no local government involvement. Municipal collection contracts thus have not been used as a vehicle to require that recycling service be provided. From the business firm's standpoint, separate handling of recyclable materials represents additional expense, while providing for collection from individual businesses complicates the hauler's routing. There has thus been limited incentive to either request or offer commercial recycling. Several of the intergovernmental solid waste agencies have determined that it was important to try to create those incentives.

In 1994, the Solid Waste Agency of Northern Cook County instituted the state's first governmentally-funded commercial recycling program in downtown Park Ridge. Collection of cardboard, mixed paper, and containers was provided to over 100 businesses, with the haulers' fees paid by the agency. A grant

from the Department of Energy and Natural Resources paid for inside boxes and for 90-gallon carts. Each cart was shared by several businesses, which reduced the number of separate collection stops. SWANCC's intent was to demonstrate that recycling would not be inconvenient for the businesses and that cost savings would result as businesses were able to contract for smaller dumpsters or less frequent collection of mixed waste. The program yielded two tons of recyclable materials per week.

At the end of the one-year Park Ridge pilot project, twenty percent of the participating merchants contracted with their haulers for recycling service on a continuing basis. At the end of a similar program in Arlington Heights, 38 percent of 240 businesses elected to continue recycling. Programs have also been initiated in Wilmette and the Central Street business area in Evanston. A commercial blue bag pilot project in Winnetka, designed to accommodate tight alley clearances which preclude placement of additional containers, was less successful and was terminated. SWANCC has also worked with the Village of Skokie to develop a commercial collection franchise including mandatory recycling service for the downtown area. SWANCC estimated that nearly 90 percent of businesses would achieve a reduction in their waste collection costs.

The Solid Waste Agency of Lake County has also instituted a series of two-year commercial recycling demonstration projects. The first was implemented in downtown Highland Park. Service was provided to 550 businesses at 120 stops by a single hauler under contract to the agency. The cost of collection - initially \$8.00 per month per business and currently \$12 - was paid in the first year by SWALCO and in the second year by the city. The hauler retained the proceeds from the sale of materials. The agency provided bins and inside containers. Similar programs have been established in Libertyville, Grayslake, Antioch, Gurnee, Lake Zurich, and the Ravinia business district in Highland Park.

The West Cook County agency has had considerable success working with member municipalities, individual businesses, and haulers to institute recycling service. The agency has provided waste analyses and educational and promotional materials to business establishments and has assisted in redesigning their waste collection arrangements. The agency worked with the Village of Oak Park and the Avenue Business District to develop a program serving 30 businesses through a single collection contract. A waste management and recycling guide for small businesses was developed for the agency by the Central States Education Center.

Kane County and the City of Chicago have mandated the availability of commercial recycling service as a condition of business licensing. In each case, haulers are required to provide collection service for at least two of the materials prevalent in single-family collection programs.

Construction/Demolition Waste Recycling

Another area in which aggressive recycling could have a substantial impact on landfilling rates is construction/demolition (C/D) waste. We estimated that 14 percent of the municipal waste stream in 1990 consisted of broken concrete, brick, wood, drywall, and other building materials. This would amount to 1.33 million tons in 1996. The actual amount may be higher given the current level of

construction activity in the region. In part because of its inert nature, C/D waste has not been subject to extensive local or state regulation. Except for concrete reprocessed as aggregate and high-value materials such as copper, most of it has been landfilled. As landfill tipping fees and transportation costs have risen, developers and other waste generators have become more receptive to diversion and recycling possibilities.

Efforts by the county and intergovernmental agencies have emphasized education and technical assistance to developers and building contractors. Beginning in 1996, DuPage County has worked with contractors to carry out waste audits and provide training in recycling techniques. The purpose of the audits is to focus generators' attention on how much waste they actually produce. The county has also provided post-audits to establish the effectiveness of recycling efforts. The county was funded by the Department of Commerce and Community Affairs to prepare a guidebook on C/D recycling intended for use throughout the state.

SWALCO has conducted a training symposium for developers and has encouraged the establishment of temporary on-site processing centers in connection with major developments. The Agency has selected three demonstration sites. Two are new residential developments in the villages of Lake Villa and Long Grove. The third involves the rehabilitation of 55 residences in the Town of Fort Sheridan project in Highland Park.

Will County has worked with one of its developers on a similar program to recycle drywall scrap as a compost material. It is also considering development of a permanent processing facility and is drafting a model C/D recycling ordinance for its member communities. The City of Chicago has emphasized recycling of concrete and brick, which alone constitute 14 percent of the waste stream. In a twelve-month period in 1996-97, 559 thousand tons were recycled as clean building material or processed as aggregate.

