STATE OF ILLINOIS
FINAL REPORT

Task Force on the Advancement of Materials Recycling

REPORTING TO
GOVERNOR PAT QUINN AND
ILLINOIS' 98TH GENERAL ASSEMBLY

January 1, 2015

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Section I. Executive Summary, Primary Recommendations, and Acknowledgements

Executive Summary

Public Act 97-853 (HB 4986 - May) created the "Task Force on the Advancement of Materials Recycling" (Task Force) and was signed into law by Governor Quinn on July 26, 2012, and took effect January 1, 2013.

The Task Force was created to review the status of recycling and solid waste management planning in Illinois. The goal of the Task Force was to investigate and provide recommendations for expanding waste reduction, recycling, reuse, and composting in Illinois in a manner that protects the environment, as well as public health and safety, and promotes economic development.

The scope of the key issues reviewed by the Task Force included, but was not limited to, the following topics:

1) county recycling and waste management planning;
2) current and potential policies and initiatives in Illinois for waste reduction, recycling, composting, and reuse;
3) funding for State and local oversight and regulation of solid waste activities;
4) funding for State and local support of projects that advance solid waste reduction, recycling, reuse, and composting efforts; and the proper management of household hazardous waste;
5) Evaluate the extent to which materials with economic value are lost to landfilling and recommend ways to maximize the productive use of waste materials through efforts such as materials recycling and composting.

The Task Force consisted of twenty one members, representing a broad spectrum of individuals with public policy interests regarding this specific subject matter. It should be noted that during the initial Task Force meetings members were surveyed concerning what topics were most pertinent to them and the industry sectors they represented. And, while this report references the banning of electronic product for historical context, the Task Force agreed to not include electronic product recycling issues and matters relating to the Illinois Electronic Products Recycling and Reuse Act (IEPRR) in their discussions. The IEPRR Act requires the Illinois Environmental Protection Agency (IEPA or EPA) to solicit written comments, hold a public hearing, and produce a stand-alone report to the Illinois Governor and General Assembly on the sufficiency and fairness of the legislation. That report is due by February 1, 2016.

The following individuals were appointed and served on the Task Force:

Appointment Authority	Individual
Director of IL DCEO or Representative to Co-Chair & Facilitate TF	David E. Smith, IL Department of Commerce and Economic Opportunity
Director of IL EPA or Representative to Co-Chair & Facilitate TF	David Walters, Illinois Environmental Protection Agency
Legislator appointed by President of the Senate (Cullerton)	Senator Daniel Biss
Legislator appointed by Minority Leader of the Senate (Radogno)	Senator Sue Rezin
Legislator appointed by Speaker of the House (Madigan)	Representative Ann Williams
Legislator appointed by Minority Leader of the House (Cross)	Representative Mike Tryon
Director of IL DCEO to represent Local Gov't	Chad Braatz, IL County Solid Waste Management Association
Director of IL DCEO to represent Local Gov't	Marta Keane, Will County
Director of IL EPA to represent Local Solid Waste Agency	Walter Willis, Solid Waste Agency of Lake County
Director of IL EPA to represent Local Solid Waste Agency	David Van Vooren, Solid Waste Agency of Northern Cook County
Director of IL EPA to represent Solid Waste Management Industry	Lisa Disbrow, Waste Management of Illinois, Inc.
Director of IL EPA to represent Solid Waste Management Industry	Dan Gorske then Rick Bulthuis- Republic Services
Director of IL DCEO to represent non-profit recycler	Jeff Stauter, Kreider Services
Director of IL DCEO to represent recycling collection and processor	Greg Maxwell, Resource Management
Director of IL DCEO to represent C&D recycler	Ken Hoving, K Hoving Recycling & Disposal; Construction Materials Recycling Assn.
Director of IL DCEO to represent composting	Dr. Paul Walker, Illinois State University
Director of IL DCEO to represent general recycling interests	Rod Fletcher, Fletcher Consultants
Director of IL EPA to represent environmental interest groups	Jen Walling, Illinois Environmental Council
Director of IL DCEO to represent environmental interest groups	Nick Magrisso, Natural Resource Defense Council, Chicago Office
Director of IL EPA to represent manufacturing trade association	Mark Denzler then Jerry Peck, Illinois Manufacturers Association
Director of IL EPA to represent a statewide business association	Rob Karr then Alec Laird, Illinois Retail Merchants Association

The Task Force met in formal session 18 times, with most of these meetings taking place at Heartland Community College in Normal, Illinois. The initial meeting of the task force was held on June 18, 2013. The final meeting of the Task Force that took place at Heartland Community College was held on December 17, 2014. All meetings were co-chaired by David Walters, Illinois EPA, and David E. Smith, DCEO. Each Task Force meeting followed a printed agenda that was designed to accomplish tasks and activities on the date of that meeting. During the meetings, the members made verbal presentations and distributed research documents and policy papers that were required to investigate the numerous subjects and to accomplish the various tasks. The Task Force discussions were robust with a wide variety of opinions being presented. Task Force members discussed subject matters in great detail. As noted earlier, the Task Force also, on occasion, received information from guest presenters.

As a final work product, the Task Force prepared this report to summarize its activities and accomplishments and confirmed the recommendations resulting from its study. On behalf of the Task Force, DCEO is submitting the report of the Task Force's findings and recommendations to the Governor and the General Assembly by January 1, 2015. It is notable that the legislation calls for the Task Force to be dissolved upon issuing the report. The section of the law creating the Task Force is also repealed upon submittal of the report.

Primary Recommendations of the Task Force on the Advancement of Materials Recycling

Over the life of the task force several formal recommendations were presented for consideration. Copies of these formal recommendations are included as attachments B and C.

The recommendations are summarized below and discussed in greater detail in various sections of the full report:

Approved Recommendations

1) Revision of the Illinois Solid Waste Management Hierarchy
2) Require more purchasing by the state of environmentally preferable products and supplies
3) Product Stewardship Labeling
4) Amend state law to establish a more convenient statewide Household Hazardous Waste collection system
5) Amend state law to authorize the development of a statewide Illinois Resource Master Plan
6) Require more purchasing by the state of products and material generated by Construction and Demolition debris recyclers.
7) Temporary drop-off sites for Organics, anaerobic digestion define permitting and tiered compost regulations

Unapproved Recommendation

1) Specific Funding Recommendation for Household Hazardous Waste (HHW) Convenient Statewide Collection System

Acknowledgements

DCEO and IEPA commend the Task Force members for the significant time and effort that they devoted to this effort on behalf of the State of Illinois. The members examined in great detail many complicated subject areas and complex issues. These members were exemplary in representing various constituent groups, and/or industrial sectors. The final work product of the Task Force will offer great value for practitioners in years to come.

The Task Force is grateful to Heartland Community College in Normal, Illinois for hosting the vast majority of our meetings. Special thanks to Larissa Armstrong originally with the Illinois Green Economy Network and then as Associate Director of the Green Institute at Heartland Community College. Larissa served as the Task Force liaison to Heartland Community College and was a valuable asset by coordinating room assignments, posting meeting agendas and providing for all necessary information technology needs.

The Task Force also thanks the following guest presenters:

- Carol Pinkerton, Illinois Department of Central Management Services
- Bill Turley, Construction Demolition Recycling Association
- Shantanu Pai and John Mulrow, Illinois Sustainable Technology Center
- Susan Monte, Champaign County Regional Planning Commission
- Jen Nelson, Seven Generations Ahead on behalf of the Illinois Food Scrap Coalition

Section II. Current Illinois Recycling and Waste Management Laws

Illinois does not have an omnibus law that deals with solid waste management issues; many separate pieces of legislation focus on waste reduction and recycling and solid waste management. The three major laws that impact and guide the programs and functions of the State in this area are the *Illinois Solid Waste Management Act*, the *Illinois Solid Waste Planning and Recycling Act*, and the *Illinois Environmental Protection Act*. Recent newer laws include the Electronics Waste Products Recycling Act and the Solid Waste Hauling and Recycling Program Act.

Full text of all of these laws can be found online at the Illinois General Assembly website at: http://www.ilga.gov/legislation/ilcs/ilcs.asp. For those reading an electronic version of this report, the specific Illinois Compiled Statutes (ILCS) referenced is hyperlinked below.

Solid Waste Management Act (415 ILCS 20/1 et seq.)

This law establishes the following waste management hierarchy, in descending order of preference, as State policy:

1) volume reduction at the source;
2) recycling and reuse;
3) combustion with energy recovery;
4) combustion for volume reduction;
5) disposal in landfill facilities.

The Solid Waste Management Act (SWMAct) assigns the Illinois Department of Commerce and Economic Opportunity (DCEO) the responsibility of being the lead agency in implementing waste reduction and recycling programs in the State. This law gives DCEO the authority to provide grants and loans to governmental entities, not-for-profit organizations and for-profit businesses.

The SWMAct requires, under certain circumstances, the State of Illinois to procure products that are made from recycled commodities. For example, the law stipulates that at least 50 percent of the total dollar value of paper and paper products purchased by the Department of Central Management Services (CMS) shall be recycled paper and paper products. This law also mandates that the recycled products purchased by Illinois contain increasing percentages of post-consumer commodities.

The SWMAct also requires all state-supported colleges and universities to develop and implement comprehensive waste reduction plans. These plans must contain recycling and waste reduction provisions designed to achieve at least a 40 percent reduction in the amount of solid waste that is generated by the institution. These plans must be updated every 5 years and DCEO is tasked with reviewing and approving them in coordination with the State Board of Higher Education and the Illinois Community Colleges Board.

In addition, the SWMAct requires the Illinois EPA (IEPA) to complete an annual projection of disposal capacity report for sanitary landfills that are subject to the Solid Waste Management fees in Section 22.15 of the Illinois Environmental Protection Act. The reports are to present data on a regional basis and shall include an assessment of the life expectancy of each site.

Solid Waste Planning and Recycling Act (415 ILCS 15/1 et seq.)

Under the Solid Waste Planning and Recycling Act (SWP&RAct), all Illinois counties, as well as the City of Chicago, were required to develop comprehensive solid waste management plans by March 1, 1995. The Illinois EPA was tasked with reviewing and commenting on each county waste management plan to ensure consistency with the requirements of this Act. Each county waste management plan is required to be updated and reviewed every 5 years, and any necessary or appropriate revision shall be submitted to the Illinois EPA for review and comment.

Each plan must include provisions for the implementation of a recycling program designed to recycle 25 percent of the municipal waste generated in their jurisdiction. This law encourages counties to undertake solid waste management planning on a multi-county, regional basis through inter-governmental cooperation agreements.

The SWP&RAct also contains a provision that requires single use plastic containers to be coded by resin type. (This coding helps recyclers more easily identify and segregate recyclable plastic containers.)

Illinois Environmental Protection Act (415 ILCS 5/1 et. seq.)

The EPAct contains Illinois' environmental regulations to control and regulate the movement and disposal of waste. Among other things, the EPAct regulates the disposal of used tires and refuse. In addition, this legislation establishes requirements for the issuance of permits for pollution control facilities such as landfills, transfer stations and some compost sites. (Recycling centers and "clean" material recovery facilities (MRFs) do not require permits.) The EPAct also establishes fees on Illinois' landfills to support DCEO's and IEPA's solid waste management related programs.

The EPAct authorizes the Illinois EPA to utilize funds from the Solid Waste Management Act to provide funding to delegated units of local government for the performance of inspecting, investigating, and enforcement activities at local nonhazardous solid waste disposal sites. It also authorizes the IEPA to conduct Household Hazardous Waste (HHW) collection and disposal programs.

The law also requires the State and authorizes some local governments to impose a surcharge on tipping fees at Illinois' landfills. The revenue generated from the state surcharge is deposited into the Solid Waste Management Fund (Illinois Comptroller Special Fund 078), and becomes a source of funding for both IEPA and DCEO. The portion allocated to DCEO is the only source of funding for DCEO's waste reduction and recycling activities. Under the law, the state tipping fee surcharge is $0.95 cents per cubic yard and/or $2.00 per ton. Local governments that host landfills also are authorized to impose up to an additional $0.60 cents per cubic yard and/or $1.27 a ton local surcharge. An additional Subtitle D fee of

$0.10 per cubic yard and/or $0.22 per ton is also imposed, thus the total state tipping fee is often referenced as being $2.22 a ton.

The EPAct also imposes a fee of $2.50 on each tire sold at retail in Illinois. Revenue generated is deposited into the Used Tire Management Fund (Illinois Comptroller Special Fund 0294). A portion of this money is dedicated for use by the Illinois Environmental Protection Agency. In addition, fifty cents of each fee is dedicated to the Illinois Emergency Public Health Fund. The law also requires persons selling tires at retail in Illinois to accept for recycling used tires from customers, in a quantity equal to the number of new tires purchased. DCEO once received a portion of this fee for used tire market development activities, but the law was changed over a decade ago to dictate that DCEO's share of the fund be deposited into the state's General Revenue Fund. In June 2014 the law was again amended to authorize the IEPA to develop a market development program for tires.

COMPOST Laws and Regulations

Landscape waste was banned from landfills in Illinois in 1990 and many landscape waste composting facilities were created because of this effort. Permit requirements for commercial food scrap composting were lowered in 2009, making this type of business more feasible in Illinois. Permit requirements were also adjusted for urban farms and compost piles less than 25 cubic yards in 2013. These facilities need only register with the Illinois EPA and follow local laws. In 2014 the Illinois EPA also developed a pilot program to allow for the one day collection of organics (e.g., pumpkins) through a registration process versus permitting.

The EPAct also contains provisions that prohibit a variety of items from being disposed of in Illinois' landfills.

The following items are banned from Illinois' landfills:

Landscape Waste: Public Act 85-1430 banned landscape waste (grass, leaves and brush) from being landfilled effective July 1, 1990.

Lead-Acid Batteries (Car Batteries): Public Act 86-723 banned the landfilling of lead-acid batteries effective September 1, 1990.

Waste Tires: Public Act 86-452 (1989) banned whole used or waste tires from sanitary landfills effective July 1, 1994. (Pubic Act 93-839 eliminated DCEO's share of the Used Tire Management.)

White Goods: Public Act 87-858 banned white goods (large appliances) from being landfilled effective July 1, 1994, unless the "white good components have been removed." White goods include "all discarded refrigerators, ranges, water heaters, freezers, air conditioners, humidifiers and other similar domestic and commercial large appliance." White good components include: "any chlorofluorocarbons refrigerant gas; any electrical switch containing mercury; and any device that contains or may contain PCBs in a closed system, such as a dielectric fluid for a capacitor, ballast or other component." Additionally,

landfills cannot accept "clean" white goods for disposal unless they participate in the Industrial Materials Exchange Service by communicating the availability of white goods.

Used Oil: Public Act 87-1213 prohibits, beginning July 1, 1996, persons from knowingly mixing liquid used oil with any municipal waste that is intended for collection and disposal at a landfill. The law further stipulates that no owner or operator of a sanitary landfill shall accept liquid used oil for final disposal beginning July 1, 1996. For the purpose of this act "liquid used oil" does not include used oil filters, rags, absorbent material used to collect spilled oil, or empty containers which previously contained virgin oil, re-refined oil or used oil.

Electronic Products: While not covered by the EPAct, many electronic products were banned from landfilling effective January 1, 2012, under the Electronic Products Recycling and Reuse Act.

Electronic Products Recycling and Reuse Act (415 ILCS 150/1 et seq.)
This more recent law, signed and effective September 17, 2008 as amended in 2011 and 2014, advances a producer responsibility model for dealing with end-of-life electronics generated in Illinois. Among other things, this legislation bans covered electronic devices from being landfilled in Illinois starting ***January 1, 2012***. Covered electronic devices include computers, monitors, televisions and printers.

Mercury Thermostat Collection Act (415 ILCS 98/1 et. seq.)
This law requires manufacturers to collect and properly dispose of thermostats containing mercury.

Solid Waste Hauling and Recycling Program Act (415 ILCS 12/1 et. seq.)
This law, enacted in 2014, requires each waste hauler to offer commercial recycling services to businesses, commercial property owners and institutional facilities located in Cook (excluding the City of Chicago), Lake, DuPage, Kane, Will and McHenry counties. Haulers shall provide information on how and what materials to recycle at least once every other year to customers with recycling service. Haulers shall provide a written offer to provide recycling services to commercial businesses, owners or operators of commercial property, and institutional facilities that are not recycling. Those offers shall be made at least once during the term of the contract or at least once every 2 years, whichever is shorter. The hauler's written offer shall include a request that the commercial business, owner or operator of the commercial business, or institutional facility respond to the hauler's request to provide recycling services in writing. Recyclable materials collected by a hauler within a county or municipality 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. While not impacting prior contacts, the law establishes that before a municipality decides to award an exclusive or franchise contract for commercial collection they must demonstrate, with information provided by the haulers, that less than 50 percent of the commercial businesses do not have recycling services for a defined period.

Section III. Background and Discussion

This background contains four sections: 1) Material Consumption in the United States, 2) An Overview of Sustainable Materials Management, 3) A Review of Historical Waste Management in Illinois, and 4) Benefits of Recycling and Composting in Illinois.

It is important to distinguish between discarded materials and waste. Discarded materials represent the overall umbrella of materials/products no longer of value to the generator of such items. This represents materials that can be and are recycled and/or composted and waste materials. Many people incorrectly believe that that all materials discarded are waste, and thus we are recycling or composting waste. This is simply not true as the recycling and composting industries are recovering materials that have economic value and are subsequently sold as commodities. Waste materials cannot be recovered and are of no further environmental, economic, or social benefit.

1. Material Consumption in the United States

In the world today, the quantity of discarded materials generated, is a function of societal demand for products and population. World population is estimated to increase, from 7 billion today to an estimated 9 billion in 2050 and this will drive increased product consumption. Our global society is consuming enormous amounts of raw materials at a rapid pace. There is a direct correlation between population and raw materials use. As world population increases the demand for raw materials will also likely increase. For example, U.S. raw material use rose 2.8 times more than the population from 1910 to 2010. [*Matos, G. (2009) Use of Raw Materials in the U.S. from 1900-2006. USGS.*]

Municipal solid waste (MSW) is generated from residential, commercial, and institutional sources. While MSW has seen dramatic increases up to the year 2000, since then is has leveled off with about 250 million tons per year being generated or about 4.5 pounds per person per day. In addition to MSW, other wastes are also generated, such as those generated from mining, manufacturing, industrial processes, agriculture, etc.

The World Resources Institute (WRI) states "Just as materials flow from the environment and are consumed by the U.S. economy, they flow back (exit) into the environment as they are used. These "outputs", excluding wastes, have been classified into three groupings: [*World Resource Institute (2008) Material Flows in the United States.*]

A. Materials that exit (back into the environment) within 2 years after entry (e.g., food, petroleum used as fuel and its' emissions, product packaging, etc.);
B. Durable goods that are consumed (then exit back into the environment) within more than 2 but less than 30 years (e.g., automobiles, computers, refrigerators, etc.); and
C. Materials that remain in use for more than 30 years are called "additions to stock" and typically constitute infrastructure (e.g., steel in buildings, aggregate in concrete, etc.)."

During 2000, the WRI reports some 44% of the materials consumed in the economy were added to the long-term domestic stock, 2% were durable goods, 39% were used within 2

years or less and 15% was recycled." This data helps to explain the magnitude of material consumption and the duration of use for these materials.

To meet consumption needs, we must continually extract new resources to replace those that are landfilled or incinerated. It is estimated that for every ton of discarded products not recovered, 71 tons of exploration, mining, fossil fuel consumption, manufacturing, agricultural, emissions and other discards are produced. *[B.Platt, N.Seldman. (2000) Wasting and Recycling in the U.S. Based on data reported in the Office of Technology/Assessment, Circular (OTA-BP-O-82).]*

Figure 1 represents the ever increasing U.S. demand for materials. The majority of materials now consumed in the U.S. are nonrenewable, including metals, minerals, and fossil-fuel derived products.

