Cook County
Solid Waste Management Plan
2018 Update

Prepared by:

delta institute

With Support from the Cook County Energy Efficiency and Conservation Block Grant Program

SUBURBAN COOK COUNTY

30%
diversion rate

44.6%
recyclable portion of waste stream

1.9 lbs
recycled per household each day

8.2 lbs
sent to the landfill per household each day

9,700
tons of hazardous household waste generated per year

40-200
miles waste is hauled to landfills outside Cook County

228,000
food insecure residents

21.3%
of landfilled waste is food

95%
of demolition debris is recycled or reused

15
building material reuse businesses

360 million
economic value of recyclable materials sent to the landfill in Illinois

Cook County Solid Waste Plan
2018 Update
Recommendations Highlights

1. Help small or underperforming communities to increase curbside recycling through joint contracting, or other procurement assistance.

2. Increase recycling in multi-family buildings by providing technical assistance and providing model ordinances to municipalities to help them to include multi-unit buildings in waste and recycling collection contracts and by conducting a public awareness campaign for landlords and property managers.

3. Establish a working group with haulers, material recovery facilities, and municipalities to create an accurate list of recyclable products and a simple unified message. Establish metrics, such as decreased contamination, as tracked by materials recovery facility operators.

4. Develop and produce a marketing campaign, based on work with waste haulers, with a focus on one or two major recycling issues per year for effective public education (e.g. do not include plastic bags in recycling).

5. Identify barriers to increasing diversion rates for industrial/commercial and institutional waste generators through a voluntary program which solicits waste hauling reports and request waste audits from a sample of businesses and conduct interviews with businesses.

6. Encourage Cook County municipalities to implement residential food scrap programs as part of their hauling contracts or licensing requirements.

7. Use Cook County projects to demonstrate the end market use of compost and establish guidelines for finished compost in county road/landscape projects where applicable and look for closed-loop opportunities at Cook County facilities.

8. Seek IEPA funding for expanded collection of household hazardous waste for Cook County residents who do not currently have reliable/convenient access to collection.

9. Establish permanent program collection sites for recyclable electronics in accordance with the Consumer Electronics Recycling Act.

10. Create and consistently use clear definitions of recycling and reuse through all communication channels with demolition contractors.

Contents

Dear Cook County Resident,

The Cook County Department of Environment and Sustainability is pleased to present the 2018 update to the Cook County Solid Waste Management Plan. This plan helps set the County's priorities to promote safe, practical, environmentally beneficial and economically sound solid waste management practices for suburban Cook County.

This document can serve as a resource for local government officials, solid waste joint action agencies and businesses to better understand the landscape of solid waste management in Cook County and to help all of us coordinate our goals and priorities moving forward.

Effective materials management protects public health, addresses pollution, improves property values and quality of life, and provides economic opportunity. This update addresses issues and opportunities in curbside recycling, food scrap composting, household hazardous waste, electronic waste, and construction and demolition debris.

Cook County plays an advisory, coordinating and regulatory role in waste management. The County does not operate landfills or waste transfer stations, nor does it provide waste pickup or hauling services. Each municipality within Cook County has primary responsibility for waste management for their residents.

Cook County inspects and regulates waste and recycling facilities and liquid hazardous waste generators within the County. Cook County is a leader in promoting recycling and reuse of building materials, in conjunction with its demolition permitting. And Cook County works with stakeholders to promote responsible materials management and increase recycling and waste reduction in our communities, institutions and businesses.

We are grateful to our Solid Waste Management Plan Update Advisory Committee, listed in Appendix A, which advised Cook County on current conditions and issues and worked to prioritize goals and recommendations for this plan. We'd also like to extend our gratitude to the Delta Institute for their work in research and drafting this document.

Deborah Stone
Cook County Chief Sustainability Officer

Executive Summary

What is the Solid Waste Plan?

Cook County promotes sustainable materials management to protect public health and provide economic opportunity. The impact of waste is often understated because once it is hauled away; we tend not to think of it again. However, the efficient management of waste is foundational to a functioning society. Equity and the economic and environmental impacts of waste management need to be considered, ensuring that areas which have historically been most impacted by waste disposal are not further disadvantaged.

As a part of its sustainability practices, the County has outlined a carbon reduction strategy to reach an overall decrease of greenhouse gas emissions of 80 percent by 2050. The proposals in this plan will further the County's progress towards the interim target of decreasing carbon emissions due to waste 50 percent by 2035.

Cook County's Role in Waste Management

Cook County Does Not:

- *Collect waste or recyclables from residential, commercial or institutional entities.*
- *Operate any waste transfer or disposal facilities.*

Cook County Does:

- *Inspect, and regulate municipal solid waste transfer stations, landfills, recycling facilities and liquid hazardous waste generators.*
- *Require, by ordinance, recycling and reuse from construction and demolition activities.*
- *Collect data regarding waste and recycling hauling, transfer station or landfill activity.*
- *Provide leadership and assistance with sustainability by working with stakeholders to increase recycling, promote diversion and improve waste management and diversion in Cook County facilities.*

The first Cook County Solid Waste Management Plan was completed in 1992, as required by the Illinois Solid Waste Planning and Recycling Act. Each update serves to:

- Summarize the existing waste management conditions,
- Provide current waste management systems, policies, and programs,
- Report on the status of recommendations from the previous update,
- Propose new goals and recommendations that will drive Cook County's solid waste management programs for the next five years.

To ensure the plan update would address Cook County's most pressing solid waste management issues, stakeholders representing diverse interests were asked to participate in the planning process. The advisory committee members represented municipalities from within the County, community organizations, and industry. The full advisory committee list can be found in Appendix A. The advisory committee met four times to discuss the current conditions, reflect on the most pressing issues, prioritize goals and objectives, and review the plan prior to adoption.

The Cook County Department of Environment and Sustainability (CCDES) led the plan update process, which began with a review of the previous plan and an assessment of current waste management practices in suburban Cook County. A review of best practices ranging from neighboring Midwestern communities to those on the West and East Coast informed the selection of five special research topics. Additional analysis and dialog with the advisory committee resulted in eight goal areas, organized by priority.

Plan Layout

The plan is organized into five sections, the first of which is the Executive Summary. The second section of the plan outlines demographic trends and Cook County's solid waste management role throughout the County, and the roles of additional actors like joint action agencies and municipalities. The third section of the plan reviews current state, regional, and local waste generation and diversion trends. It also outlines existing waste management infrastructure, which includes transfer stations, recycling and compost facilities, and landfills. The fourth section looks closely at five special topic areas for the 2018 Plan Update, consisting of residential curbside recycling, food scrap diversion, electronic waste, household hazardous waste, and construction and demolition debris. The final section of the outlines recommendations for Cook County over the next five years. Appendices include the Advisory Committee members, suburban Cook County waste infrastructure, and state and county level legislation that has been introduced since 2012 that affects materials management in Cook County.

Special Topic Areas

Residential Curbside Recycling

Materials that are commonly recycled in curbside collections programs (commodities such as metal, plastic, paper, and glass) represent 44.6 percent of the residential municipal solid waste (MSW) stream in Cook County.[1] Despite the recyclability of these materials, 42.5 percent of landfilled materials in urban areas of Illinois are paper, glass, metal, and plastics.[2] [3]

Resident access to and participation in curbside recycling programs is crucial to ensuring maximum diversion of recyclable commodities. However, the majority of incorporated municipalities in Cook County only provide single family homes with automatic curbside recycling programs, and individuals

who live in multi-unit buildings (4 or more units) or unincorporated communities are often not offered the same level of service.

Only 46 of 134 municipalities in suburban Cook County include multi-unit buildings in their waste and recycling collection contracts and franchise agreements. Additionally, there more than 125,000 Cook County residents who live in unincorporated areas, many of which are responsible for coordinating their waste and recycling collection services independently.[4]

Contamination of Recyclable Materials

Generating uncontaminated streams of recyclable materials is imperative for recycling to be cost effective. Contamination occurs when non-recyclable materials (e.g. organics, non-recyclable plastics) are placed in recycling collection bins, and can result in mechanical issues at sorting facilities. That requires more time, labor, and energy to process into pure commodities. Waste Management, the nation's largest waste service provider, reports that processing costs are increasing along with contamination rates (16 percent, by weight, of Waste Management's collected recyclables are non-recyclable materials[5]), while commodity prices are decreasing. These factors significantly decrease the profitability of recycling. The issue of contamination has become increasingly pressing as international regulations, such as China's Green Fence and National Sword policies, have increased quality requirements for recycled commodities entering overseas markets.

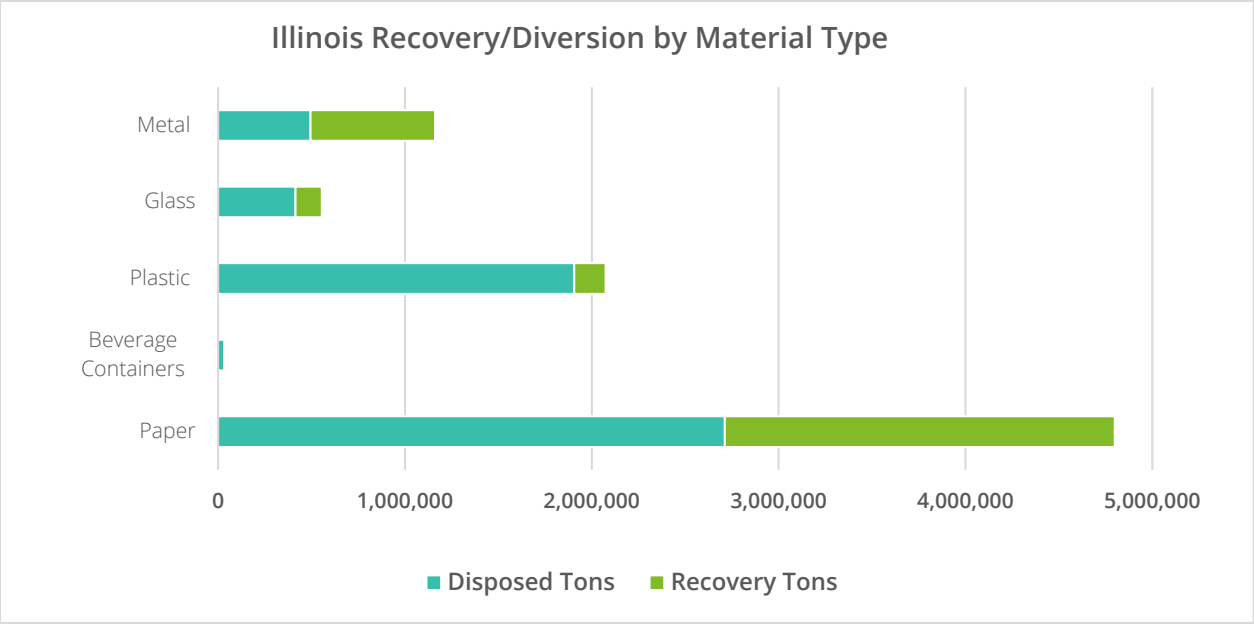


***Figure 1**: Illinois material recovery and disposal quantity for commonly recycled materials. Source: Illinois Commodity/ Waste Generation and Characterization Study Update, 2015.*

Waste is indicative of lost opportunity to our economy. It is estimated that recycled materials sent to landfills in Illinois have a market value of more than $360 million.

Source: Illinois Commodity/Waste Generation and Characterization Study Update, 2015

Waste experts suspect that contamination is frequently a result of miscommunication with the public. Residents have either no information or incorrect information regarding materials that are accepted in their curbside collection programs. There is no online educational information available regarding recycling for 46 communities in suburban Cook County. Additionally, a study conducted in the Chicago Metro Region in 2016 found that 69 percent of municipalities provided recycling information, but 60 percent of those municipalities published lists of accepted materials that differed from the lists published by the material recovery facility (MRF) receiving those materials.[6] Public education and outreach is imperative to address the issue of contamination, and it should be undertaken in partnership with the waste and recycling industries to ensure accuracy.

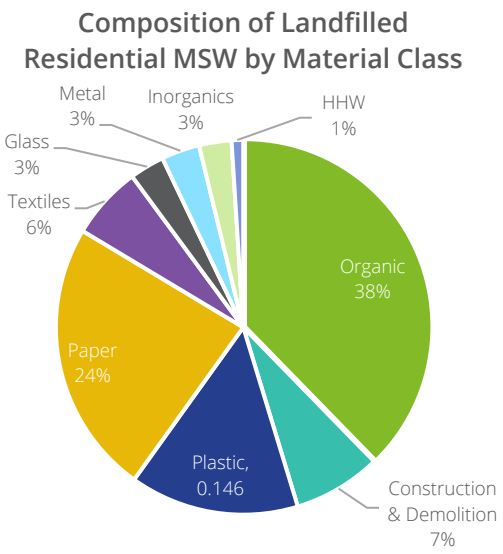
Non-Residential Recycling

Non-residential municipal solid waste generators include industrial, commercial, and institutional (ICI) entities (such as office spaces, retail, schools, hospitals, and manufacturers). This category of municipal solid waste does not include specialty or hazardous waste materials. Generally speaking, ICI waste generators contract waste and recycling collection services independently of local government, and the haulers they contract with are not generally required to provide recycling services along with garbage collection. Because of this, participation in recycling programs and diversion tracking is often more challenging for ICI entities. But it is also possible for these businesses to exert more control over their facilities and processes to enable them to achieve high diversion rates.

Similar to the residential municipal solid waste (MSW) stream, 45.8 percent of the ICI MSW stream is composed of frequently recycled materials (papers, plastics, glass, and metals).[7] Although many ICI waste generators have greater variety in waste materials, their spaces are more use-specific compared to a single family home. This provides ICI entities with the potential to capture pure streams of recyclable materials in large quantities (e.g. paper in an office printing station, cardboard in receiving areas of retail establishments).

The advisory committee has suggested that the County engage the ICI sector to increase their participation in recycling programs by identifying key barriers to waste diversion efforts. With this information, tools can be created and distributed through existing relationships, such as a municipality's chamber of commerce.

Food Scrap Diversion



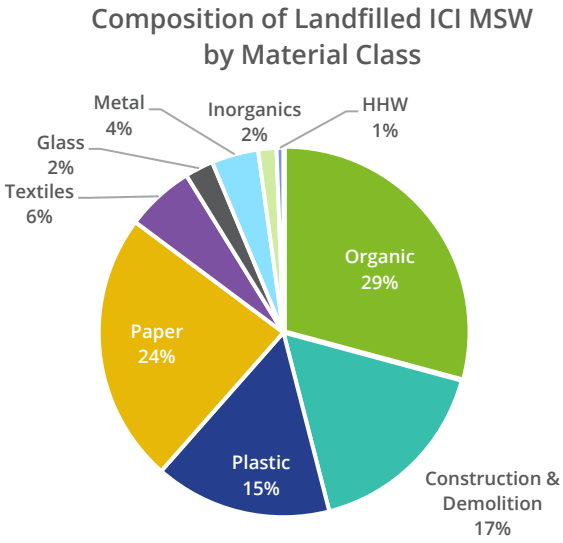


***Figure 2**: Waste Characterization for Res. municipal solid waste by Materials Class. Source: Cook County Commodity/ Waste Generation and Characterization Study, 2014*

***Figure 3**: Waste Characterization for ICI municipal solid waste by Material Class. Source: Cook County Commodity/ Waste Generation and Characterization Study, 2014*

Food waste accounts for 14.9 percent of the national waste stream and 21.3 percent of waste landfilled in Cook County.[8] The substantial amount of food wasted is a problem for many reasons. Food waste in landfills contributes to climate change because it creates methane emissions that trap atmospheric heat. Additionally, producing food that will be disposed is a significant waste of resources. While a significant amount of food is being wasted, 41 million Americans, including 13 million children, struggle with hunger.[9]

Composting food scraps and using finished compost as a soil amendment offers several environmental and economic benefits. While composting can be done by individuals using containers to store organic material in their homes or backyard, it can also be accomplished on a far broader scale using anaerobic digesters or through commercial based composting.

A compost facility in suburban Cook County is currently undergoing the permitting and site approval process, with the potential to open in the fall of 2018. If the facility is approved by the Illinois Environmental Protection Agency and the Metropolitan Water Reclamation District, it will have the ability to compost an additional 200,000 cubic yards (approximately 54,000 tons) of food scraps and

Nationally it is estimated that:

Each person wastes 400 pounds of food every year.

40% of food in the U.S. goes uneaten, representing a loss of $165 billion dollars.

Source: NRDC Issue Paper: Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill. 2012

landscape waste per year.[10] Commercial composting could help divert food scraps to landfills; however, these facilities need a healthy finished compost market to encourage growth.

In addition to commercial composting, anaerobic digesters offer another solution to divert food scraps from landfills. Enabling new anaerobic or aerobic digestion facility development is crucial for increasing the capacity within Cook County to manage food scraps. Dialog with businesses seeking to develop digester facilities revealed challenges with permitting, zoning, and the public's fear of the unknown. Identifying and studying the barriers to developing compost infrastructure may present strategies for addressing those challenges.

Since 2012, at least seven municipalities in suburban Cook County have created residential food scrap collection programs combined with yard waste collection. Schools and institutions can also provide unique opportunities for effective composting programs. Cook County could take several steps to reduce the volume of organics sent to landfills including educating the public, changing behavior around food waste management, increasing accessibility of collection, expanding infrastructure, and strengthening food scrap end markets.

Household Hazardous Waste Disposal

The improper disposal of household hazardous waste (HHW), leads to contamination and degradation of environmental quality and public health concerns. Household hazardous wastes include any leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients (e.g. drain cleaner, lighter fluid). HHW is not regulated to the extent of commercially-produced hazardous wastes; however, many of the chemicals kept in homes pose similar risks. These materials typically remain in the home until the resident moves or conducts a cleanout.[11]

American households generate more than 20 pounds of HHW per year which would equate to 9,700 tons per year of HHW generated in suburban Cook County.

Source: U.S. EPA, Solid Waste, 2016, https://www3.epa.gov/region9/waste/solid/house.html

Currently, Cook County residents have two primary options for proper disposal of their HHW — permanent collection facilities and temporary collection events. There are only three permanent facilities in the Chicago Metropolitan Region (Chicago, Naperville, and Gurnee), and Illinois Environmental Protection Agency (IEPA)

sponsored one-day collection events have declined sharply in recent years with six events occurring in Cook County between 2012 and 2017. Commercial retail collection locations can be a good resource for Cook County residents looking to properly dispose of types of HHW however, many items like non-latex paints, pesticides and cleaning products are not required to be recycled by the retailers and manufacturers that provide them to the public. These options leave several gaps for residents looking to dispose of HHW, creating opportunity for innovation in Cook County.

To adequately serve the HHW disposal needs of Cook County residents, larger and broader partnerships and collaborations between area waste agencies, municipalities, counties, businesses and institutions will need to be made. For HHW collection events to be successful in the future, there will need to be a concerted effort to market and advertise events in order to increase participation. Providing technical assistance and example strategies may help municipalities expand the reach of HHW collection initiatives. This assistance may include procurement guidance to include curbside HHW collection into waste collection contracts, regional partnership building, assisting with promotional and educational efforts, and long term planning.

Residential Electronic Waste Recycling

The Consumer Electronic Recycling Act (CERA), passed in 2017, will alter how electronic waste (e-waste) collection programs function. The most significant change included standards for manufacturer recycling goals that will change from weight-based to convenience-based metrics. Starting in 2019, Illinois counties will need to establish permanent e-waste drop off locations, the number of which is determined by the county's population density. For all of Cook County (including the City of Chicago), this could result in 25 sites. Electronics manufacturers will be required to pay for the recycling of covered electronics collected at these drop-off sites.

CERA will improve access for residents to recycle electronic devices, but Cook County will need to take additional measures to ensure its success. Residents should receive up to date information regarding how and where they can drop off old electronics for recycling. These locations will need to be promoted and residents will need to be educated regarding accepted electronic devices at each location and any associated costs. For the implementation of the CERA to be successful, it will require Cook County to partner with regional waste agencies, municipalities, Illinois Environmental Protection Agency and electronics retailers for promotional and educational efforts.

Construction and Demolition Debris Diversion

The 2012 Demolition Debris and Diversion Ordinance has successfully reduced Construction and Demolition (C&D) waste and generated economic opportunity. Prior to the ordinance, C&D represented 25.3 percent of landfilled waste, but in 2015 after the ordinance requirements had been in place for over two years, C&D represented 16.8 percent of landfilled waste.[12] While the direct causation of this reduction is unknown, the implementation of the ordinance correlated with a reduction of C&D debris sent to the landfill. Since 2012, the number of building material reuse retailers nearly doubled.

However, confusion about reporting is undermining implementation in a field where new businesses open frequently. This requires continuing education. C&D contractors are a diverse group that include both very large and small businesses. Small or newly formed businesses may be unaware of the permit process, ordinance compliance, and penalties, while being the most difficult to identify and contact.