Recycling Education

Recycling education has been a major component of each of the county and joint action agency programs. In addition to the commercial and other training programs referred to above, strong emphasis has been placed on outreach to elementary and secondary schools. The intent has been to capture the substantial amount of recyclable material generated in the schools and, more importantly, to train the next generation of citizens in the importance of recycling and waste reduction. Programs have included training for teachers in recycling values and techniques, development of curriculum materials, presentations to classes and assemblies, presentation of Earth Flags to schools which make significant commitments to source reduction and recycling, grants for the purchase of recycling bins and other materials, and sponsorship of essay contests and other recycling-oriented activities. Activities directed to adults include publication of "green pages" recycling guides, handbooks on recycling and waste reduction, participation in America Recycles Day, recycling award programs for businesses and institutions, and presentations to civic and other organizations.

Several agencies have hired education coordinators to oversee these activities. In other cases, educational programs have been included in the recycling coordinator's assignment. Education centers which can be used for training and other purposes have been incorporated in the design of SWANCC's Wheeling Township transfer station, the DuPage County Intermediate Processing Facility in Carol Stream, and the Waste Management processing facility in Grayslake. The Grayslake center was developed in cooperation with SWALCO.

Household Hazardous Waste

Diversion of household hazardous waste from landfills has been a priority concern of the solid waste agencies. This class of waste includes paints, solvents, horticultural chemicals, and similar materials which are potentially hazardous to health or environmental quality if placed in landfills. Because they are generated in small quantities and require special handling, they cannot be effectively collected by curbside programs.

The typical collection method has been a one-day drop-off event. These events are usually conducted in cooperation with IEPA, which assumes the legal status of "generator" of the waste and thus relieves the local sponsor of liability for its safe collection and disposal. Collections are usually held on a Saturday in spring or fall at a processing center, fire station, or other public facility which provides adequate access, traffic movement and parking. Residents of the sponsoring agency's service area are informed of the collection event through newspaper advertisements, local-access cable announcements, and other means. A contractor for IEPA receives, identifies, manifests, and packs the material for shipment for treatment or disposal. Collection days have attracted as many as 3,000 cars and collected 500 55-gallon drums of material. IEPA has supported as many as 30 drop-off events around the state in a year, with half of these in the nine-county area.

The City of Naperville was the first local government to establish a permanent site for hazardous household waste collection. In 1992, the city entered into a three-year contract with IEPA to operate a year-round drop-off site open on Saturdays and Sundays at one of the city's fire stations. Material was received by city fire and public works employees, placed in drums, and stored for weekly pick-up by an IEPA contractor. IEPA agreed to pay the cost of disposal and to assume liability for the material as soon as it entered storage. The program was limited to Naperville residents.

When the contract was renewed in 1995, IEPA asked that the facility be opened to any Illinois resident. The agency agreed that advertisement of the site could be limited to jurisdictions which provided funding support. DuPage County agreed to offset a portion of the added cost in order to make the site accessible to all county residents. In 1997, Kane County agreed to provide funding in return for directing residents of the Aurora area to the site. In the most recent fiscal year, the site handled an estimated 518 thousand pounds of material brought by just under 10 thousand cars.

DuPage County has also conducted an on-going program of mobile collection. In each of the last three years, twelve drop-off events have been held - six in the fall and six in the spring - at locations in the

six County Board districts. A contractor receives waste material and prepares it for delivery to recycling or disposal sites. The contractor assumes "generator" status and thus liability for proper disposal. Each event has served between 600 and 1400 cars, and some have included Sunday as well as Saturday collection. The program has been run without IEPA participation.

The Solid Waste Agency of Lake County is the first countywide agency to initiate development of a permanent household hazardous waste facility. The facility will be used for short-term storage of materials collected at one-day drop-off events throughout the county and delivered to the central facility by trailer. At the storage facility they will be classified, recorded, and bulked for shipment to treatment or disposal sites. SWALCO has entered into an agreement with IEPA, which will assume "generator" status for the waste. A host agreement for the storage facility was negotiated with one of SWALCO's member municipalities. The agreement provided for payments to the village in lieu of taxes on the property, and stipulated that there would be no public drop-off of waste at the facility. The agreement was subsequently canceled by the host community, and a new site is being sought. The permanent facility is planned to be in operation in the summer of 1999.