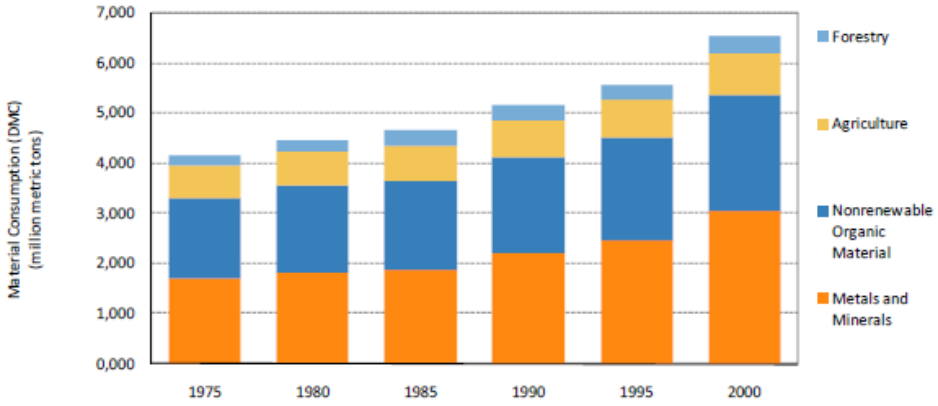


Figure 1: Materials Consumption in the United States by Sector of Origin, 1975–2000
Source: WRI Material Flows Database 2005

There are hundreds of minerals that the Earth provides. What are the known reserves? The World Reserve Indices is an index that takes into account the quantity of known reserves that can be extracted economically at today's prices - using today's technology, and is divided by the current annual consumption of a particular mineral. A listing of common metals is shown as Figure 2.

Metal	Reserves (years)
Zinc	19
Lead	20
Copper	35
Manganese	43
Nickel	51
Uranium	65
Titanium	79
Iron ore	178
Aluminum	219

Figure 2. World Reserves of Selected Materials
Source: Richards, J. (2009). Mining, Society, and a Sustainable World

This chart indicates that within a generation, there could be shortages of some materials. And by the end of this century, many more materials will likely be exhausted. While other "other unknown" reserves or new extraction technology may emerge, global material demand will likely continue to increase as world population increases, such that current and future patterns of material consumption and their impacts upon the environment and the economy cannot be ignored. The implication is that both public and private sectors must look beyond past practices and policies that contribute to the wasting of valuable resources and implement plans and programs that will secure short and long term environmental, economic, and social stability well-being.

Therefore, it is of strategic importance that an approach serving human needs by using/reusing resources most productively and sustainably throughout their life cycles, minimizing the amount of materials involved and associated environmental impacts, and to foster greater economic and social benefits be pursued. This is the sustainable materials management approach.

2. <u>An Overview of Sustainable Materials Management</u>

In 2009, USEPA published "Sustainable Materials Management: The Road Ahead". In this publication a graphic flow chart is presented that depicts the life cycle of any given resource. This provides an understanding of how resources flow through the environment and economy.

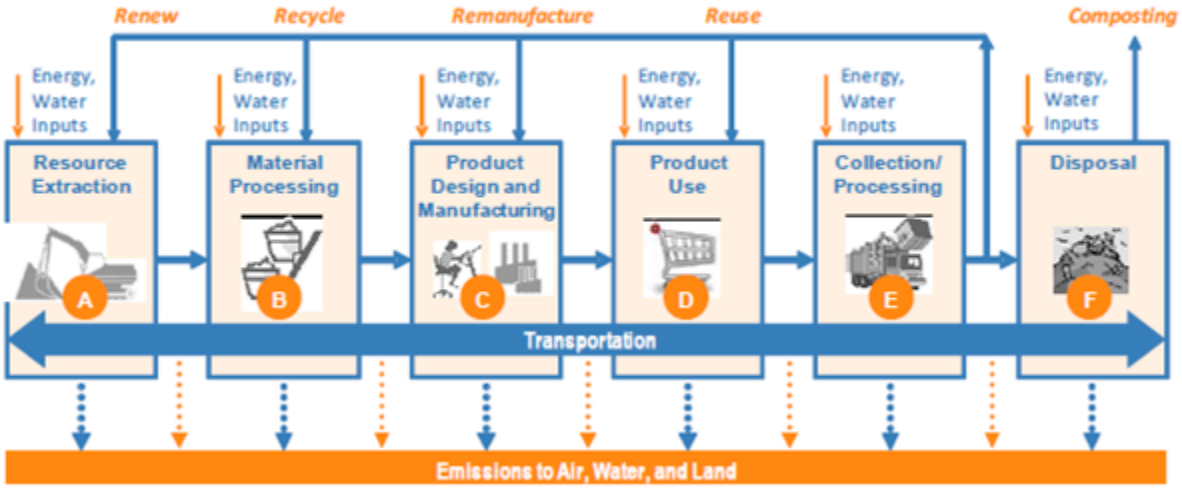


Figure 3. Materials Life Cycle

The chart begins with the extraction of resources – including renewable, non-renewable and energy sources (Box A). After being extracted, most resources undergo some form of material processing and enter product or service supply chains or are used for energy to facilitate processing resources into production-ready form (Box B). Box C represents the design and manufacturing of products for consumption. Some raw materials and all products are then used by business or individual consumers, who ultimately become generators of the unused materials themselves and/or the packaging of those products and reach an end-of-life. Box E represents the collection of discarded materials, whether such materials are bound for recycling, composting, some other beneficial use, or are waste

materials. Finally, materials are ultimately disposed of – primarily landfilled and to a lesser extent incinerated.

Every step in the material flow requires energy and water inputs, while also generating wastes, which impact the air, water and land resources. Energy is also required to provide transportation throughout the life cycle with resulting emissions.

This chart also depicts reuse, recycling and composting material management strategies and where they interact with the material life cycle flow by supplying both pre and post-consumer recovered materials to reduce raw material extraction and providing inputs for product remanufacturing.

USEPA also provided a listing of strategies to encourage sustainable material management approaches:

Key	*Approaches to Reduce Environmental Impacts at Individual Stages*
A-C	*Material substitution, replacing toxic or hazardous materials with benign materials*
A-C	*Cleaner technologies, reducing the toxic or hazardous properties of waste streams*
A-C	*Redesign industrial processes to reduce toxic pollution and waste*
A-F	*Reduction of GHG emissions associated with fossil fuel combustion and disposal*
A-D	*Material regulation, restricting the use of specified materials*
D-E	*Recovery and beneficial recycling of post-industrial or post-consumer [discards]*
F	*Waste modification through chemical or biological treatment*
F	*Waste containment or isolation to prevent human and ecological exposure*
F	*In-suti waste treatment*

Key	*Approaches to Reduce System-wide Material Use*
A	*Extract less raw materials, extract only what is needed [use of recovered materials]*
A	*Prioritize the use of renewable materials and those that can be used in closed loop system*
A-F	*Increase in material efficiency in the supply chain (zero waste, industrial ecology)*
A-F	*Industrial and product re-design to reduce mass, material use, packaging, life cycle energy requirement, and toxicity*
A-F	*Reduction of transport in the supply chain, thus reducing fuel and vehicle use*
D-F	*Consume products that are less material intensive, made with recyclable materials, and are more durable*
C-D	*Substitution of electronic services for material intensive services*
C-D	*Substitution of services for products*
F	*Only biodegradable materials are disposed and returned to earth*
A-F	*Consider the function of the product and whether it can be provided in a different manner*

All of the approaches listed could be encouraged using a variety of "tools", such as policy, economic incentives, regulation, education, public/private sector collaboration, etc.

According to the State/USEPA 2020 Vision Workgroup, materials management differs from current waste management approaches in several ways:

A. Materials management seeks the most productive use of resources, while waste management seeks to minimize and/or manage waste or pollutants.

B. Materials management focuses broadly on impacts and policies relating to all the life cycle stages of a material or product – including such upstream considerations as using less material, using less environmentally intensive materials, or making products more durable, as well as downstream solutions such as reuse and recycling. Waste management usually focuses only on what to do with wastes once they are generated.

C. Materials management is concerned with inputs and outputs from/to the environment, including use of materials, energy and water, plus multiple environmental impacts; it is not geographically restrained. Waste management is concerned mainly with outputs to the environment (air, water, land) and usually only those from waste and only where the waste is managed.

D. The goal of materials management is overall long-term system sustainability, while the goal of waste management is often focused on managing a single set of environmental impacts.

E. Materials management counts as responsible parties all those who are involved in the life cycle of a materials or product, including industry and consumers. In contrast, waste management usually counts as responsible parties those who generate waste.

The municipal (residential and commercial) solid waste stream is rich with products and commodities that can be intercepted through comprehensive recovery programs and reintroduced into the material life cycle process thus reducing upstream environmental impacts and costs and provide a viable economical feedstock for manufacturing of new products. However to assist the residents of the State to facilitate the capture and reuse it is imperative that we have a standardized labeling methodology that informs users as to the ability to recycle products.

Materials management casts a far broader net than waste management has traditionally done. It seeks to address and reduce the life cycle environmental impacts from the making and consumption of materials and products and applies a systems-wide perspective in doing so.

3. <u>Historical Waste Management in Illinois</u>

In the early 1980's there were hundreds of small dumps and municipal landfills throughout the state and few recycling opportunities – over 90% of all discarded materials were landfilled. Landfill capacity was a concern and siting new landfills met with great resistance…NOT IN MY BACK YARD… was the call from residents. Illinois had no coordinated state level approach to manage solid wastes.

That all changed in 1986 with the adoption of the Solid Waste Management Act (SWMAct). This was the first significant legislative effort to set forth a new path to manage discarded

materials and demonstrated the leadership role of the State. As Governor Jim Thompson stated when he signed this legislation on September 4, 1986:

> *"We are challenged…to develop new technologies for waste management. We are challenged to blend the resources of government and business with the power of university research in Illinois to encourage the development of an emerging recycling industry. It is our responsibility to meet that challenge, not to ignore it. We do not look past problems in Illinois. We confront them and find a solution to them. This legislation is a major part of that solution."*

The stated purpose of the SWMAct is "to reduce reliance on land disposal of solid waste, to encourage and promote alternative means of managing solid waste, and to assist local governments with solid waste planning and management."

In addition, several public policy tenets are cited in the SWMAct. Among them:

A. That more effective and efficient management of solid waste is needed in a manner that promotes economic development, protects the environment and public health and safety, and allows the most practical and beneficial use of the material and energy values of solid waste.

B. That the purchase of products or supplies made from recycled materials by public agencies in the State will divert significant quantities of waste from landfills, reduce disposal costs and stimulate recycling markets, thereby encouraging the further use of recycled materials and educating the public about the utility and availability of such materials.

The Solid Waste Planning and Recycling Act (SWPRAct) was adopted in 1988. The purpose of this Act was to require all counties and the City of Chicago, or designated agencies, to develop comprehensive waste management plans that placed substantial emphasis on recycling and other alternatives to landfilling, to implement such programs, and to encourage municipal recycling and source reduction and composting.

The planning requirements are very detailed, and among other provisions, require: an assessment of the quantity and characterization of discards generated and 20 year projections; description of the facilities where materials are currently being processed and/or disposed; and description of facilities and programs for managing discards for the next 20 years - including size, costs, and financing; evaluations of the environmental, energy, life cycle, and economic advantages/disadvantages of the proposed programs and facilities; implementation timelines; identify entities other than counties that would be responsible for plan implementation; each plan required establishing recycling programs to meet certain diversion goals; and establish certain penalties for non-compliance.

One primary goal of the SWPRAct was to bring recovery efforts to the forefront of waste management strategies and to continually improve such efforts by submitting planning and programming updates every five years to IEPA for review to ensure consistency with the provisions of the Act and subsequent approval. Initially the SWPRAct did foster the development of solid waste plans and did begin to institutionalize recycling programs throughout the state. Over time the requirements set forth in the SWPRAct were not upheld

and planning and programming efforts in many counties were simply ignored - with no repercussions. However not all counties, or responsible agencies, succumbed to this position and have continued to comply with SWPRAct and today have very successful and dynamic recycling and composting programs.

The SWMAct requires IEPA to annually publish the Non-hazardous Solid Waste Management and Landfill Capacity Report regarding the projected disposal capacity available for MSW in the state, and on a regional basis and also report on the life expectancy of each landfill. The first such report was issued with data gathered in 1986.

Since the inception of these reports, detailed information was required to be reported from landfills. The Agency requested recycling and compost data from county coordinators. The IEPA stopped requesting recycling and composting information in 2010, therefore the last report to provide such information was in 2009. So there is no data available to depict an overall view of management activities from 2009 to present. (The State Plan Recommendation attempts to address this by requiring a statewide database developed with a method for keeping it updated).

In addition, there is no mechanism in the state that requires the annual reporting of recovered materials to a central entity, and there is no uniform recycling reporting protocol that sets forth the guidelines for counties to report (e.g. what materials should be included/ excluded or what activities should or should not be included, double counting, etc.). Therefore Illinois cannot reliably report what the landfill diversion rate, resulting from recycling and composting efforts, actually is today or what it may have been in the past.

In 2008, a comprehensive statewide Commodity/Waste Generation and Characterization (CWGC) Study was commissioned by DCEO. This study found that nearly 19 million tons of MSW was generated as discarded materials and 15.2 million tons was landfilled. This yields a statewide recovery rate of 19.1%. In the 2008 Landfill Capacity Report, county coordinators reported that 23.4 million tons of materials were generated and 9.1 million tons were recycled, yielding a recovery rate of 39.3%. This is a significant difference between the CWGC Study and coordinator reports. Thus data reported by county coordinators appears to be as much as 20 percentage points higher than what actually occurred.

That being said, the data collected by IEPA is the only data available. Figure 4 depicts the four management strategies that have occurred in the state from this data.

Figure 4. Management of Municipal Solid Waste in Illinois 1986 - 2009

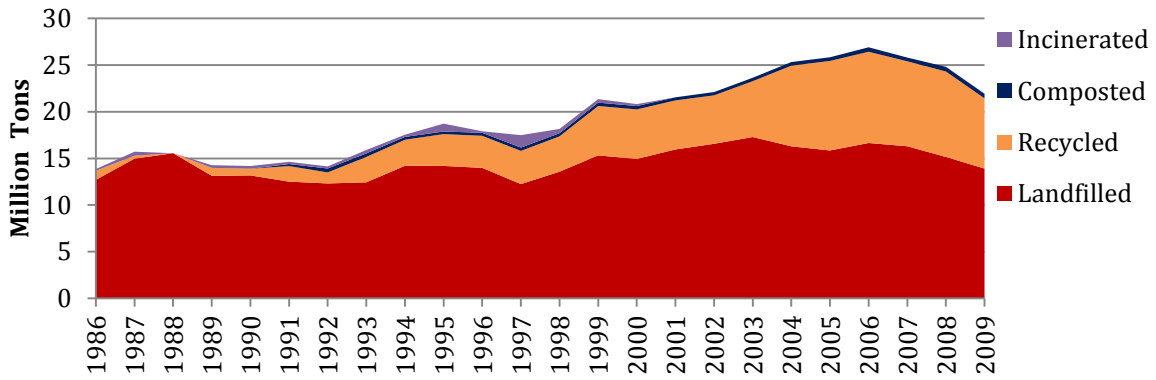


Figure 4 shows how municipal solid waste (MSW) has been disposed of or otherwise managed in Illinois over the 24 year period in which data were collected. Averaged over the full 24 year period, 73% of the material was landfilled, 25% was recycled and 2% was composted. The total amount of material landfilled on a yearly basis has remained fairly constant within this time interval; though, when reflected as a percent of the total amount, MSW that has been landfilled has decreased substantially. Furthermore, during this 24 year time period the amount of MSW recycled has increased in total amount and as a percent of the total MSW. Specifically, recycling steadily increased from 1986 to 2006, and plateaued after 2006. For the period 2006 to 2009, the average recycling, composting and disposal percentages were landfilling at 64%, recycling at 34%, and composting at 2%.

The amount of MSW composted increased in the early 1990's following adoption of SWMAct and SWPRAct but since that initial increase, composting has remained relatively constant on both a total amount and percent composted basis. The amount of MSW incinerated rose in the mid 1990's but has declined in recent years to negligible amounts.

In summary, while progress has been made, it appears as though efforts to place substantial emphasis on recycling and other alternatives to landfilling must be rejuvenated to further advance the intent of the SWMAct and SWPRAct.

4. <u>Benefits of Recycling and Composting in Illinois</u>

Recycling is an important driver to the economy of Illinois, providing local jobs through the network of municipal and private collection programs, material recovery facilities, reclaimers, converters, brokers, reuse operations, remanufactures and recycled-content product manufacturers. Further, recycling replaces materials often mined and manufactured outside of the state with materials collected and processed within Illinois. Not only does recycling save significant energy, it creates the opportunity for more jobs compared to disposal. The number of jobs created depends on the type of commodity being recycled. Based on a publication from the Tellus Institute (using 2008 data), 1.67 jobs are created per 1,000 tons of material collected for recycling or composting and 0.56 jobs per ton

for disposal. This publication also notes that the collection job production estimate for recyclables is expected to decline to 1.23 jobs per 1,000 tons by 2030 as single-stream recyclables collection continues to grow. Furthermore, an additional 2 jobs per 1,000 tons of material may be created related to processing recyclable materials, plus anywhere from 2 to 17 jobs per 1,000 tons in manufacturing using recyclable materials as raw material feedstock (depending on the type of commodity), plus anywhere from 3 to 20 jobs per 1,000 tons in reuse & manufacture of recyclable "as is" materials (depending on the type of commodity), ["More Jobs, Less Pollution: Growing the Recycling Economy in the U.S., Prepared by: Tellus Institute with Sound Resource Management, pages 32 & 34"].

DCEO commissioned a Recycling Economic Information Study to determine the economic impact recycling has on the Illinois economy. This report updated a study DCEO had completed in 2001. The primary source of data for the 2010 report is the U.S. Economic Census, and other data sources were also used including County Business Patterns, Annual Survey of Manufacturers, Bureau of Labor Statistics, the USGS Metals Yearbook, and Trade Associations.

Data was gathered on total employment, total payroll, gross receipts and annual throughput (for applicable categories) for each recycling and reuse industry. These terms are defined as:

- Employment includes all employees (jobs) in the recycling, recycling reliant, and reuse industries (allocated by use of recycled versus virgin materials), from the factory worker to the administrator, and are reported as full time equivalent jobs.
- Payroll represents total taxable wages for each employee counted.
- Gross receipts represent total sales revenue for each recycling and reuse industry.
- Throughput represents estimated tons of recovered or recycled material handled, processed or otherwise used by the recycling or recycling reliant industries.

There are two other definitions that should be presented;

- "Supply side" are activities that result from collecting, recovering, and preparing materials for recycling or products for resale; and
- "Demand side" are activities up to the first point at which the recovered materials or product for reuse competes against the primary or virgin equivalent.

Furthermore, recycling does not include activities involving incineration or use of recovered materials as fuel; and activities of non-business entities involved with education, advocacy or other activities that do not directly support or add value to the recovered materials or products.

Direct Economic Impacts Reported in the 2010 REI Study:

Businesses

Twenty-six business sectors were identified and are divided into three categories: Recycling Industries, Recycling Reliant Industries, and Reuse and Remanufacturing Industries.

A total of 2,173 establishments are involved in recycling, or the use of recycled materials, in Illinois. An establishment is defined by the U.S. Economic Census as a single physical location where business is conducted, or where services are performed. This would include processing centers, material recovery facilities, recycled-content product manufacturers, etc.

As Figure 5 illustrates, 47 percent (1,021) of the total establishments are in the recycling industries, with another 35 percent (764) in reuse and remanufacturing. Only 18 percent of establishments are recycling reliant industries. This is consistent with the pyramid that one would expect; with many smaller collection, processing, and wholesaling operations feeding a few larger recycling reliant industries.