Recommendation Highlights

- *Help small or underperforming communities to increase curbside recycling through joint contracting, or other procurement assistance. (1.1)*
- *Increase recycling in multi-family buildings by providing technical assistance and providing model ordinances to municipalities to help them to include multi- unit buildings in waste and recycling collection contracts and by conducting a public awareness campaign for landlords and property managers. (1.3)*
- *Establish a working group with haulers, material recovery facilities, and municipalities to create an accurate list of recyclable products and a simple unified message. Establish metrics, such as decreased contamination, as tracked by materials recovery facility operators. (2.1)*
- *Develop and produce a marketing campaign, based on work with waste haulers, with a focus on one or two major recycling issues per year for effective public education. (2.2)*
- *Identify barriers to increasing diversion rates for industry/commercial and institutional waste generators through a voluntary program which, solicits waste hauling reports and request waste audits from a sample of businesses and conduct interviews with businesses. (3.1)*
- *Encourage Cook County municipalities to implement residential food scrap programs as part of their hauling contracts or licensing requirements. (4.1)*
- *Use Cook county projects to demonstrate the end market use of compost and establish guidelines for finished compost in county road/landscape projects where applicable. Look for closed-loop opportunities at Cook County facilities. (4.2)*
- *Seek Illinois Environmental Protection Agency funding for expanded collection of household hazardous waste for Cook County residents who do not currently have reliable/convenient access to collection. (5.2)*
- *Establish permanent program collection sites for recyclable electronics in accordance with the Consumer Electronics Recycling Act. (7.1)*
- *Create and consistently use clear definitions of recycling and reuse through all communication channels with demolition contractors. (8.1)*

Waste in Suburban Cook County

Effective solid waste management protects public health, addresses pollution and other environmental issues, improves property values and quality of life, and provides economic opportunity.[13] In Cook County, "city scavenger" trash collectors were hired in the late 1800s to collect trash for use as landfill to stabilize marshy land for future development.[14] In the early 20th century, solid waste in Cook County was primarily incinerated, or disposed in waterways or municipal dumps.[15] In response to public objection to open dump sites, the federal government began developing waste management legislation and local governments began to relocate landfills and introduce recycling programs.[16]

Today's waste and materials management systems are a complex interconnected network that involve the coordination of municipal, state, and county governments as well as participation from the public residents, the private sector, and institutions. Modern waste management systems have evolved to handle the various waste streams differently. For some materials, management and end-of-life destination is dependent on the reuse or recycling potential and value of the material, such as recyclable and biodegradable materials. For other materials, management and end-of-life destination is dependent on the hazard they may present to the public, such as electronic waste (e-waste) and household hazardous waste (HHW).

Defining Suburban Cook County

Cook County is responsible for solid waste planning in suburban Cook County, excluding the City of Chicago. When the term "suburban Cook County" is used, the City of Chicago is excluded, but when "Cook County" is used, it refers to all of Cook County including Chicago. Suburban Cook County encompasses 134 incorporated municipalities and covers an area greater than 1,400 square miles. In 2016, the population of suburban Cook County was estimated to be 2,498,541, and the total population of Cook County (including Chicago) was estimated to be 5,203,499. While the majority of suburban Cook County residents live in incorporated municipalities, in 2014, 5.1 percent (or 126,114 residents) of the suburban Cook County population lived in unincorporated areas.[17] In the Chicago Metropolitan Agency for Planning (CMAP) GO TO 2040 Comprehensive Plan, suburban Cook County's population was expected to increase by 15.6 percent, or 392,000 residents by 2040. However, suburban Cook County's population remained relatively flat between 2010 and 2015, increasing by only 0.6 percent.[18]

Municipalities in suburban Cook County vary widely in population size. The three largest municipalities in suburban Cook County are Elgin, Cicero, and Arlington Heights, with populations ranging from 112,000 to 84,000 residents. The three smallest municipalities in suburban Cook County are McCook, Golf, and Bedford Park with populations ranging from 208 to 650 residents (Figure 4). While some municipalities in suburban Cook County have experienced greater than 10 percent population growth between 2010 and 2015 (e.g. Hodgkins, Bedford Park, Thornton), others have faced declines in population greater than 5 percent (e.g. Barrington Hills, McCook, Golf).

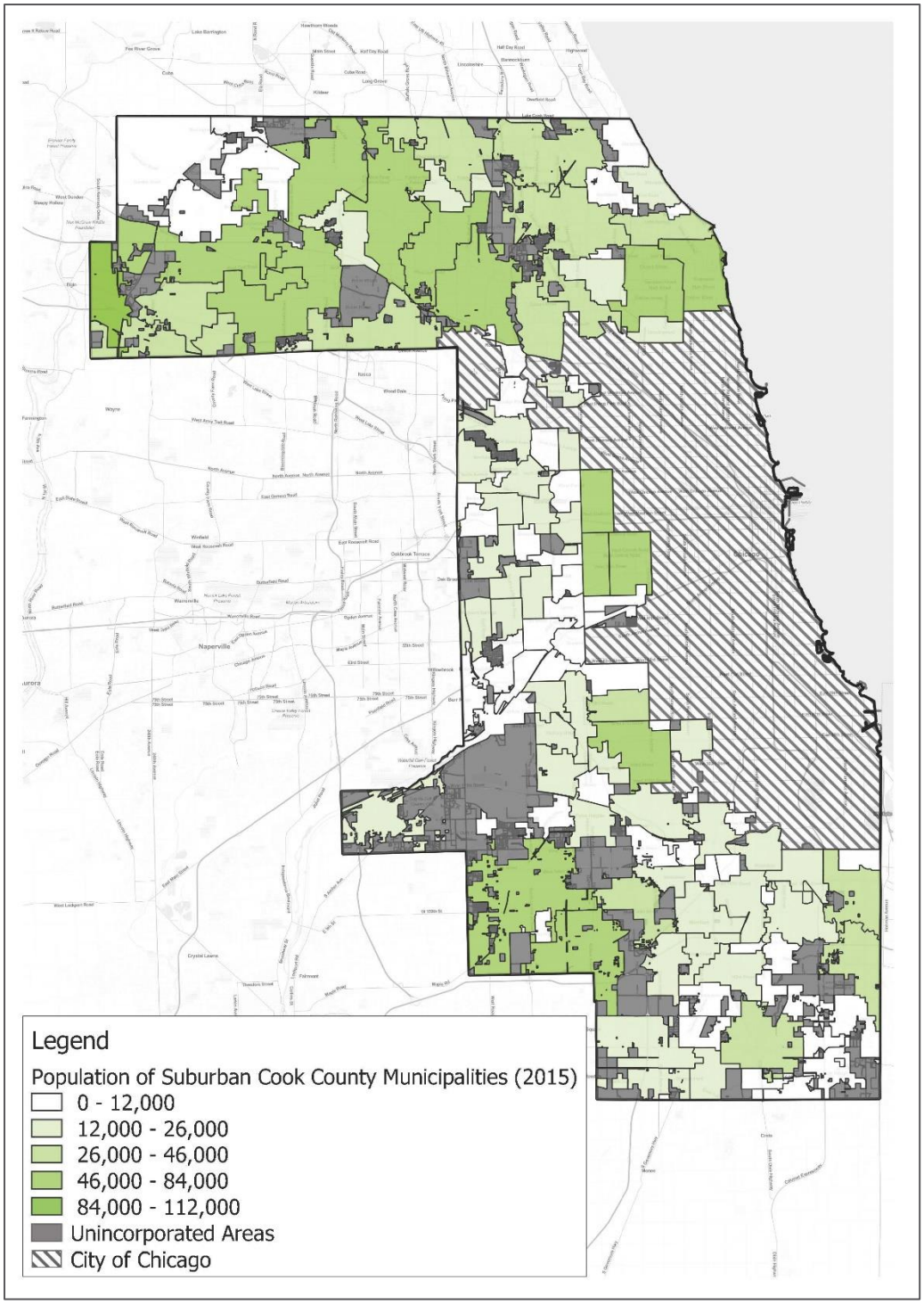


Figure 4: *Suburban Cook County Municipality Populations, 2015. Source: CMAP Community Snapshots*

Cook County's Role in Solid Waste Management

In 1991, Illinois legislation was passed requiring each county with a population of 100,000 or more to submit a management plan for the municipal solid waste (MSW) generated within its boundaries. This plan must be updated every five years and include descriptions of the origin, content, and quantity of MSW generated in the county. The plan must also include descriptions of facilities where MSW is processed and disposed.[19]

County ordinance requires that prior to adopting a Solid Waste Management Plan, the Cook County Board President or a designee will form an advisory committee to review the plan during preparation, make suggestions, and propose changes.[20] The advisory committee for the 2018 update included representatives from private industry, academia, solid waste agencies, regional planning entities, municipal government, and residents. The members of the 2018 Solid Waste Management Plan advisory committee are listed in Appendix A.

Each municipality within suburban Cook County holds the primary responsibility for providing or arranging for waste management services for their residents. Cook County implements the coordination, planning, and monitoring of the Solid Waste Management Plan. The County is also responsible for encouraging municipal recycling and source reduction, promoting composting of yard waste, and placing substantial emphasis on alternatives to landfills.[21]

Cook County acts as a regulatory authority to permit recycling facilities, inspect and regulate MSW transfer stations, landfills, recycling facilities, and liquid hazardous waste generators, and enforce requirements for recycling and reuse of demolition debris.[22] The County also collects data regarding waste and recycling hauling, transfer station activity, landfill activity (though there are now no landfills operating in Cook County), and demolition debris recycling.[23] Cook County does not collect any waste or recyclable materials or operate any waste transfer or disposal facilities open to the public. These activities are primarily conducted by private interests contracted by municipalities or individual businesses and institutions.[24]

Role of Agencies, Municipalities, and Government in Solid Waste Management

The majority of municipalities in suburban Cook County belong to one of three intergovernmental agencies that provide technical, programmatic, and operational assistance to member municipalities. The three agencies are Solid Waste Agency of Northern Cook County (SWANCC), Western Cook County Solid Waste Agency (WCCSWA), and South Suburban Mayors and Managers Association (SSMMA) (Figure 2). Both SWANCC and WCCSWA primarily support sustainable materials management through programs, resources, and technical assistance to municipalities. SSMMA's mission is broader as it provides technical and programmatic assistance to member municipalities in areas other than waste management, including stormwater management and economic development.[25] Some additional

services provided by solid waste agencies include workshops and collection events for specialty waste materials. Of the three agencies, only SWANCC owns a transfer station.

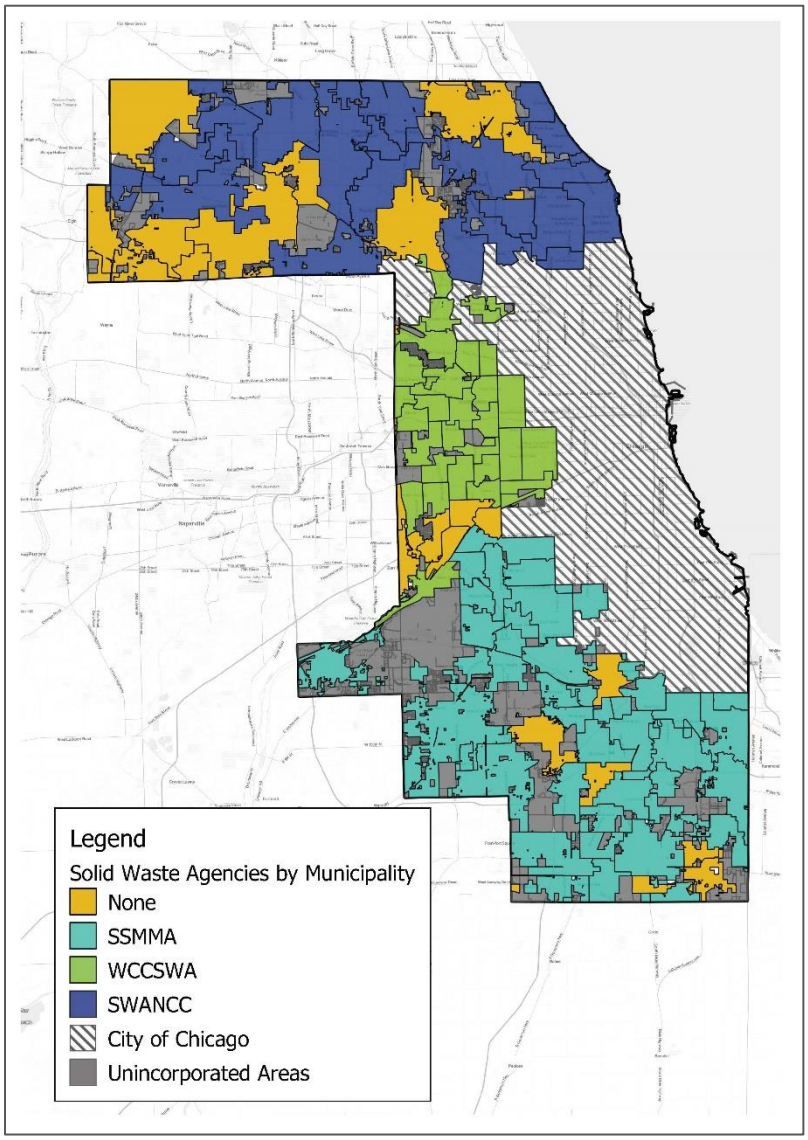


Figure 5 & Table 1: *Solid Waste Agencies by Municipality in Cook County*
Source: Solid Waste Agency websites and Cook County Open Data Portal

Waste Agency	Number of Member Municipalities	Represented Population by Member Municipalities	Percent of Suburban Cook County Population
SWANCC	23	745,784	30%
SSMMA	61	768,285	31%
WCCSWA	32	537,273	22%
TOTAL	116	2,051,342	82%

While these solid waste agencies provide support to their member communities, most municipalities provide the waste collection services to their residents, either in-house or contracted through a private collection service. In suburban Cook County, four municipalities provide waste collection services in-house. The vast majority of municipalities outsource waste collection services resulting in the private sector owning and operating the waste management infrastructure. In unincorporated areas of the County, waste collection services vary. In suburban Cook County, three of the 24 townships have contracts for residents who live in unincorporated areas within their territories. Some municipalities also provide services for adjoining unincorporated areas. In the remaining unincorporated areas, residents are responsible for coordinating waste and recycling collection service independently.

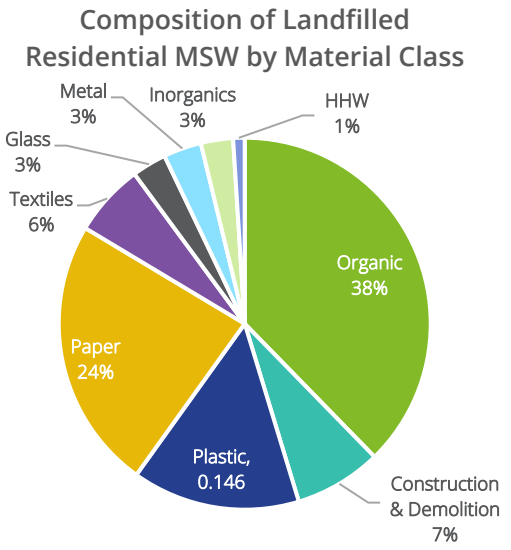
Municipalities provide contract and service oversight, Cook County permits and regulates waste infrastructure activities, and waste haulers provide the actual waste service. Waste hauling contracts are incredibly important to municipalities due to both customer service concerns and costs - waste hauling can represent over 10 percent of the municipal budget.[26] There are more than ten commercial waste hauling companies that contract waste and recycling collections services to suburban Cook County municipalities.

The majority of waste collection contracts exclude multi-unit buildings (four or more units), which represent 25 percent of the suburban Cook County population.

Waste in Suburban Cook County

What's In Our Waste?

In 2014, the Cook County Department of Environment and Sustainability commissioned a Commodity/Waste Generation and Characterization Study to determine the composition of different materials in the waste stream.[27] This study reviewed and characterized municipal solid waste (MSW) from both residential and industrial/commercial/institutional (ICI) waste streams. Data was obtained from 60 waste samples at six waste transfer stations across suburban Cook County, comprised of materials destined for landfills.[28] The samples, consisting of approximately 200 to 300 pounds of waste, were sorted into nine material classes; paper, plastics, glass, metals, organics, construction and demolition debris (C&D), inorganics, household hazardous waste (HHW), and textiles. Materials within these classes were further separated into 79 more specific material categories.



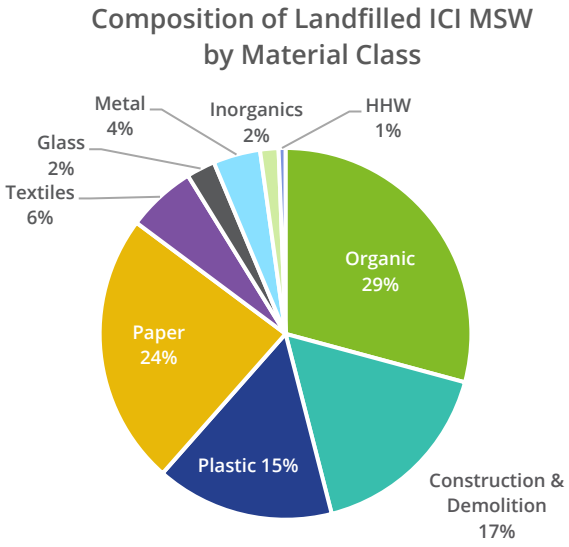


***Figure 6**: Waste Characterization for Res. municipal solid waste by Materials Class. Source: Cook County Commodity/ Waste Generation and Characterization Study, 2014*

***Figure 7:** Waste Characterization ICI municipal solid waste by Material Class. Source: Cook County Commodity/ Waste Generation and Characterization Study, 2014*

The study found that the organics, paper, and plastics combined to account for 76 percent of the landfilled residential MSW and 69 percent of the landfilled ICI MSW (Figures 6 and 7). When categorized into individual material types, the most prevalent categories for residential waste destined for landfill are food scraps (21.3 percent), compostable paper (9.0 percent), compostable yard waste (4.8 percent), and diapers (4.8 percent). For ICI waste, the most prevalent categories are again food scraps (17.7 percent), cardboard/chipboard (11.4 percent), and compostable paper (5.9 percent).[29] The characterization provides a more detailed breakdown from larger categories into several smaller categories. For example, the plastic category includes 13 subcategories, paper includes nine subcategories, and metal includes seven subcategories. The subcategories are important because while some plastics, paper, and metals are recyclable, not all are. While plastic bottles are recyclable, other plastic goods (e.g. laundry baskets) are not.

How Much Waste is Generated in Suburban Cook County?

In 2014, Illinois Department of Commerce and Economic Opportunity also commissioned a Commodity/ Waste Generation and Characterization study. IEPA Region 2 (which includes Cook, DuPage, Grundy, Kane, Kankakee, Kendall, Lake, McHenry, and Will Counties[30]) generates 71.5 percent of waste in the state, roughly 8.7 pounds of waste per person per day (Figure 8).[31] Region 2 represents 68 percent of the state's population.[32]

Compared to an earlier 2008 study, Region 2 was the only IEPA region to increase waste generation per person per day. All other regions decreased generation per person per day, but the 5.75% increase in Region 2 was significant enough to result in a 1.25% increase per person per day statewide.

Source: Illinois Waste Generation and Characterization Study Update. 2015

In 2016, Cook County Department of Environment and Sustainability collected quarterly, hauler-reported data on tonnages of material collected as waste, recyclables, and landscape waste from 121 municipalities and unincorporated areas in suburban Cook County. The data collected represents over 70 percent of the households in suburban Cook County and contains a geographically representative sample. This data was used to estimate waste generation ratios and diversion rates in suburban Cook County. In 2016, Cook County municipal waste hauler data indicated that haulers collected an estimated 8.2 pounds per household per day of waste and an estimated 1.87 pounds per household per day of recyclable materials.

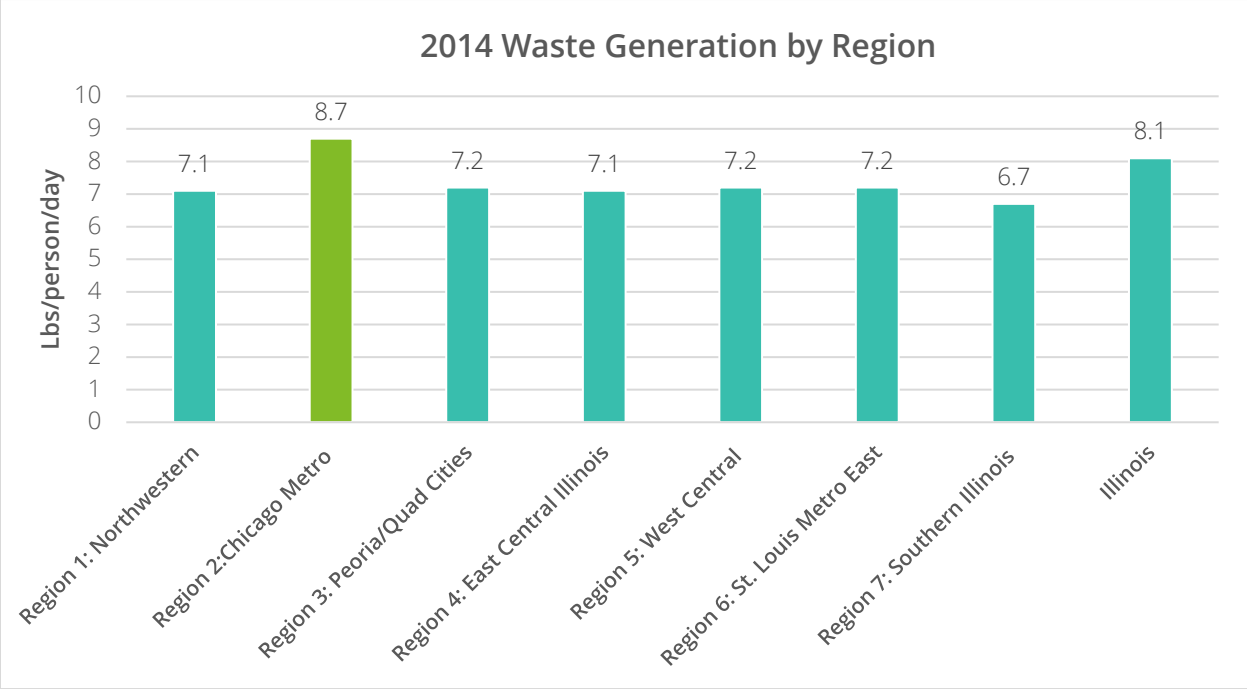


***Figure 8**: Source: Illinois Waste Generation and Characterization Study Update. 2015 Illinois Recycling Association.*

Since 2008, Region 2 experienced a waste generation increase that influenced the statewide generation rate (Figure 9).[33] The increase of waste generation in the Chicago metro region could be attributed to the increase in real median household income. Between 2011 and 2015 the real

household median income increased in the region by more than $3,000 per household. [34] Studies have shown a positive correlation between household income and waste generations.[35]

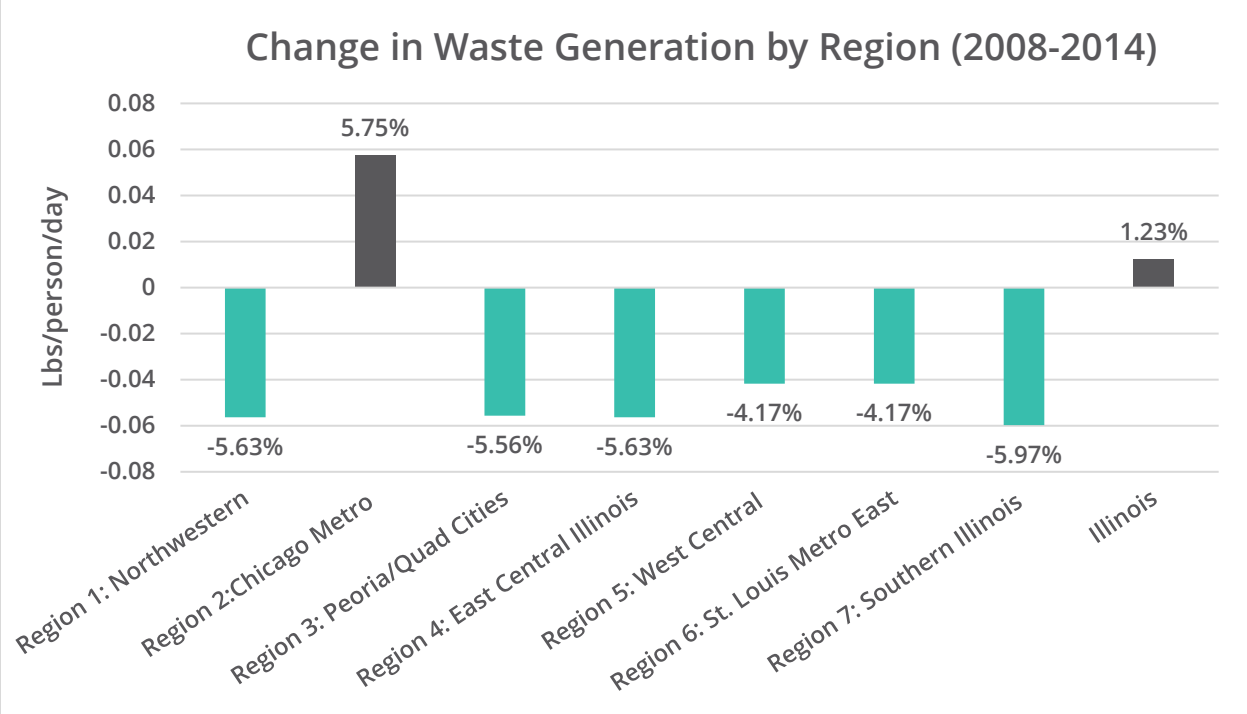


Figure 9: *Source: Illinois Waste Generation and Characterization Study Update. 2015 Illinois Recycling Association.*

Where Does Our Waste Go?