Incineration

Incineration with energy recovery ranks just below waste reduction and recycling in the state's hierarchy of waste management methods. However, it has not been a major component of the region's waste management system. In the first generation of county solid waste plans, only four areas - Chicago, southwest and south Cook County, and Lake County - proposed significant burning of MSW. At that time, about sixteen percent of Chicago's residential waste was sent to the city-owned Northwest Waste-to-Energy (WTE) facility, which sold steam to a nearby manufacturing plant. The south suburban plans assumed that some portion of the waste stream would be sent to an incinerator proposed for the Village of Robbins. The Lake County plan proposed the development of a new 700 ton/day facility to handle about twenty percent of the county's waste.

Of these proposed units, only that in Robbins is operational. The Northwest incinerator was closed in 1996 when the costs of upgrading it to meet operational and emissions requirements were found to be excessive. The incinerator proposal was deemed to be infeasible in Lake County and was removed from the five-year update of the plan. While a number of other incinerators have been proposed in the region, none has proceeded beyond the permitting stage.

The Robbins WTE became operational in 1996. It is designed to process 1600 tons of waste per day. Recyclable and noncombustible materials constituting twenty-five percent of the input by weight are first sorted from the waste stream. The remainder is then shredded into a uniform refuse-derived fuel (RDF) and fed to two 600 ton/day burn units. Steam is generated and used to drive a generator capable of producing 55 megawatts of electricity. Approximately ten percent of the input by weight remains as ash. Twelve communities in the south and southwest suburbs have long-term contracts to direct waste to the plant. Their waste represents about one quarter of capacity, the remainder being filled on the spot market.

Energy production is a critical factor in the economic viability of an incineration facility. In 1987, the Illinois General Assembly enacted the Retail Rate Law, which required that public utilities buy cogenerated electricity from WTE facilities at the price they charge their retail customers. The higher cost of this electricity, compared to the utilities' own cost of generation, was offset by a state tax credit. The law thus provided an indirect public subsidy to incinerator operators. They, in turn, could use energy revenues to offset a portion of their operating costs and thus offer waste generators a tipping fee more nearly competitive with those of landfills. In 1996, however, the law was repealed in the face of public concern about perceived air quality risks of incineration and the number of WTE facilities being proposed. An effort to "grandfather" the Robbins facility, which was then nearing operation and which had assumed retail-rate sales in its financing, was unsuccessful.

In part as a consequence of this action, the Robbins facility's contractual tipping fee is substantially higher than that for landfilling (about \$59/ton in 1998 as opposed to \$30-32/ton for waste delivered to a transfer station in an inner Cook County suburb). Even with this higher fee, the facility is reported to be losing money. As landfill capacity close to the urbanized parts of the region is exhausted, the effect of transportation on the cost of landfilling could reduce the differential. But the loss of a favorable energy market, combined with public uncertainty about air quality and other impacts, make it highly unlikely that additional WTE facilities will be developed in the region.

Landfilling

Despite the strong emphasis in both state policy and local practice on diversion and recycling, landfilling remains the predominant means of handling the region's municipal solid waste. In 1996, approximately 74 percent of the region's MSW (6.7 million tons) was placed in landfills.

Our survey of waste management practices confirmed the regional nature of the waste disposal market. Contrary to expectations when the countywide solid waste plans were prepared, there is very little restriction on the movement of waste among counties or even across state lines. Table 3 indicates the percentage of the region's MSW landfilled in various jurisdictions. Of the nine counties, only McHenry and Kendall did not have active landfills in 1996. Except for Cook, each of the counties with landfill capacity disposed of at least half of its own waste internally. The high volume of waste delivered to DuPage County reflected the pricing strategy of a landfill operator attempting to use up capacity before closing. Comparable information for 1997 would show a lower percentage of the region's waste going to DuPage County and higher percentages going to Kane County and Wisconsin. The large unreported component of the waste stream originated primarily within the City of Chicago and DuPage County.