[*Recycling Reliant Industries comprise 19 different business categories including: municipal residential curbside and drop-off collection, private residential/commercial collection, compost/misc. organics producers, material recovery facilities, and recyclable material wholesalers, foundries, mills, manufacturers, etc.*]

Figure 5

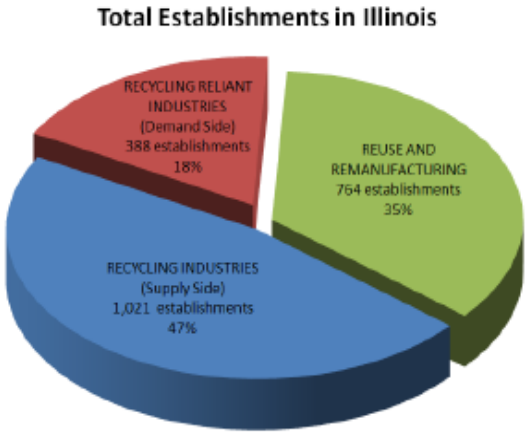
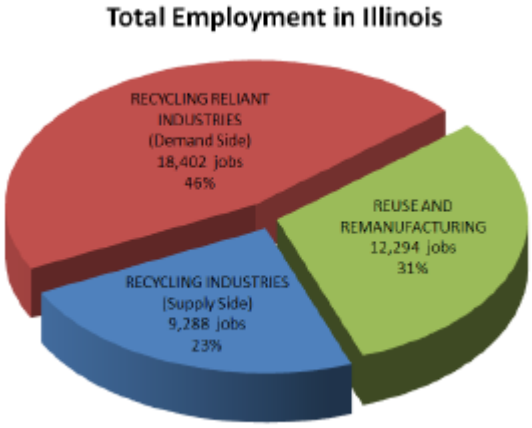


Figure 6

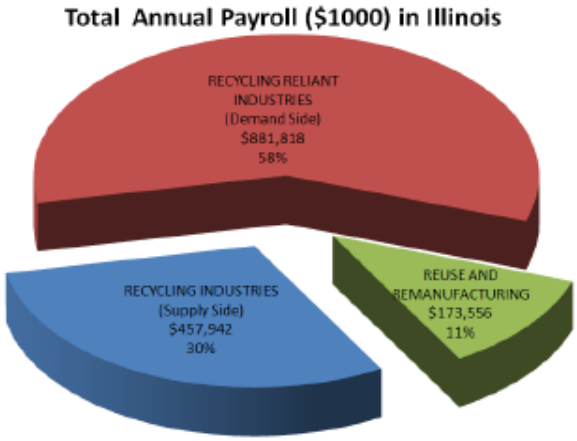


Employment

The 2,173 recycling establishments in Illinois employed an estimated 40,000 people (rounded) in 2009 (Figure 6). Interestingly, the distribution of employment did not follow the distribution of establishments. The supply-side establishments (recycling industries) accounted for just 23 percent (9,300 jobs) of employment while the demand-side establishments (the recycling reliant industries) accounted for 46 percent (18,400 jobs). This phenomenon is explained by the small number of full-time equivalent (FTE) employees working at the large number of small composting and drop-off facilities that account for a significant portion of supply-side recycling establishments The remaining 31 percent (12,300 jobs) were provided by the reuse and remanufacturing establishments.

Payroll

Figure 7

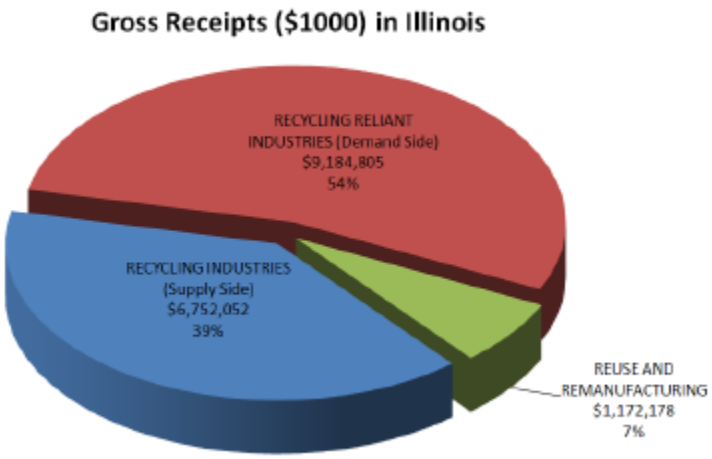


The 40,000 jobs provided $1.5 billion dollars in annual payroll, with payroll roughly paralleling the employment distribution among recycling industries, recycling-reliant industries, and the reuse and remanufacturing industries. However, employee pay was higher in recycling-reliant industries, reflecting better paying manufacturing jobs.

Gross receipts

A total of $17 billion (rounded) in gross receipts were generated by the recycling, recycling reliant, and reuse and remanufacturing industries. As shown in Figure 8, thirty-nine percent of gross receipts were generated by the recycling industries, with 54 percent generated by the recycling reliant industries. Only 7 percent of gross receipts were generated by the reuse and remanufacturing industries, which tend to deal in lower value materials, but may have significant environmental benefits.

Figure 8



Total Economic Impact

Including Indirect and Induced Impacts

Indirect effects measure the value of additional economic demands that the recycling, recycling reliant and reuse and remanufacturing industries place on supplying industries in the region. Induced effects accrue when workers in the direct and indirect industries spend their earnings on goods and services in the region. These indirect and induced effects were

Figure 9

Impact Type	Jobs	Payroll	Gross Receipts	State and Local Taxes
Direct Effect	40,000	$1.5 billion	$17.1 billion	$564.3 million
Indirect Effect	34,000	$1.2 billion	$7.1 billion	$234.3 million
Induced Effect	37,500	$886 million	$6.1 billion	$201.3 million
Total Effect	**111,500**	**$3.6 billion**	**$30.3 billion**	**$1 billion**

estimated using the IMPLAN model. The multipliers reported for each sector can be used by economic development agencies to support investments in recycling reliant industries. A "whole model" approach was used to develop an estimate of the total (direct, indirect and induced) impact of the recycling, recycling reliant and reuse industries in Illinois without significant double-counting. Figure 9 summarizes of how jobs, payroll, gross receipts and taxes revenues are distributed between direct, indirect, and induced impacts in 2009.

Potential Job Creation

The Delta institute recently released a report entitled "Waste Management: Unrealized Environmental & Economic Benefits for Chicagoland" (October 2014). In this report Delta analyzed the potential for job creation in the Chicago Metropolitan Area (CMA) resulting from recycling and compost collection, processing and manufacturing opportunities. Their

scenario assumed reaching a 60% diversion rate - 45% attributed to recycling and 15% through composting for the CMA only.

This study concluded that if this diversion rate could be met that 180,000 direct jobs could be created. Those jobs attributable to recycling collection and processing totaled some 32,600 and for composting collection and processing some 7300 jobs. The largest potential area for job creation lies in the remanufacturing arena for recyclables – nearly 140,000. However, these jobs would not necessarily remain in the CMA, because most recycled material collected or processed is exported out of state for remanufacturing.

Similar potential opportunities that are identified in this report can also apply to other areas within the state. A copy of this report is available on the Delta Institute's website: http://delta-institute-org/.

Composting Benefits

There are numerous collective benefits derived from composting. Because there are several types of composting facilities (windrow, in-vessel, static-pile, indoor, outdoor, etc.) and there are many organic materials that can be used as raw materials for composting, not all compost facilities produce the same benefits nor are the benefits equally distributed among the compost facilities. However, a summary of the benefits gained from developing a robust composting industry within Illinois include:

1. Composting has greater potential for job creation as compared to landfilling. According to the Institute for Local Self Reliance (ISLR), on a per-ton basis, composting sustains up to four times the number of jobs as landfill or incinerator disposal. (Composting in the US: What, Why, Where & How, prepared by the ILSR, July 2014, page ES-4)
2. Composting affords the opportunity to create a local value-added Illinois industry using material that is currently disposed in a landfill or utilized in a way that creates lessor value.
3. The benefit of extending the capacity of current landfills.

Recycling - Environmental Benefits [CWGC Study (2009)]

According to the DCEO commissioned 2009 Commodity and Waste Characterization Study, climate change is an issue that has been steadily gaining national and worldwide attention and concern. It is widely agreed that greenhouse gases (GHG) that result from the burning of fossil fuels and other human activities, is contributing to climate change. Illinois has a sustainable energy plan and is a signatory to the Midwestern Greenhouse Gas Accord. Recovering commodities from discarded materials through recycling, composting and waste reduction strategies can play a significant role in reducing GHG's by reducing emissions. Recovering commodities:

1. Avoids emissions from raw material extraction and transport,
2. Avoids emissions from raw material processing into "manufacturing ready" feedstock,
3. Avoids emissions from landfilling (methane),

4. Sustains forest carbon sequestration,
5. Reuses carbon based plastics indefinitely, rather than one time BTU value for combustion.

The Illinois MSW generation and disposal information during 2008 was inputted into the U.S. Environmental Protection Agency (EPA) Waste Reduction Model (WARM), to determine equivalent greenhouse gas emissions resulting from the landfilling of MSW in Illinois and to determine the emission reductions resulting from the quantities estimated to be recovered .

The WARM model was created by the U.S. EPA to help solid waste planners and organizations estimate GHG emission reductions from several different waste management practices. WARM calculates GHG emissions for baseline and alternative waste management practices, including source reduction, recycling, combustion, composting, and landfilling. The model calculates emissions in metric tons of carbon dioxide equivalent ($MTCO_2E$) across a wide range of material types commonly found in MSW. The GHG emission factors were developed following a life-cycle assessment methodology using estimation techniques developed for national inventories of GHG emissions. Default values for all variables were used for this model.

<u>The total GHG emissions produced from landfilled MSW (15.3 million tons) in 2008* was approximately 2,404,563 $MTCO_2E$.</u> This is equivalent to the annual greenhouse gas emissions from approximately 440,400 passenger vehicles or the carbon sequestered annually by 16,800 acres of forest preserved from deforestation.

<u>The total GHG emissions reduced from materials recycled (3.6 million tons) in 2008* was 8,910,029 $MTCO_2E$,</u> which is equivalent to the annual greenhouse gas emissions from approximately 1,631,900 passenger vehicles or the carbon sequestered annually by 62,300 acres of forest.

*Most recent Illinois data available. An update to this study is currently being prepared and is expected to be published in 2015.

GHG emission reductions vary for various materials, e.g. aluminum -15.07 $MTCO_2$ or PET plastic -1.55 $MTCO_2$. Portland, Oregon reports that for every 100 tons of mixed recyclable collected curbside, 6 $MTCO_2$ are emitted from diesel collection vehicles, while there is a reduction of 232 $MTCO_2$, when these recyclables displace virgin feedstock in production thus there is a net GHG reduction of 226 $MTCO_2$ considering life cycle impacts.

Recycling saves energy. [National Recycling Coalition, Economic and Environmental Benefits of Recycling Fact Sheet. (2009).] Just a few examples:

1. Recycling aluminum saves 95% of the energy cost of producing aluminum from raw materials and can be recycled indefinitely,
2. Plastics from a recycled beverage container uses only two-thirds the energy required as opposed to using virgin material and can be used indefinitely,
3. Recycling steel – tin cans – saves 60% of the energy used to make new from virgin material, and

4. Producing recycled paper requires about 60% less energy than if paper is made from virgin wood pulp.

Endnotes

[1] Matos, G. (2009) Use of Raw Materials in the U.S. from 1900-2006. USGS.
[2] World Resources Institute, (2007) Material Flows in the U.S.: A Physical Accounting of the U.S. Industrial Economy.
[3] Wagner, L. (2002) Materials in the Economy – Material Flows, Scarcity and the Environment. USGS.
[4] B.Platt, N.Seldman. (2000) Wasting and Recycling in the U.S. based on data reported in the Office of Technology/Assessment, Managing Industrials Solid Wastes from manufacturing, mining, oil, gas, production, and utility coal combustion Circular (OTA-BP-O-82).

Section IV. County Recycling and Planning

Background

As previously noted in this report, two important pieces of legislation were passed in the late 1980's that created a funding source for county solid waste planning (the 1986 Solid Waste Management Act) and planning requirements for those county plans (the 1988 Solid Waste Planning and Recycling Act. As a result of these laws 101 of Illinois' 102 counties developed and adopted solid waste management plans with the assistance of planning grants from the IEPA that covered 70% of the costs of developing the plans. Most county plans were developed with the assistance of consultants and had to be completed by 1991 for counties with 100,000 or more people and by 1995 for counties with less 100,000.

The Solid Waste Planning and Recycling Act (SWPRAct) requires that counties update their plans every five years. The IEPA developed a form for counties to use in updating their plans, and the IEPA used to publish the dates of when plan updates were due and whether they had been completed for every county in the Annual Disposal Capacity Report, but no longer provides this information in that report.

The Task Force spent several meetings discussing the status of county planning since the early 1990s when the IEPA was actively awarding planning grants and solid waste planning in Illinois was at its zenith. The Task Force's discussions led to the following general findings:

- The planning energy and commitment since the IEPA planning grant program was discontinued has waned considerably. No longer is the status of plan updates published by IEPA and many counties have not completed their five year updates (the majority of counties have now missed at least one five year update).
- Plan implementation has been sporadic and typically the success of a county's implementation is tied to whether it has a landfill within its borders that generates revenue for local implementation efforts. This is something the Task Force and others refer to as the "Haves" and "Have-nots" in Illinois, approximately 35 counties have landfills (there are 42 active landfills in Illinois). Reinvigorating county planning given the current environment ("Haves and Have-Nots", lack of State funding for planning efforts) is a significant challenge; however, the Task Force did address this issue as outlined in the state plan recommendation, Attachment B (5)
- Over the years the use of the money collected by the State as part of the landfill surcharge and deposited in the State's Solid Waste Fund has shifted to other programs and the IEPA is no longer able to issue planning grants for plan updates. Without funding assistance or technical assistance many counties are no longer compelled or able to meet the five year plan update requirement and as importantly, implementation of those plans. No legal action against those counties that have not

met their legal obligations under the SWPRAct has been pursued. This in turn has led to fewer and fewer counties meeting the law.

Recommendations

Given the findings as discussed above, the Task Force spent numerous meetings talking about the development of a statewide Illinois Resource Management Plan (State Plan) and ultimately approved a recommendation to develop a State Plan. The State Plan would have a "tool box" component that would provide guidance, programmatic ideas, and educational and public outreach tools for counties to use in preparing their five year updates. The programmatic ideas would be sensitized to whether a county is urban (200,000 or more people) or rural (less than 200,000) and would be designed to achieve diversion rates of 40% by 2020, 45% by 2025 and 50% by 2030 for urban counties and 30%, 35% and 40% respectively for rural counties.

Specific recommendations for the county recycling and planning topic required by Public Act 97-0853 include:

A. The State of Illinois should develop a State Plan as outlined and further discussed in the State Plan Recommendation portion of this document.
B. All counties that are not current with their five year updates should be informed that they have a legal obligation to complete five year plan updates. Afterward, any county that does not meet its five year update timeline should be sent a letter requiring compliance.
C. A database of recycling coordinators for each county in Illinois needs to be developed.
D. The IEPA should post on its website the status of all counties' plan updates, when they are due and whether they have been completed. All completed plan updates should be posted to the IEPA's website. The website should also post the most current recycling rates for each county as reported in the five year updates.
E. The State of Illinois should amend the Solid Waste Management Act, and in particular the waste management hierarchy, in accordance with the Task Force's recommendation on upgrading the waste management hierarchy in Attachment B (1). While this is more symbolic in nature it does provide a more accurate listing of preferred waste/material management options to act as a guide to counties as they develop their plan updates.

Section V. Evaluation of the Proper Management of Household Hazardous Waste in Illinois

Background

The Federal Resource Conservation and Recovery Act (RCRA) details very rigid management methods for hazardous wastes generated by commercial and industrial sources. The "cradle to grave" management of hazardous waste insures that it is properly and environmentally handled, transported, treated, and disposed. Those very comprehensive regulations provide guidelines for industrial and commercial hazardous waste, but exclude household hazardous waste (HHW). Household products often contain the same hazardous components as products used in industrial or commercial operations, but since the resulting waste is generated by households it is exempt from most environmental regulations. Potential public health and environmental problems resulting from inappropriate disposal of such wastes are evident. While the waste generated by one household may contain only small quantities of hazardous wastes, the accumulation of small quantities multiplied by millions of households has raised legitimate concern for their proper disposal.

Residential households also consume products that when not properly disposed of have the potential to impact human health and the environment, air, land and water, in a negative manner. Recognizing the need for environmentally sound management of HHW the IEPA has developed several household hazardous waste (HHW) programs to assist Illinois residents in managing these critical waste streams (see Attachment G which provides an overview of IEPA's HHW programs). In addition to the HHW programs administered by IEPA the Illinois General Assembly has enacted laws to ban certain potentially hazardous products from disposal: mercury switches, used oil, lead acid batteries, refrigerant coolant containing appliances, and electronics. Although these bans have increased the public's awareness they are not 100% effective in the removal of these products and there still exist a significant number of household hazardous products that are purchased and used that have not been included in the "ban" approach to managing these wastes at their end of life.

As previously stated, the IEPA has developed collection programs to assist residents of the State to safely and efficiently manage household generated hazardous waste. The Illinois Environmental Protection Act authorizes the IEPA to utilize funds from the Solid Waste Management Fund for the development of programs to collect and dispose of HHW. The IEPA's programs have been comprised of both one day collection events where a partner, generally a local municipality or county, assists the IEPA in advertising, site management and traffic control for the event, to permanent drop-off locations (currently 4 in the State located in Naperville, Chicago, Rockford and Gurnee) that provide residents the ability to bring unwanted HHW where the local partner is responsible for operating the facility on a frequent basis and to provide collection, packaging, and storage of the material. Over the course of these programs IEPA has effectively removed 156,000 drums of household hazardous waste from nearly 1,000,000 Illinois residents over the past 25 years.

Today, IEPA continues to assist the four permanent HHW collection sites by providing resources to both remove and properly destroy the materials collected. They also retain the generator status of the HHW material collected. Furthermore, the IEPA supports numerous

one day collection events for HHW throughout the State. Most residents of Illinois, however, still lack a convenient collection system for the proper disposal of HHW. The one day collection events are neither routine in their location or timing resulting in significant frustration for the residents of Illinois to disposal of unwanted HHW. These HHW materials continue to show up in waste audits conducted by the State. (Illinois' 2009 Statewide Commodity/Waste Generation and Characterization Study found that 64,000 tons of HHW are currently being disposed per year) and the State's efforts to remove HHW needs to be enhanced to meet our obligations to future residents of the State.

The Task Force has spent a significant amount of time evaluating both the success of the State's existing product/material bans and the collection systems in place to assist residents in the disposal of HHW. Based on this evaluation the Task Force believes that there exists an inadequate HHW collection infrastructure to meet the desired convenience of most Illinois residents. Furthermore, the Task Force believes that the use of permanent collection drop-off sites provides for a more efficient and effective program for residents to dispose of HHW.

Based upon materials shared with the Task Force from the IEPA regarding disposal costs, (permanent sites average annual disposal costs are approximately $250,000) as well as the total funds collected from the landfill fees, see appendix 3.2 "Solid Waste Management Fund 078" annual revenue and expense report, the Task Force is recommending that more permanent HHW collection sites be developed to enhance the disposal network for the residents of the State. Below is the specific recommendation agreed to by the Task Force.

The task force believes that all citizens of Illinois, regardless of geographic location, deserve a collection system to dispose of their unused and unwanted HHW that is safe for the environment and to human health. Any collection system must be convenient for the citizenry to use if it is to be successfully utilized. Several methods for funding the establishment of additional permanent HHW collection drop offs locations were considered by the Task Force, but no consensus was reached. Funding options that were discussed and that could be further explored to potentially assist in establishing a state wide HHW collection system are included later in this document at the end of Section VIII.