The movement of waste and materials throughout suburban Cook County is supported by a complex network of waste and recycling haulers, transfer stations, material recovery facilities (MRFs), and composting facilities. Cook County does not contain any active landfills, so disposal of all materials takes place outside of the county, primarily in the Northeast Illinois and Northwest Indiana.[36]

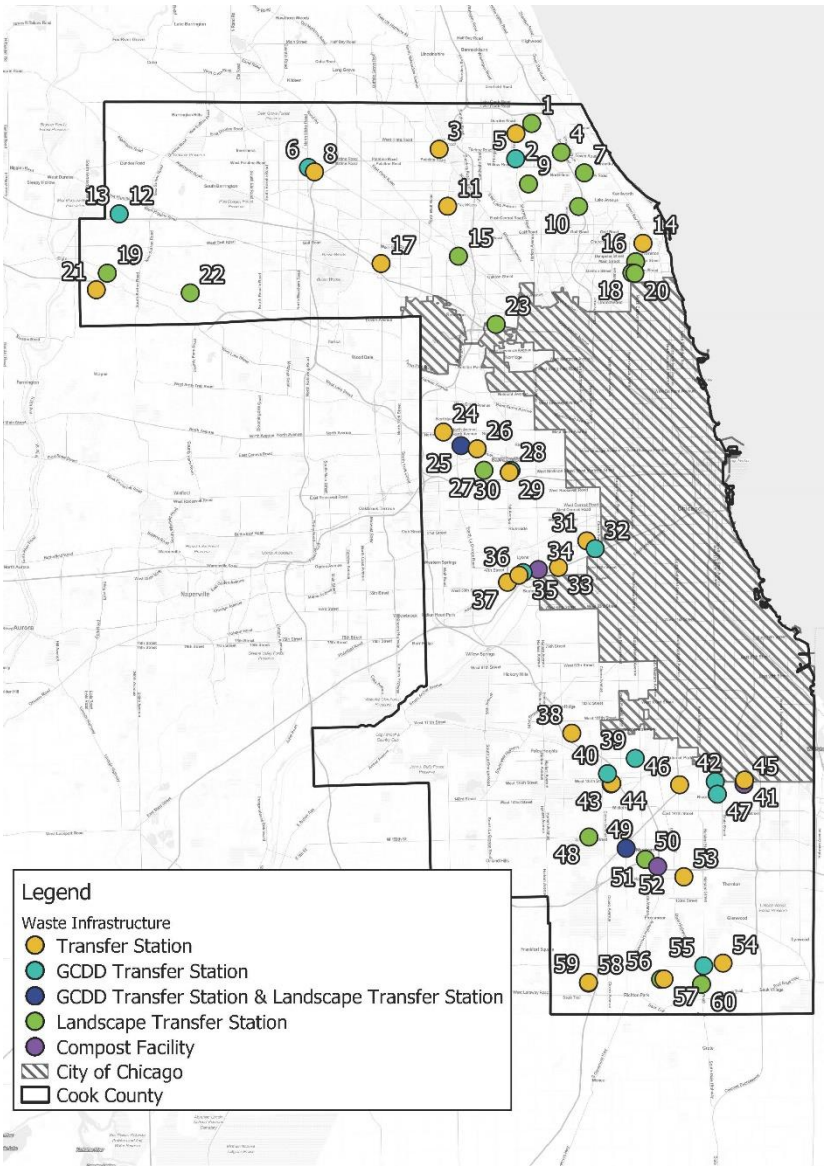


Figure 10: *Map of Waste Infrastructure in Cook County. See Appendix B for facility list*

Waste Hauling

Waste and recyclable materials are collected by private companies for both residential and nonresidential customers. There is significant diversity in business type and size among haulers, ranging from the largest waste hauling company in the U.S., to locally owned and operated businesses. Several companies solely provide hauling services, while others own and operate additional components of the waste management infrastructure, including transfer stations, recycling facilities, and landfills. Waste hauling companies offer services ranging from curbside waste and recycling collection from single family homes, to roll-off dumpster services for large construction projects. In 2016, waste haulers collected at least 1,029,795 tons of materials from suburban Cook County. At least 304,056 tons were collected as recyclables materials and 725,739 tons were collected as garbage.[37]

Transfer Stations and Material Recovery Facilities

Transfer stations are processing sites for the temporary disposition of waste material, and they are an integral part of the waste management system in Cook County. Collection vehicles deposit their waste cargo at transfer stations, and materials are loaded into larger trucks to be hauled to designated landfills. Transfer stations can also be co-located with material recycling facilities (MRFs) in which recyclable materials are separated from materials that will be landfilled. According to the US EPA, in areas where waste disposal sites (landfills) are in remote locations, waste transfer stations improve the efficiency of waste collection by reducing overall transportation costs, air emissions, energy use, truck traffic, and road wear and tear.[38]

As of the end of 2017, there were 20 operational municipal solid waste transfer stations in suburban Cook County, with one additional transfer station currently under construction and expected to open soon. Of the 21 current and future transfer stations, 19 are privately owned and operated. The publicly owned transfer stations are owned by the Solid Waste Agency of Northern Cook County (SWANCC) and the City of Rolling Meadows, operated by Groot Industries and Advanced Disposal, respectively. In 2016, a reported 3.52 million tons of waste and recyclable materials were passed through suburban Cook County transfer stations.[39] In addition to MSW transfer stations, there are also 11 general construction and demolition debris (GCCD) transfer stations, 16 landscape waste transfer stations, and five combined GCCD and landscape waste transfer stations in suburban Cook County.

In addition to, and occasionally co-located with, transfer stations, another type of intermediary site is a material recovery facility (MRF). MRFs are essential components of the recycling process, as they are where materials, such as metal, plastic, or wood, are received, sorted, and prepared for market, depending on the technology and capacity of the facility. There are currently ten MRFs operating in Cook County.[40]

Composting Facilities

Suburban Cook County currently has three composting facilities, Hazel Crest (a small lot accepting only yard waste), HASMA (a large lot managed by the Metropolitan Water Reclamation District (MWRD) that accepts yard waste to assist with biosolid processing), and Land & Lakes (a small lot in unincorporated Chicago that is not currently operating). Regionally, Solid Waste Agency of Northern Cook County has also identified facilities in Lake County (Midwest Organics, Wauconda), Will County (Willow Ranch Compost Facility, Romeoville), and LaSalle County (Compost Supply, Sheridan).[41]

Statewide, 500,000 tons of organic waste (primarily yard waste) are composted each year through existing compost infrastructure in Illinois. State law currently allows compost facilities, after notifying Illinois Environmental Protection Agency (IEPA), to accept food scraps up to 10 percent of total organics accepted. Facilities looking to accept food scraps as more than 10 percent of their organics feedstock must apply for a modified permit, which several Illinois sites have done. [42]

One additional compost facility in suburban Cook County is currently undergoing the permitting and site approval process, with the potential to open in the fall of 2018. The 25-acre facility will be located at a former landfill site in Des Plaines in northwestern Cook County. The Cook County Board of Commissioners approved the proposal for the facility in March 2017. If the facility is approved by the IEPA and the MWRD, it will have the ability to compost an additional 200,000 cubic yards (approximately 54,000 tons) of food scraps and landscape waste per year.[43] For reference, a study in 2016 conducted by ReFED found that the Chicago-Naperville-Elgin Metropolitan Area sends 1,524,136 tons of food scraps to landfill each year, so this facility could process and divert a little over 3.5 percent of currently landfilled material.[44]

Beyond traditional windrow composting facilities, digestion infrastructure can help to increase the amount of food scraps able to be diverted from landfills in suburban Cook County. Lakeshore Recycling Systems has installed an aerobic digester at their facility in Chicago that has the capacity to process 15 tons of organic waste per day.[45]

Landfills

The Chicago Metropolitan Region has seen a decrease in the number of active landfills over the past decade. In 2004, there were eight active landfills in the region, and in 2018, there are only four: Veolia ES Zion Landfill in Zion, Countryside Landfill in Grayslake, Laraway Recycling and Disposal Facility in Joliet, and Prairie View Recycling and Disposal Facility in Wilmington (Figure 11).[46] In 2012, the Illinois Environmental Protection Agency (IEPA) was banned from issuing permits for new or expanded landfills within Cook County.[47] The last remaining landfill in Cook County, River Bend Prairie Landfill, was not permitted to expand and closed at the end of 2015, due to the legislation passed in 2012.

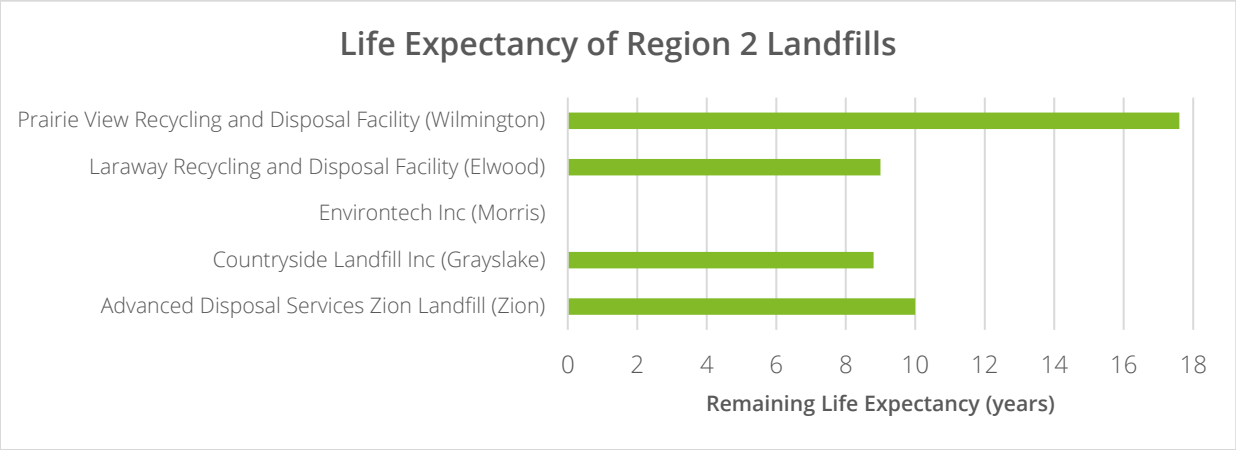


Figure 11: *Source: Illinois Landfill Capacity and Disposal Report, 2016. Illinois Environmental Protection Agency*

The Chicago Metropolitan Region also has significantly less landfill capacity when compared to other regions of the state, with only 11.5 remaining years compared to the statewide average of 21 remaining years of life expectancy (Figure 11). Landfill capacity in the Chicago Metropolitan Region

has remained relatively consistent for several years though, due to expansion of current facilities. The remaining four active landfills in Region 2 received over 7.5 million cubic yards of waste in 2016.

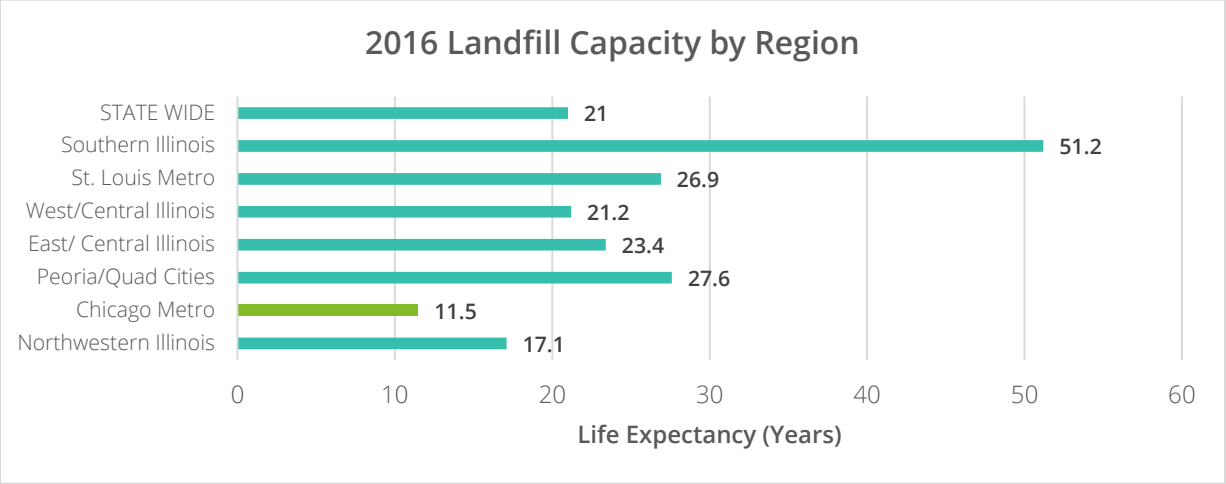


***Figure 12**: Source: Illinois Landfill Capacity and Disposal Report, 2016. Illinois Environmental Protection Agency.*

While the capacity of landfill facilities located within Region 2 of Illinois was 11.5 years in 2016, there are many landfills outside of the region that receive waste generated within suburban Cook County. This includes facilities more than 90 miles away from the county border. In 2016, Indiana landfills accepted over 2.2 million tons of MSW and 90,000 tons of C&D debris that originated in Cook County (including City of Chicago).[48] [49] Between 2013 and 2016, four landfills in Indiana received over 9 million tons of waste from Cook County, of which 8.8 million tons were municipal solid waste (MSW) and 238,000 tons were C&D debris (Figure 10). The average landfill capacity of these four Indiana landfills is approximately 28 years as of 2016.[50] Of these facilities, Newton County Landfill received the most waste from Cook County between 2013 and 2016. In the three year period, it received over 4.6 million tons of MSW and C&D debris from Cook County,[51] and had a remaining capacity of 18.2 years.[52]

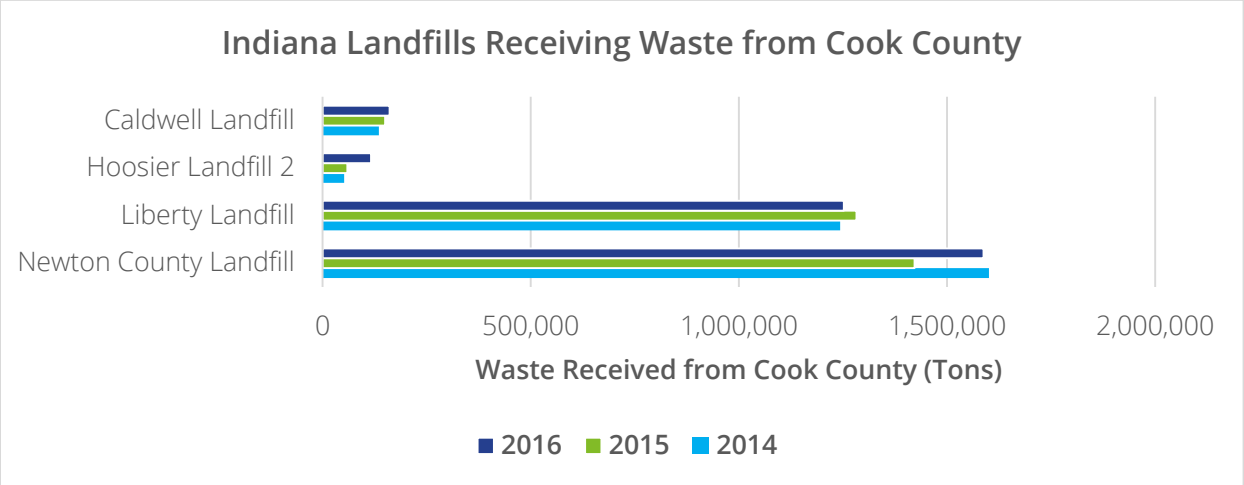


***Figure 13:** Source, Solid Waste Quarterly Report Database 2013-2017.*

How Much Does It Cost To Dispose Waste At The Landfill?

The cost of disposal has a significant effect on the management of materials. If the cost of disposal is low, it reduces the incentive to recycle or compost. The tipping fees that landfills charge for the disposal of waste represent the primary cost of disposal, in addition to transportation of waste to the disposal site. In 2017, while Illinois landfills charged an average tipping fee close to $40, the Chicago Metropolitan Region had an average fee of $60.75, compared to the national average of $50.59 per ton. In addition to tipping fees, Illinois charges a state surcharge of $2 per ton and/or $0.95 per cubic yard. Smaller landfills pay a set annual fee regardless of tonnage or volume. This generates approximately $20 million dollars annually, of which the state requires $2 million per year go towards the state's Hazardous Waste Fund. The remaining $18 million per year is included in the Solid Waste Management Fund managed by the Illinois Environmental Protection Agency (IEPA) to support program activities.[53] While the average cost of disposal in the Chicago Metropolitan Region is greater than the state and national average, Chicago area disposal costs are much lower than other major metropolitan areas in the U.S. For example, landfill tipping fees in Los Angeles County in California range from $51 to $125,[54] and tipping fees in Philadelphia County in Pennsylvania range from $63 to $103.[55]

Waste Diversion vs. Recycling

***Waste Diversion** includes materials that are recycled, composted, or reused.*

***Recycling** is the recovery of useful materials, such as paper, glass, plastic, and metals, to use to make new products, reducing the amount of virgin raw material needed.*

***Composting** involves collecting organic waste, such as food scraps and yard trimmings, and storing it under conditions designed to help it break down naturally. The resulting compost can then be used as a natural fertilizer.*

Source: "Municipal Solid Waste ", EPA 2016. https://archive.epa.gov/epawaste/nonhaz/municipal/web/html

Diverting Waste from Landfills

Waste diversion rates are an important metric to track evolving waste management practices and progress towards sustainable materials management goals. Other metrics that can be used to benchmark and assess progress toward sustainable materials management include capture rates, participation rates, and program accessibility. The 2012 Solid Waste Management Plan recommended a tiered approach for setting waste diversion goals, starting at a baseline 25 percent diversion rate through an overarching philosophy of achieving zero waste. Incomplete and flawed data provide difficulties in assessing the completeness of this goal, but the metrics and municipal programs highlighted in this plan capture some of the progress of diversion activities in suburban Cook County.

Cook County Diversion Rate

Since the implementation of the Solid Waste and Recycling Ordinance in 2014, The Cook County

Department of Environment and Sustainability has collected reports from municipal waste haulers which include the quarterly volume of waste and recycled materials collected and number of households served for each municipality.[56] While this information is self-reported, it is required for all haulers and represents a significant improvement from information collected previously. A diversion rate can be calculated with the reported data and thus improve the metric tracking for future plans.

The diversion rate for suburban Cook County, published in the 2012 plan, was between 28 and 29 percent. It was calculated by aggregating data originally collected by different solid waste agencies throughout Cook County. That data did not represent the entire county, nor did it represent materials that might have been collected as recyclables but were actually disposed (e.g. contents of highly contaminated recycling bins).

Since switching to data collected from municipal waste hauler reports, The Department of Environment and Sustainability has been able to estimate a 30 percent diversion rate. Approximately 70 percent of suburban households were included in the 2016 data, providing a broader representation of suburban Cook County. The data is also consistent with that of other counties (Table 2).