At the beginning of 1998, IEPA identified 17 landfills in northeastern Illinois with a combined remaining permitted capacity of 108 million cubic yards. These facilities are listed in Table 4. Our 1992 survey had identified 27 landfills with 147 million yards of capacity. This represented just under six years of capacity at then-prevailing disposal rates.⁶ The reduction in the number of facilities is a continuation of a 30-year trend, and has several causes. Some facilities have been closed when they reached capacity limits imposed by their permits or by the practical limitations of their sites. Others

Table 3: Destination of Landfilled MSW and Percentage of Total, 1996

Destination	Percent	Destination	Percent
Chicago	4	Tazewell	1
Sub'n Cook	3	Will	4
DuPage	16	Winnebago	<1
Grundy	1	Wisconsin	5
Kane	8	Indiana	2
Kankakee	1	Other State	<1
Lake	5	Not Reported	47
Livingston	2		

Source: Survey of County and Intermunicipal Solid Waste Agencies, 1997

were closed prior to reaching their full permitted capacity in response to state action. In 1990, the Illinois Pollution Control Board adopted new regulations governing landfill design, construction, and groundwater monitoring. Landfills which could not meet defined levels of compliance were required to notify the IEPA of that fact and were given closure dates between two and seven years after the effective date of the regulations. By October 1991, over half of the operating landfills in the state had informed the Agency that they would close earlier than their available capacity would allow.⁷ At that time, only 6 of 26 operating landfills in the nine-county region were expected to have capacity remaining after 1998.

The Vanishing Disposal Crisis

As the number of active landfills in the region has declined, there have been periodic predictions of a "crisis" in waste management. In 1986, we said:

According to the best current estimate, the six-county area as a whole has only a little more than eight years worth of landfill capacity remaining. Given the time necessary to site, license, and develop a new landfill or other disposal facility, this is precious little time. As one participant in the Commission's regional solid waste conference in December, 1984 commented, "We are not waiting for a crisis; we have it now."⁸

The crisis, however, has failed to materialize. A combination of market conditions and public actions has assured the continued availability of disposal capacity. The first of these factors, of course, has been the increased volume of waste diverted to recycling and composting. Despite the increase in population and employment, the amount of waste generated in the nine counties and sent to landfills annually has declined by nearly nine percent since 1990, from 7.7 to 6.7 million tons. The percentage of the total waste load landfilled declined from 77 to 74 during the same period.

Table 4: Landfills With Capacity Available in Northeastern Illinois, 1997

County	Municipality	Facility
Cook	Calumet City/Chicago	CID Recycling and Disposal Facility #3
Cook	Calumet City/Chicago	CID Recycling and Disposal Facility #4
Cook	Hillside	Congress Development Co. Landfill
Cook	Chicago	Land & Lakes #3/Harbor View Landfill
Cook	Dolton	River Bend Prairie Landfill
DuPage	Hanover Park	Mallard Lake Landfill
Grundy	Morris	Environtech Landfill
Grundy	Morris	Morris Community Landfill - Parcels A & B
Kane	Batavia	Settler's Hill Recycling and Disposal Facility
Kane	South Elgin	Woodland Recycling and Disposal Facility
Kankakee	Chebense	Kankakee Recycling and Disposal Facility
Lake	Grayslake	Countryside Landfill
Lake	Zion	Zion Landfill
Will	Beecher	Beecher Development Co.
Will	Joliet	CDT Landfill
Will	Elwood	Laraway Recycling and Disposal Facility
Will	Plainfield	Wheatland Prairie Recycling and Disp. Facility

Source: Illinois Environmental Protection Agency, "Illinois Landfills Reporting Capacity on Jan. 1, 1998", Springfield, no date.

A second factor has been the expansion of existing facilities. Landfill owners have sought both horizontal and vertical expansion of their facilities, with the new sections meeting more stringent environmental and engineering standards. The communities and solid waste agencies which host these sites, faced on the one hand with rising disposal costs and on the other with the prospect of substantial host payment and tipping fee revenues, have found such expansions palatable if not desirable. Environtech, Settler's Hill, Countryside, and Zion have all had substantial expansions approved by the local siting authority and IEPA.

A third factor has been continued exporting of waste from the nine-county area. In 1996, approximately sixteen percent of the region's waste was shipped outside for disposal. Of this amount, half went to

other states (primarily Wisconsin and Indiana) and half to other Illinois counties (primarily Livingston, Tazewell, and Winnebago). This has been made necessary by the declining supply of landfill capacity in the region.

Increased waste exporting has been associated with increased use of transfer stations and high-capacity trailers for waste movement. As of March 1996, IEPA identified forty permitted transfer stations in the nine-county area. Thirty-five of these were in Cook County, including sixteen in Chicago (four associated with blue-bag processing facilities). One was located in Kane County and four in Will County. Only one transfer station - SWANCC's Wheeling Township facility - was publicly owned. The number of stations in Cook County obviously reflects the high cost of transporting waste from the urban center of the region to increasingly distant landfills. The first permitted transfer station in DuPage County, located near West Chicago, is scheduled to open in late 1998.