Recommendations

Amend section 22.25 of the Environmental Protection Act to require the establishment of a convenient State wide collection infrastructure for HHW. This infrastructure should be developed by regions of the State and rely upon partnerships for the operation of the collections sites with the State's participation being the transportation, disposal and RCRA liability of the materials collected. The infrastructure shall have as its base eight sites in the northern part and four each in the central and southern part of the State. See Attachment B(4), the HHW Task Force recommendation.

Section VI. Evaluation of the Extent to which Materials with Economic Value are lost to Landfilling

Background

The DCEO funded a comprehensive statewide Commodity/Waste Generation and Characterization (CWGC) Study that was published in 2009. The Executive Summary of this report is provided as Attachment E. Furthermore a PDF copy of the full report can be downloaded and/or accessed electronically at: www.illinoisrecycles.com.

This study focused upon Municipal Solid Waste sector and provides the most detailed information available concerning the quantities and types of materials generated and disposed in landfills in Illinois. The CWGC study identified 79 individual material categories in 10 material classes in terms of estimated quantities generated and landfilled.

The results have revealed Illinois' management of municipal waste, recyclable materials, and compostable materials. The 2008 data will also serve as a benchmark to evaluate the success of future recycling and composting plans and programs. It is notable that with DCEO support again, this study is currently being undertaken to provide updated information. The final report is expected to be completed and available electronically in early 2015.

Recovery rates are a prime indicator to assess the quantities of materials that are landfilled. Attached is an Appendix entitled "Illinois Recovery/Diversion Rates" that identifies all the material categories, the quantities generated, quantities disposed, quantities recovered and the recovery rate. This table indicates that nearly 19 million tons are generated as discarded materials and 15.2 million tons are landfilled. This yields a statewide recovery rate of 19.1%. As Table 1 reflects, recovery rates vary widely for individual materials.

Currently there is no mechanism in the state that requires the annual reporting of recovered materials to a central entity. Therefore, Illinois cannot corroborate the CWGC data with other reliable data sources to determine the actual recovery rate. Illinois EPA is required by statute to publish the Non-Hazardous Solid Waste Management and Landfill Capacity Report and did, for a time, asked county recycling coordinators for voluntary reporting of recovery (recycling and composting) data. In the 2008 Report, coordinators reported that 23.4 million tons of materials were generated and 9.1 million tons were recycled, yielding a recovery rate of 39.3%. This is a significant difference between the CWGC Study and coordinator reports.

There are several factors that can account for this difference:

1. The CWGC study focused solely on municipal waste while coordinator's data focused on landfilled tonnages that could include industrial process waste, special waste, and/or clean construction and demolition debris, and some items may be "double counted".
2. The coordinator's data was incomplete – only one half of the 106 reporting entities submitted data.
3. The lack of a uniform recycling reporting protocol.

4. The lack of a clear and concise statutory definition of "recycling" in Illinois.

Table 1 provides a listing of recovered materials by the percent recovered.

Table 1 - Listing of Materials Recovered by Percent Recovered (CWGC Study)

Material	Generated Tons	Disposed Tons	Recovered Tons	Recovery %
White goods - refrigerated	**55,430**	**0**	**55,430**	**100.0**
Lead acid batteries	**102,810**	**400**	**102,400**	**99.6**
White goods - not refrigerated	121,940	2,690	119,300	97.8
Televisions	41,830	930	40,900	97.8
Automotive fluids	**14,390**	**880**	**13,500**	**93.8**
Used oil/filters	**117,890**	**12,380**	**105,500**	**89.5**
Tires	**186,220**	**29,630**	**156,600**	**84.1**
Pallet-wood	380,830	149,810	231,000	60.7
Yard Waste-Woody	**432,510**	**184,750**	**247,800**	**57.3**
Yard Waste- Compostable	**471,250**	**204,130**	**267,100**	**56.7**
Newsprint	868,130	418,690	449,400	51.8
High grade office paper	290,910	144,110	146,800	50.5
Magazines/catalogs	423,250	241,750	181,500	42.9
Aluminum beverage cans	100,800	57,910	42,900	42.6
Uncoated OCC/kraft	2,452,290	1,524,280	928,000	37.8
Glass bottles/jars	520,020	401,210	118,800	22.8
Ferrous(tin cans)	173,400	143,510	29,900	17.2
Other glass	9,630	8,020	1,600	16.6
Electronic equipment	155,770	132,830	22,900	14.7
Other rigid plastic product	586,130	500,970	85,200	14.5
Other metal	138,100	118,230	19,900	14.4
#1 other PET containers	13,850	11,810	2,000	14.4
Other ferrous	354,890	308,610	46,300	13.0
Household bulky items	142,920	125,500	17,400	12.2
#1 PET bottles/jars	164,620	146,630	18,000	10.9
#2 other HDPE containers	13,170	11,870	1,300	9.9
Mixed recyclable paper	457,880	418,360	39,500	8.6
Ash, sludge, industrial waste	8,370	7,750	600	7.2
#2 HDPE bottles/jars- color	93,670	87,180	6,500	6.9
Computer equip	33,760	31,570	2,200	6.5
Latex paint	12,550	11,790	800	6.4
Juice & milk boxes- coated	34,460	32,400	2,100	6.1
Clothing	336,330	315,860	20,500	6.1
Household batteries	6,850	6,450	400	5.8
#2 HDPE bottles/jars- clear	64,400	60,860	3,500	5.4
Compostable paper	474,730	451,450	23,300	4.9
#3-#7 other plastic all	123,750	118,400	5,400	4.4
Other paper	142,420	137,210	5,200	3.7
Reinforced concrete	39,240	38,250	1,000	2.5
Other plastic	277,950	272,460	5,500	2.0
Computer monitors	29,450	28,950	500	1.7
Grocery bags -plastic	81,400	80,250	1,200	1.5
Treated wood	604,760	604,270	500	0.1
Gypsum board	472,380	471,650	700	0.1
Other textiles	463,770	462,400	1,400	0.3
Shingles	407,870	405,080	2,800	0.7
Concrete	401,860	399,850	2,000	0.5

Food Scraps	1,838,100	1,838,100	0	-
TOTALS			**3,577,030**	

Chart Notes:
1. The 48 individual materials listed represents 99% of the total recovered materials, by weight.
2. The materials in bold and blue shaded cells represent items banned from landfilling.
3. The materials in green shaded cells are materials commonly accepted in curbside programs.
4. This is 2008 data – prior to the adoption of the electronics ban that became effective 2011.

This table reveals that with the exception of yard waste, materials banned from landfills have extremely high recovery rates – 84% or greater as compared to materials that are not. Overall materials that are commonly accepted in traditional curbside collection programs in aggregate see relatively low recovery rates – even after decades of voluntary participation and educational efforts.

Evaluating the full extent - or a complete economic evaluation including direct, indirect and induced economic impacts - to which materials with economic value are lost to landfilling, is a complete study in and of itself. It should be recognized that there are several important variables to be considered:

1. That at any given point in time there are numerous materials landfilled that are or could be considered commodities but are not collected in traditional recycling programming efforts or are hard to handle items– i.e. ferrous metals not collected in recycling programs, roofing shingles, commercial plastic film, or organic materials are good examples.
2. The commodity market is worldwide and the value of commodities fluctuates subject to supply and demand.

Given this however, the CWGC study did estimate the market value of 12 commodities traditionally collected and processed in residential/commercial recycling programs. Table 2 lists these commodities, tons landfilled, the recovery rate, the market value of individual materials, and the total market value lost in 2008. The market value was calculated based on the average 2008 commodity values from January through October 2008, based from market data for the Midwest region published by recognized market authorities.

The value of <u>only</u> these 12 materials landfilled in 2008 was $618 Million and $457 million in 2014 (assuming tons disposed as reported in the DCEO funded statewide Commodity/ Waste Generation and Characterization (CWGC) Study that was published in 2009.)

In 2008 some 18.9 million tons were landfilled and these 12 commodities represent 20% of total tons landfilled, or 3.8 million tons. Corrugated cardboard was landfilled in the largest quantity – some 1.5 million tons and its recovery rate was only 38%. It is also the material with the greatest value lost – $153 million. The CWGC study concludes that of all corrugated cardboard landfilled 75% is generated by the Industrial/Commercial/ Institutional (ICI) sector, 24% from the residential sector and 1% from the C&D sector.

The top five 2008 commodity values - corrugated cardboard, aluminum cans, #1 PET, #2 HDPE clear, and #2 HDPE colored bottles and jars; together total $412 Million and represents 67% of the value of selected materials landfilled.

The marketplace suffered a collapse in November 2008 as a part of the "Great Recession" and reflects the degree that commodities are subject to global markets. A brief analysis can be made to attempt to determine the impact of the recession coupled with the impact of supply and demand drivers.

To estimate this, the same selected commodities are used and the same quantities landfilled in 2008 are assumed, and the 2014 average market values during the same timeframe (January through October) is applied. Results are also presented in Table 2. The average market values were obtained from the 'Pulp&Paper Official Board Markets-Midwest Region' published pricing index for paper fibers, and from the 'Secondary Materials Pricing.Com-Midwest Region published pricing index' for containers.

Table 2 - Market Value of Selected Materials Landfilled 2008 and 2014

Material	2008 Tons Landfilled	Recovery %	$/Ton 2008	Value – 2008	$/Ton 2014	Value - 2014
Paper						
Newsprint	418,690	52	120.50	$ 50,452,145	52.50	$21,981,225
High Grade Office	144,110	51	85.00	$ 12,249,350	131.00	$18,878,410
Magazine /catalog	241,750	43	85.00	$ 20,548,750	82.00	$19,823,500
Uncoated OCC	1,524,280	38	100.50	$ 153,190,140	80.50	$122,704,540
Boxboard	243,870	6	85.00	$ 20,728,950	37.50	$9,145,125
Mixed paper	418,360	9	85.00	$ 35,560,600	37.50	$15,688,500
Plastic						
#1 PET bottles/jars	146,630	11	438.00	$ 64,223,940	335.00	$49,121,050
#2 HDPE clear bottles/jars	60,860	5	762.00	$ 46,375,320	893.00	$54,347,980
#2 HDPE colored bottles/jars	87,180	7	502.00	$43,764,360	545.00	$47,513,100
Glass						
All colors, bottles/jars	401,210	23	20.00	$ 8,024,200	<10.00>	<$4,012,100>
Metal						
Alum. Beverage containers	57,910	43	1,822.00	$ 105,512,020	1493.00	$86,459,630
Ferrous containers	143,510	17	400.50	$ 57,475,755	110.00	$15,786,100
TOTALS	**3,888,360**			**$ 618,105,530**		**$457,437,060**

Overall, the 2014 gross market value is 26% lower compared to 2008; however, these commodities still represent significant value today, amounting to $457 Million currently lost to landfilling. This is nearly $1.25 Million being lost every day using the average 2014 market values.

Considering 2014 markets, corrugated cardboard is again the leading commodity value lost- $122 Million. The papers category sees a gross loss of 29% or $84 Million. The plastics category loses nearly 2.5% in value or nearly $3.6 Million, metals see a loss of $60 Million, down 37%, and glass sees a 150% turnaround losing $4 Million.

The individual top five commodity values in 2014 - corrugated cardboard, aluminum cans, #1 PET, #2 HDPE clear, and #2 HDPE colored bottles and jars; together total $360 Million and represent 79% of the total value of the selected materials landfilled.

As previously stated, a comprehensive economic evaluation is beyond the scope of this review. This review has focused on the market price for selected commodities typically collected in recycling programs. There certainly are other materials with economic value landfilled. This review does not include the overall loss to the Illinois economy in terms of other direct, indirect and induced benefits that could be realized through the recovery of these and other commodities. Nor does it account for the Greenhouse Gas reductions or energy savings for both households and businesses when recyclables displace virgin feedstock in manufacturing production. Nonetheless, it can be safely stated that potentially hundreds of millions of dollars of commodities that could be recovered by recycling processors are lost to landfilling each year in Illinois.

Recommendations

1. A coalition of interested parties should at the earliest opportunity convene to research and develop strategies to maximize the recovery of materials, including but not limited to, those contained in Table 2. These strategies should target increased education and marketing efforts for implementation in 2015. This effort would be in addition to those outlined in the state plan recommendation and is intended to foster results in the short term until the state plan is fully implemented.

2. The State should adopt a uniform recycling reporting protocol as contemplated in the "State Plan" recommendation – see Attachment B(5). When the reporting protocol is developed as part of the State Plan it should incorporate work done previously in Illinois regarding reporting requirements [Reference the ILCSWMA Recycling Measurements Report; 1997,2003] and include in the evaluation the efforts of Region 5 US EPA to develop national reporting protocols.

3. A Commodity/Waste Generation Characterization study should be performed by the State every five years to assess the types and quantities of materials generated and discarded, provide empirical data, and to provide an opportunity to gauge success or failure of recycling and composting programs providing insight to overall material management policies and strategies.

4. The State should conduct future updates to the Recycling Economic Information study to understand the broad economic impacts and value of the recycling industry in Illinois.

5. The State should re-assert its' leadership role in recycling by providing appropriate personnel and resources to continually improve and aggressively seek the economic, environmental and social benefits that can be realized.

6. The State should engage industry, trade associations and government to develop public/private partnerships to make strategic investments that can produce and sustain high levels of recovery.

7. The State should encourage the recovery of materials or "mining" of discarded and transported to transfer stations and landfills as long as the recovery can be conducted safely, economically, and in compliance with permitting requirements.

8. The State should support national labeling efforts through the "Product Stewardship Labeling" recommendation– see Attachment B(3).

9. The State should support the purchase and use of recycled materials as proposed in the recommendation concerning "Construction and Demolition Materials" and the "Environmentally Preferable Procurement" recommendation – see Attachment B(2) and (6).

SECTION VII. Ways to Maximize Productive Use of Materials through Reuse, Recycling, Composting and Biodegradation

It is often said that the three most important things associated with the value of real estate are 'Location, Location, Location'. Similarly, the three most important things associated with ways to maximize productive use of material reuse, recycling, composting and biodegradation are "Markets, Markets, Markets'. This means that multiple competitive markets need to be fostered and sustained for each material to ensure long term viability for maximum reuse.

Markets are driven by competitive economic demand for usable materials. Demand is best created when used materials are more economically advantageous to use compared to virgin materials. To create viable long term markets requires producers, retailers, consumers and processors to present the materials in a manner that will be acceptable to markets. Maximum productive use is achieved when the material can be reused over-and-over again or re-entered safely into the environment. Such productive use should be accomplished in a manner that protects and preferably improves the environment. Life cycle analysis is a tool that can be used to assess the total cost (economic + environmental) of materials management.

Maximum productive use can only be achieved if there is a framework of shared responsibility by the producer, retailer, consumer and processor to furnish and present materials acceptable for markets.

In summary, the Task Force recognizes the challenges associated with creating infrastructure to achieve maximum productive use of materials, and recommends that these challenges be objectively stated for consideration in preparation of the proposed State Plan, and further recommends that the State of Illinois support local, state and national initiatives that promote shared responsibility by the producer, retailer, consumer and processor to support the infrastructure for creating multiple competitive markets particular to each type of product or material.

Composting

The 2009 DCEO waste characterization study estimated that nearly 1/3 of Illinois landfilled waste is organic material. Approximately 13% of total landfilled waste is food scrap. Five hundred thousand tons of yard waste and food scraps were diverted from Illinois in 2013, of which 74,000 tons were food scrap. There are 45 permitted facilities that are active and accept organic materials.

Landscape waste was banned from landfills in Illinois in 1990. Many Landscape waste composting facilities were created as a result of this law. Local siting requirements were removed from composting projects that accept food scraps in 2009. Landscape waste facilities are permitted through a section 830 permit and facilities that accept significant amounts of food scrap are permitted through a section 807 permit.

Composting of organic materials provides several environmental and economic benefits. Composting diverts material from landfills to create a valuable soil amendment. End product compost can be used in a wide variety of projects in place of soil or as a growing amendment to soil.

A report developed by the Illinois Food Scrap Coalition (IFSC) summarized the following summary of the environmental benefits of developing a robust food scrap composting industry in Illinois:

1. Reducing greenhouse gas emissions, compared to emissions generated from landfilling (particularly in reference to reduced methane production by aerobic composting facilities).
2. Carbon sequestration benefits of compost utilized as a soil amendment compared to landfill deposition of bio-degradable materials. (This form of carbon sequestration supports reduced greenhouse gas emissions reduction goals.)
3. Compost provides a soil amendment that improves the soil in numerous ways including but not limited to increased organic matter, improved cation exchange capacity, reduced mineral leaching and increased water holding capacity. Compost can be utilized in urban landscaping and in agricultural production.
4. Compost can be utilized to replace the use of some inorganic fertilizers. Using compost as a soil amendment is a sustainable method to maintain/replenish the nutritive value of Illinois soil.
5. Utilization of food scraps as a raw material for composting expands the benefits listed here.
6. And, in addition to aerobic composting, anaerobic digestion technology offers another mechanism for harnessing renewable energy (methane) and capturing other useful by products (carbon dioxide and nutrient rich bio solids).

The IFSC report finds that depositing food scraps in landfills is in essence throwing away a valuable resource that can support local economic development, social and environmental goals.

A report by the IFSC, following forums throughout the state of Illinois, identified the following challenges:

- Need for education
- Low landfill tipping fees
- Lack of demand for composting pick up services
- Lack of composting infrastructure
- Contamination of food scraps
- Lack of end market for compost

Accordingly, the Task Force on the Advancement of Materials Recycling has recommended a stakeholder group to address the following issues:

- The creation of rules for temporary and/or permanent drop off sites for organic materials.

- Development of rules for anaerobic digestion in Illinois
- Discussion about the permitting/regulatory structure for composting systems.

Recommendations

1. The State should be directed to form a committee of stakeholder organizations to conduct a coordinated review of the permitting regulations for siting, developing, operation, and closure of compost facilities and anaerobic digestion facilities within Illinois. This committee should review a range of recommendations as outlined in task force recommendation, Attachment B(7), including development of regulations that recognize a tiered system based on size and type of facility, review of various regulations and permit requirements as outlined under the law including those to site or operate a facility or those regulations that oversee the use and sale of end product compost. Changes to a regulatory system should address the need for new infrastructure while protecting public health and the environment.
2. The committee should develop appropriate definitions and regulations for Anaerobic Digesters (AD) including AD substrates and products. Permitting, location standards, and siting regulations should be developed specifically for AD. Definitions for terms such as anaerobic digester, digestate and anaerobic digestion should be adopted, based on scientific knowledge and should be practical while ensuring environmental and human safety.
3. Develop and implement regulatory changes that will allow temporary and permanent drop-off sites for organic material (especially food scraps) separate from regulations for transfer stations. These changes will provide both infrastructure (i.e., new locations to bring materials) and education - information about the source separation of organic material.

Section VIII - Funding for State and Local Oversight along with Funding for Programs

Under current State Laws the funding of State and Local solid waste management programs and oversight is established in a variety of laws, including but not limited to, the Illinois Solid Waste Management Act (415 ILCS 20), the Illinois Solid Waste Planning and Recycling Act (415 ILCS 15), and the Illinois Environmental Protection Act (415 ILCS 5). Local laws, ordinances and policy vary but are also potential sources of revenue for funding oversight and programs.

A variety of initiatives identified as desirable by the Task Force require funding. Many programs currently funded and identified as desirable by the Task Force are presently reliant on the amount of solid waste disposed of in Illinois landfills. However, the programs currently operated and the programs desired by the Task Force, are intended to reduce the amount of material destined for disposal.