Table 2: Current Diversion Rates of the City of Chicago and Surrounding Counties

Location	Diversion Rate	Recycling Rate	Source
City of Chicago	NA	9%	City of Chicago Website, Blue Cart 2017 Results
Suburban Cook County	30%	19%	2016 Municipal Waste Hauler Data
DuPage County	NA	30%	Solid Waste Management Plan Five Year Update 2017
Kane County	38%	NA	Solid Waste Management and Resource Recovery Plan 2015 Update
Lake County	48%	NA	2014 Solid Waste Management Plan Update for Lake County, IL
Will County	43%	NA	Solid Waste Management Plan Update 2007-2016
State of Illinois	37%	NA	Illinois Commodity/Waste Generation and Characterization Study Update 2015

Note: Counties and cities in the region use different metrics and methodologies in reporting on waste diversion activities. Some Counties publish recycling rates, which includes materials collection in curbside recycling programs, and ICI recycling programs. Other counties publish diversion rates, which includes recycled materials mentioned above, but also landscape debris, C&D recycling, and sometimes results from special collection events. For this reason, diversion and recycling rates should not be compared (see definitions on page 27).

Municipal Diversion Rates

Municipalities typically manage solid waste hauling and basic recycling for residential single family homes, as well as multi-unit buildings with fewer than four units. Cook County does not provide or coordinate waste hauling or recycling services to any Cook County residents. Because of this, municipalities play a crucial role in solid waste management. In 2014, Delta Institute collected residential waste hauling contracts from 128 out of the 135 municipalities of Cook County. Of the contracts reviewed, 71 percent are with three haulers, Allied Waste/Republic Service, Waste Management, and Groot Industries. The services outlined in each agreement vary between contracts. The services in each contract were categorized in terms of primary (waste, recycling, and yard waste) and secondary services (selective or specialized waste streams). For primary services, 94.7 percent of municipal contracts include recycling collection and 83.3 percent include yard waste collection services. Some secondary waste collection services included in the contracts reviewed include bulk item and white good collection, construction waste collection (for residents), electronic waste collection (single item or one day events), and household hazardous waste collection (single item or one day events). Of the contracts reviewed, 34.2 percent include white good collection, 29 percent include bulk item collection, 14 percent include C&D debris collection, 2.6 percent include e-waste collection, and 1.8 percent include HHW collection. Many of these secondary services are provided at additional cost to the resident, but were included in the contract language.[57]

In addition to basic municipal waste and recycling, several municipalities partner with agencies, organizations, and waste haulers to provide special collection programs for hazardous wastes and reusable products that cannot be recycled curbside. These programs are an important resource for residents as they offer opportunities to properly dispose or recycle materials that are not typically included in curbside collection programs.

Program Spotlight:

River Forest's School District 90 Green4Good committee has successfully established a Semiannual "Recycling Extravaganza" event at which residents of River Forest and nearby communities can drop off items such as electronics, pharmaceuticals, scrap metal, textiles, and other miscellaneous items for proper recycling and disposal. In 2012, 40,000 different electronics, 100 pounds of medication, and 62 American flags collected for proper retirement were dropped off by 600 vehicles in a single day. From 2012 to 2016, 3,336 vehicles have dropped off close to 250,000 pounds of difficult to recycle material.

Multiple Sources: RF Community Matters (2016), RFumc (2012), Plan it Green Environmental Sustainability (2016)

Special collection is an important component of waste planning because it is typically managed inconsistently. Special goods (e.g. electronics, hazardous waste, or items such as shoes and textiles) present an opportunity for significantly reducing waste disposed and helping residents do something

that is very difficult to do on their own. In 2012, Cook County coordinated, marketed, and managed e-waste collection events.

Collection efforts also occur in Cook County's sub-regions. The Solid Waste Agency of Northern Cook County (SWANCC) provides residents with multiple outlets to recycle and dispose of hazardous materials, and these efforts are achieving results. In 2016, SWANCC collected over 14,000 pounds of compact fluorescent bulbs and other mercury-containing devices (e.g. smoke and radon detectors, mercury containing switches), and in 2017 they collected over 30,000 pounds. In addition, between 2016 and 2017, SWANCC collected over 1.2 million pounds of electronics at permanent collection sites and over 650,000 pounds at temporary collection events.[58]

Local vs. National Trends in Waste Diversion

National municipal solid waste (MSW) recycling rates increased significantly between 1990 and 2010 (from 16 percent in 1990 to 34 percent in 2010), but since 2010, the rate of increase has plateaued. Recycling and composting rates have only increased by 0.5 percent since 2013.[59] Of the primary recyclable and compostable materials that make up the national waste stream (paper, paper products, glass, metal, plastics, rubber, leather, textiles, wood, food waste, and yard trimmings), paper products and nonferrous metal have the highest diversion rate at 64.7 percent and 66.7 percent, respectively. Food waste and plastics were the least frequently recycled materials with diversion rates of 5.1 percent and 9.5 percent, respectively.[60]

Since the U.S. has moved out of the recession of 2008/2009, waste material generation has begun to increase again. Disposal of recyclable materials represents a missed economic opportunity.[61] The overall Illinois diversion rate (including composting and recycling) is estimated to be 37.3 percent by weight, which is slightly higher than the national average (Figure 13).[62] This represents an 18.7 percent increase in diversion since 2011. However, these diversion rates were calculated by subtracting the amount of waste disposed of in the state by the statewide estimated generation quantities. This methodology can lead to an overestimate of diversion rates as it includes all estimated waste

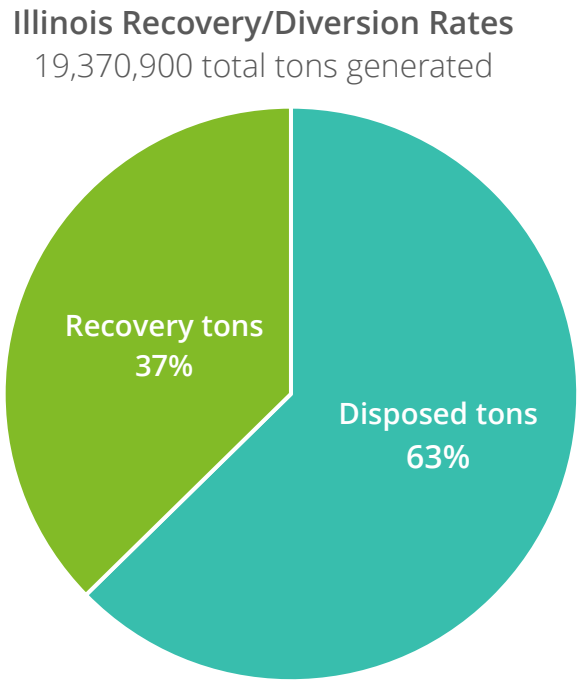


Figure 14: *Illinois Recovery/Diversion Rates. Source: Illinois Commodity Waste Generation and Characterization Study Update 2015*

generated that is not disposed of at a permitted disposal site (e.g. waste disposed out of state). Because of market conditions the recovery rates for paper, metal, textiles, and construction and demolition debris have increased since 2008, while recovery rates for beverage containers, plastic, glass, organics, inorganics, and household hazardous waste have remained relatively static.

It is estimated that the value of recycled materials sent to landfills in Illinois have a market value of over $360 million.

The national recycling rate (which includes both recycling and compost) has remained mostly static, but the generation of recyclable and compostable materials has increased. In 2015, Americans generated over 258 million tons of municipal solid waste, 66 million tons of which was recycled, 23 million tons of which was composted, and 169 million tons of which was landfilled or incinerated.[63]

Currently, roughly one-third of recyclable material is exported out of the United States, and about half of all exported material is sent to China.[64] As of 2017, China has implemented a new policy titled National Sword, following the previous Green Fence policy. National Sword requires recyclable materials sent to China to adhere to much more rigorous contamination standards and bans several solid waste categories.[65] If recycling contamination levels are not improved, the National Sword policy could have a major effect on the feasibility of maintaining recycling rates in the U.S. This new policy, combined with other trends in the change of materials disposed and recycled may create disruptions to recycling and waste management. Such trends include a depressed commodity market (e.g. colored post-consumer plastics as seen in Figure 15) with fewer buyers of recyclable materials, and a changing material mix due to packaging advances (e.g. light-weighting), and increased electronics entering the waste stream.

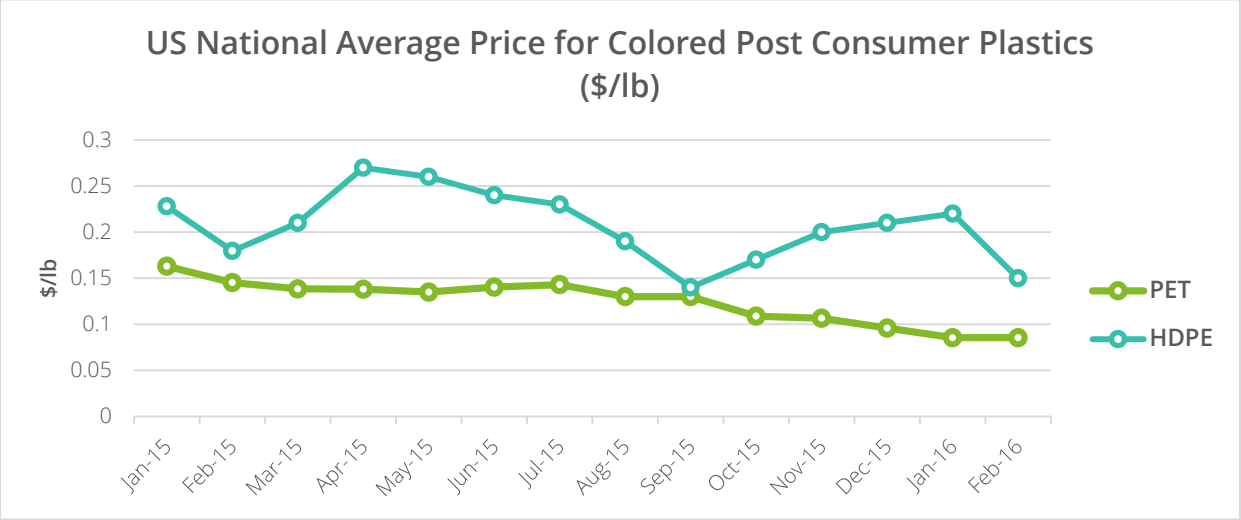


***Figure 15**: US National Average Price for Colored Post Consumer Plastics. Source: "Post- Consumer Recyclable Materials Pricing Remain Unsteady", Waste 360 February 2016. http://www.waste360.com/commodities-pricing/post-consumer-recyclable-materials-pricing-remains-unsteady*

Manufacturers have substantially reduced the amount of materials used in product packaging, a practice known as light-weighting. For example, "between 2000 and 2014, the average weight of a 16.9-ounce PET (Polyethylene terephthalate) half-liter plastic bottle has declined 48 percent to 9.89 grams. This has resulted in a savings of 6.2 billion pounds of PET resin since 2000." [66]

Additionally, per capita paper waste is down 7 percent, which is suspected to be caused by a shift to electronics.[67] Finally, glass, a significant material in recycling, has proven so costly to recycle that some municipalities are removing it from their recycling programs. Not only is glass recycling energy-intensive, but mixed recycling results in broken glass, which is difficult to sort. While glass can be recycled because it does not decompose, glass manufacturers need high-quality, uncontaminated material for recycling. Additionally, there are few uses for poor-quality recycled glass, and glass shards can contaminate other more valuable recyclables, like paper and plastic.[68]

Special Topic Areas

Residential and Non-residential Recycling

Recyclable materials, including paper, cardboard, glass, plastics, and metals, comprise a significant portion of the residential waste stream. Removing these items from the waste stream for recycling can create positive environmental outcomes. For example, making cans from recycled aluminum, the most valuable container material, requires 95 percent less energy and creates 90 percent less greenhouse-gas emissions than virgin stock.[69] The recycling and scrap industries also play a significant role in the U.S. economy. From 2010 to 2015, the national recycling industry increased in size from $77 billion per year to $106 billion per year, and jobs increased from 107,000 to 149,000 jobs.[70] In Illinois, more than 56,000 people are employed by the recycling industry, with a payroll totaling $1.7 billion.[71]

Nationwide, it is estimated that 70 percent of the U.S. population is serviced by a curbside recycling program,[72] and 53 percent of those residents with program access have services automatically provided to them.[73] In the state of Illinois, an estimated 37.3 percent of materials by weight are recovered through recycling. The most prevalent recyclable materials disposed in Illinois are paper, plastic, and metal (Figure 16). While a significant quantity of materials are being captured and diverted from landfills through curbside recycling programs, in urban areas of Illinois, glass, metal, plastic, and paper represent 42.5 percent of landfilled materials, much of which has the potential to be recycled.[74] [75] This 42.5 percent of materials that could have been recycled is a consequence of either lack of access to recycling services, misinformation, or other barriers.

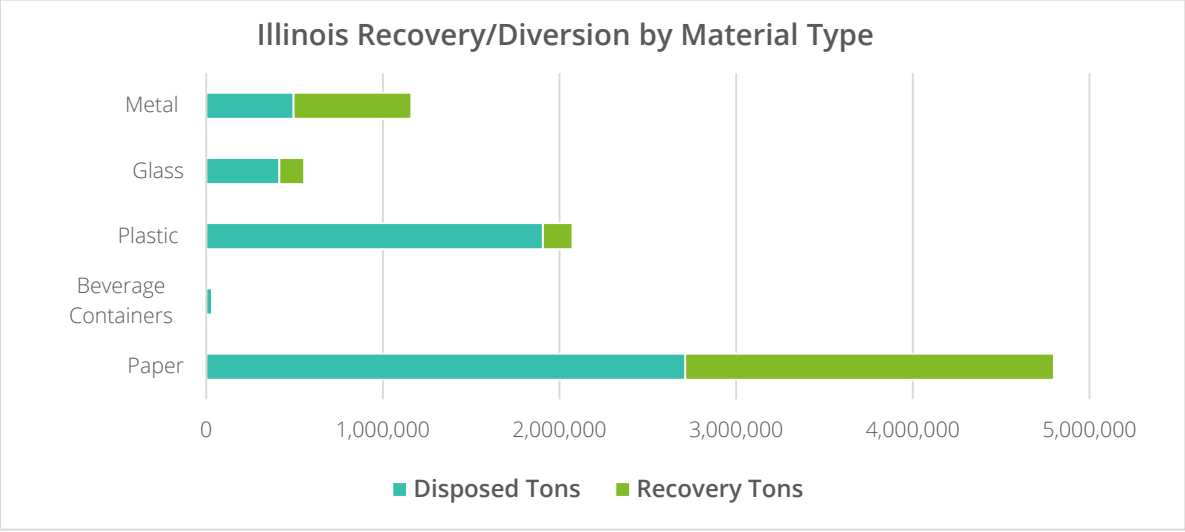


Figure 16: *Illinois material recovery and disposal quantity for commonly recycled materials. Source: Illinois Commodity/ Waste Generation and Characterization Study Update, 2015.*

Recycling Programs in Cook County

The majority of Cook County residents live within incorporated communities with curbside recycling programs. Housing type and recycling and waste services are linked, and the majority of Cook County residents live in single family housing (Figure 17). For single family homes, 121 municipalities automatically provide residents with a recycling collection service that covers at a minimum: glass, paper, plastics (1-5 and 7 where numbers denote the type of plastic), cardboard, and ferrous and nonferrous metals. Often this service is provided to residents at no additional charge because it is bundled with waste disposal service. Three municipalities do not automatically provide residents of single family homes with recycling collection service. For these communities, residents must pay an additional charge to receive recycling collection service, or they must coordinate the service independently. Nine incorporated municipalities within suburban Cook County do not provide any waste or recycling collection services to residents. In these areas, residents must coordinate all collection of refuse materials independently. The majority of these nine municipalities have very small populations (under 5,000) and/or have average median household incomes less than the state average.[76] In addition, unincorporated communities usually are not included in locally provided waste disposal service. More than 125,000 suburban Cook County residents live in unincorporated areas.

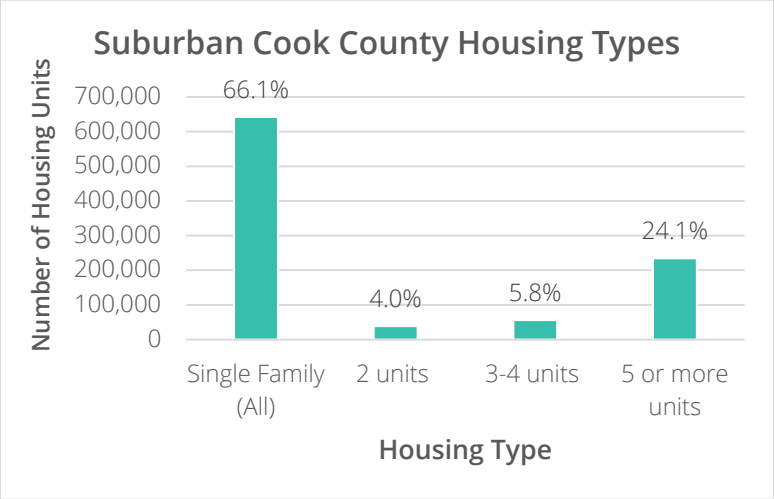


***Figure 17**: Suburban Cook County Housing Type in 2015. Source: CMAP Metro Pulse Community Snapshots.*

Provision of recycling service is less consistent in multi-unit buildings. Only 46 of 135 municipalities in suburban Cook County include multi-unit buildings (4 or more units) in their waste and recycling collection contracts and franchise agreements. A survey conducted by the Solid Waste Agency of Northern Cook County found that 98 percent of residents who live in single family homes report that they recycle, while only 78 percent of residents who live in apartments or condos recycle.[77]

Contamination of Recyclable Materials

The mixing of non-recyclable materials with recyclables, or contamination, is a major issue for curbside recycling haulers and recycling facilities. Materials such as plastic bags can clog recycling equipment and are difficult to separate from other materials. This can cause recycling facilities to shut down to repair or clean equipment. Additionally, dirty recyclables (recyclable materials that have been compromised e.g. a cardboard pizza box soaked in grease) and garbage can ruin all of the materials, rendering them unsellable as recyclables.[78]

Waste Management, the nation's largest waste service provider,[79] reports that processing costs are increasing along with contamination rates (16 percent of collected recycling by weight for Waste Management is non-recyclable material), while commodity prices are decreasing. According to Waste Management, this is increasing the cost of recycling up to $150 per ton while diminishing returns.[80] Resource Management Companies reported similar findings in 2017; as the contamination rate rises, the cost of processing increases and material value decreases (Figure 18).

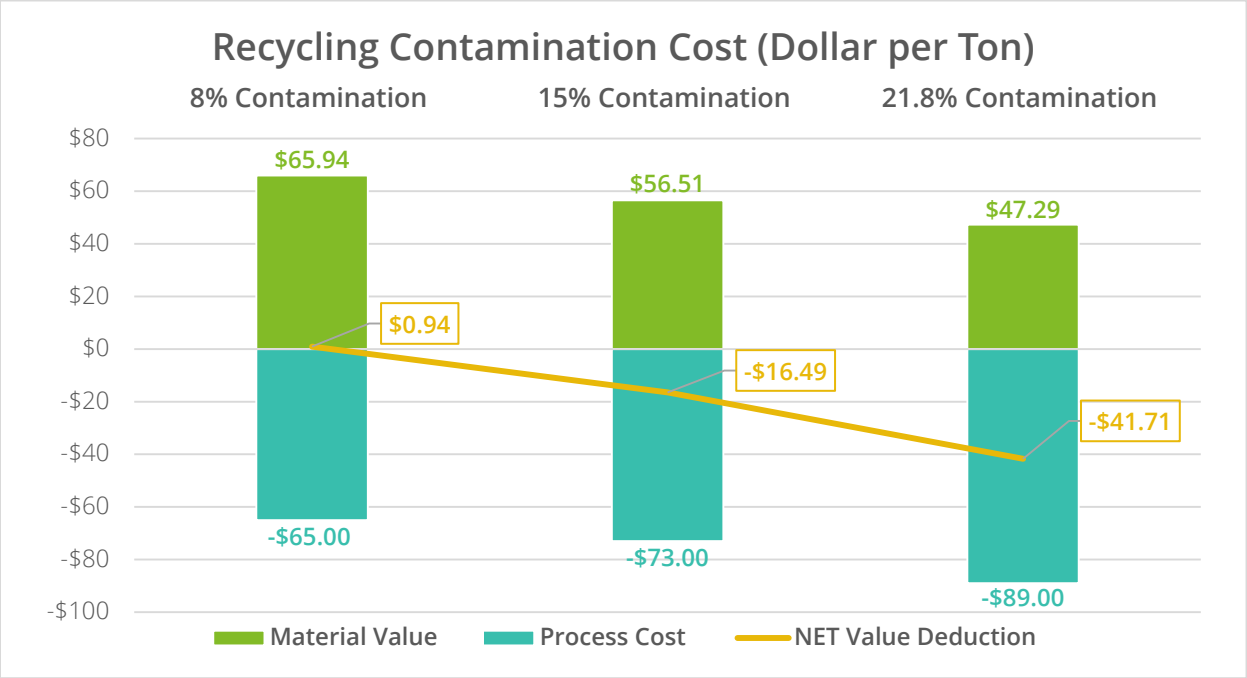


***Figure 18**: Recycling Contamination Cost in 2017. Source: Presentation by Greg Maxwell, Resource Management Companies*

Many communities in suburban Cook County do not provide adequate education for residents on what products to recycle and how to recycle. In 46 of 135 incorporated communities, no online educational information is available regarding recycling.[81] The Recycling Partnership conducted a study in the Chicago Metropolitan Area in 2016 and found that, of the municipalities that provided recycling information, 60 percent published lists of accepted materials that differed from the lists published by the material recovery facility (MRF) receiving said materials.[82] While a municipality is a logical place to look for education because municipalities typically manage recycling programs, the strategies municipalities can employ most easily may be too passive to reshape behavior.