New Landfills

The first generation of county solid waste plans anticipated that additional landfills would be developed in public ownership and that some restrictions would be imposed on the disposal of waste from outside the sponsoring counties. This has not occurred, for reasons related to market economics, local politics, and judicial decisions. As was noted above, most new disposal capacity within the region has been gained through expansion of existing private facilities. Only two new disposal facilities under local government sponsorship have been proposed.

SWANCC initiated planning for a landfill in 1983. The eventual proposal for the Northwest Cook County Balefill was for a facility located on a 410-acre tract of land in unincorporated Hanover Township near the Village of Bartlett. The facility would receive baled waste from transfer stations located closer to the most populated parts of the service area. Baling was intended to reduce the volume of waste being transported to the site, make placement in the landfill more economical, and reduce blowing of loose waste. The balefill was designed to best-available engineering standards and would include both compacted clay and artificial liners, leachate collection and treatment, and gas collection and reuse. The facility would utilize an inward gradient design intended to insure that if the liner were pierced, groundwater would flow into rather than out of the waste cells. The capacity of 39 million yards was designed to serve the SWANCC communities for twenty years.

The site is an abandoned gravel strip mine. The actual waste disposal area would include 142 acres. The site design included retention of existing wooded areas around the waste cells as buffering. Portions of the site, which was highly disturbed by gravel mining operations, would be restored to wetland and prairie conditions which predated the initiation of mining. The operations plan would include property value guarantees for property owners in the vicinity of the site and water supply guarantees in the event that municipal wells should be contaminated by the landfilling activity.

IEPA issued a development permit for the facility in 1989. In 1990, SWANCC applied to the U.S. Army Corps of Engineers for a permit under Section 404 of the Clean Water Act. This permit was

necessary because the project would fill waters defined by the Corps as under its jurisdiction. The 404 permit was denied in 1991, and a revised application was denied in 1994. SWANCC filed suit against the Corps, challenging its jurisdiction over the site. The U.S. Circuit Court decided in 1997 that the Corps had jurisdiction. SWANCC has appealed the decision.

Will County has contracted with Waste Management to develop and operate a landfill on a portion of the Joliet Army Arsenal site. The landfill will occupy 455 acres of the 19,000-acre site, most of which - designated the Midewin National Tallgrass Prairie - will be restored to presettlement conditions. The landfill will be permitted at 14 million yards total capacity and the County will guarantee annual delivery of 500 thousand yards. The operator must reserve sufficient capacity for 20 years for Will County waste, estimated at 490,000 tons/year after thirty percent of MSW is diverted. The contract provides for a \$17/ton initial tipping fee for residential waste generated within the county (not including portions of towns which lie across a county line), with escalation based on fees at other area landfills. The county will receive a host fee calculated on a per-ton basis as well as an initiation fee. The contract also provides for three household hazardous waste collections every spring and for an environmental education center at the landfill.

Disposal Agreements

Despite landfill expansions, the closure of several major facilities accessible from the center of the region will increase competition for capacity and upward pressure on tipping fees. As an alternative to developing their own disposal facilities, the intergovernmental solid waste agencies have adopted the strategy of entering into long-term agreements with private firms for disposal capacity on behalf of their member governments. This has the benefit of assuring future disposal at a predictable price while leaving the development and operation of disposal facilities in private hands.

The West Cook County Regional Disposal Project became operational in March 1997. The WCCSWA entered into a ten-year agreement with Waste Management to provide transfer and disposal service. The agreement allows the agency to exercise unilateral options for twenty additional years of service. Twenty-one communities, in turn, entered into contracts with the Agency to direct waste to specified transfer stations. This is accomplished through their hauling contracts. Twelve communities delivered waste initially, with seven more to be phased in as their current hauling contracts expire. When the project reaches full operation, about 87 thousand tons of waste will be delivered per year.

The initial disposal price was about ten percent less than that prevailing at the Hillside landfill, to which most waste from west Cook County was going. Price increases are limited to the lesser of the increase in the Consumer Price Index or five percent per year. Under the contract, the communities are indemnified against future liability arising from waste transfer or disposal. The agency has the right to approve the landfill in which waste is disposed. A direct data link from the transfer station scale provides the agency current data on the quantities of waste delivered.