The Environmental Protection Act requires the State and authorizes some local governments to impose a surcharge on certain wastes disposed of at Illinois' landfills. The revenue generated from the state surcharge is deposited into the Solid Waste Management Fund, the only source of funding for all of DCEO's waste reduction and recycling activities, and the IEPA's permitting, inspection, enforcement and HHW programs. Under the law, the state tipping fee surcharge is $2.00 per ton. Local governments that host landfills also are authorized to impose up to an additional $1.27 a ton local surcharge. An additional Subtitle D fee of $0.22 per ton is also imposed by the State, thus the total state tipping fee surcharge is $2.22 a ton.

While local jurisdictions with landfills spend the local funds differently, the State law dictates to some extent how those funds are spent. For most counties in Illinois, there are no landfills to derive local funds from disposal. Some communities have generated funds from transfer stations. A review of the state's current funding situation reveals that the two agencies that split the funds generated are not spending all the funds available.

Solid Waste Management Fund

DCEO Recycling Programs	FY10	FY11	FY12	FY13
Illinois Recycling Grants Program	2,014,137	826,753	749,130	794,762
Recycling Expansion and Modernization	2,351,305	2,568,328	1,737,741	751,032
Zero Waste Schools	183,644	192,999	179,000	329
Strategic Opportunities	235,033	1,342,844	2,054,160	1,874,721
	4,784,120	4,930,925	4,720,030	3,420,845
Percent of SWMF Spent	28%	28%	26%	19%
IEPA Enforcement and Clean - Up				
Solid Waste Mgmt. & Enforcement Program	8,041,485	8,078,543	8,606,908	8,997,771
Household Hazardous Waste Collections	595,489	1,942,972	1,457,240	1,991,667
Open Dump Clean-Ups	540,555	-	161,465	159,298
Enforcement Delegated Grants	1,420,994	465,165	1,436,466	1,483,041
Transfer to Hazardous Waste Fund (HWF)	2,000,000	2,000,000	2,000,000	2,000,000
	12,598,523	12,486,680	13,662,079	14,631,777
Percent of SWMF Spent	72%	72%	74%	81%
Fiscal Year Total Spending	**$17,382,643**	**$17,417,605**	**$18,382,109**	**$18,052,622**
Fiscal Year Total Revenue	$21,072,185	$20,800,218	$20,566,799	$19,569,614
Fiscal Year Balance	$3,689,542	$3,382,613	$2,184,690	$1,516,992

DCEO Fund Use as described: The detail, efficiency or management of DCEO expenditures is beyond the scope of the Recycling Task Force; however,

a. A portion of the fund is allocated to DCEO's recycling and waste reduction programs (Illinois Recycling Grants Program, Strategic Opportunity (e.g. F-SCRAP) and Recycling Expansion & Modernization Program are also allocated funds (with a combined annual expenditure range of $1.6 million to $4.3 million for the past 4 years).

b. The Recycling Task Force has been advised of generalized achievements of waste diversion stating environmental benefits and job creation as a result of DCEO's recycling and waste reduction programs.

IEPA Fund Use as described: The detail, efficiency or management of IEPA expenditures is beyond the scope of the Recycling Task Force; however,

a. The current funding level for the Solid Waste Mgmt. & Enforcement Program, Enforcement Delegated Grants, and Open Dump Clean-Ups (with a combined annual expenditure range of $8.6 to $10.6 million for the past 4 fiscal years) is reported by IEPA staff to thus far be adequate to fund these current IEPA permitting and enforcement without expansions of the HHW and enforcement grant programs activities.

b. Funding in the amount of $2,000,000 per year is legislatively transferred to the state's Hazardous Waste Fund to support Hazardous Waste Cleanups and Landfill Remediation's as may be needed.

c. Funding for Household Hazardous Waste collection (with an annual expenditure range of $0.6 to $1.9 million for the past 4 years) has been limited to what is needed to dispose of HHW collected by 4 existing permanent HHW sites (Chicago, Naperville, Gurnee and Rockford) and for a limited number of HHW drop-off events throughout the State. NOTE: Construction, operation and maintenance of the permanent HHW sites has been typically funded by local governments; however, DCEO recently provided some capital improvement funding to assist with the cost to build a new HHW and Recycling multi-use facility in Naperville, IL.

Based on data gleaned from the Illinois Comptroller's Office, over the past five fiscal years (FY 10, 11, 12, 13, and 14) the Illinois Solid Waste Fund has received approximately $12.78 million of revenue that has not been expended. The Task Force has discussed that it may be prudent to leave a buffer in the fund, but has also discussed that at least a portion of these unexpended funds present an opportunity to fund future initiatives that advance recycling and waste reduction planning and implementation in Illinois.

The State Tipping fee surcharge that feeds the Solid Waste Management Fund remains an important source of revenue to both IEPA and DCEO, and the allocation of these funds to IEPA and DCEO should be closely monitored and managed on an annual basis to ensure that these funds continue to be allocated and used for their intended purposes. DCEO and IEPA have at various times discussed the erosion of staffing for solid waste activities over the past decade or more. The fund balance may provide an opportunity to help DCEO and IEPA satisfy staff needs and programing effort to more effectively undertake their solid waste missions, especially if additional duties result from the recommendations in this report.

Economic Development funds often provide business opportunities that can lead to economic growth. Specifically, DCEO's focus on recycling businesses and government programs are reported by DCEO and its grantees to have advanced recycling in Illinois for many years. Furthermore, DCEO has reported that demand for its recycling and waste reduction programs has routinely exceeded available funds, implying that there may be additional opportunities to further advance recycling in Illinois if additional funding were made available.

The Task Force understands that the State's compliance, permitting and enforcement activities have a direct benefit to the health welfare and environmental protection of the residents of Illinois however, the State's support of Resource Management programs

administrated by DCEO similarly enhance the wellbeing of all residents of Illinois and both efforts should continue to enjoy this support.

County Funds from Local Landfill Tip Fee Surcharges: Counties with operating landfills may impose a fee not exceeding $1.27/ton to be utilized for solid waste management or other environment-related purposes. In fiscal year 2012, this fee generated more than $4 million for these local governments. The imposition and use of these funds for activities consistent with the Solid Waste Management Act are encouraged, but local governments have discretion on how they are actually spent.

Local Government Host Fees: Counties and Municipalities with operating pollution control facilities may impose a Host Fee that is negotiated between the unit of local government and the owner of the pollution control facility. The amount of revenue generated by these in Illinois is not required to be reported and is not tracked by the State and can be used for a variety of needs from road improvements and maintenance to fire protection and nursing home funding. These funds may also be used for recycling if the County chooses to use them in this manner.

Residential Recycling Funding: Over the past 30 years, many municipalities have funded recycling services through residential user fees for waste and recycling. Further, local governments have accessed DCEO grants that have helped pay for capital equipment (e.g., collection containers and vehicles; balers; fencing and security cameras for drop-off sites) necessary to get a recycling program off the ground or to help an existing program expand. Consumers contracting for garbage collection individually may have the option to pay additional subscription fees for recycling and composting services. Cities and Townships have mandated recycling services for residents in many areas of the state, funding the efforts through direct consumer payment. Some communities fund their recycling services through property taxes.

These direct user fees (paid for by the consumer) ensure a supply of specified recyclable materials available to private industry who establish profitable enterprises based off the market value of specific recyclable materials. Residential curbside and drop-off recycling service funded by the citizens through units of local government is now prevalent throughout urban and suburban areas of Illinois; however, there are still many Illinois communities who have not yet mandated citizens to pay for household collection of recyclable materials as part of their overall household solid waste service. Furthermore, many local governments continue to treat multi-family dwellings (typically having more than 4 units) as commercial properties, and as such not all multi-family dwellings receive the same level of recycling service as single family dwellings. Recycling in Illinois could be further advanced if all local Illinois governments would establish a minimum recycling service requirement within their jurisdiction to pay for and receive recycling services, as is already done by most Illinois municipalities for single family households. In this way, most citizens pay for recycling without putting any additional financial burden on local and State government.

There has also been recognition that while some materials may be co-collected for recycling, other materials must be handled separately. For those materials that must be handled

separately, a separate infrastructure is needed particular to the material that is desired to be recycled. Examples of well-established recycling programs for materials that require separate handling include post-consumer materials such as plastic bags, batteries, florescent light bulbs, tires, and thermostats. For these materials, citizens are given responsibility to take these materials back to stores or recycling drop-off locations which may or may not place the cost of collection on local government. In addition, appliances have been banned from landfills and collection efforts have varied from inclusion in municipal contracts to consumers hauling to drop-off sites to consumers paying for recycling services.

Commercial and Industrial Recycling Funding:

Businesses pay directly for the costs of disposal and recycling and have historically seen the value of reducing waste through recycling as a value to their customers as well to their "bottom-line" and this awareness is growing. Several businesses have adopted sustainability plans and incorporated recycling as part of their brand. In some cases, businesses will invest in equipment and backhaul specific materials to generate revenue from items that otherwise would be considered waste. DCEO grants have been provided to a variety of commercial and industrial businesses to pay for equipment such as balers, containers, composting machinery, and much more to provide a stronger financial foundation for recycling.

In addition to reducing disposal costs, businesses seek opportunities to be 'green' by decreasing the size and weight of product packaging, using materials that are made from recyclable materials, or producing products or product packaging that are reusable, recyclable, compostable or biodegradable. These initiatives typically reduce disposal costs, and also serve as an environmental marketing tool for their products. For example, makers of expanded polystyrene recognize that their packaging is not collected in Illinois residential or commercial single stream recycling programs and at least one company has established separate recycling drop-off locations to advertise the recyclability of their product if kept clean and separated from other recyclable materials. Another example is plastic bags, where plastic bag suppliers have established separate collection programs for consumers to take plastic bags back to the grocery or department store where they were initially provided. These examples show voluntary industry initiatives that do not require government funding.

While some materials have established recycling return programs, other bulky materials are receiving more current attention, such as electronics, paint and batteries. Recycling of construction and demolition materials are also expanding, such as concrete and brick rubble, asphalt grindings, wood scrap, drywall and roofing materials.

Funding Increased Recycling Percentage Goals: Increasing overall statewide recycling percentage goals is desired by the Task Force in the State Plan recommendation; however, this can only realistically be accomplished by achieving recycling or waste reduction goals for specified materials, since each commodity typically has different opportunities for reuse, recycling, composting or biodegradation that may, or may not, have the same overall percentage recycling goal as other commodities. Simply put, to achieve overall recycling goals, science or demonstrated practice needs to be applied to surmise potential recyclability or beneficial utilization of each type of material, and if demonstrated practice or science demonstrates the opportunity to achieve recycling or beneficial use at a cost that is less than

disposal or has lower net life cycle costs compared to disposal, then such endeavors may be worthwhile and deserve consideration for investment.

The Task Force, in a separate section, recommends an assessment of the various types and quantities of commodities currently being disposed of in landfills (as determined by the DCEO 2014 Waste Characterization Study), and subsequent development of a State Plan to identify potential economic and technical strategies for counties to maximize the diversion of these commodities from landfills via waste reduction, recycling, composting and biodegradation methods. The cost to develop the State Plan is estimated to be at least $300,000.00.

Potential Funding Impacts of Specific Task Force Recommendations:

1. Illinois State Plan for Waste Reduction, Reuse, Recycling, Composting, and Biodegradation.
   Develop a new State Plan for counties to use as a reference and 'tool box' to expand waste reduction, reuse, recycling, composting and biodegradation within their respective county.
   FUNDING IMPACT: The State Plan at an estimated one-time cost of at least $300,000.00 from the Solid Waste Management Fund.

2. County Recycling and Waste Management Planning.
   Renew the requirement for each County to submit and publish 5 year waste management plans, where such plans shall;
   a. list current waste reduction, recycling, reuse and composting plans in place, including the effectiveness of current plans; and
   b. List future plans for the next 5 years that considers the use of the State 'tool box' of information that will be provided by the newly adopted Illinois State Plan.

   FUNDING IMPACT: Each County would be required to continue to fund and use local resources to develop plan updates required by the Solid Waste Planning and Recycling Act. The cost to hire a consulting service or the equivalent of Recycling Coordinators to perform this effort will vary by county and scope of services performed, with the opportunity for counties to join together with common plans if desired. It is hoped that the tools created under the state plan would lessen this cost.

3. Funding for State and Local IEPA Permitting, Oversight and Regulation of Solid Waste Activities.
   Evaluate the funding level every year to determine if any changes may be needed.
   FUNDING IMPACT: The funding level should be reviewed on an annual basis to determine the amount of IEPA funding needed from the Solid Waste Management Fund.

4. Funding for State and Local DCEO Support of Projects that Advance Solid Waste Reduction, Recycling, Reuse, and Composting Efforts.
   Evaluate the funding level every year to determine if any changes may be needed.

FUNDING IMPACT: The funding level should be reviewed on an annual basis to determine the amount of DCEO funding needed from the Solid Waste Management Fund.

5. Management of Household Hazardous Waste:
   Expand collection and disposal of Household Hazardous Waste (HHW) by providing the opportunity to add 12 more permanent HHW facilities.
   FUNDING IMPACT:
   a. Maintain funding for current HHW programs.
   b. State funding would be needed to transport and dispose of the material generated from any new program.
   c. Local funding would be needed to build, staff and operate a new local facility/program.
   d. The funding level should be reviewed on an annual basis to determine the amount of funding needed from the Solid Waste Management Fund.

6. State Initiatives:
   Utilize existing funds from the Solid Waste Management Fund for the following:
   A. Establish communications with other states to seek national standards for the following:
      1. Product labeling to identify products that can be recycled via residential collection programs.
      2. Product labeling to identify products that are compostable or biodegradable.
   B. Participate on a national level to identify and promote opportunities to advance alternative products that are not hazardous.
   C. Provide statewide media effort to establish a unified message to achieve statewide recycling goals.
   D. Modify state procurement standards to require greater purchase/use of recycled content products.
   E. Convene committee of stakeholders to review and recommend organic, composting, and anaerobic digestion policy, rules and regulations.
      FUNDING IMPACT: Allocate funding to provide staff and/or professional services to work with other states to achieve common national standards while continuing to fund social media, website, public event and additional advertising promotion of programs.

The Task Force discussed the following potential funding options to consider if the legislature believes additional funding is necessary. The Task Force is not taking a position for or against any of the specific ideas; they are listed for informational purposes only:

a. Implementation of a fee on Motor Vehicle Registrations of $1 per registration, estimated revenue of $9 million;

b. Implementation of permit application fees for landfills, transfer stations and all other pollution control facilities which are currently not charged due to the $2

per ton tax on waste (any proposed permit application fee should not violate agreements that were made when the Landfill Tip Fee Fund was established or agreements that have made since then). In recognition of this arrangement, the Task Force agrees that the full cost of reviews should not be considered, but a fee system consistent with other state agencies may be considered;

c. Eliminate some exemptions to the $2 per ton tax on waste as a means to increase revenue. Special waste and beneficial use exemptions to the fee result in millions of lost revenue (any proposed elimination of exemptions should not violate agreements that were made when the Landfill Tip Fee Fund was established or agreements that have made since then).

d. Reduce the exemption benefit: rather than allow a total exemption, continue the exemption a half or one quarter of the tax rate (Instead of $2, the waste would be charged $1 or less per ton). (Any proposed reduction of exemption benefit should not violate agreements that were made when the Landfill Tip Fee Fund was established, or agreements that have made since then.)

e. Implement EPR legislation where the manufacturer of the product charges the consumer for recycling or end of life reuse programs as part of the sales fee and funds the programs implemented by the state or local governments; or implements their own program.

f. Consider passing Paint Stewardship legislation that was agreed to by Paint manufacturers in 2014 that will reduce disposal costs by implementing a consumer fee on each can of paint sold and ensure expansion of paint recycling service across Illinois and reduce IEPA costs for the HHW program.

g. Utilize direct consumer fees at the point of sale;

h. Increase the tip fee tax a small amount and give the additional revenue to counties without landfill revenue based on population and a working solid waste plan, to be used for recycling, reuse and composting programs;

i. Implement a fee surcharge on all materials delivered from offsite to Anaerobic Digestion sites;

j. Generator based fees (user fees paid by the generator at the point of collection).

k. The Illinois Solid Waste Fund (Comptroller Special Fund 078) has an existing fund balance and there should be a reasonable policy for spending these funds, including the possibility of earmarking a portion for the development of an expanded HHW collection network.

l. Current State law earmarks $2,000,000 ($500,000 each quarter) to be transferred from the Illinois Solid Waste Fund to the Hazardous Waste Fund. While it has a similar sounding name, these funds are not used for Household Hazardous Waste; it is used to assist in more general hazardous waste related clean-up activities. The state could consider redirecting some of these transferred funds to Household Hazardous Waste collection and disposal.

m. If legislation is adopted that would reduce HHW items (e.g., paint) the State's overall HHW disposal costs could be reduced and savings could be redirected to assisting in the development of an expanded State wide HHW collection network.

n. Consideration should be given by municipalities to include a transparent HHW collection fee as part of their solid waste management service cost for at-home collection, as is being accomplished for some municipal waste collection contracts in northern Illinois.

o. Consider finding another funding source in the amount of $2 million per year currently allocated for HWF (Hazardous Waste Cleanups and Landfill Remediation) in the event that the Landfill Tip Fee becomes insufficient to fund this effort.

Attachments

A. Public Act 97-853

B. Formal Approved Recommendations

1. Revision of the Illinois Solid Waste Management Hierarchy
2. Require more purchasing by the state of environmentally preferable products and supplies
3. Product Stewardship Labeling
4. Amend state law to establish a more convenient statewide Household Hazardous Waste collection system
5. Amend state law to authorize the development of a statewide Illinois Resource Master Plan
6. Require more purchasing by the state of products and material generated by Construction and Demolition debris recyclers.
7. Temporary drop-off sites for Organics, A.D. define permitting and tiered compost regulations

C. Formal Unapproved Recommendation

1. Specific Funding Recommendation for HHW Convenient Statewide Collection System

D. Executive Summary of Recycling Economic Impact Study

E. Executive Summary of Illinois Waste Characterization Study

F. Executive Summary of Illinois Food Scrap Coalition Report Food Scrap Composting Challenges and Solutions In Illinois

G. Summary of Illinois EPA's Household Hazardous Waste Program

Attachment A

Public Act 097-0853
HB4986 Enrolled

AN ACT concerning safety.

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section 5. The Illinois Solid Waste Management Act is amended by adding Section 10 as follows:

(415 ILCS 20/10 new)

Sec. 10. The Task Force on the Advancement of Materials Recycling.

(a) The Task Force on the Advancement of Materials Recycling is hereby created to review the status of recycling and solid waste management planning in Illinois. The goal of the Task Force is to investigate and provide recommendations for expanding waste reduction, recycling, reuse, and composting in Illinois in a manner that protects the environment, as well as public health and safety, and promotes economic development.

The Task Force's review shall include, but not be limited to, the following topics: county recycling and waste management planning; current and potential policies and initiatives in Illinois for waste reduction, recycling, composting, and reuse; funding for State and local oversight and regulation of solid waste activities; funding for State and local support of projects that advance solid waste reduction, recycling, reuse, and composting efforts; and the proper management of household hazardous waste. The review shall also evaluate the extent to which materials with economic value are lost to landfilling, and it shall also recommend ways to maximize the productive use of waste materials through efforts such as materials recycling and composting.