Good public education is especially important because recycling is confusing on a basic level. Clean, dry paper is a well-known recyclable material, but if shredded, its size and elasticity can post a challenge for MRFs. Shredded paper does not separate easily from other materials, it can prevent many of the technologies in a MRF from working correctly and lessen material quality.[83] For these reasons, shredded paper should not be included in residential single stream recycling programs. Similarly, while many plastics are recyclable, not all are. Additionally, residents can become confused about special collection items. They understand that some goods may be reusable and are collected

at special collection events, leading them to place such goods (e.g. hangers, binders, laundry baskets) in recycling bins, which creates challenges because those materials cannot be processed at recycling facilities. This confusion and lack of information can create contamination issues and raise costs for recycling facilities.

Municipal Waste Hauling Contracts Review

Waste hauling contracts typically represent 10 to 15 percent of municipal budgets. A review of 128 suburban Cook County waste hauling contracts by Delta Institute in 2015 indicated opportunities for municipalities to leverage contracts for additional special collections, recycling events, and consumer education. The review uncovered that there was very little consistency across the contracts despite the similarity in services provided. For example, some contracts included automatic fee increases and contract continuations. Automatic increases and continuations can be beneficial because they save time and expense of running a procurement process and assure continuity of service; however, they can also result in pricing above market due to unforeseen changes in market conditions. Several organizations, such as Solid Waste Agency of Northern Cook County, West Cook Solid Waste Agency, and Illinois Counties Solid Waste Management Association, provide model procurement language; however, many communities are not using model contracts that promote best practices. Those practices may include incorporating recycling marketing and educational materials for residents or bundling special collections for yard waste, bulk, or electronics.

Improving Recycling

Curbside recycling is the predominant recycling method for Cook County. However, some residents still lack access to curbside recycling and some residents with access place incorrect items in recycling bins. Improving curbside recycling is therefore contingent upon increasing access to and participation in programs and decreasing contamination of recyclable materials. While some municipalities are expanding their curbside recycling programs to include multi-unit buildings, others are compelling multi-unit buildings to provide recycling independently. For example, Arlington Heights has introduced legislation that "requires multi-family properties to file a recycling plan documenting how service is provided and annually inspects properties for compliance."[84] Providing technical assistance and model strategies may help municipalities increase the number of residents with access to recycling.

The two most significant ways to increase access to curbside recycling rely on developing curbside recycling programs in the remaining communities without programs and ensuring multi-unit buildings have recycling programs.

Concurrently, recycling behavior must also be improved. In order to change recycling behavior, Cook County residents must receive accurate information about what materials should be placed in a recycling bin, landfilled, or managed through special collection programs. In order to determine what

materials can be recycled, the County may need to collect information from all recycling facilities and communicate this information back to municipalities and residents. Additionally, Cook County may need to educate and encourage residents to recycle the correct materials through social media or other strategies. The City of Chicago is a potential model in this initiative. Chicago has experimented with simplified postcards on specific routes where contamination is problematic. The City has found tackling single issues to be more successful than providing comprehensive instruction in the same communication.[85]

Food Scrap Diversion

An estimated 400 pounds of food per person is wasted every year in the United States.[86] Food accounts for 14.9 percent[87] of the national waste stream and 21.3 percent of waste landfilled in Cook County.[88] It is estimated that 40 percent of food in the U.S. goes uneaten, representing a loss of $165 billion dollars.[89] The substantial amount of food wasted is a problem for many reasons. Among them, food waste contributes to climate change because food waste in landfills creates methane emissions that trap atmospheric heat.[90] Additionally, producing food that will be disposed is a significant waste of resources. At the same time that so much food is being wasted, 41 million Americans, including 13 million children, struggle with hunger.[91] In Cook County over 760,000 residents are food insecure, 30 percent of whom live in suburban Cook County.[92]

In response to the nationwide volume of wasted food, the United States Department of Agriculture and U.S. EPA have created the U.S. Food Waste Challenge to encourage a variety of stakeholders to reduce food waste. The U.S. EPA's Food Recovery Hierarchy prioritizes source reduction, followed by food recovery for hungry people and animals, industrial uses, and composting.[93]

Composting is the controlled decomposition of organic matter by microorganisms into a nutrient rich product. Techniques, such as windrow composting, static piles, and digesters, generate heat that destroys weeds, plants, and human pathogens.[94] Finished compost used as a soil amendment offers several environmental and economic benefits, including chemical fertilizer reduction, higher crop yields, soil remediation, carbon sequestration, and increased water retention in soil.[95]

Composting in Illinois

Food waste in Cook County is included as part of organic waste, which is 37.7 percent of landfilled material. However, the term organics does not exclusively apply to food scraps. Illinois, along with 23 other states,[96] bans landscape waste (e.g. grass, leaves, brush) from landfills.[97]

The three composting facilities currently located in suburban Cook County do not currently accept food scraps, only yard waste. One additional compost facility that would accept food scraps is currently undergoing the permitting and site approval process, with the potential to open in the fall of 2018. The 25-acre facility will be located at a former landfill site in Des Plaines in northwestern Cook County. The Cook County Board of Commissioners approved the proposal for the facility in March 2017. If the facility is approved by the Illinois Environmental Protection Agency (IEPA) and the

Metropolitan Water Reclamation District (MWRD), it will be able to compost 200,000 cubic yards (approximately 54,000 tons) of food scraps and landscape waste per year.[98]

Requirements for obtaining a commercial food scrap composting facility permit were adjusted in 2009, making it easier to open a facility in Illinois. In 2013, requirements were also loosened for compost piles less than 25 cubic yards, only requiring registration with IEPA and compliance with local laws. For one-day composting events (e.g. pumpkin collection in the fall), the IEPA is currently allowing for a registration process to take place of official permitting.[99] Additionally, the Illinois General Assembly Task Force on the Advancement of Materials Recycling has recommended implementing a tiered system for permitting regulations dependent on the facility size and materials processed.[100] These recommended legislative changes could help to address some of the barriers to increasing composting infrastructure in Cook County, but other barriers still exist. The pending facility in Des Plaines was met with strong resistance from residents due to fears of odor, vermin, increased traffic, and impact on property values.[101]

While food scrap composting can be done by individuals using containers to store organic material in their homes or backyards, it can be accomplished on a far broader scale using traditionally industrial methods such as windrow composting, static pile composting, or digesters. Windrow composting refers to the process of piling organic materials into long rows and periodically aerating the material by mechanically or manually turning the piles. This method works well for large volumes of diverse feedstock materials, including animal byproducts.[102] Aerated static pile composting refers to the process of piling organic waste combined with loose material such as wood chips to aerate the pile without turning. This process is slower than windrow composting and works best for feedstock that does not include grease or animal byproducts, but can be conducted at a lower cost.[103]

Anaerobic and Aerobic Digesters

Other methods of processing organic waste include anaerobic and aerobic digestion. Anaerobic digestion occurs in a closed space without oxygen where microorganisms process and break down organics.[104] Aerobic digesters, where oxygen is present, are less common than their anaerobic counterparts. In 2017, Lakeshore Recycling Systems in Chicago introduced the first privately held aerobic digester in the United States.[105] Research is currently inconclusive, but aerobic digesters are thought to emit only water vapor and carbon dioxide and use less space for quick organics processing.[106]

Suburban Cook County Food Scrap Collection Programs

Over the past five years, at least seven municipalities in Cook County have created food scrap collection programs. Those municipalities are currently offering food scrap collection combined with yard waste (Table 3).

Table 3: *Municipalities in Suburban Cook County with Curbside Compost Collection Programs. Source: Multiple, see endnotes.*

Municipality	Hauler	Availability	Program Type	Cost
Arlington Heights[107]	Groot Industries	April through mid-Dec.	Regular collection with yard waste for participating residents	$167.48 or $152.25 per season (95 or 65 gallon cart)
Barrington[108]	Groot Industries	Mid-March through mid-Dec.	Regular collection with yard waste	No additional cost
Evanston[109]	Collective Resource	Year-round	Weekly or biweekly 5-gallon bucket service	$27 or $20.50 per month (weekly or biweekly service)
Highland Park[110]	Lakeshore Recycling Systems	April 1 through December 15	Regular collection with yard waste	No additional cost
Northfield[111]	Waste Management	Early April through early December	Stand-alone composting or add-on to yard waste service	$55.60 per season for composting only, $18 fee to add-on
Oak Park[112]	Waste Management	Year-round	Weekly collection spring through fall, biweekly in winter	$14.42 per month with option to share with a neighbor for reduced cost
River Forest[113]	Roy Strom	Year-round	Weekly collection in yard waste season, biweekly in off season	$18.72 per month for a one-year contract

In suburban Cook County, one school district and 11 individual schools participate in the Green Lunchroom Challenge, a program sponsored by U.S. EPA Region 5, University of Illinois Urbana-Champaign, and Illinois Science & Technology Coalition to reduce food waste. This challenge engages schools to prevent food waste through operational modifications (including composting) and introduction of food waste reduction topics into curricula.[114] Schools and other institutions can provide unique opportunities for effective composting programs.

In addition, to municipal and school programs, thirteen commercial vendors offer compost pick-up in Cook County.[115] For a fee, these businesses collect food scraps and other compostable materials from both residential and commercial locations and take them to a compost facility. In addition to the pick-up services, there are at least four drop off locations: Altgeld Sawyer Corner Farm, Growing Power Chicago's Iron Street Farm, Heartland Café and The Urban Canopy, which provides food scrap collection at farmers markets. In addition to composting, food can be diverted from landfills by donations through a variety of programs, such as the Chicago Food Depository. Restaurants, corporate caterers, and grocery stores can also pay to have leftover food donated and delivered to nonprofits.[116] In Oak Park, the Surplus Project collects food prepared in Rush Oak Park Hospital, Dominican University, Riveredge Hospital, and Oak Park and River Forest High School and donates that food to Oak Park River Forest Food Pantry, West Cook YMCA, Youth Outreach Services, Mills

Tower, and Oak Park nonprofit New Moms. In 2017, the Surplus Project rescued and distributed over 8,000 meals and over 1,900 side dishes to food insecure neighbors, diverting over five tons of food from the waste stream.[117]

Other Counties' Food Scrap Collection Programs

Lake County, McHenry County, Kane County, DuPage County, and Will County all include municipalities that offer food scrap collection programs. Collar county municipality programs are similar to Cook County programs with either subscription-based or pay-as-you-throw sticker programs commingled with yard waste. Program innovations include free food scrap drop-off sites for Grayslake residents in Lake County[118] and one free bag of finished compost as a benefit for program participants in North Barrington in Lake County.[119]

Diverting Food Scraps from Landfills

Many different options are available to reduce food scraps and organics sent to landfills. Those major activities include educating the public, changing behavior around food waste management, increasing accessibility of collection, expanding infrastructure, and strengthening food scrap end markets. On a national level, the USDA and EPA are leading efforts to raise awareness. On a local level, nonprofits and businesses are seeking to divert food that would otherwise be discarded to the hungry and those in need. Cook County can work in partnership with municipalities and other stakeholders to reduce food waste through educational initiatives and increased access to food scrap collection. While educational initiatives are important to reducing food waste, Cook County can potentially have greater impact through enabling new infrastructure development for compost facilities and reducing food waste at Cook County facilities.

Enabling new infrastructure development (such as anaerobic or aerobic digestion facilities) is crucial for increasing the capacity within Cook County to manage food scraps. Dialog with businesses seeking to develop digester facilities revealed challenges with permitting, zoning, and the public's fear of the unknown. Identifying and studying the barriers to developing compost infrastructure may enable strategies for addressing those challenges.

Within the Cook County government, there are opportunities to reduce food waste at County facilities such as: the Cook County Jail complex, Cook County Criminal Courts & Administration Building, Cook County Building, five suburban courthouses (Bridgeview, Markham, Maywood, Skokie, and Rolling Meadows), Juvenile Temporary Detention Center, Domestic Violence Courthouse, Forensic Institute, Hawthorne Warehouse, and Rockwell Warehouse. Together, these facilities amount to 11 million square feet with more than 22,000 employees.[120] Adjustments to how these facilities manage their food waste could have a significant impact on Cook County's overall environmental footprint, and serve as a positive example for area institutions and businesses.

The Compost Market

While composting food scrap and organic material is good for the environment, it currently incldes an additional cost. Those who compost may make the choice based on values and not economics. Demand for products developed from food scrap and organic material could subsidize the cost of separate collection and incentivize food waste generators to sort food scraps.[121]

The Illinois Food Scrap Coalition (IFSC) is an organization dedicated to developing and marketing potential end markets for composted food scraps.[122] IFSC has created project guidance information for applications, such as landscaping around government buildings, turf and athletic field management, park and open space maintenance, beautification of vacant land, and community garden creation.[123] Several states have already been successful in implementing compost in Department of Transportation projects, including: erosion control, turf and vegetation establishment, wildflower and roadside plantings, wetlands creation, soil bioengineering, and others.[124] In general, landscaping and agriculture are the most prominent end market uses for compost.[125]

Governments, including Cook County, can act as an impactful catalyst for compost end markets through projects like landscaping for highways and government buildings. However, there are barriers to adoption government and construction bids including lack of availability or awareness of compost, increased costs, or lack of education which could result in skepticism of benefits or incorrect application.[126]

Household Hazardous Waste Disposal

The improper disposal of household hazardous waste (HHW), leads to contamination and degradation of environmental quality. HHW includes any leftover household products that contain corrosive, toxic, ignitable, or reactive ingredients (e.g. drain cleaner, lighter fluid). HHW is not regulated to the extent of commercially-produced hazardous wastes; however, many of the chemicals kept in homes pose similar risks.

Because HHW is not regulated to the same degree as commercially-produced hazardous waste, it is difficult to measure how much HHW disposal demand exists within Cook County. Nationwide, American households generate more than 20 pounds of HHW per year, which would equate to 9,700 tons per year of HHW generated in suburban Cook County. These materials will often accumulate to quantities greater than 100 pounds in a household and typically remain in the home until the resident moves or conducts a cleanout.[127]

The improper storage and disposal of HHW can have serious human health and environmental implications. If disposed of with conventional curbside MSW, hazardous material can contaminate groundwater through landfill leachate. HHW can also pollute surface water when poured down drains or into sewers.[128] Stockpiling flammable HHW materials can pose a fire risk to residents[129] and increase risk of accidental exposure or ingestion in homes, especially for children. Of 2.7 million cases handled by the American Association of Poison Control Centers in 2016, household cleaning substances are

the second most common exposure substances, and pesticides are the ninth. Over half of those incidents involved children under 12, and 93 percent of exposures occurred at home.[130]

Residents of Cook County have two primary options for proper disposal of their HHW; permanent collection facilities and temporary collection events. Additionally, commercial and retail stores offer residents limited opportunities for collection of some special materials, usually limited to batteries, compact fluorescent lamps (CFLs), and automotive fluids.

Permanent Collection Facilities

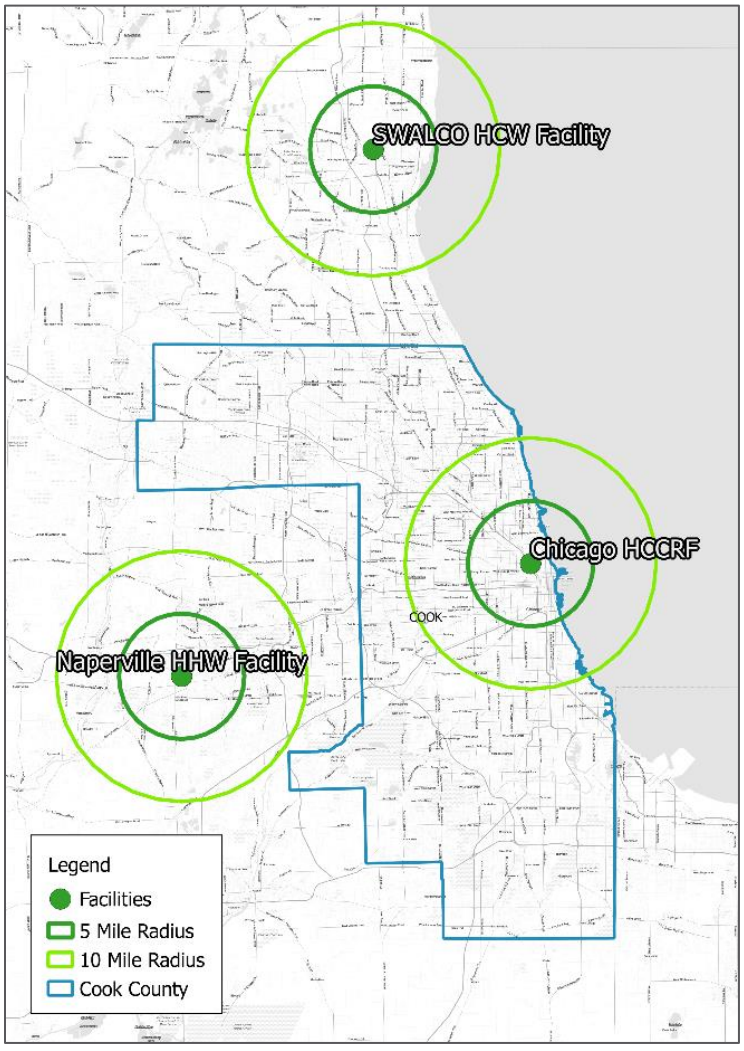


Figure 19: *Map of Household Hazardous Waste Collection Facilities in the Chicago Metro Area.*

There are currently three facilities located in the Chicago Metropolitan Region, out of four total facilities in Illinois (Figure 19). Only one of these facilities is located in Cook County, the City of Chicago's Household Chemical and Computer Recycling Facility (HCCRF). The two remaining facilities within the Chicago Metropolitan Area are located in Naperville and Gurnee. The average cost to operate these facilities is $53 per individual drop off (participant) or $7.60 per gallon collected (Figures 20 and 21).

HCCRF annually serves between 7,500 and 11,800 participants, of which the vast majority are from the City of Chicago, not suburban Cook County.[131] HCCRF's hours are a limiting factor for suburban Cook County residents, as they are only open 10 to 17 hours per week. Most Cook County municipalities are more than 10 miles away from the facility, and according to a survey of over 866 Cook County residents, most are not willing to travel more than 10 miles to properly dispose of HHW.[132]

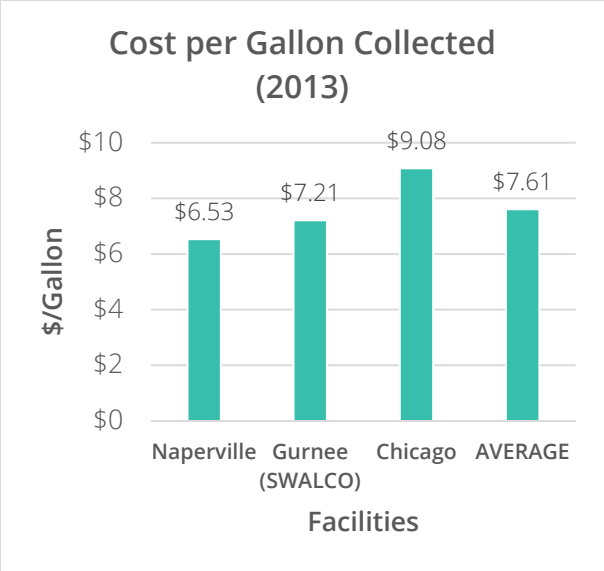


***Figure 20**: Cost per Gallon Collected at Chicago Metro Region HHW Facilities.*

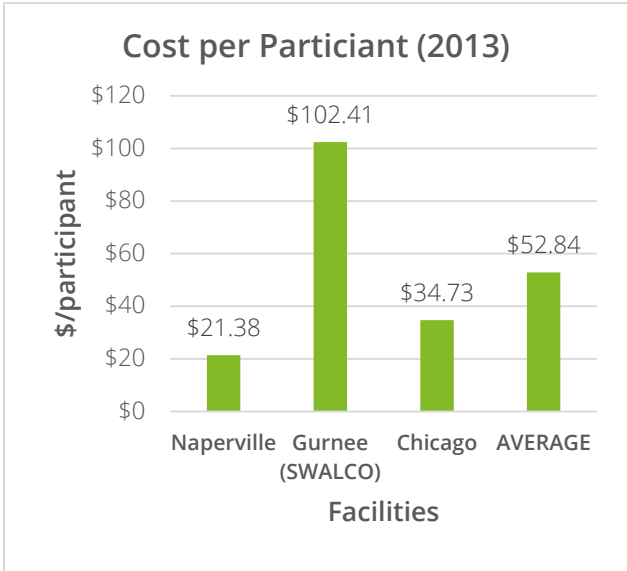


***Figure 21:** Cost per Participant at Chicago Metro Region HHW Facilities*

Temporary Collection Events

The Illinois Environmental Protection Agency (IEPA) sponsors one-day collection events throughout the state. IEPA began sponsoring such events in 1989, but in 2009 funding opportunities for sponsorship were drastically reduced.[133] Over the past 10 years, there has been a significant decline in the number of collection events held within the Chicago Metropolitan Area and throughout the state (Figure 22). Only six collection events have occurred in Cook County since 2012. The average number participants in these collection events was 630 residents, with a range of 275 to 1,147 participants. The average cost of these collection events is $56,335, with a range of $35,456 to $74,089 per event.