SWANCC has also negotiated a single contract with Waste Management for disposal. Member communities direct waste through their hauling contracts to the Wheeling Township transfer station. Baled waste is delivered to a disposal facility agreeable to SWANCC. The disposal contract includes a "most favored nation" clause which guarantees SWANCC the best rate given by Waste Management to any municipal customer. Initial savings were about four dollars per ton. The contract runs to 2014, but is cancelable in 2004 or upon the opening of the Northwest Cook County balefill.

SWALCO has addressed the problem of assuring future disposal by entering into contracts directly with landfill operators. Three such contracts have been concluded, reserving sufficient landfill capacity for twenty years. Browning Ferris Industries has reserved 8.5 million cubic yards at its facility in Zion for SWALCO member agencies. USA Waste has reserved 14 million yards at the Countryside landfill in Grayslake. Waste Management has committed 9.5 million cubic yards at its facility in Pleasant Prairie, Wisconsin. Each operator is required to certify annually that the required capacity is available.

The member towns are under no obligation to direct their waste to the three facilities. However, the proximity of the landfills and the fact that BFI and Waste Management are the dominant haulers in Lake County make them the most logical destinations. The contracts do not establish or limit tipping fees, although the Countryside contract includes a "most favored nation" clause. Fees are thus set in individual municipal hauling contracts, which the agency helps negotiate. Under an agreement between the agency and Lake County, local solid waste surcharges authorized by the Illinois Environmental Protection Act and collected by the County are used to fund SWALCO and the county landfill inspection programs. Host fees paid to SWALCO are transferred to the County. Under the Waste Management contract, a host fee will be paid in lieu of the state surcharge, which cannot be collected in Wisconsin.

Disposal of Illinois waste in Wisconsin is potentially subject to state law governing recycling. Wisconsin legislation which imposed unusually high standards of "effective recycling" on out-of-state waste was struck down by the U.S. Court of Appeals as an impermissible restriction on interstate commerce. New legislation developed in response to this decision was also ruled invalid by a U.S. Circuit Court. The State of Wisconsin will appeal this decision. At such time as new recycling standards are enacted and found valid, disposal in Wisconsin landfills may be restricted to Illinois communities which conform to them.

Several other jurisdictions have also assured capacity in conjunction with the approval of proposed expansions and operating contracts. Kane County's contract with Waste Management for operation of the Settler's Hill landfill includes a guarantee of capacity for waste generated in the county through 2004. In 1993, Grundy County secured a twenty-year agreement under which the Environtech landfill cannot refuse any load originating in the county. All twelve municipalities have in turn entered an intergovernmental agreement with the county guaranteeing them access to the landfill.

Conclusion

The landfill capacity agreements represent a major area of progress in the region's ability to address its solid waste needs. In the 1986 regional policy plan, we noted that there was among local elected officials

a pervasive sense of frustration with a system in which local planning and enforcement are of little effect and in which local officials are held accountable for problems over which they have little authority.⁹

At that time, state law did not enable strong local governmental or intergovernmental involvement in solid waste planning, and the private waste management industry was subject primarily to state regulation. What has evolved over the past decade is a system in which local governments have been granted many of the tools they need for effective planning, in which intergovernmental cooperation is strongly supported, and in which public-private relationships are more cooperative than adversarial. Northeastern Illinois is often criticized for its multitude of governments and its seeming lack of common direction. The waste management arena provides abundant examples of local communities' ability to overcome jurisdictional boundaries and provide public services in a coordinated manner.

Notes

1. Northeastern Illinois Planning Commission, *Regional Solid Waste Management Policy Plan*, An Element of the Comprehensive General Plan of Northeastern Illinois, updated December 18, 1986, p. vii.
2. Northeastern Illinois Planning Commission, *Local Government Planning for Municipal Waste Management in Northeastern Illinois*, prepared for the Illinois Environmental Protection Agency, August 1993, Table 1.
3. Solid Waste Planning and Recycling Act, P.A. 85-1198, effective January 1, 1989.
4. Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois*, Ninth Annual Report, December 1996, p. 19.
5. Illinois Recycling Association, "Recycling in Illinois," March, 1998.
6. MSW quantities are variously reported in cubic yards and tons. The typical conversion is about 2.5 compacted yards per ton or 800 pounds per compacted yard.
7. Illinois Environmental Protection Agency, *Available Disposal Capacity for Solid Waste in Illinois*, Fifth Annual Report, October 1991, p. 4.
8. Northeastern Illinois Planning Commission, "Solid Waste Management in Northeastern Illinois." *Planning in Northeastern Illinois*, vol. 27, no. 1, Spring 1985, p. 1.
9. *Regional Solid Waste Management Policy Plan*, p. 29.