(b) The Task Force on the Advancement of Materials Recycling shall consist of the following 21 members appointed as follows:

(1) four legislators, appointed one each by the President of the Senate, the Minority Leader of the Senate, the Speaker of the House of Representatives, and the Minority Leader of the House of Representatives;
(2) the Director of the Illinois Environmental Protection Agency, or his or her representative;
(3) the Director of Commerce and Economic Opportunity, or his or her representative;
(4) two persons appointed by the Director of Commerce and Economic Opportunity to represent local governments;
(5) two persons appointed by the Director of the Illinois Environmental Protection Agency to represent a local solid waste management agency;
(6) two persons appointed by the Director of the Illinois Environmental Protection Agency to represent the solid waste management industry;
(7) one person appointed by the Director of Commerce and Economic Opportunity to represent non-profit organizations that provide recycling services;
(8) one person appointed by the Director of Commerce and Economic Opportunity to represent recycling collection and processing services;
(9) one person appointed by the Director of Commerce and Economic Opportunity to represent construction and demolition debris recycling services;

(10) one person appointed by the Director of Commerce and Economic Opportunity to represent organic composting services;
(11) one person appointed by the Director of Commerce and Economic Opportunity to represent general recycling interests;
(12) one person appointed by the Director of the Illinois Environmental Protection Agency to represent environmental interest groups;
(13) one person appointed by the Director of Commerce and Economic Opportunity to represent environmental interest groups;
(14) one person appointed by the Director of the Illinois Environmental Protection Agency to represent a statewide manufacturing trade association; and
(15) one person appointed by the Director of the Illinois Environmental Protection Agency to represent a statewide business association.

(c) The Directors of Commerce and Economic Opportunity and the Illinois Environmental Protection Agency, or their representatives, shall co-chair and facilitate the Task Force.

(d) The members of the Task Force shall be appointed no later than 90 days after the effective date of this amendatory Act of the 97th General Assembly. The members of the Task Force shall not receive compensation for serving as members of the Task Force.

(e) The Task Force shall seek assistance from the Illinois Department of Central Management Services, the Illinois Green Economy Network, and the Illinois Green Governments Coordinating Council to help facilitate the Task Force, using technology, such as video conferencing and meeting space, with the goal of reducing costs and greenhouse gas emissions associated with travel.

(f) The Task Force shall prepare a report that summarizes its work and makes recommendations resulting from its study, and it shall submit a report of its findings and recommendations to the Governor and the General Assembly no later than 2 years after the effective date of this amendatory Act of the 97th General Assembly.

(g) The Task Force, upon issuing the report described in subsection (f) of this Section, is dissolved and this Section is repealed.

Effective Date: 1/1/2013

ATTACHMENT B (1)

Task Force on the Advancement of Recyclable Material in Illinois
Formal Recommendation of Finding and/or Recommendation

Submitted By: GROUP EFFORT Date: February 2014, resubmitted April 24, 2014, with a minor edit on 19 May 2014

Legislative Citation: 415 ILCS 20/2 (IL SWM Act)

Brief Summary of Issue: Revision of Illinois' Solid Waste Management Hierarchy

Current Legislative Language:

(415 ILCS 20/2) (from Ch. 111 1/2, par. 7052)
Sec. 2. Public Policy.

A. The General Assembly finds:

1. that current solid waste disposal practices are not adequate to address the needs of many metropolitan areas in Illinois;
2. that the generation of solid waste is increasing while landfill capacity is decreasing;
3. that siting of new landfills, transfer stations, incinerators, recycling facilities, or other solid waste management facilities and the expansion of existing facilities is very difficult due to the public concern and competition with other land uses for suitable sites;
4. that more effective and efficient management of solid waste is needed in a manner that promotes economic development, protects the environment and public health and safety, and allows the most practical and beneficial use of the material and energy values of solid waste;
5. that state government policy and programs should be developed to assist local governments and private industry in seeking solutions to solid waste management problems;
6. that the purchase of products or supplies made from recycled materials by public agencies in the State will divert significant quantities of waste from landfills, reduce disposal costs and stimulate recycling markets, thereby encouraging the further use of recycled materials and educating the public about the utility and availability of such materials;
7. that there are wastes for which combustion would not provide practical energy recovery or practical volume reduction, which cannot be reasonably recycled or reused and which have reduced environmental threat because they are non-putrescible, homogeneous and do not contain free liquids. Such wastes bear a real and substantial difference under the purposes of the Illinois Solid Waste

Management Act from solid wastes for which combustion would provide practical energy recovery or practical volume reduction, which can be reasonably recycled or reused, or which are putrescible, non-homogeneous or contain free liquids;

8. since it is the policy of the State as set forth in the Environmental Protection Act to assure that contaminants discharged into the atmosphere or waters of the State are given the degree of treatment or control necessary to prevent pollution, that wastes generated as a result of removing contaminants from the air, water or land bear a real and substantial difference from other wastes in that the generation of wastes containing pollution treatment residuals can improve the environment in Illinois and should be encouraged;

9. since it is the policy of the State as set forth in the Environmental Protection Act to promote conservation of natural resources and minimize environmental damage by encouraging and effecting recycling and reuse of waste materials, that wastes from recycling, reclamation or reuse processes designed to remove contaminants so as to render such wastes reusable or wastes received at a landfill and recycled through an Agency permitted process bear a real and substantial difference from wastes not resulting from or subject to such recycling, reclamation, or reuse and that encouraging such recycling, reclamation or reuse furthers the purposes of the Illinois Solid Waste Management Act;

10. that there are over 300 landfills in Illinois which are permitted to accept only demolition or construction debris or landscape waste, the vast majority of which accept less than 10,000 cubic yards per year. By themselves these wastes pose only a minimal hazard to the environment when landfilled in compliance with regulatory requirements in an Agency-permitted site without commingling with other wastes and, as such, landfills receiving only such wastes bear a real and substantial difference from landfills receiving wastes which are commingled. Disposal of these wastes in landfills permitted for municipal wastes uses up increasingly scarce capacity for garbage, general household and commercial waste. It is the policy of the State to encourage disposal of these wastes in separate landfills.

B. It is the purpose of this Act to reduce reliance on land disposal of solid waste, to encourage and promote alternative means of managing solid waste, and to assist local governments with solid waste planning and management. In furtherance of those aims, while recognizing that landfills will continue to be necessary, this Act establishes the following waste management hierarchy, in descending order of preference, as State policy:

    1) volume reduction at the source;
    2) recycling and reuse;
    3) combustion with energy recovery;
    4) combustion for volume reduction;
    5) disposal in landfill facilities.

Suggested Finding: While no changes to the "whereas" clauses of this act were suggested, the actual hierarchy listed in section (b) is dated and should be updated to reflect technical advances and to provide policy direction for Illinois in terms of managing society's discards.

Furthermore, a greater discussion of the actual hierarchy should be included in the revised language.

Specific Recommendation: The Task Force discussed the hierarchy issue at several meetings and agreed that the hierarchy and the text explaining it should read as follows in an amendment to the IL Solid Waste Management Act:

C) In the interest of the public, health, safety and welfare, in order to conserve energy and natural resources and to maintain and/or enhance job creation, and after consideration of the technical and economic feasibility, it is the policy of Illinois to establish a comprehensive statewide program for solid waste management which will preserve or enhance the quality of air, water, and land resources in accordance with the following preferred hierarchy, in descending order of preference:

    1) Reduce
    2) Reuse
    3) Recycle
    4) Compost/Biological Treatment
    5) Recover Energy
    6) Dispose

The hierarchy shall be used as policy guidance, to focus planning efforts and to prioritize program activities that will:

First, reduce the amount of solid waste generated.
Second, reuse material.
Third, recycle material that cannot be reused.
Fourth, compost or biologically treat material to create useful organic products and/or energy recovery.
Fifth, recover energy from solid waste that cannot be reused, recycled, composted or biologically treated.
Sixth, dispose of solid waste by landfilling or other permitted disposal method that cannot be reused, recycled composted, or biologically treated.

Each action of the hierarchy shall be accomplished in such a manner so as to preserve or improve the quality of air, water, and land resources, regardless of the order of preference. If generally accepted scientific analysis shows that the action chosen for a specific material has lower environmental impacts and/or preserves more resources when compared to a higher step, then the chosen action for the specific material may be considered as the preferred action.

Discussion in Support: The actual hierarchy listed in section (b) is dated and should be updated to reflect technical advances and to provide policy direction for Illinois in terms of managing society's discards. Furthermore, a greater discussion of the actual hierarchy should be included in the revised language.

Discussion in Opposition: Illinois environmental organizations, including the Illinois Environmental Council, oppose listing landfilling last as they would prefer that incineration be at the bottom due to toxic releases from burning.

RECORD KEEPING SECTION

Date of Vote: 07-10-2014

Votes in Favor: Walters, Smith, Braatz, Keane, Van Vooren, Disbrow, Fletcher, Magrisso, Willis, Bulthuis, Hoving, Maxwell, Peck, Laird

Votes in Opposition: Walling

This recommendation passed with a final vote of 14 to 1.

Attachment B (2)

Task Force on the Advancement of Recyclable Material in Illinois
Formal Recommendation of Finding and/or Recommendation

Submitted By: David Van Vooren, Jennifer Walling and Walter Willis **Date**: July 14, 2014

Legislative Citation: Amend 30 ILCS 500/45-20 Recycled Materials and 30 ILCS 500/45-26 Environmentally Preferable Procurement codes to assist in providing direction to State agencies for the purchasing of recycled content goods.

Brief Summary of Issue: Illinois' procurement code provides for State agencies and departments to secure products and materials that have or are produced from recycled components. As the State continues to see fiscal and economic benefits in the way of resource conservation and job creation, it is in the State's best interest to pursue procurement strategies that enhance a procurement code that supports the practice of the use of recycled materials.

On July 10, 2014 a representative from Central Management Services (CMS) gave a presentation to the Task Force on the current status of recycled content purchasing in Illinois. Based on that presentation and the information provided the Task Force believes the procurement code should be amended to include language requiring State Agencies and Departments to purchase products either composed of or containing recycled material when the products are priced equal to a product or material that contains no recycled content the State Agency or Department should be required to purchase the recycled content product or material.

Further, in conjunction with the State's existing Environmentally Preferable Procurement policy, and in an effort to close the loop with recycled content products and materials, CMS and State Agencies should continue to explore opportunities to purchase recycled materials and products made from recycled content material even when there exist a price preference difference. By allowing this procurement enhancement the State will further assist in market demand for recycled content products, enhanced resource management, and job creation in Illinois.

Any Current Legislative Language: No legislative language has been developed at this time, but the existing State Procurement Code can be amended to accomplish the desired results.

Suggested Finding: Current State procurement is limited in its effectiveness to create stronger markets for recycled content products purchased by the State and should be strengthened in such a manner as to increase demand for recycled content products without having a significant impact on the cost for those goods purchased by the State. This finding also covers the use of compost in addition to recycled content goods purchased by the State.

Specific Recommendations:

1. Amend the State's procurement code to require State Agencies and Departments to purchase recycled content products when the price for the recycled content product is equal to or less than the cost of a material or product produce without recycled content. There would be no option to buy virgin content products or materials if the recycled content option is equal to or less than for the Agency or Department. Currently agencies and departments are given a choice between the recycled content and virgin content products and this practice should stop.

2. Amend the appropriate State statutes to require that any entity (local government, colleges, school districts and other recipients of State funds) that receives State funding must incorporate the requirements of the State's Procurement Code in its own procurement process as a condition of receiving that State funding. Also encourage the use of larger joint purchasing agreements with county, township and municipal government for recycled content products and compost.

3. Require that in all State procurement processes (both by CMS and other State agencies and departments) that factors in the selection process be: 1) the amount of recycled content a product contains, 2) how the product was designed to minimize its environmental impact through its life cycle, and 3) how the product was designed to be recycled or composted. The vendors as part of their procurement document submittals would be required to provide this information to the State and the State would utilize this information as part of its overall evaluation of the vendor submittals.

Discussion in Support: The positives related to this recommendation are: 1) the development of a stronger procurement preference for recycled content products, and thereby enhancing the economics of recycling programs in general, 2) the State agencies and department will have the same sustainability strategy in their procurement programs and this strategy can be expanded to other entities that rely on State funding and could possibly be expanded to larger joint purchasing contracts that county, township and municipal government could utilize much like the State's current road salt purchasing program, and 3) the State will be using its purchasing power to support natural resource conservation and job creation while not substantially expending more State dollars.

Discussion in Dissent or Opposition: Walling noted that the IEC supports this language but would prefer for the allowance of a premium to be paid for recycled content material.

RECORD KEEPING SECTION

Date of Vote: 09-04-2014

Votes in Favor: Walters, Smith, Braatz, Keane, Van Vooren, Disbrow, Walker, Fletcher, Magrisso, Willis, Bulthuis, Hoving, Maxwell, Peck, Laird, Walling

Votes in Opposition: None

This recommendation was approved with a vote of 16-0.

Attachment B (3)

Task Force on the Advancement of Recyclable Material in Illinois
Formal Recommendation of Finding and/or Recommendation
Submitted By: Greg Maxwell Date: July 12, 2014

Legislative Citation (if known): Product Stewardship Labeling

Brief Summary of Issue: Consumers need labeling that is easily understood to identify if the product they buy is truly recyclable, compostable or biodegradable without causing harm to human health or the environment. This allows consumers to make a conscientious choice of what products to buy. The State of Illinois can take a leadership role to support national standardized labeling for any packaging or products that are claimed to be recyclable, compostable or biodegradable, where such labeling is based on nationally recognized and accepted scientific standards. Informative labeling is recommended to include the following:

For recyclable products: How2Recycle label.

Note: Information regarding the How2Recycle organization can be found on their website: http://www.how2recycle.info/

For compostable and biodegradable products: Labeled as compostable or biodegradable only if the packaging is compostable or biodegradable according to the current applicable ASTM Standard.

Current Legislative Language: The Illinois Solid Waste Management Act, Section 6a states that the Department of Commerce and Economic Opportunity shall:

1. Work with nationally based consumer groups and trade associations to develop nationally recognized logos which may be used to indicate whether a container is recyclable, made of recyclable materials, or both.
2. Work with nationally based consumer groups and trade associations to develop nationally recognized criteria for determining what conditions the logos may be used.
3. Develop and conduct a public education and awareness campaign to encourage the public to look for and buy products in containers which are recyclable or made of recyclable materials.

Suggested Findings:

1. The current legislative language of Section 6a (1), (2) and (3) only pertains to containers.
2. The current legislative language of Section 6a (1), (2) and (3) does not reference composting and biodegradation.

Specific Recommendation:

Expand the current legislative language for Section 6a (1), (2) and (3) as follows:

1. In section 6a (1) and (3), after the word container, add "and any other consumer products which are claimed to be recyclable by a product manufacturer".

2. In section 6a(1), delete “made of recyclable materials, or both” and replace with “compostable or biodegradable.”

3. In section 6a(3), delete “or made of recyclable materials” and replace with “,compostable or biodegradable.”

NOTES

1. Products making claims that their product is made from recyclable materials does not necessarily mean that the product is recyclable and therefore should not be a part of How2Recycle labeling. A product producer that desires to provide labeling that their product is made from recyclable materials needs to address this separately.

2. Section 10 of the Solid Waste Planning and Recycling Act states that plastic bottles cannot be offered for sale unless it has a resin code surrounded by a 3-sided triangular chasing arrow. The plastic container industry is in the process of creating a new resin identification standard via the plastics recycling committee of ASTM (American Society of Testing Materials) to have the resin number surrounded by a triangle ‘without’ chasing arrows. Section 10 needs to be updated accordingly.

Discussion in Support: Maxwell opined that better labeling will lead to a more informed public in terms of what can be recycled and this will help reduce contamination levels at processing facilities.

Discussion in Dissent or Opposition: None

RECORD KEEPING SECTION

Date of Vote: 09-23-2014

Votes in Favor: Smith, Walters, Braatz, Keane, Van Vooren, Fletcher, Walling, Willis, Bulthuis, Maxwell, Walker, Peck, Laird

Votes in Opposition: None.

This recommendation was approved by a vote of 13-0.

Attachment B(4)

Task Force on the Advancement of Recyclable Material in Illinois
Formal Recommendation of Finding and/or Recommendation

Submitted By: David Van Vooren, Jennifer Walling, and Walter Willis **Date:** July 14, 2014

Legislative Citation: Amend Section 22.55 of the Illinois Environmental Protection Act to develop a convenient statewide collection infrastructure for residents to dispose of their unwanted household hazardous waste (HHW)

Brief Summary of Issue: The Illinois Environmental Protection Agency has been given the authority to reduce the environmental impact of improper disposal of household hazardous waste and has utilized its HHW program to provide collection opportunities throughout the State. IEPA currently provides one day and permanent collection sites through partnerships with local agencies for the proper management and disposal of household chemical waste. These one day and permanent collection sites are funded through the Section 22.15 of the Illinois Environmental Protection Act and administered by the IEPA (see attached handout on the IEPA's HHW program). Currently, the IEPA funds four permanent collections sites (Chicago, Naperville, Rockford and SWALCO) and several one day collection events in central and southern Illinois. Providing a means for the residents of the State of Illinois to dispose of their household hazardous waste in an effective, safe, cost effective and especially convenient manner ensures the State's environment, air and water, is preserved for future generations. The Task Force realizes, after receiving information from the IEPA and public comments provided to it that the existing HHW collection infrastructure is inadequate to meet the desired convenience standard for most of Illinois' residents. The Task Force suggests that the State develop, through local partnerships, an enhanced collection infrastructure that would include eight sites in the northern third of the State (four more in addition to the existing four sites) and four sites each in the central and southern portion of the State.

Any Current Legislative Language: No legislative language has been developed at this time, but amending Section 22.55 of the Illinois Environmental Protection Act to require the development of a more convenient HHW program may be an appropriate approach. The other element of this is the funding for 8 additional permanent collection sites in Illinois which are anticipated to cost the State approximately $2 million more per year to manage the HHW material collected by the sites. This estimate is based on $250,000 per site and could be lower if the Paint Stewardship bill is enacted in IL.

Suggested Finding: Currently the State collects funds through the fee established in Section 22.15 of the Illinois Environmental Protection Act. The State should first review the allocation of these funds and determine if the existing allocation can be increased by re-prioritizing the way the existing funds are spent. Secondly, the State should consider eliminating the exemptions allowed under Section 22.15, which will generate significant new funding..

Specific Recommendations:

1. Amend Section 22.55 of the Environmental Protection Act to require the establishment of a convenient State wide collection infrastructure for household hazardous waste. Said infrastructure should be developed by regions (north/central/south) and rely upon partnerships for the operation of the collections sites with the State's participation being the disposal of the materials collected. The infrastructure shall have as its base eight sites in the northern part and four each in the central and southern part of the State.
2. The IEPA should evaluate the existing allocation of Section 22.15 fee revenue to determine if additional funds can be allocated to the expansion of the HHW program.
3. If existing funds cannot be reallocated then amend Section 22.15 of the Act to eliminate the exemptions to the State and local fee and utilize of portion of this new revenue to fund an expanded HHW program..

Discussion in Support: The positive related to this recommendation is the development of a convenient, statewide HHW collection infrastructure that will promote clean air, land and water for the residents of the State.

Discussion in Dissent or Opposition: None provided.

RECORD KEEPING SECTION

Date of Vote: 09-04-2014

Votes in Favor: Walters, Smith, Braatz, Keane, Van Vooren, Disbrow, Walker, Fletcher, Magrisso, Willis, Bulthuis, Hoving, Maxwell, Peck, Laird, Walling

Votes in Opposition: None

This recommendation was approved with a vote of 16-0.

Attachment B (5)

Task Force on the Advancement of Recyclable Material in Illinois

Formal Recommendation of Finding and/or Recommendation

Submitted By: Walter Willis, Greg Maxwell and Lisa Disbrow

Date: First submitted on February 24, 2014; resubmitted May 19, 2014, June 12, 2014, August 14, 2014, and September 23, 2014(approved at Task Force meeting); amendments proposed on October 28, 2014 and November 18, 2014 (approved at Task Force meeting).

Legislative Citation: Amend Section 6 of the Solid Waste Management Act and Section 6 of the Solid Waste Planning and Recycling Act to provide authority to the State to develop a statewide Illinois Resource Management Plan (State Plan),which will encourage Counties to utilize and identify aspects of the State Plan that provide opportunities to achieve greater diversion of waste from landfills in a cost effective manner via source reduction, reuse, recycling, composting/biodegradation methods or other programs when preparing their 5 year Plan Updates.