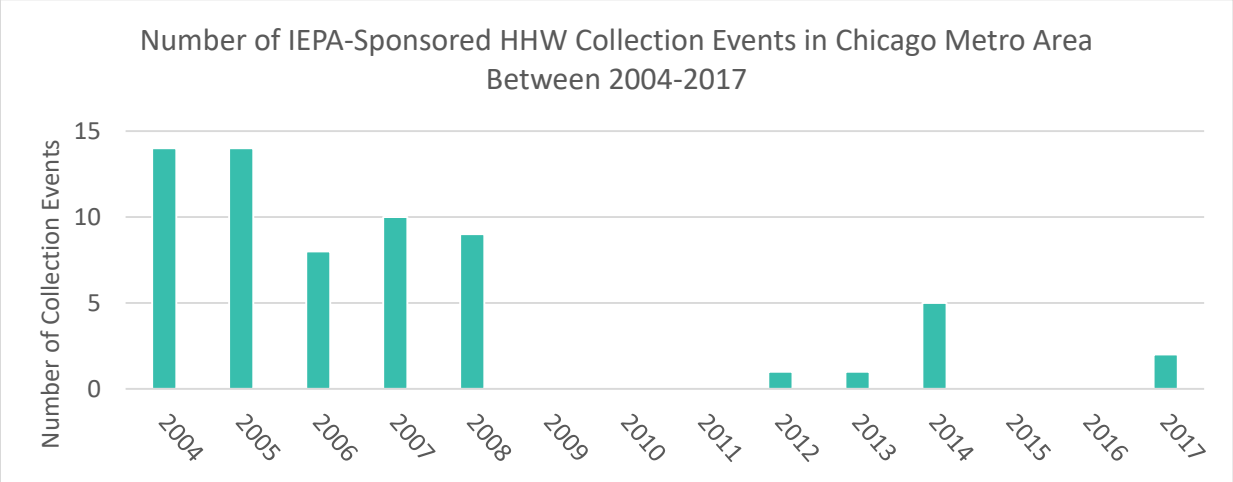


***Figure 22:** Number of IEPA-Sponsored Collection Events in Chicago Metro Area 2004-2017. Source: IEPA.*

There are also HHW collection activities not funded by IEPA that take place across the county with varied regularity. These events are organized by a range of groups from municipalities to churches. Because of the informality of these events, they are difficult to locate and determine effectiveness or frequency.

Commercial and Retail Collection Sites

Commercial and retail stores offer residents limited opportunities for collection of some special materials, usually limited to batteries, compact fluorescent lamps (CFLs), and automotive fluids. These materials can be brought back to the place of purchase where the retailer then becomes responsible for proper disposal. Such retail outlets are available to residents throughout Cook County, but there are still many types of HHW materials for which there are no commercial or retail collection opportunities. For example, non-latex paints, flammables, pesticides, and cleaning products are not required to be recycled by the retailers and manufacturers who provide them to the public. Commercial and retail collection of e-waste and special materials provides residents an outlet to properly dispose of limited materials but does not fulfill HHW disposal needs.

Curbside Collection

Some waste haulers offer curbside collection service of hazardous materials that should not or cannot be placed in waste or recycling bins. These programs can function in two ways: 1) the cost of HHW collection service is included in the waste collection contract as an additional service, or 2) residents are charged on a per-pick-up basis. Curbside collection programs offer several benefits compared to other collections models, such as convenience and avoidance of disposal cost or storage liability by municipalities and local governments.

Diverting Household Hazardous Waste from Landfills

For Cook County to increase proper disposal of household hazardous waste, there will need to be improvement in access and convenience for suburban Cook County residents. While IEPA collection events have decreased, collection events have lower costs of entry than permanent sites and will need to be part of the solution. To increase effectiveness and cost efficiency of these events, larger and broader collaborations between area waste agencies, municipalities, counties, businesses, and institutions will need to be made. For these events to be successful in the future, there will also need to be a concerted effort to market and advertise events to increase participation. Providing technical assistance and example strategies may help municipalities expand the reach of HHW collection initiatives. This assistance may include procurement guidance to include curbside HHW collection into waste collection contracts, regional partnership building, assisting with promotional and educational efforts, and long term planning.

Residential Electronic Waste Recycling

Electronic waste (e.g. televisions, computers, cables) can contain lead, mercury, cadmium, hexavalent chromium, and other materials that pose significant health and environmental issues if end-of-life processing is not handled properly.[134] While these devices can present hazards, they can also be considered an asset, as recycling and reuse of old electronic devices can prevent materials of high value from entering the waste stream.

To address these concerns and opportunities, the State of Illinois passed the Electronic Products Recycling and Reuse Act in 2008, which established a statewide system for recycling and/or reusing covered electronics devices (CEDs) that are discarded by residents. This system requires electronic manufacturers to participate in the management of discarded and unwanted electronic devices. Between 2012 and 2014, this legislation resulted in over 175 million pounds of e-waste being recycled.[135] Each year, manufacturers have exceeded recycling goals set annually by the IEPA by over 8 percent (Figure 23). Televisions account for the most weight of all electronics collected, comprising over 50 percent in 2013 and 2014.[136]

Covered Electronic Devices (CEDs) *refers to all electronic devices that have been banned from landfills in Illinois.*

This includes: Cable Receivers, Computers (desktop, laptop, notebook, tablet), Digital Converter Boxes, Digital Video Disc Players, Digital Video Disc Recorders, Electronic Keyboards, Electronic Mice, Fax Machines, Monitors, Portable Digital Music Players, Printers, Satellite Receivers, Scanners, Small Scale Servers, Televisions, Videocassette Recorders, and Video Game Consoles

Source: IEPA. "Covered and eligible electronic devices," http://www.epa.illinois.gov/topics/waste-management/electronics-recycling/covered-electronic-items/index

Figure 23: *Illinois Environmental Protection Agency E-Waste Collection Results. Source: IEPA*

While these results represent a significant improvement from e-waste recycling efforts prior to the Electronic Products Recycling and Reuse Act, there are still opportunities to improve end-of-life management of electronics. In 2016, a statewide e-waste program review conducted by the Illinois Environmental Protection Agency (IEPA) raised the following concerns with the implementation of the bill:[137]

- Not all registered collection sites accept all CEDs.
- Not all collection sites are available year-round, or do not have convenient hours.
- Many collection sites stop collecting materials after they have met annual collection goals.
- There is debate over whether the goals set by the IEPA are ambitious enough.
- There is an inability to verify collection data.

While this legislation resulted in a significant increase in the number of electronics recycled, there were several flaws with the program as originally implemented. Goals were determined by the weight of electronics sold each year, but as new products weigh less than older products (e.g. CRT television vs. flat screen TVs), manufacturers had less of an incentive to recycle. A new amendment to the Consumer Electronic Recycling Act will switch standards from weight-based to convenience-based.[138] Starting in 2019, counties will need to establish permanent e-waste drop off locations, the number of which is determined by the county's population density. For all of Cook County (including the City of Chicago), this could be up to 25 sites. Electronics manufacturers will be required to pay for the recycling of any electronics collected at these drop-off sites. For more information, see Appendix C: Legislative Update.

Collection Facilities and Events

The Household Chemicals and Computer Recycling Facility (HCCRF) located on Goose Island in Chicago represents one opportunity for residents of suburban Cook County to properly dispose of their e-waste. As mentioned in regard to household hazardous waste, this facility has limitations to effectively serving the needs of suburban Cook County residents, as is it more than 10 miles from most suburban Cook County residents and has limited hours of operation. Beneficially, HCCRF does accept all CEDs. Some municipalities also host temporary e-waste drives and collection events. While these events can be very effective and convenient to residents of those communities, they generally only serve residents of the host community, and not all communities host such events. E-waste collection events and permanent facilities do not currently provide all residents of suburban Cook County with convenient or equitable access to proper e-waste disposal, leading to fly dumping or improper disposal in curbside waste and recycling collection.

Commercial and Retail Collection Sites

The IEPA maintains a list of all registered collection sites throughout the state on their website.[139] These locations are primarily electronic retailers (e.g. Best Buy, computer repair stores) or second-hand stores (e.g. Salvation Army, Goodwill). There are 192 registered collection facilities within Cook County and bordering counties. There are 91 registered sites in Cook County (including Chicago), and 66 are registered in suburban Cook County.

An audit of the facilities in suburban Cook County was conducted by Delta Institute in November 2017 to assess whether the issues raised in the statewide program assessment are prevalent in Cook County. This assessment revealed that of the facilities listed by IEPA, 28 percent (19 facilities) are not currently collecting e-waste (Figure 24). This includes facilities that have canceled collection service, temporarily discontinued collection service, permanently closed, or have disconnected phone numbers. Approximately 72 percent (47 facilities) are currently accepting e-waste, but the majority of those facilities do not accept TVs, the most significant portion of electronic waste by weight. All of the 24 facilities accepting TVs charge customers $25-$80 per TV for collection. The cost varies depending on location of the retailer and size of the TV. The facilities accepting e-waste offer convenient and reasonable hours for residents to dispose of e-waste, with average hours of operation of 10 hours per day and 6 days a week. These facilities are spread fairly evenly throughout Cook County, so there is not a strong variation in accessibility based on region.

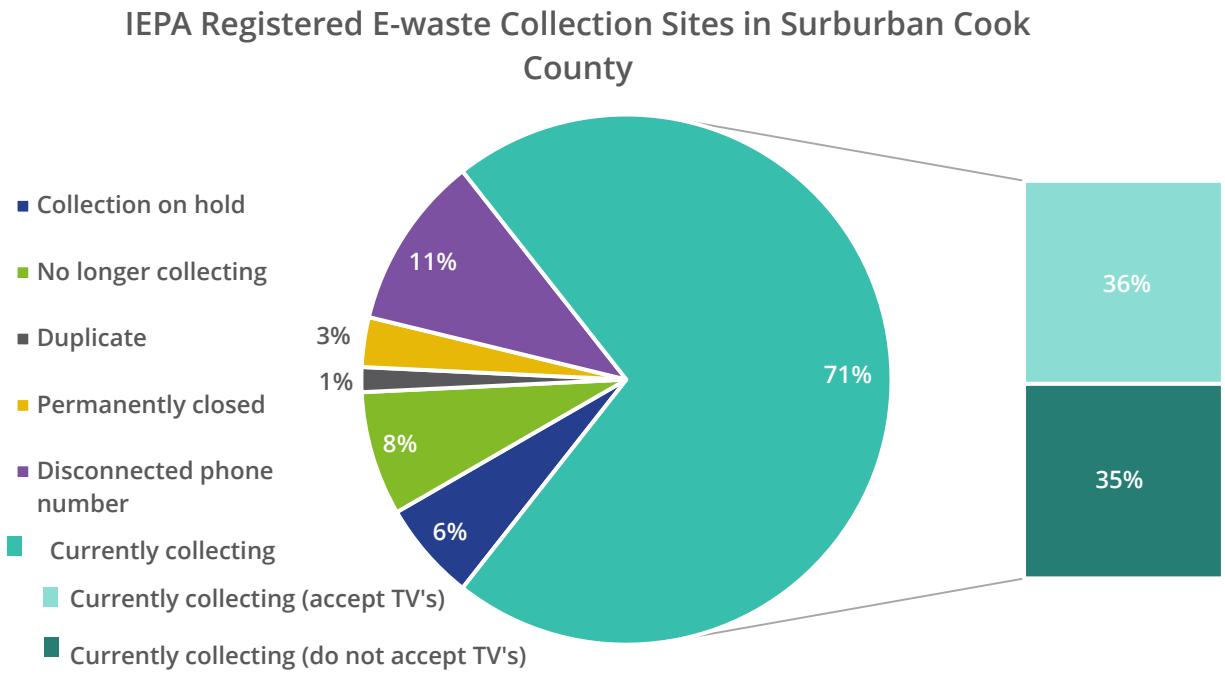


Figure 24: *Current Status of IEPA-Registered Collection Sites in Suburban Cook County. Source: IEPA*

Diverting E-Waste from Landfills

For e-waste recycling to improve in suburban Cook County, residents should be provided up-to-date information regarding how and where they can drop off old electronics for recycling. The changes to the Consumer Electronics Recycling Act (CERA) will improve reliability of collection sites throughout Cook County, but there will need to be significant promotion of these sites, and education for residents of the materials they accept. For the implementation of the CERA amendment to be successful, it will require Cook County to partner with regional waste agencies, municipalities, IEPA, and electronics retailers for promotional and educational efforts.

Construction and Demolition Debris Diversion

Construction and demolition (C&D) debris is the waste material generated during construction, renovation, and demolition projects. It typically comprises 25 to 40 percent of the national solid waste stream.[140] While C&D represented the largest single category of waste disposed at MSW sites in 2012 in Cook County (25.3 percent[141]), it reduced to 16.8 percent as of 2014.[142] Concurrently, construction and demolition as denoted by building permits has increased over the same period of time, suggesting that there should be an increase in the amount of C&D material. The reduction in landfilled C&D

material may be related to Cook County's 2012 Demolition Debris Diversion Ordinance (CCDDDO) which requires recycling and reuse of C&D material. While the majority of C&D material goes to specialized sites that keep such items out of the landfill, C&D material is generated by a number of activities at different scales. Small home repairs and larger renovations are a significant source of C&D debris. Anecdotal evidence suggests waste generated from smaller projects are typically bagged and discarded in the municipal solid waste stream.[143]

***Figure 25**: Reclaimed Building Materials Marketplace Flow Diagram*

Cook County Demolition Debris Diversion Ordinance (CCDDDO)

Established in 2012, the CCDDDO requires recycling 70 percent by weight of debris from residential and non-residential demolition and reusing 5 percent of debris from residential demolition.[144] The purpose of the ordinance was to establish a program for recycling and salvaging C&D waste, as prioritized in the 2012 Cook County Solid Waste Management Plan. Primary goals include reducing the overall amount of C&D material generated, preventing improper disposal of materials within Cook County, and recovering material value through reusing/recycling materials that would have been otherwise discarded.[145] The ordinance has achieved its goal of reducing the overall amount of C&D

material as evidenced by the County's mechanisms in place to monitor demolition waste. Cook County data indicates a year-over-year increase of waste diverted from demolition (Figure 26).

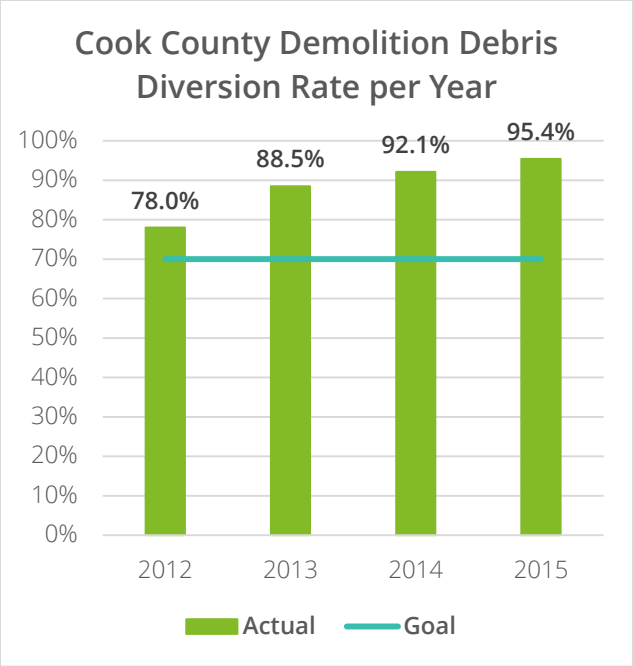


Figure 26: *CCDDDO results from 2012-2015. Source: Cook County Department of Environment and Sustainability*

Additionally, the composition of material types being landfilled has changed (Figure 27) while the amount of demolition has increased as evidenced by the increase in permits issued.[146] Previously, composition shingles, concrete, and other aggregate represented the largest categories of landfilled C&D, but in 2014, amounts of landfilled concrete, rock, and other aggregate were significantly reduced. The reduction in these materials may be related to the CCDDDO. Because the ordinance is weight-based, dense and heavy materials that are comparatively easier to extract may provide an efficient approach to compliance for demolition contractors. Conversely, the percentage of wood landfilled increased. Because wood is lighter weight and higher volume than rock and harder to extract than other materials, demolition contractors may not prioritize salvaging wood or brick from projects to achieve ordinance compliance which is weight based.[147]

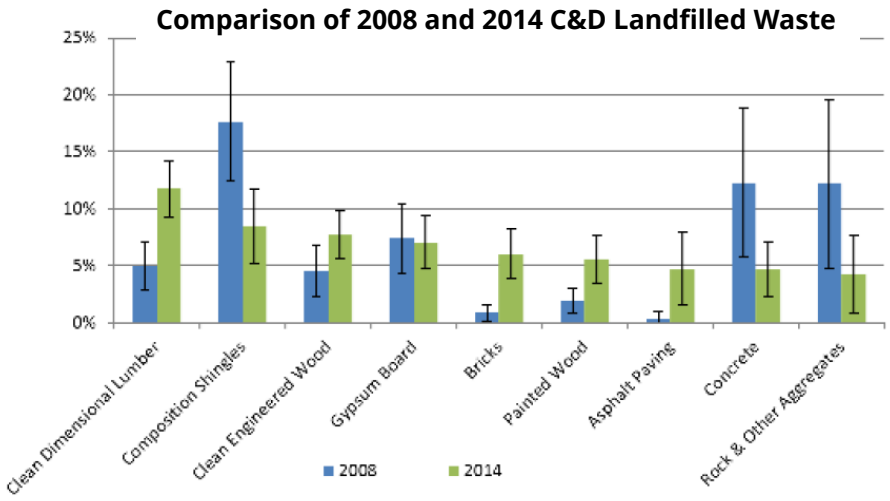


Figure 27: *State of Illinois Construction and Demolition Debris Waste Characterization. Source: Illinois Commodity/Waste Generation and Characterization Study Update, 2015*

Finally, growth in the number of businesses that manage C&D material and growth in sales and donations from building material reuse centers reflect that more materials are being salvaged. This

growth suggests that the ordinance is achieving its goal of recovering materials that would otherwise be discarded because those materials now have end markets due to their value (Figure 28).

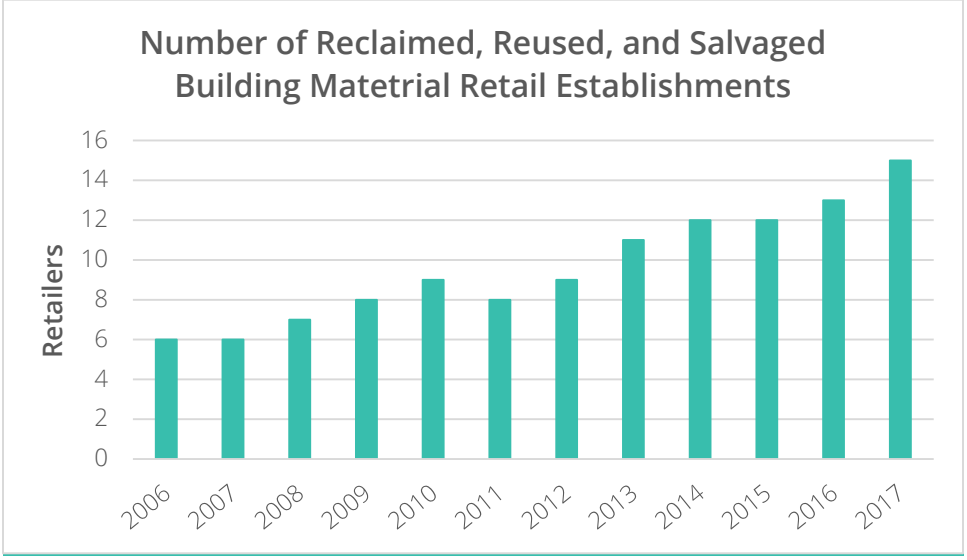


***Figure 28**: Number of Retail Establishments in Cook County. Source: Delta Institute data compilation*

The CCDDD ordinance goals were achievable because C&D materials afford opportunities for reuse and recycling without having to be processed into another physical state. Such materials include: bricks, concrete, masonry materials, soil, rock scrap, scrap metal, plaster, gypsum drywall, plumbing fixtures and piping, insulation, roofing shingles, other roof coverings, reclaimed or other asphalt pavement, glass, plastics, electrical wiring, corrugated cardboard, piping or metals incidental to any of those materials, landscape waste, wood (painted, treated, coated), wall coverings, and incidental dirt, metal, mortar, gypsum, plasterboard, wood, and sand that may be intermingled with reusable or recyclable demolition material generated from demolition activities.[148]

While the ordinance has been successful overall, the implementation of the ordinance unearthed barriers and challenges. Interviews with demolition contractors and Cook County staff highlighted the need for continuing education specific to the ordinance for contractors. Contractors reported confusion about the difference between recycling and reuse and reporting on such. While the County invested significant resources in ordinance training, there seems to be the need for frequent retraining due to staff turnover in demolition firms and new business formation. C&D contractors are a diverse group that includes both very large companies and small businesses. These small or newly formed businesses may be unaware of the permit process, ordinance compliance, and penalties, while being the most difficult to identify and contact. There is concern that, despite the paper reporting system and Green Halo online platform, reported information may be incomplete due to contractor capability or variation in documentation provided by recycling and reuse end market actors.[149] Additionally, because contractors must also get permits in the municipality in which they are doing a demolition, there is potential that the contractor has received the municipal permit only and not the county permit. Working with municipalities to create an automatic communication from either

the county to the municipality or vice versa might create an opportunity to identify contractors missing paperwork.

Delta Institute reached out to over a dozen demolition contractors with a high response rate from contractors from large, unionized companies who experienced little difficulty complying using the Green Halo software system. The most commonly identified barriers to compliance and their potential solutions were:

- Efficiency of the ticket upload process,
- Interpreting the definition of 'reuse' for residential demolition, and
- Lack of reporting standardization among C&D recyclers.

Demolition contractors must submit the final Demolition Debris Diversion Report within 10 days of permit expiration. Some contractors felt that Green Halo site was inefficient in ticket uploading. Other challenges included working with reuse and recycling facilities. While demolition contractors file permits through which the CCDDDO is implemented, they are working within a larger context with other market actors such as C&D recycling centers, scrap metal recyclers, and reuse stores. The diversity of facilities accepting C&D materials is a challenge for demolition contractors. While some facilities provide documentation of the weight of the material on a ticket or receipt, others do not, which may present documentation difficulties.