Brief Summary of Issue: Illinois Counties were mandated in the late 1980s to develop and adopt solid waste management plans and to update them every five years. At that time the IEPA had a grant program that covered 70% of the planning costs. Counties worked hard to develop these plans and significant progress has been made over the past 20 years, but to reach higher waste diversion levels, the plans need to be updated to take into account newer methods and programs that have evolved. According to the USEPA, paper, paperboard, glass, metals, and plastics, which are traditional curbside recyclables, equal 51.8% of the waste stream. If these items could be recovered through various recycling programs, based on these commodities alone, it would be possible for the State of Illinois to reach a 50% waste diversion goal. A State Plan can help achieve higher diversion by acting as a resource with ideas and programs that provide potential options for each county in IL to consider.

Other state governments, such as Wisconsin, Indiana, Minnesota, Vermont, Tennessee, Massachusetts, and California (and others) have taken action in the last several years to enact state laws related to improving or expanding recycling and composting programs. The Task Force has discussed these other State initiatives and reviewed other State plans that may be beneficial in preparing the Illinois State Plan.

Public Act 97-0853 requires the Task Force on the Advancement of Materials Recycling to review: 1) county recycling and waste management planning, and 2) current and potential policies and initiatives in Illinois for waste reduction, recycling, composting, and reuse. This recommendation is attempting to address both of these requirements of the Act. The Resource Management Plan will provide a "tool box" of source reduction/reuse/recycling/ composting programs for both rural and urban counties (see recommendation 1) to consider and implement when preparing their 5 year plan updates, which addresses the county planning requirement. The second component of the State Plan (see recommendation 2) will address the current and future policies and initiatives requirement of Public Act 97-0853 by evaluating barriers and developing solutions to achieve higher diversion rates and to help the State of Illinois develop a long term vision for managing waste/materials in Illinois.

Any Current Legislative Language: No legislative language has been developed for this recommendation, but this recommendation does provide guidance on what the legislative language may want to include.

Suggested Finding: Comprehensive planning has the opportunity to be improved in Illinois via a State Plan to help counties update their plans with more specific program recommendations (see recommendation 1 below), and develop a longer term vision for waste/material management in Illinois and assign responsibility for implementing the State Plan (recommendation 2 below).

Specific Recommendations:

1. Amend Section 6 of the Solid Waste Management Act to grant the State of Illinois the authority to prepare and update as needed a statewide IL Resource Management Plan. It is recommended that the State Plan be developed with the assistance of a broad based advisory committee. The State Plan will focus on programs to divert waste/materials from final disposal, but will not provide recommendations to local units of government regarding the siting of pollution control facilities. The State Plan will provide guidance to counties developing their Plan Updates by providing the following information:

    a. An estimate, with 2014 as a base year, of the amount and composition of waste disposed on a statewide and per capita basis, and development of a database of permitted facilities and non-permitted facilities that must notify IEPA (the State Plan would establish this database and the county plans, see items (b) and (c) below, would be used to augment it and keep it updated), including landfills, garbage transfer stations, landscape waste transfer stations, composting sites, landscape waste land application sites, and construction and demolition debris recycling facilities; and recycling facilities that process recyclables from residential and/or commercial generators. In addition, an estimate of the overall waste generation rate and how that waste is managed after generation (amount reused, recycled, composted and disposed) as of 2014. It is expected that the DCEO waste characterization study being conducted in 2014 will form the basis for this section of the State Plan. The results of the 2014 DCEO study should be compared to the 2009 study to evaluate trends in composition of waste/material being disposed. This comparison should lead to conclusions regarding recommendations for diversion programs. It is also recommended that the 2014 study be used by counties when preparing their five year updates to develop and/or enhance local programs to capture and divert materials identified in the 2014 study.

    b. A common methodology for counties to use in determining their annual recycling and composting rate. Included will be a recommendation that County plans include identification of facilities (at a minimum the name of facility, geographic location, and type of facility) that accept recyclables and

organic material for recycling, composting or digestion from the County, and that this information be used to update and augment the database of facilities developed as part of the State Plan.

c. A common methodology for counties to use in determining their annual waste disposal rate. Included will be a recommendation that County plans include identification of facilities (at a minimum the name of the facility, geographic location and type of facility) that accept for transfer or final disposal municipal waste from the County, and that this information be used to update and augment the database of facilities developed as part of the State Plan.
d. Source reduction, reuse, recycling and composting programs that are applicable to counties with a population of 200,000 or more. Specific recommendations should be developed for residential programs (single family and multi-family), commercial programs, and construction and demolition debris programs. Each recommendation must include an estimate of the cost to implement the program, how it will be funded, and an estimated timeframe for implementation.
e. Source reduction, reuse, recycling and composting programs that are applicable to counties with a population of less than 200,000. Specific recommendations should be developed for residential programs (single and multi-family), commercial programs and construction and demolition debris programs. Each recommendation must include an estimate of the cost to implement the program, how it will be funded, and an estimated timeframe for implementation. (NOTE: The 200,000 population is a population baseline for urban county plans vs. rural county plans.)

f. Education and public outreach programs that are applicable to all counties. This should include an overall education campaign strategy for counties (how to define the target audience, what media to use and how to allocate resources), and development of an updated education toolkit with sample flyers, press releases, radio ads, recycling guidelines for recyclables, composting guidelines for food scrap collection, website banners, etc.

g. An assessment of the DCEO waste characterization study conducted in 2014 to form the basis of setting realistic diversion goals over specified periods of time through implementation of the methods and programs identified in the State Plan, where diversion goals will be determined based on: (a) landfill disposal volumes to account for source reduction and reuse, and (b) economically viable commodity markets available to account for recyclable materials.

h. Based on the opportunities outlined in the "tool box" above, the state goal would be to achieve diversion rates of 40% by 2020, 45% diversion by 2025 and 50% diversion by 2030 in counties with a population over 200,000 (as of 2010 census); 30%, 35% and 40% respectively in counties with a population of 200,000 or less.

2. The State Plan should also detail the specific responsibilities of the counties regarding implementation of the plan, and identify the future role the Agency (IEPA), the Department (DCEO), and other State agencies have in assisting counties and the State to achieve the goals outlined in the State Plan. The State Plan should also provide a vision with recommended practices that may include residential curbside programs, voluntary industry initiatives, public/private partnerships, consumer education, product stewardship and Extended Producer Responsibility, disposal bans, mandatory recycling, Zero Waste approaches, and State government procurement, from which policy makers may consider what proposed programs may have merit for implementation in Illinois. The evaluation of which programs or practices have merit should be conducted pursuant to Section 4(c)4 of the Solid Waste Planning and Recycling Act which requires "an evaluation of the environmental, energy, life cycle cost, and economic advantages and disadvantages" of the proposed programs. In addition, the State Plan may include recommendations to Congress, such as product labeling, that will benefit state diversion plans.

Discussion in Support: The positives related to this recommendation are: 1) diversion programs will more likely be considered and implemented by counties if feasible ideas and programs are presented in a State Plan, 2) more counties will engage in meaningful 5 year Plan Updates if provided the ideas, and education concepts in a State Plan, and 3) will allow the State to go through a more detailed planning process during the development of a State Plan and further consider actions being taken by other States.

Discussion in Dissent or Opposition: Concerns related to this recommendation are: 1) the cost to prepare a State Plan (at least $300,000 to prepare a first class report with multiple stakeholder meetings), 2) making sure the Plan can achieve its goal of being relevant to all 102 counties, and 3) the State Plan will not be effective if counties continue to disregard the 5 year planning requirement, and not utilize the State Plan for its intended purposes.

The Illinois Manufacturer's Association and the Illinois Retail Merchants Association submitted the following text in opposition to the State Plan:

Environmental initiatives such as extended producer responsibilities, product stewardship, and landfill bans merit discussion with all key stakeholders in a proper venue. We have serious reservations that this Task Force is recommending creation of a new appointed commission to deal with these issues without identifying who has appointment power and what stakeholders will be represented on such a commission. One size fits all approaches do not work for these initiatives that have widely differing economic and regulatory impact on different sectors of the economy. Many involve significant costs and compliance time. Illinois is not an island and companies compete in regional, national, and international markets. Any initiative that could potentially place Illinois employers at a competitive disadvantage should be carefully considered by large and inclusive groups of stakeholders including businesses in specific affected industries. We strongly oppose the recommendation of a vague and unsupported approach that may lack sufficient input from

impacted stakeholders while the two primary state agencies (IEPA and DCEO) have expressed opposition to hosting the committee.

RECORD KEEPING SECTION

Date of Vote: Original version approved on 09-23-2014 with incorporated revisions considered on 11-18-2014

Votes in Favor on 09-23-2014: Walters, Braatz, Keane, Van Vooren, Fletcher, Willis, Bulthuis, Maxwell, Walling, Walker

Votes in Favor on 11-18-2014: Walters, Braatz, Keane, Van Vooren, Fletcher, Willis, Bulthuis, Disbrow, Maxwell, Walling, Walker

Votes in Opposition on 09-23-2014: Peck, Laird, Smith

Votes in Opposition on 11-18-2014: Peck, Laird, Smith

This recommendation was approved on 09-23-2014 by a vote of 10-3 and by a vote of 11-3 on 11-18-2014.

Attachment B (6)

<u>Task Force on the Advancement of Recyclable Materials in Illinois</u>
<u>Formal Recommendation of Finding and/or Recommendation</u>
Submitted by: Ken Hoving

Date: December 09, 2014

Legislative Citation: Amend 30 ILCS 500/45-20 Recycled Materials and 30 ILCS 500/45-26 Environmentally Preferable Procurement codes to assist in providing direction to State agencies for the purchasing of recycled content goods.

Brief Summary of Issue: Illinois procurement code provides for State agencies and departments to secure products and materials that have or are produced from recycled components. As the State continues to see fiscal and economic benefits in the way of resource conservation and job creation, it is in the State's best interest to pursue procurement strategies that enhance a procurement code that supports the practice of the use of recycled materials.

Current Legislative Language: No legislative language has been developed at this time, but the existing State Procurement Code can be amended to accomplish the desired results.

Specific Recommendations:

1. **The State of Illinois** should require a preference on the use of higher Asphalt Binder Replacement in asphalt mixes when use of these materials is economically viable and meets project specifications on a delivered basis**.** This has the potential to reduce the cost of mix designs and save money for the State while enhancing the market for recycled shingles. As the allowable ABR increases more contractors will have the opportunity to use Recycled Asphalt Shingles in their asphalt mixes. There is substantive documentation to show that this can be done in a beneficial way, both saving money without sacrificing pavement strength or quality. (RAS Specifications are attached to this recommendation.)

2. **The State of Illinois** should require a preference on the use of recycled concrete as a replacement for stone or gravel fill for all road building and construction projects when use of these materials is economically viable and meets project specifications on a delivered basis. Recycled concrete has the ability to be crushed and graded to various size and specifications and is an excellent replacement with the same qualities as quarried stone or gravel.

3. **Central Management Services** should amend its procurement code in conjunction with the recommendations from David Van Vooren, Jennifer Walling and Walter Willis (dated July 14, 2014) to require State Agencies and Departments to purchase products either composed of or containing recycled material when the price is equal to or lesser than a product that contains no recycled content.

4. **The State of Illinois** should govern that any new or rehabilitated State owned or State funded buildings and properties should meet current LEED and Green specifications. Any demolition or deconstruction of State owned properties should also be deconstructed in a manner to maximize the highest and best use of C & D recyclable materials.

5. **The State of Illinois** should expand and promote its grant program to the construction and demolition industry, given the fact that construction and demolition debris consists of 40% wood products and 20% aggregates.

Discussion in Support: The positives related to this recommendation are: 1) Conservation of landfill space 2) Reduced mining of natural resources 3) Allow the State of Illinois to transform the way it designs, builds, maintains and operates State facilities in a more efficient manner.

Discussion in Dissent or Opposition: None

RECORD KEEPING SECTION

Date of Vote: 12-09-2014

Votes in Favor: Walters, Smith, Braatz, Keane, Van Vooren, Fletcher, Walling, Willis, Bulthuis, Disbrow, Maxwell, Walker, Peck, Laird, Hoving

Votes in Opposition: None

This Recommendation was approved by a vote of 15-0.

Current RAS Specifications

Maximum Acceptable Deleterious Materials

Max. Deleterious materials (by weight)		
IDOT (D1)	IDOT (BDE)	Tollway
0.5%	0.5%	0.5%

Minimum Required Testing Frequency

Minimum Testing Frequency during stockpiling	
D1	One sample per 200 tons for the first 1000 tons and one sample per 1000 tons thereafter
BDE	One sample per 200 tons for the first 1000 tons and one sample per 250 tons thereafter
Tollway	One sample per 200 tons for the first 1000 tons and one sample per 1000 tons thereafter

Required Gradation (Dry Shake)

Sieve	Percent Passing (%)		
	D1	BDE	Tollway
3/8 in. (9.5 mm)	100	100	100
No. 4 (4.75 mm)	90-100	93-100	93-100

Current RAS Specifications

Acceptable Tolerances
(between individual test results and the averages)

Sieve size	D1*	BDE **	Tollway**
No. 8 (2.36 mm)	± 5%	± 5%	± 5%
No. 16 (1.18 mm)	± 5%	± 5%	± 5%
No. 30 (600 µm)	± 4%	± 4%	± 4%
No. 200 (75 µm)	± 2.5%	± 2.0%	± 2.0%
Asphalt Binder Content	± 2.0%	± 1.5%	± 1.5%

* **D1**: If any individual sieve and/or asphalt binder content tests are out of the above tolerances when compared to the average used for the mix design, the RAS shall not be used in HMA unless the RAS representing those tests is removed from the stockpile.

****Tollway and BDE**: If more than 20% of the individual sieves are out of the gradation tolerances, or if more than the 20% of the asphalt binder content test results fall outside the appropriate tolerances, the RAS source will no longer be allowed for use in asphalt mixtures.

Current IDOT (BDE) Maximum Allowable ABR%

Type 1 or 2 RAS may be used alone or in conjunction with RAP or FRAP in HMA up to a maximum of 5.0% by weight of total mix.

Max. Allowable ABR % when RAS is used in conjunction of RAP/FRAP:

HMA Mixtures 1/, 2/	RAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified
30	30	30	10
50	25	15	10
70	15	10	10
90	10	10	10
105	10	10	10

HMA Mixtures 1/, 2/	FRAP/RAS Maximum ABR %		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified 3/, 4/
30	50	40	10
50	40	35	10
70	40	30	10
90	40	30	10
105	40	30	10

1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the RAP/RAS ABR shall not exceed 50 percent of the mixture.

2/ When RAP/RAS ABR exceeds 20 percent, the high and low virgin asphalt binder grades shall each be reduced by one grade

Current IDOT (D1) Maximum Allowable ABR%

Type 1 or 2 RAS may be used alone or in conjunction with FRAP in HMA up to a maximum of 5.0% by weight of total mix.

Max Asphalt Binder Replacement for FRAP with RAS Combination

HMA Mixtures [1/ 2/ 4/]	Maximum % ABR		
Ndesign	Binder/Leveling Binder	Surface	Polymer Modified [3/]
30L	50	40	30
50	40	35	30
70	40	30	30
90	40	30	30
4.75 mm N-50			40
SMA N-80			30

1/ For HMA "All Other" (shoulder and stabilized subbase) N-30, the percent asphalt binder replacement shall not exceed 50% of the total asphalt binder in the mixture.

2/ When the binder replacement exceeds 15 percent for all mixes, except for SMA and IL-4.75, the high and low virgin asphalt binder grades shall each be reduced by one grade

4/ When FRAP or RAS is used alone, the maximum percent asphalt binder replacement designated on the table shall be reduced by 10%.

Chicago Department of Transportation (CDOT)

✓ Follows Mostly IDOT RAS specification

Chicago's Sustainable Urban Infrastructure Policy:

CODE	EFFECTIVE JULY 2013	EFFECTIVE JANUARY 2015	EFFECTIVE JANUARY 2018
MW1	Projects shall divert 50% construction and demolition waste, as calculated in Volume 2, from landfills.	Projects shall divert 65% construction and demolition waste, as calculated in Volume 2, from landfills.	Projects shall divert 75% construction and demolition waste, as calculated in Volume 2, from landfills.
MW2a	20% of the total materials value, for projects over $5M, shall be from recycled materials, as calculated in Volume 2.	20% of the total materials value, for projects over $3M, shall be from recycled materials, as calculated in Volume 2.	20% of the total materials value, for projects over $1M, shall be from recycled materials, as calculated in Volume 2.
MW2b	Projects under $5M shall specify materials so that 10% of the total materials value is from recycled content as calculated in Volume 2.	Projects under $3M shall specify materials so that 10% of the total materials value is from recycled content as calculated in Volume 2.	Projects under $1M shall specify materials so that 10% of the total materials value is from recycled content as calculated in Volume 2.
MW3	When asphalt is used a minimum asphalt binder replacement of 20% is required.	When asphalt is used a minimum asphalt binder replacement of 30% is required.	When asphalt is used a minimum asphalt binder replacement of 40% is required.

Current Tollway Maximum Allowable ABR %

Type 1 or 2 RAS may be used in all asphalt mixtures up to a maximum of 5.0% by weight of total mix.

Max. Allowable ABR % when RAS is used in conjunction of FRAP:

HMA Mixtures	FRAP/ RAS Maximum ABR%
SMA Surface Mixes	35%
N90 Surface Mixes	35%
N105 Surface Mixes	35%
N70 Shoulder Surface Mixes	40%
N90 Binder and Leveling Binder Mixes	45%
N105 Binder and Leveling Binder Mixes	45%
4.75 mm Leveling Binder Mixes	45%
N50 Shoulder Binder Mixes	50%
Asphalt Stabilized Subbase Mixes	65%

Attachment B (7)

Task Force on the Advancement of Recyclable Materials in Illinois
Formal Recommendation of Finding and/or Recommendation

Submitted by: Jen Walling/Paul Walker Date: November 18, 2014 and December 9, 2014
Legislative Citations:

Temporary Drop Off Sites For Organic - Waste 415ILCS5/3.330
Defined Permitting For Anaerobic Digestion – 415ILCS 5/3.330 (was 415ILCS 5/3.32)
Tiered Composting Regulations – 415ILCS 5/3.330

Brief Summary of Issues: Decreasing organic material in landfills can be accomplished in several ways, including through the use of organic material in composting and anaerobic digestion. The current process for permitting regulations required for siting, location standards, development and operation of composting facilities and anaerobic digesters were developed using landfill regulations as a pattern.
Composting- Composting can play a role in recycling. State regulations designed to protect the environment and human health can be proactive and encourage composting activity or regulations can be too restrictive and discourage composting activity. Illinois tends to have a "one size fits all" set of composting regulations. Originally developed using landfill regulations as a pattern, compost regulations have been found too restrictive and have been modified to fit special needs on an as perceived needed basis. These changes have been made without adherence to a uniform model that promotes environmental health while recognizing that difference of scale and type of facility affect potential for pollution.

The following list includes types of compost facilities in operation within Illinois.

-backyard
-community gardens
-schools
-on-farm with all raw materials generated on-site
-on-farm with some raw materials generated off-site (>30,000 yd3 one time capacity)
-on-farm with some raw materials generated off site (less than 30,000 yd3 one time capacity)
-commercial compost facilities
-vermi compost facilities
-in-vessel compost facilities
-in-vessel compost facilities that include windrow or static pile composting
-in-door composting facilities
-out-door composting facilities

Anaerobic Digesters - Current regulations do not provide appropriate definitions for anaerobic digestion nor its substrates and products. There is regulatory confusion within Illinois between state staff and some stakeholders regarding whether or not an anaerobic digester is a pollution control facility or if it is included under the food scrap composting exemption. Anaerobic Digesters should be defined and regulated based upon the risks associated with these type of facilities (feedstock management, odors, vectors, gases, pathogens, etc.) to ensure protection of the environment and human health.