While C&D Recycling centers could produce itemized reports for haulers and contractors, interviewees stated that it is very time consuming. In order to itemize a report, they must first dump out all material, sort, and individually re-weigh each type of material. Challenges with receipts and weight are of particular concern for ordinance compliance. Typically contractors use weights on tickets and estimates to show that they have complied with the recycling and reuse goal. Because they do not know the weight of the structure they are demolishing when they begin the job, they must estimate the weight as a sum of components of the structure. Lack of weight information poses risk to the validity of the number reported.

While C&D reuse has increased nationwide, it is difficult to monitor.[150] While some materials can be weighed using a scale, many materials may not be weighed before they find a second life.[151] [152] In many cases, when material is reused on-site or sold at a job-site, that transaction may never be documented. Attempts to track data are further undermined by diversity of groups generating C&D waste from a variety of activities. This group ranges from individuals to small businesses or large companies involved in a number of activities that may include home repair, renovation, demolition, deconstruction, or construction. For this reason, C&D can be salvaged and enter reuse markets in a variety of ways.

Reuse vs. Recycling Markets

Cook County is hailed as a leader in demolition diversion and building material reuse. Its efforts and successes are acknowledged by the Environmental Protection Agency, National Association of Counties, and the Building Material Reuse Association.[153] [154] [155] While Cook County has provided

leadership in reuse and recycling promotion, it is the reuse and recycling markets that enable C&D material to stay out of landfills. Cook County is home to a number of demolition, deconstruction, construction, and renovation contractors who sell, donate, and dispose of C&D waste in a variety of arenas including:[156]

Reuse warehouses: These operations house a wide variety of source materials and tend to serve the general public. They are often nonprofit organizations, and most of their materials are donated. Cook County has 5 nonprofit and 2 for-profit reuse warehouses.

Non-facility reusers: These operators trade in materials salvaged from home renovations or demolitions but may not have a physical location. They source materials from property owners and resell directly to clients or into secondary markets.

Architectural salvage: These entrepreneurs, including Chicago's Salvage One, Urban Remains, and Architectural Artifacts, recycle unique and valuable design elements. Similar to the value-add producers, these operators cater to more affluent market segments.

Construction and Demolition (C&D) material recovery centers (MRFs): These centers are processing sites for the temporary disposition of C&D waste, such as concrete, wood, metals, glass, and salvaged building components

Single-Stream Material Recovery Centers: Single-stream material processors collect and sell materials as commodities. Those market actors may include collectors of scrap metal or bricks.

Value-added producers: This group of individuals and organizations transforms salvaged materials into value-added products, such as furniture.

Construction and Demolition Debris Regulation in Other Jurisdictions

Because C&D is a large portion of the waste stream and there are environmental and economic benefits from greater recycling and reuse, other regions have sought to emulate Cook County's C&D ordinance or ban C&D from landfills. In a national policy study, 16 C&D materials across 13 states are impacted by some form of disposal ban or recycling ordinance:

- Six states ban the disposal of friable asbestos, which is commonly found in acoustic ceilings and tiles, many types of plasters, wallboard, joint compound or "mud" and thermal insulation for water heaters and pipes made before 1978.
- Five states ban the disposal of wallboard.
- Ten states require corrugated cardboard to be recycled, and one state bans its disposal.
- Seven states ban the disposal of mercury containing devices found in thermostats and in other devices.
- Seven states require glass containers to be recycled, and four states ban its disposal.[157]
- Massachusetts bans certain construction and demolition materials, such as brick, asphalt paving, metal, wood, and clean gypsum wallboard from landfills.

Illinois does not have a C&D waste ban, recycling, or reuse law, but does ban some products typically found at demolitions sites from the landfill. The state's relevant laws and regulations covering goods

that may be encountered in the construction or demolition process cover the following products: E-Waste, lead batteries, liquid oil, mercury thermostats, used tires and white goods (e.g. refrigerators, water heaters, air conditioners).[158] [159]

Several local governments across the United States have sought to encourage C&D waste diversion through requiring waste management planning throughout the life of a project, helping to improve recycling and reuse rates and reduce contamination. Enforcement strategies include tying requirements to permit approval and increasing tiers of requirements depending on the square footage, price, or materials used for the project. Non-compliance enforcement typically includes permit rejections and/or fines.

A review of local legislation ordinances yielded trends in the types of enforcement mechanisms used and changes in policy ends of legislation. A review of 15 policies found that the most recent ordinances are focused around quality of building material reuse rather than quantity of reuse achieved. Specifically, later ordinances target older buildings suspected of containing higher value lumber and salvage. For example, Milwaukee, Wisconsin requires deconstruction of one to four unit homes built before 1930, and Portland, Oregon requires deconstruction of homes and duplexes built before 1916. Both ordinances require demolition contractors performing such work to have a professional deconstruction certification and each ordinance uses penalties and removal from certified contractor list to respond to non-compliance. Eight ordinances including Cook County's specify percentage goals for recycling and reuse and leverage building permits to document compliance. Four of the ordinances target homes, duplexes and other small structures. Those ordinances are typically striving for reuse of higher value materials; whereas, the four ordinances that target larger facilities tend to be focused on achieving C&D recycling or diversion goals. Seven of the ordinances relate to the material of C&D generated in demolition versus the structure from which they are harvested.

Location / Ordinance Title	Effective Year	Method / Mechanism	Non-Compliance
Milwaukee, WI Deconstruction Ordinance	2018	Homes built before 1930 that are one to four residential units must be deconstructed.	Forfeitures of up to $3,000 (up to $20,000 for misuse of heavy machinery), citations, or revocation of decon contractor cert.
Seattle, WA Demolition and Deconstruction	2017	Reuse a minimum of 20 percent of the building materials, by weight and excluding asphalt, brick, and concrete. Recycle or reuse a minimum of 50 percent of the building materials, by weight and excluding asphalt, brick, and concrete Recycle or reuse 100 percent of asphalt, brick, and concrete. Submit a Waste Diversion Plan with your permit application and plans.	Deconstruction allows receipt of demolition permit to deconstruct property before construction permit is issued.
Portland, OR	2016	Requires projects seeking a demolition permit of a house or duplex to fully deconstruct that	Escalating fines starting at $500, up to $10,000, removal from

Deconstruction of Buildings Law		structure if it was built in 1916 or earlier or is a designated historic resource.	approved contractors list, stop work order
Austin, TX Construction & Demolition Recycling Ordinance (CD)	2016	Minimum 50% of waste from C&D projects over 5,000 sq.ft. must be diverted for beneficial use (replacing or supplementing a raw material with industrial by-products) with no more than 2.5 lbs of materials per sq.ft. disposed of in landfills. City plans to expand scope of ordinance to apply to all building sizes in 2019 and increase percentage diverted in 2020 and 2030. Building permit process triggers inspection of structure and waste plan.	Class C misdemeanor Fines up to $500
King County, WA Green Building and Sustainable Development (CD)	2013	Starting in 2013, all projects are required to take materials from construction sites to either single commodity recycling facilities, commingled processing facilities, or transfer stations reducing materials sent to the landfill. Documentation may be used in conjunction with LEED or Built Green certification reporting.	Code citation Up to 60 days of civil penalties followed by legal prosecution
Cook County, IL Cook County Demolition Debris Diversion Ordinance (CD & Reuse)	2012	Minimum 70% of C&D waste from all building projects must be diverted from landfill where 5% of waste from residential projects must be reused. Waste management plan must be submitted with permit application before work begins, an actual materials tracking form must be submitted when work completes to close out permit.	Fines up to $5,000
Evanston, IL Green Building Ordinance (CD)	2011	Buildings over 20,000 sq.ft (or 10,000 sq.ft. if owned or funded by the city) must achieve LEED Silver rating or higher. Non-city owned buildings between 10,000 and 20,000 sq.ft. can choose LEED Silver rating or to employ eight or more Evanston Sustainable Building Measures for New Construction. LEED requirements include waste management planning and diversion of recyclable or reusable material. Proposal for meeting criteria must be submitted with permit application. USGBC LEED approval letter must be submitted after project completion.	Fine equal to 0.75% construction cost multiplied by number of credits short
Madison, WI Construction and Recycling	2010	Buildings projects with steel and concrete supports must recycle 70% of materials. Wood supported structures and remodeling projects exceeding $20,000 must reuse or recycle all	Fines ranging from $25 to $500 per percentage point under threshold

Ordinance (CD & Reuse)		wood, non-toxic metals, scrap drywall, corrugated cardboard, and shingles. Report with waste diversion details must be submitted within 60 days of project completion.	
Boulder, CO Boulder Green Points Building Program (CD)	2008	Permit applications for new construction, remodels, additions, and demolitions must include sustainable building components, which is calculated through a point system where points are accrued through use and documentation of sustainable practices such as use of reclaimed material and waste diversion from landfills.	Permit rejection
Concord, CA C&D Materials Recycling Ordinance (CD & Reuse)	2007	Minimum 65% of waste materials (and 75% of inert debris - waste that is neither biologically nor chemically reactive) generated from C&D projects must be diverted from landfill. Initial performance agreement and final report must be submitted to city to track performance.	Fines up to $10,000/day Suspension of demolition, permit rejection, civil action, misdemeanor prosecution
Chicago, IL C&D Recycling Ordinance (CD)	2006	Minimum 50% of C&D waste from residential buildings over four units and nonresidential buildings over 4,000 sq. ft. must be diverted from landfill. Contractor, in conjunction with waste/recycling provider, must submit form and affidavit within 30 days of completion.	$500 fine for projects less than 10,000 sq. ft. $1,000 fine for larger projects
Los Angeles County, CA Construction and Demolition Ordinance (CD & Reuse)	2005	Minimum 50% of C&D materials generated, no more than two-thirds of which may be inert materials, must be reused or recycled. Minimum 50% of all inert materials must be reused or recycled. Approved Recycling and Reuse Plan must accompany permit application. Regular progress reports and final report with waste facility receipts must be submitted to the county.	$250 fine per ton not recycled/reused as required
San Mateo, CA Recycling and Diversion of Debris from Construction and Demolition (CD)	2002	For any demolition project over $5,000, construction or renovation project over $250,000, or any new structure over 2,000 sq.ft. - 100% of inert solids and minimum 50% of remaining debris must be diverted from landfill. Waste management plan must be submitted with permit application and updated with receipts and totals within 30 days of project completion.	Forfeiture of security deposit
Orange County, NC	2002	All regulated recyclable material generated must be recycled excluding health risks and inability to separate from non-recyclable material. Material must be recycled at a certified commingled	Doubled tip fee for landfilled recyclables Permit revocation

Regulated Recyclables Materials Ordinance (CD)		recycling facility and may not be disposed of in any other manner.	Fines up to $500 or 30 days in jail
San Jose, CA Construction Demolition Diversion Deposit (CDDD) Program	2001	Minimum of 75% of construction materials must be recovered from the site and diverted from landfill. Receipts documenting diversion deposits are collected, to be refunded after verification of landfill diversion.	Forfeiture of security deposit

***Table 4**: Local Building Material Reuse Legislation*

Diverting Construction and Demolition Debris from Landfills

Outreach, education, and policy responses may be needed to improve construction and demolition debris diversion. Outreach and education to contractors to confirm understanding of the CCDDDO may result in increased number of permits while also achieving higher quality demolition work that protects the health of Cook County residents. Outreach to permit-issuing municipalities can ensure that permits are also being filed in Cook County, and outreach to recycling centers to determine if customers are filing permits with the County could help increase consistency. The CCDDDO provides a powerful tool for reducing C&D waste. Leveraging the CCDDDO to require contractors to register and acknowledge the ordinance and its requirements; requiring standards for those accepting C&D materials that are documented as part of waste plans to acknowledge their understanding of the CCDDDO, their registration in Green Halo, and including critical information contractors need for reporting in receipts or tickets; and requiring municipalities to notify the County of permits they have issued could result in not only more diversion but also more accurate documentation of such.

It is also important to boost markets for reuse and recycling of C&D waste. The County has worked with partners such as the US Environmental Protection Agency, Archeworks and Builtworlds, to educate architects and designers on how these materials may be incorporated into projects. Further opportunities should be sought.

Goals and Recommendations

Increase access to and participation in municipal solid waste curbside recycling programs.

Rec ID	Category	Recommendation
1.1	Recycling	Help small or underperforming communities to increase curbside recycling through joint contracting, or other procurement assistance.
1.2	Recycling	Conduct outreach to unaffiliated or unincorporated areas to encourage affiliation with a waste agency or partnership with other municipalities/townships to improve bargaining for disposal services.
1.3	Recycling	Increase recycling in multi-family buildings by providing technical assistance and providing model ordinances to municipalities to help them to include multi- unit buildings in waste and recycling collection contracts and by conducting a public awareness campaign for landlords and property managers.
1.4	Recycling	Implementing a pilot project at a county facility or municipality that does not currently provide recycling to demonstrate efficacy of alternative recycling models beyond single stream. This may include reducing the number of accepted materials, or multi stream recycling.
1.5	Recycling	Host annual waste and recycling procurement workshops for municipal stakeholders to build capacity at the municipal level.
1.6	Recycling	Assist local governments to contract residential, multifamily, and/or commercial collection services as a means to control costs, increase recycling, reduce the amount of greenhouse gases associated with collection services, and enhance community sustainability efforts.
1.7	Recycling	Fund recycling extravaganzas and promote specialty recycling programs for products that often are incorrectly placed in recycling bins (e.g. Electronic Waste, Household Hazardous Waste, textiles, laundry baskets, hangers)

1.8	Recycling	Set a benchmark for waste performance for all County facilities by requiring waste haulers to produce hauler reports containing amount of material disposed and recycled.
1.9	Recycling	Improve County government diversion rate by instituting consistent availability of recycling bins in all Cook County facilities including consistent signage.
1.10	Recycling	Develop partnerships with the business community, waste haulers, institutions, service and professional organizations, and governmental entities to expand the outreach potential for focused educational efforts.

Decrease contamination of recycled materials.

Rec ID	Category	Recommendation
2.1	Recycling	Establish working group with haulers, material recovery facilities (MRF), and municipalities to create an accurate list of recyclable products and a simple unified message. Establish metrics, such as decreased contamination, and type of materials processed as tracked by MRF operators.
2.2	Recycling	Develop and produce a marketing campaign, based on work with waste haulers, with a focus on one or two major recycling issues per year for effective public education (e.g. do not include plastic bags in recycling)
2.3	Recycling	Target outreach to communities with existing curbside recycling programs that have low participation and/or high contamination rates to discuss potential mitigation measures with municipal staff.
2.4	Recycling	Work with municipalities on ways to increase recycling and decrease contamination. Incentives may include: recycled materials rebates, reward programs like Recycle Bank, and pay-as-you-throw programs.

Improve diversion rate for industry/commercial/institutional waste generators.

Rec ID	Category	Recommendation
3.1	Recycling	Identify barriers to increasing diversion rates for industry/commercial and institutional waste generators through a voluntary program which, solicits waste hauling reports and request waste audits from a sample of businesses and conduct interviews with businesses
3.2	Recycling	Convene nonresidential waste generators to share best practices within industry types (e.g. hospitals, schools, industrial) for waste diversion.
3.3	E-Waste	Develop programming targeted for businesses for education on proper E-waste disposal. Work in collaboration with partners such as Illinois Science and Technology Coalition and Illinois Environmental Protection Agency to develop campaign to inform businesses. Develop programming to encourage compliance with state law.

Increase diversion of organics and food waste from landfills.

Rec ID	Category	Recommendation
4.1	Food Scraps/ Organics	Encourage Cook County municipalities to implement residential food scrap programs as part of their hauling contracts or licensing requirements.
4.2	Food Scraps/ Organics	Use Cook county projects to demonstrate the end market use of compost and establish guidelines for finished compost in county road/landscape projects where applicable. Look for closed-loop opportunities at Cook County facilities.
4.3	Food Scraps/ Organics	Promote industrial/commercial/institutional food scrap collection programs
4.5	Food Scraps/ Organics	Establish sites for public organic waste drop off.
4.6	Food Scraps/ Organics	Assess potential for food donation from public and private facilities.
4.7	Food Scraps/ Organics	Use organics collection events to educate residents about best practices and the benefits of composting and food waste reduction.
4.8	Food Scraps/ Organics	Make compost bins available and teach people to compost.
4.9	Food Scraps/ Organics	Establish requirements for food waste reduction in vendor contracts for Cook County facilities.
4.10	Food Scraps/ Organics	Develop compost strategies for county facilities.

Increase household hazardous waste (HHW) diversion.

Rec ID	Category	Recommendation
5.1	HHW	Increase HHW collection by adding more permanent sites and encouraging local municipalities to include HHW collection in their waste hauling contracts or by other means.
5.2	HHW	Seek IEPA funding for expanded collection of household hazardous waste for Cook County residents who do not currently have reliable/convenient access to collection.
5.3	HHW	Encourage municipalities, including the City of Chicago, to collaborate with a coordinating body such as a council of government or joint action agency (Solid Waste Agency of Northern Cook County or West Cook County Solid Waste Agency) or partner with neighboring communities for HHW collection initiatives.
5.4	HHW	Work in tandem with other agencies to assess producer responsibility legislation for Hazardous Household Chemicals.
5.5	HHW	Continue to educate the public about proper storage, handling and disposal of HHW and provide information on why these materials are banned from landfills, in addition to how to avoid generation of HHW, especially for residents in unincorporated or unaffiliated areas.
5.6	HHW	Reduce the use of toxic chemicals in the maintenance of Cook County facilities
5.7	HHW	Begin a dialogue with hospitals, pharmacies, police, and others already dealing with sharps and medications, to explore opportunities for cost-share or coordination.

Increase electronic waste (E-Waste) diversion.

Rec ID	Category	Recommendation
6.1	E-Waste	Establish permanent program collection sites for recyclable electronics in accordance with the Illinois Consumer Electronics Recycling Act.
6.2	E-Waste	Develop a marketing campaign to educate residents on proper e-waste disposal.
6.3	E-Waste	Investigate opportunities for public outreach for education on e-waste recycling by participating at special events such as Farmers Market, Community Days, and Open Houses.
6.4	E-Waste	Partner with commercial and retail collection sites to increase accessibility of existing e-waste collection programs.
6.5	E-Waste	Work in tandem with Illinois Environmental Protection Agency to provide suburban Cook County residents an up-to-date list of registered collection sites that is reviewed and updated quarterly.
6.6	E-Waste	Encourage sub-regional partnership and coordination to increase access to e-waste collection opportunities.

Promote source reduction and reuse.

Rec ID	Category	Recommendation
7.1	Recycling	Develop a green purchasing strategy for the County and develop model procurement documents for municipalities and other agencies.
7.2	HHW	Educate residents and local governments on alternatives to household hazardous chemicals.
7.3	Recycling	Work in tandem with Waste Agencies or Councils of Government to identify schools serving low to moderate income students and encourage area businesses to donate office supplies, computers, and furniture that would otherwise be thrown out.
7.4	Recycling	Adopt stronger procurement practices by the County that promote reused and reusable goods and reduce packaging/life cycle costs. Develop further strategies to reduce operational waste at County facilities such as printing policies.
7.5	Recycling	Update County Code to require amounts of waste and recycling from County facilities to be reported annually and to develop a waste diversion plan that shows plan to reduce waste annually.

Improve construction and demolition (C&D) debris diversion.

Rec ID	Category	Recommendation
8.1	C&D Debris	Create and consistently use clear definitions of recycling and reuse through all communication channels with demolition contractors.
8.2	C&D Debris	Consider revisions to 2012 Cook County Demolition Debris Diversion ordinance that could increase reuse, such as targeting materials with high reuse potential to be salvaged, requiring reuse in non-residential demolitions, or requiring minimum requirements for hauling and drop-off tickets.
8.3	C&D Debris	Establish outreach and public educational programs on construction and demolition debris reduction and recycling initiatives.
8.4	C&D Debris	Evaluate potential for construction and demolition contractor's registration programs through which Cook County would ensure contractors had full knowledge of Cook County Demolition Debris Diversion Ordinance
8.5	C&D Debris	Conduct gap assessment of demolition activity in Cook County and reported activity in Cook County.
8.6	C&D Debris	Explore ways to increase the market for reused and recycled C&D materials, such as incorporating them into projects at County facilities, or partnering with other entities to increase awareness of the value and utility of these materials.

APPENDIX A: Advisory Committee Members

Name	Affiliation and Title
Ning Ai	Assistant Professor in the Department of Urban Planning and Policy at the University of Illinois at Chicago (UIC)
Sarah Cardona	Project Manager with Metropolitan Planning Council
Kristi DeLaurentiis	Executive Director of the South Suburban Mayors and Managers Association (SSMMA)
Richard Golf	Managing Partner for Lakeshore Recycling Systems
Neil James	Executive Director of West Cook County Solid Waste Agency (WCCSWA)
Karen Rozmus	Suburban Cook County Resident, Former Waste Reduction Manager for the Village of Oak Park
Henrietta Saunders	Suburban Cook County Resident, Chair of the Natural Resources Commission for the Village of Glenview, Treasurer of the League of Women Voters of the United States, and serves on the Delta Institute Board
Elaine Strunk	Global Sustainability Director at McDonalds
Dave Van Vooren	Executive Director of the Solid Waste Agency of Northern Cook County (SWANCC)

APPENDIX B: Waste Infrastructure in Suburban Cook County

ID number corresponds with values in Figure 10

ID	Address	City	Name / Operator	Owner	Type
1	3460 Dundee Road	Northbrook	Red's Garden Center LLC	T & C Sisters, LLC	Landscape Transfer Station
2	2800 Shermer Road	Northbrook	Advanced Disposal SW Midwest	Advanced Disposal	Transfer Station
3	230 Sumac Road	Wheeling	Waste Mgt.-Northwest/W	Waste Management	Transfer Station
4	2100 Frontage Road	Glencoe	Glencoe Water Tower Site	Village of Glencoe	Landscape Transfer Station
5	2300 Carlson Drive	Northbrook	C&D Recycling Inc.	Lakeshore Recycling System	GCDD Transfer Station
6	630 S. Hicks Road	Palatine	MBL Recycling Inc	Lenzini Holding LLC	GCDD Transfer Station
7	1390 Willow Road	Winnetka	Winnetka Municipal Landscape TS	Village of Winnetka	Landscape Transfer Station
8	3851 Berdnick Street	Rolling Meadows	Rolling Meadows Transfer Station	City of Rolling Meadows	Transfer Station
9	2100 Johns Court	Glenview	Glenview Material and Supply	Glenview Material & Supply, Inc.	Landscape Transfer Station
10	711 Laramie Avenue	Wilmette	Wilmette Village Yard	Village of Wilmette	Landscape Transfer Station
11	3 Providence Way	Glenview	Glenview Transfer Station	SWANCC	Transfer Station
12	72 Beverly Road	Hoffman Estates	American Wood Recycling	American Wood Recycling	Landscape Transfer Station
13	72 Beverly Road	Elgin	American Wood Recycling	American Wood Recycling	GCDD Transfer Station
14	1711 Church Avenue	Evanston	Evanston Transfer Station	Advanced Disposal	Transfer Station
15	1111 Joseph Schwab Road	Des Plaines	Des Plaines TS	City of Des Plaines	Landscape Transfer Station
16	2215 Main Street	Evanston	Greenwise Organics Inc.	Greenwise Organics Inc.	Landscape Transfer Station

17	2101 Busse Road	Mt. Prospect	Republic Service of Mt Prospect	Republic Service	Transfer Station
18	2533 Oakton Street	Evanston	Mulch Center of Evanston	Contour Landscape Inc.	Landscape Transfer Station
19	1300 Spaulding Road	Elgin	Cloverleaf Farms Transfer - Elgin	Midwest Compost LLC	Landscape Transfer Station
20	2222 Oakton Street	Evanston	James Park TS	City of Evanston	Landscape Transfer Station
21	1225 Gifford Road	Elgin	Waste Management/Bluff City TS	Waste Management	Transfer Station
22	1435 Yorkshire Drive	Streamwood	Best Lawn Landscape Waste TS	West Suburban Bank	Landscape Transfer Station
23	1440 Higgins Road	Park Ridge	Mr. K's Garden and Material Center	Mr. K Garden and Material Center	Landscape Transfer Station
24	605 Northwest Avenue	Northlake	Northlake Transfer Station	Northlake Transfer, Allied	Transfer Station
25	3800 W. Lake Ave	Melrose Park	JKS Ventures TS	JKS Ventures, Inc.	GCDD Transfer Station & Landscape Transfer Station
26	4700 W. Lake Street	Melrose Park	Advanced Disposal Melrose Park	Advanced Disposal	Transfer Station
27	1918 W. Madison Street	Maywood	American Waste Industries	American Waste Industries Inc.	Landscape Transfer Station
28	2100 W. Madison Street	Maywood	American Waste Industries 22.38 Site	American Waste Industries Inc.	GCDD Transfer Station
29	1201 Greenwood Ave	Maywood	Greenwood Landscape TS	Greenwood Development LLC	Landscape Transfer Station
30	1201 Greenwood Avenue	Maywood	Greenwood Transfer Facility	Greenwood	Transfer Station
31	3815 S.Laramie Avenue	Cicero	Waste Mgt. - Laramie Transfer Station	Waste Management	Transfer Station
32	5001 W. 40th Street	Cicero	Riverview Recycling	Riverview Recycling Inc.	GCDD Transfer Station
33	6201 W. Canal Bank Road	Forest View	West Cook Transfer Station	Town & Country Transfer	Transfer Station

34	7430 W. Portage Trail	Forest View	Harlem Ave Solids Mgmt Composting	Metropolitan Water Reclamation District	Compost Facility
35	5300 S. Lawndale Avenue	McCook	TAZ Construction and Demolition Recycling LLC	TAZ Construction and Demolition Recycling LLC	GCDD Transfer Station
36	5100 Lawndale Avenue	McCook	Liberty Waste	Liberty Waste, Allied	Transfer Station
37	8745 W. 53rd Street	McCook	Groot Industries/McCook TS	Groot	Transfer Station
38	11601 S. Austin Avenue	Alsip	Waste Management of the South	Waste Management	Transfer Station
39	12807 S. Homan Avenue	Blue Island	Windy City Waste & RC	Cook County Waste & Recycling Inc.	GCDD Transfer Station
40	4700 W. Cal Sag Road	Crestwood	Crestwood Yard 28 (IL Mining Corp)	Metropolitan Water Reclamation District	GCDD Transfer Station
41	1258 E. 138th Street	Chicago (unincorporated)	River Bend Prairie Recycling and Transfer	Land & Lakes	Transfer Station
42	1201 W. 138th Street	Riverdale	Riverdale Materials	Brackenbox, Inc.	GCDD Transfer Station
43	4438 W. 137th Place	Crestwood	K & R Services	K & R Services	GCDD Transfer Station
44	13701 S. Kostner Avenue	Crestwood	Groen Waste Services Crestwood Transfer	Allied	Transfer Station
45	1220 E. 138th Street	Chicago (unincorporated)	Land & Lakes 1&2	MCM Land Co.	Compost Facility
46	13903 S. Ashland Avenue	Riverdale	Tri-State Disposal, Inc.	Tri State Disposal	Transfer Station
47	13050 S. State Street	Riverdale	Riverdale RC Facility	Frank M. Ward, Sr. Revocable Trust	GCDD Transfer Station

48	5400 159th Street	Oak Forest	Oak Forest Public Works TS	City of Oak Forest	Landscape Transfer Station
49	16501 S. Crawford Avenue	Markham	Wright Concrete Co	Wright Concrete Recycling Inc.	GCDD Transfer Station & Landscape Transfer Station
50	2300 W. 167th Street	Markham	Markham Transfer & Recycle	Markham Transfer & Recycling	GCDD Transfer Station
51	2300 W. 167th Street	Markham	Markham Landscape Transfer	2300 W. 167th LLC	Landscape Transfer Station
52	2600 170th Street	Hazel Crest	Hazel Crest Compost	Village of Hazel Crest	Compost Facility
53	17415 S. Ashland Avenue	East Hazel Crest	Homewood Scavenger Service TS	Homewood Disposal	Transfer Station
54	1301 S. State Street	Chicago Heights	Chicago Heights Transfer Facility	Allied Waste	Transfer Station
55	201 N. State Street	Chicago Heights	Bridge Waste Transfer	Contractor's Recycling Service Inc.	GCDD Transfer Station
56	27 South Street	Park Forest	Star Disposal Landscape TS	Star Investments LLC	Landscape Transfer Station
57	20 South Street	Park Forest	Star Disposal Service TS	Homewood Disposal	Transfer Station
58	21900 S. Central Avenue	Matteson	Prairie Trails C&D Facility 22.38	Waste Management	GCDD Transfer Station
59	21860 Central Avenue	Matteson	Prairie Lakes Recycling and Transfer	Waste Management	Transfer Station
60	56 E. 25th Street	Chicago Heights	Allied Waste Transportation	Allied Waste Transportation	Landscape Transfer Station

APPENDIX C: Legislative Update

Since the 2012 Solid Waste Management Plan, there have been significant policy changes on a state and county level that affect how materials are managed in Cook County. The table below outlines state and county legislative updates that affect Solid Waste Management in Cook County.

Cook County Legislative Update Since 2012

Municipal Solid Waste		
Legislation Summary	**Year**	**Description and Mechanisms**
Cook County Solid Waste and Recycling Ordinance Given Cook County tools and information to increase recycling, prosecute fly dumping, and reduce theft of metal and other valuable materials from public and private property **Link**: https://www.cookcountyil.gov/file/795/download?token=D0AaHh7-	2014	The following violations may be prosecuted as illegal dumping activities: • Causing or allowing the open dumping of any waste, • Abandoning or disposing of any waste upon public property, except in a sanitary landfill approved by the Illinois EPA, • Disposing, treating, abandoning or transporting any waste, except at a site or facility which meets the requirements of the IL Environmental Protection Act, • Failure of any owner, occupant, agent, or person in possession or control of any real estate to remove any waste located on any such real estate, and • Failure to issue reports as prescribed by the Cook County Department of Environmental Control. • Every solid waste and recycling facility, currently accepting waste and located within Cook County, except within the City of Chicago or solid waste facilities owned or operated by a Local Government, must adhere to all operational standards outlined in section 30-824 (solid waste) or 30-864 (recycling). Every owner or operator of a sanitary landfill or a municipal waste transfer station located within Cook

		County which is permitted, or required to be permitted by the IEPA and has accepted waste within the calendar year shall file a quarterly report specifying the quantities of waste and/or recyclable materials accepted by the sanitary landfill or municipal solid waste transfer station, either for transfer or permanent disposal. Waste hauling companies operating in Cook County (with the exclusion of the City of Chicago) must submit quarterly reports documenting the weight and/or volume of municipal solid waste and recyclable materials collected from residential and non-residential properties. Creates fines for waste and recycling facilities and haulers as described in Chapter 30 of the ordinance, Fees for landfills, municipal solid waste transfer stations.

Hazardous Waste

Legislation Summary	**Year**	**Description and Mechanisms**
Cook County Liquid Hazardous Waste Ordinance The Cook County Liquid Hazardous Waste Ordinance requires Suburban Cook County facilities to report their annual liquid hazardous waste generation and submit the corresponding fee to Cook County Department of Environmental Control. **Link**:https://www.cookcountyil.gov/service/liquid-hazardous-waste-reporting	2016	The focus of the ordinance is to ensure the data on the storage and use of hazardous chemicals in suburban Cook County is available to local first responders to prepare and properly respond to chemical emergencies. The ordinance also aims to reduce the amount of liquid hazardous waste generated, transported, and disposed of in suburban Cook County. Fees on generation of liquid waste (per gallon generated for generation equivalent to 420 gallons or more per reporting period) are $0.02. The reporting period is January through December and the computation form and fee is due 90 days following the end of the reporting period (March 1).

		Any person who violates the provision of this section shall be fined not less than $300 and not more than $10,000 for each offense.
The Cook County Safe Disposal of Pharmaceuticals Ordinance Creates a plan for the safe collection, transportation, and disposal of unwanted pharmaceuticals **Link**:https://cook-county.legistar.com/LegislationDetail.aspx?ID=2625841&GUID=B66B6059-470C-48BB-B629-31B3DA6CDBC0&FullText=1	2016	Requires pharmaceutical producers to register with the Director of the Prescription Drug Take Back Program, participants in the Collection Plan, and pay a Registration Fee. Expands an existing collection program administered by the Cook County Sheriff to provide safe, secure take back sites in underserved areas of Cook County. Requires the Director and the Pharmaceutical Disposal Advisory Committee to submit a report to the Board on behalf of participating Producers describing their plan's activities during the previous reporting period. If the person or persons fail to come into compliance or correct all violations, the Director may impose administrative fines for violations up to $500.

Construction & Demolition

Legislation Summary	**Year**	**Description and Mechanisms**
Demolition Debris Diversion Ordinance Establishes a program for recycling and salvaging of construction and demolition waste consistent with the Cook County Solid Waste Plan **Link**:http://blog.cookcountyil.gov/sustainability/wp-content/uploads/2012/07/Substitute-Demolition-Debris-Diversion-Ordinance-July-23.pdf	2012	This ordinance is intended to introduce reuse and recycling requirements that will help achieve Cook County's goals to: • Reduce amount of C&D material generated. • Prevent improper disposal or dumping of C&D within Cook County (by tracking materials diverted from the waste-stream). • Recover material value through reuse/recycling from materials that would have been otherwise discarded. • Reduce environmental impacts of new material production Any residential structure (defined as a structure that contains one or more dwelling units) is subject to a

		minimum 5% by weight reuse materials requirement and a minimum total 70% by weight recycling requirement with reuse encouraged whenever possible Any non-residential building is subject to a 70% by weight recycling requirement with reuse encouraged whenever possible. Garages, sheds, projects that are not demolishing any load-bearing walls are exempt. A waste management plan must be submitted with permit application before work begins, an actual materials tracking form must be submitted when work completes to close out permit. Any person, firm, or corporation or agents, employees or contractors of such who fail to comply with the ordinance shall be subject to fines up to $10,000

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Municipal Solid Waste		
Legislation Summary	**Year**	**Description and Mechanisms**
Amendment to the Environmental Protection Act-EPA - Compost Drop Off House Bill 0437 (PA 099-0011) Amends the Environmental Protection Act to include compost drop-off **Link**:http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=099-0011	2015	Provides that the Environmental Protection Agency may approve the operation of one-day household composting collection events. Establishes requirements for the compost collection events. Provides that municipality map approve the operation of permanent compostable waste collection points with in jurisdiction. Establishes requirements for the permanent drop-off sites.

Amendment to Environmental Protection Act- EPA- Landscape Compost Facilities House Bill 2335 (PA 98-0239) **Link:**http://www.ilga.gov/legislation/BillStatus.asp?DocNum=2335&GAID=12&DocTypeID=HB&SessionID=85&GA=98	2013	Bill amends the Environmental Protection Act to specify that the one-eighth mile setback that certain composting facilities must comply with to be excluded from the definition of the term "pollution control facility" applies only in municipalities with more than 1,000,000 inhabitants. Provides that a solid-waste permit is not required for a landscape waste composting facility under certain conditions.
Amendment to Environmental Protection Act- EPA- Pollution Control Facilities Exemption Senate Bill 0850 (PA 98-0146) Amends Definition and Exemptions for Pollution control facilities **Link:**http://www.ilga.gov/legislation/BillStatus.asp?DocTypeID=SB&DocNum=850&GAID=12&SessionID=85&LegID=70397	2014	For a limited time, it exempts from the definition of the term "pollution control facility" (and associated local siting approval requirements) the portion of a site or facility • that is used exclusively for the transfer of commingled landscape waste and food scrap held at the site or facility for no longer than 24 hours, • that is located in a home rule unit of a particular size, • that is permitted by the Environmental Protection Agency, prior to January 1, 2002, for the transfer of landscape waste, and • for which a permit application is submitted to the Agency within 6 months after the effective date of the amendatory Act to modify an existing permit for the transfer of landscape waste to also include, on a demonstration basis not to exceed 18 months, the transfer of commingled waste and food scrap.
Amendment to the Environmental Protection Act-EPA - Composting Facilities Senate Bill 0099 (PA 096-0418) Updates definitions of terms related to composting	2009	Amends the Environmental Protection Act to redefine the term “compost” to mean compostable material that has, by composting, decomposed to the degree that it will not, when subjected to optimal thermal conditions and optimal levels of oxygen, moisture, and nutrients, reheat significantly due to the action of microorganisms, and that is also suitable (i) for use as a soil conditioner, (ii) for use as a cover material for a

Link:http://www.ilga.gov/legislation/BillStatus.asp?DocNum=99&GAID=10&DocTypeID=SB&SessionID=76&GA=96		municipal solid waste landfill, or (iii) for another use approved by the Agency. Amendment redefines the term “composting” to mean the decomposition of compostable material into compost by a biological process that produces carbon dioxide and water as primary by-products. Exempts food scrap from the definition of the term "garbage." Exempts certain types of facilities, sites, portions of facilities, and portions of sites from regulation as pollution control facilities.
Amendment to The Environmental Protection Act- EPA- Landfill Permitting and Expansion. House Bill 3881 Prohibits expansion, establishment, or permitting of new landfills in counties with population greater than 2 million inhabitants. **Link**:http://ilga.gov/legislation/fulltext.asp?DocName=09700HB3881sam001&GA=97&LegID=62560&SessionId=84&SpecSess=0&DocTypeId=HB&DocNum=3881&GAID=11&Session=	2012	Bans the expansion and establishment of landfilled in counties with more than 2,000,000 inhabitants. No person or agency shall permit for the establishment of a new municipal solid waste landfill or a new sanitary landfill in a county of more than 2,000,000 inhabitants on or after July 23, 2012 No person nor agency shall permit for the lateral expansion of a municipal solid waste landfill or a sanitary landfill in a county of more than 2,000,000 residents July 23, 2012

Hazardous Waste

Legislation Summary	Year	Description and Mechanisms
Consumer Electronics Recycling Act Senate Bill 1417 (PA 100-0433) Amends the Electronics Products Recycling and Reuse Act to change goal standards for manufacturers	2017	Provides that a retailer may collect a fee for each covered electronic device or eligible electronic device collected. Provides that municipalities, townships, and other units of local government that are acting as collectors may

from weight based to convenience based update fee allowances **Link**:http://www.ilga.gov/legislation/publicacts/100/100-0433.htm		collect a fee for each covered electronic device or eligible electronic device collected. Provides that a retailer shall be considered to have complied with specified provisions prohibiting the sale of computers, computer monitors, printers, or televisions if certain conditions are met. Provides that for program year 2019 and each program year thereafter, each manufacturer shall, individually or as a manufacturer clearinghouse, provide a manufacturer e-waste program to transport and subsequently recycle, in accordance with the requirements of the Act, residential covered electronic devices collected at, and prepared for transport from, the program collection sites and one-day collection events included in the program during the program year. Provides that each manufacturer e-waste program individually or collectively for a program year shall be based on a convenience standard based on the population density per square mile for counties in Illinois that requires a certain number of collection sites to be established in counties that have opted into the manufacturer e-waste program . Deletes provisions providing that individual consumers shall not be charged fees when bringing covered electronic devices or eligible electronic devices to collection sites. Provides that the Electronic Products Recycling and Reuse Act is repealed on January 1, 2020.
Amendment to the Illinois Municipal Code - Illinois Solid Waste Hauling and Recycling Program Act House Bill 5666 (PA 98-1079)	2014	Provides that recyclable materials collected by a hauler within a county shall not be deposited into a landfill or incinerator unless all reasonable efforts have been made by the hauler to sell those recyclable materials to a processor or end user.

Provides that any person who collects or hauls waste shall collect and recycle recyclable materials from any commercial or institutional property **Link**:http://www.ilga.gov/legislation/BillStatus.asp?DocNum=5666&GAID=12&DocTypeID=HB&SessionID=85&GA=98		Provides that counties and municipalities may require haulers operating within their boundaries to obtain license decals. Requires recycling centers or recycling center operators to report to the Illinois Environmental Protection Agency. Provides that the new requirements apply only to contracts for collecting or hauling of garbage, municipal waste, recyclable material, landscape waste, brush, or other refuse entered into, renewed, or extended on or after the effective date of the Act. Provides that a home rule unit may not regulate haulers in a manner less restrictive than the regulation of haulers under the Act.
Illinois Electronic Products Recycling and Reuse Act 415 ILCS 150 (PA 95-959) Establishes requirements for manufacturers selling electronic products in the state to register, meet annual recycling goals, and provide funding for collection costs. **Link**:http://www.ilga.gov/legislation/ilcs/ilcs3.asp?ActID=2998&ChapterID=36	2012	The Illinois Electronic Product Recycling and Reuse Act is amended by the Consumer Electronic Recycling act, and will be repelled on January 1st of 2020 The purpose of the Act is to set forth procedures by which the recycling and processing for reuse of covered electronic devices will be accomplished in Illinois. For program year 2013 and program year 2014 and for each category of electronic devices, each manufacturer shall recycle or reuse at least 50% of the total weight of the electronic devices that the manufacturer sold in that category in Illinois during the calendar year 2 years before the applicable program year. To determine the manufacturer's annual recycling or reuse goal, the manufacturer shall use its own Illinois sales data or its own national sales data proportioned to Illinois' share of the US population. For program year 2015, the total annual recycling goal for all manufacturers shall be as follows: • 30,800,000 pounds for manufacturers of televisions and computer monitors and

		• 15,800,000 pounds for manufacturers of all other covered electronic devices. For program years 2016 through 2018, the total annual recycling goal for all manufacturers shall be as follows: • 34,000,000 pounds for manufacturers of televisions and computer monitors and • 15,600,000 pounds for manufacturers of all other covered electronic devices. Any person who violates any provision of this Act or fails to perform any duty under this Act is liable for a civil penalty of $7,000 for the violation and an additional civil penalty not to exceed $1,000 for each day the violation continues. A manufacturer that is not registered with the Agency as required under this Act, or that has not paid the registration fee as required under this Act, is liable for a civil penalty not to exceed $10,000 for the violation and an additional civil penalty not to exceed $10,000 for each day the violation continues.
Construction & Demolition		
Legislation Summary	**Year**	**Description and Mechanisms**
Amendment to the Illinois Municipal Code - Muni-Construct & Demo Debris Senate Bill 1807 (PA 100-0316) The bill exempts construction and demolition debris from waste franchises in the state. **Link**:http://www.ilga.gov/legislation/publicacts/fulltext.asp?Name=100-0316	2017	Provides that a municipality with a population under 1,000,000 shall not enter into any new contracts, but may extend a contract or renew a contract, with any other unit of local government, by intergovernmental agreement or otherwise, or with any business or person relating to the collecting and final disposition of general construction or demolition debris. Amends the Illinois Municipal Code.

Reclaimed Asphalt Shingle (RAS) Sources Policy Memorandum Policy Memorandum 28-10.3 Establishes a procedure whereby the Reclaimed Asphalt Shingle (RAS) production will be conducted in accordance with applicable environmental laws and regulations **Link**:http://www.idot.illinois.gov/Assets/uploads/files/Doing-Business/Memorandums-%26-Letters/Highways/Materials/Hot-Mix-Asphalt/28-10.3reclaimedasphaltshinglesources.pdf	2012	A source (defined as a Recycler / Processer who processes shingles for use in Hot Mix Asphalt (HMA) and is authorized by the Illinois EPA and approved by the Department) shall submit annually for District approval: • A Quality Control plan • The RAS Source Certification form • A copy of current BUD approval or Illinois EPA permit All incoming loads of post-consumer shingles shall be quarantined until all asbestos testing is complete and found to be asbestos-free Operational regulations of Source facilities will be maintained. Department may revoke Source approval for violations

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