Organic Waste Drop Sites - Under the IEPAct definitions, “storage” refers to the containment of waste, either on a temporary basis or for a period of years in such a manner as not to constitute disposal. Communities would like to host drop off events for organic waste. For example, in other states, local communities host pumpkin drop offs after Halloween and bring these pumpkins to a drop-off site for transfer to a compost site. In New York City, farmers markets host food scrap drop offs where these materials can be hauled back to urban farms after the event. Both of these are not allowed under the current interpretation of Illinois law by the state. In general, the state does not allow temporary drop-offs for organic waste such as food scraps without obtaining permitting as a transfer station. Drop offs are an important first step that can encourage diversion of material from a landfill and are especially important in less dense areas where curb side pick-up might be too expensive. The state has interpreted current law to indicate that temporary drop offs must be defined as transfer stations and because they are transfer stations that accept more than landscape waste, they need to get local siting and obtain a permit for a transfer station. A targeted pilot program in Illinois was successfully conducted in at least five municipalities during the fall of 2014 following Halloween to collect pumpkins. This pilot program was conducted under an IEPA Hazardous Waste exemption and was limited to one-day collections. This pilot initiative diverted over 20 tons of pumpkins. The pilot program suggests that temporary drop off sites for organic wastes can be successful without compromising environmental or human safety.

Licensing/Permitting for Selling Compost - Compost produced in Illinois cannot be sold or given away unless the compost facility producing the compost has state permitting. To qualify for sale within Illinois, Illinois produced compost must meet the following standards based on the testing of one sample for every 5000 tons produced or one sample per year whichever is less: contain less than or no more than the maximum state limits for the following metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc) and are limited to maximum concentration of the two pathogen groups (fecal coliform = 1000 cfu:g of total solids and salmonella = 3MPN:4g of total solids). Which laboratory tests are required should reflect the type of raw material utilized as feed stock for composting. One test does not guarantee sanitized compost nor compost that is free of heavy metals; however, the purpose of the tests are to provide a level of comfort for the public and validate that unacceptable materials are not being allowed at permitted compost facilities. Testing of compost produced in community gardens and distributed to community members may be too expensive and distribution of compost is currently not allowed under IEPA permitting without testing.

Suggested Finding: Current permitting in Illinois for compost facilities can be confusing and often discourages the development of compost facilities. One set of regulations cannot accommodate all of the compost facility types without being either over burdensome or inadequate to protect the environment and human health. For those composting facilities that do not require state permitting, a set of model ordinances should be developed that municipal and county governments can use as guidelines. The current permitting process is acceptable for commercial facilities. The current permitting process discourages development of smaller scale compost facilities (i.e. community gardens). A tiered permit/registration system may address these issues. There is also some confusion regarding which state agency has oversight for small scale/non-permitted facilities i.e. the state or local Departments of Health.
“Permitting” should recognize that anaerobic digesters (AD) do not produce compost. A separate set of definitions and regulations for siting, development, operation and closure should be developed for AD. Trying to classify compost facilities and AD as exempt from the definition of a pollution control facility is an antiquated approach that does not work effectively. Regardless of

size, a biosolids facility (<100 CY or >100 CY) requires a different set of regulations than a compost facility. The relationship between state permit approval, local municipal or county siting approval and the authority of local Departments of Health should be clearly established. A thorough review (based on science) of the compost permitting process in Illinois, if conducted with common sense, can increase composting activity and the utilization of AD.

The ability to utilize temporary and permanent drop-off sites for organic material, especially for food scraps, should increase the diversion of this material from landfills. However, these facilities should be regulated in a manner to prevent illegal-dumping, and to address odor management, frequency of removal, contamination and vectors to ensure a successful program.

Specific Recommendations:

1. The State should be directed to form a committee to conduct a coordinated review and rewrite of the permitting regulations for siting, developing, operating and closure of compost facilities within Illinois.
2. The committee also, should develop appropriate definitions for Anaerobic Digesters including AD substrates and products. Permitting, location standards, and siting regulations should be developed specifically for AD. Definitions for terms such as anaerobic digester, digestate and anaerobic digestion should be adopted, based on scientific knowledge and should be practical while ensuring environmental and human safety.
3. Regulations that will allow temporary and permanent drop-off sites for organic material (especially food scraps) separate from those regulations for transfer stations should be developed.
4. This state committee should be composed of people representing (though not necessarily limited to) each of the following groups:
   - -IEPA
   - -University scientists (active or emeritus) with composting and AD experience.
   - -Commercial composting industry
   - -On-farm composters
   - -Municipal government
   - -Waste Industry
5. Issues that should be addressed include but are not limited to:
   - -development of regulations that recognize a tier system based on size and type of the compost facility.
   - -what regulations based on size and type of facility are required to ensure environmental and human health.
   - -when is state permitting required vs. registration of the compost facility
   - -when is local siting approval required
   - -when does a permit application require review by a civil engineer and when is such a review not necessary.
   - -when is a topographical map required as part of the approval process.
   - -when and what license/permits are required to sell or “give away” compost. Can regulations be provided for incidental sales of compost and what does this mean? Separating the sale of compost from the permitting process and placing it under a licensing process should be considered.
   - -the requirements for closure of compost facilities should be based upon volumes accepted and type of facility in order to obtain state permits or registration for compost operation.

-registration of all compost sites (those requiring permits and those not requiring permits) with the state.

Discussion In Support: Development and implementation of regulations that allow the use of temporary drop-off sites for organic waste (food scraps in particular) should speed the diversion of food scraps from landfill deposition. If residential food scrap recycling is to be embraced by the general citizenry it must be economical (affordable) and convenient. Temporary drop-off sites that are conveniently located for special occasions that target a specific type of food scrap such as pumpkins following Halloween and Thanksgiving should increase pumpkin utilization as a raw material for composting. Location of a "roll-off" at an easily assessable site for a 24-48 hour period should pose no negative effect upon the local environment. Appropriate permitting will ensure environmental and public safety. Permanent drop-off sites that have easy access by the general public should increase general residential food scrap diversion from landfill deposition substantially. Permanent drop-offs that are placed in a secure, manned location in or near residential population centers should enhance residential and small business food scrap recycling. Appropriate permitting that ensures timely pick-up or emptying of the "roll-off", that makes the drop location secure from vandalism and that has easy access by the general public should insure environmental and human safety.

Development, adoption and implementation of siting, operation and closure regulations specific to Anaerobic Digesters (AD) should increase the diversion of organic wastes from landfill deposition. Many of the regulations for siting, operation and closure of compost facilities or for landfills are not relevant to an AD. Specific regulations for AD will increase the adoption of this technology and prolong the lifespan of currently operating landfills.

The current "one model fits all" set of permitting regulations for the siting, location, development, operation and closure of compost facilities in many instances discourages the utilization of composting as an alternative use for organic wastes. Siting and location standard requirements for small scale compost facilities are often less demanding than those required for larger scale facilities and regulations should reflect these differences. However sufficient regulations must be in place to ensure environmental and human safety regardless of compost facility size or type operation. Closure requirements for compost facilities should be different than those for landfills as a compost facility can be a temporary, completely removable facility compared to a landfill that is a permanent "forever" facility. A tier system of regulations developed specific to size, type of feedstock, size and purpose of the compost facility should increase the utilization of composting as a diversion of organic material from landfill deposition.

Currently, the ability to sell compost produced in Illinois is tied to the requirement for state permitting regulations. This requirement puts Illinois produced compost at a disadvantage to compost produced "out of state" and sold within Illinois. Separating the ability to sell Illinois produced compost from permitting regulations and placing the sale of compost under licensing regulation should increase the sale of compost by small scale, compost operators. A licensing procedure for the sale of compost should increase compost sales thereby increasing the adaptation of composting as a diversion of organic material from land filling. A license requirement that requires metal or pathogen testing as appropriate should ensure that compost sold in Illinois is safe for the environment and human health.

Discussion in Dissent or Opposition: None.

RECORD KEEPING SECTION

Date of Vote: 12-09-2014

Votes in Favor: Smith, Braatz, Keane, Van Vooren, Fletcher, Walling, Willis, Bulthuis, Maxwell, Walker, Peck Disbrow, Laird, Hoving

Votes in Opposition: None.

Abstaining: Walters

This recommendation was approved by a vote of 14-0.

Attachment C (1)
Task Force on the Advancement of Recyclable Material in Illinois
Formal Recommendation of Finding and/or Recommendation

Submitted By: David Van Vooren, Jennifer Walling, and Walter Willis **Date:** July 14, 2014

Legislative Citation: Amend Section 22.55 of the Illinois Environmental Protection Act to develop a convenient statewide collection infrastructure for residents to dispose of their unwanted household hazardous waste (HHW)

Brief Summary of Issue: The Illinois Environmental Protection Agency has been given the authority to reduce the environmental impact of improper disposal of household hazardous waste and has utilized its HHW program to provide collection opportunities throughout the State. IEPA currently provides one day and permanent collection sites through partnerships with local agencies for the proper management and disposal of household chemical waste. These one day and permanent collection sites are funded through the Section 22.15 of the Illinois Environmental Protection Act and administered by the IEPA (see attached handout on the IEPA's HHW program). Currently, the IEPA funds four permanent collections sites (Chicago, Naperville, Rockford and SWALCO) and several one day collection events in central and southern Illinois. Providing a means for the residents of the State of Illinois to dispose of their household hazardous waste in an effective, safe, cost effective and especially convenient manner ensures the State's environment, air and water, is preserved for future generations. The Task Force realizes, after receiving information from the IEPA and public comments provided to it that the existing HHW collection infrastructure is inadequate to meet the desired convenience standard for most of Illinois' residents. The Task Force suggests that the State develop, through local partnerships, an enhanced collection infrastructure that would include eight sites in the northern third of the State (four more in addition to the existing four sites) and four sites each in the central and southern portion of the State.

Any Current Legislative Language: No legislative language has been developed at this time, but amending Section 22.55 of the Illinois Environmental Protection Act to require the development of a more convenient HHW program may be an appropriate approach. The other element of this is the funding for 8 additional permanent collection sites in Illinois which are anticipated to cost the State approximately $2 million more per year to manage the HHW material collected by the sites. This estimate is based on $250,000 per site and could be lower if the Paint Stewardship bill is enacted in IL.

Suggested Finding: Currently the State collects funds through the fee established in Section 22.15 of the Illinois Environmental Protection Act. The State should first review the allocation of these funds and determine if the existing allocation can be increased by re-prioritizing the way the existing funds are spent. Secondly, the State should consider eliminating the exemptions allowed under Section 22.15, which will generate significant new funding..

Specific Recommendations:

1. Amend Section 22.55 of the Environmental Protection Act to require the establishment of a convenient State wide collection infrastructure for household hazardous waste. Said infrastructure should be developed by regions (north/central/south) and rely upon partnerships for the operation of the collections sites with the State's participation being the

disposal of the materials collected. The infrastructure shall have as its base eight sites in the northern part and four each in the central and southern part of the State.

2. The IEPA should evaluate the existing allocation of Section 22.15 fee revenue to determine if additional funds can be allocated to the expansion of the HHW program.
3. If existing funds cannot be reallocated then amend Section 22.15 of the Act to eliminate the exemptions to the State and local fee and utilize of portion of this new revenue to fund an expanded HHW program.

Discussion in Support: The positive related to this recommendation is the development of a convenient, statewide HHW collection infrastructure that will promote clean air, land and water for the residents of the State.

Discussion in Dissent or Opposition: No written comments provided.

RECORD KEEPING SECTION

Date of Vote: 11-18-2014

Votes in Favor: Van Vooren, Willis, Walling, Keane, Fletcher, Walker, Braatz.

Votes in Opposition: Bulthuis, Peck, Laird, Maxwell, Walters and Disbrow

Abstaining: Smith

This recommendation failed to be approved with a vote of 7-6. Eight votes were need for approval.

EXECUTIVE SUMMARY

Overview

Recycling is an important contributor to the economy of Illinois, providing local jobs through the network of municipal and private collection programs, material recovery facilities, reclaimers, converters, brokers, reuse operations, remanufactures and recycled-content product manufacturers. Further, recycling replaces materials often mined and manufactured outside of the state with materials collected and processed within Illinois. Through a grant from the Illinois Department of Commerce and Economic Opportunity (DCEO), the Illinois Recycling Association (IRA) contracted with DSM Environmental Services, Inc. (DSM) to research the contribution of recycling and reuse industries to the economy of the State of Illinois. The research is intended to provide state and local officials, the IRA, and other interested parties, with the ability to understand and communicate the economic value of the recycling industry in the state. DCEO commissioned a similar report in the 2001, *Illinois Recycling Economic Information Study*. This work, referred to as the *Study Update*, updates the results of that nearly decade-old report (referred to as the *2001 Report*).

The Executive Summary highlights the findings of the Study Update. The full report details the methodology used to estimate the economic impacts and also documents differences between the methodology used in the Study Update, and that used in the 2001 Report. Changes in methodology were made for the Study Update to more accurately reflect the economic contribution of the recycling industry of Illinois, even though in most cases these changes reduce the estimated economic impact when compared to the 2001 Report.

This Study Update presents both the direct economic impacts of the recycling, recycling reliant, and reuse industries (the recycling industry) in Illinois, as well as estimates of indirect and induced impacts, for each recycling industry sector (the multiplier effect). An effort was made to model the indirect and induced impacts associated with all of the recycling, recycling reliant and reuse industries without double counting.

Based on a "whole model approach" it is estimated that the combined ***direct, indirect and induced impacts of Illinois' Recycling, Recycling Reliant and Reuse Industries contribute***:

- **A total of 111,500 jobs;**
- **Payroll of $3.6 billion;**
- **$30.3 billion in additional gross receipts; and,**
- **Over $1 billion in state and local taxes** (see Table 9 for details).

The following table summarizes how jobs, payroll, gross receipts and tax revenues are distributed between direct, indirect and induced impacts:

a. Table ES.1

Summary of Direct, Indirect and Induced Economic Impacts (rounded)

Impact Type	Jobs	Payroll	Gross Receipts	State and Local Taxes[1]
Direct Effect	40,000	$1.5 billion	$17.1 billion	564.3 million
Indirect Effect	34,000	$1.2 billion	$7.1 billion	234.3 million
Induced Effect	37,500	$886 million	$6.1 billion	201.3 million
Total Effect	111,500	$3.6 billion	$30.3 billion	$1 billion

A detailed description of each recycling, recycling reliant and reuse industry sector is presented in the opening chapter of this report, and Table ES.1 summarizes the estimated direct, indirect and induced economic impacts of these sectors in more detail.

The primary source of data for the 2001 Report was the 1997 Economic Census. This Study Update is based primarily on 2007 Economic Census data. Therefore, this Study Update represents the economic status of the recycling industry ten years after the 2001 Report, considering the differences in methodology used in the 2001 Report.

It is important to note that this Study Update does not present the contribution of recycling industry to the statewide *Greenhouse Gas Emission reduction strategy* even though these industries not only limit the amount of organic materials landfilled (reducing methane generation) but more importantly, replace virgin materials in manufacturing with secondary materials which reduce mining, transport, and processing energy inputs and environmental impacts upstream from waste generation.

In addition, this Study Update used survey data from 2009, just before two important regulatory changes occurred in Illinois that likely will increase the economic contribution of recycling. These are the addition of food waste as an approved activity in organics composting; and, the addition of asphalt shingles as an approved feedstock for asphalt pavement by the Illinois Tollway Authority and the Illinois Department of Transportation (IDOT). In both cases the increased feedstock are anticipated to build and grow further economic activity in Illinois.

c. Summary of Direct Economic Impacts

Twenty-six business sectors were included in the 2001 Report, and are included again in this Study Update. These 26 sectors are divided into three categories: Recycling Industries, Recycling Reliant Industries, and Reuse and Remanufacturing Industries.

The size of each sector was determined through a combination of the following:

- U.S. Census Bureau data;

[1] The INPLAN model calculated a total tax impact, and did not allocate taxes to the direct, indirect and induced activities. Therefore this summary table reflects a simplistic assumption that state and local taxes are distributed similar to gross receipts, which may or may not be the case.

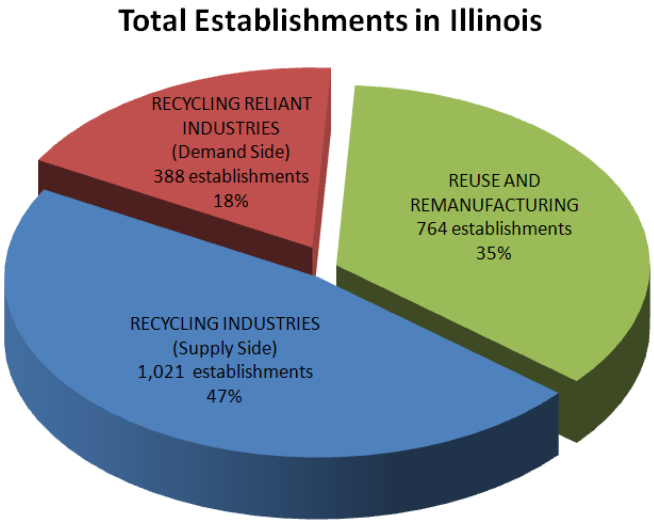
- Trade association data;
- State and private databases;
- Surveys of establishments in certain sectors; and
- Modeling of certain sectors based on the number of establishments and other attributes of the sector.

a. Establishments

A total of 2,173 establishments are involved in recycling, or the use of recycled materials, in Illinois. An establishment is defined by t**he U.S. Economic Census as a** single physical location where business is conducted, or where services are performed. This would include processing centers, material recovery facilities, recycled-content product manufacturers, etc. As Figure ES.1 illustrates, 47 percent (1,021 establishments) of the total establishments are in the recycling industries, with another 35 percent in reuse and remanufacturing. Only 18 percent of establishments are recycling-reliant industries. This is consistent with the pyramid that one would expect; with many smaller collection, processing, and wholesaling operations feeding a few larger recycling reliant industries.

a. **Figure ES.1**

Total Establishments in Illinois



b. Employment

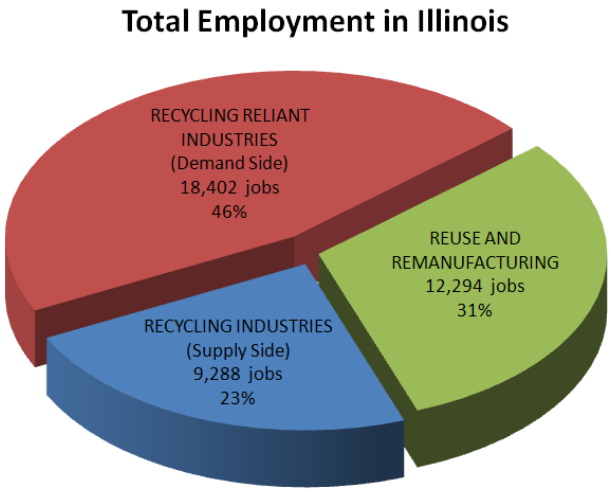
The 2,173 recycling establishments in Illinois employed an estimated 40,000 people (rounded) in 2009 (Figure ES.2).[2] Interestingly, the distribution of employment did not follow the distribution of establishments. The supply-side establishments (recycling industries) accounted for just 23 percent (9,300 jobs) of employment while the demand-side establishments (the recycling reliant industries) accounted for 46 percent (18,400 jobs). This phenomenon is explained by the small number of full-time equivalent (FTE) employees working at the large number of small composting

[2] Data provided in this report are rounded to reflect that only a portion of the data are the result of Economic Census data, requiring estimates for certain sectors based on surveying and/or modeling.

and drop-off facilities that account for a significant portion of supply-side recycling establishments. The remaining 31 percent (12,300 jobs) were provided by the reuse and remanufacturing establishments.

a. **Figure ES.2**

Total Employment in Illinois

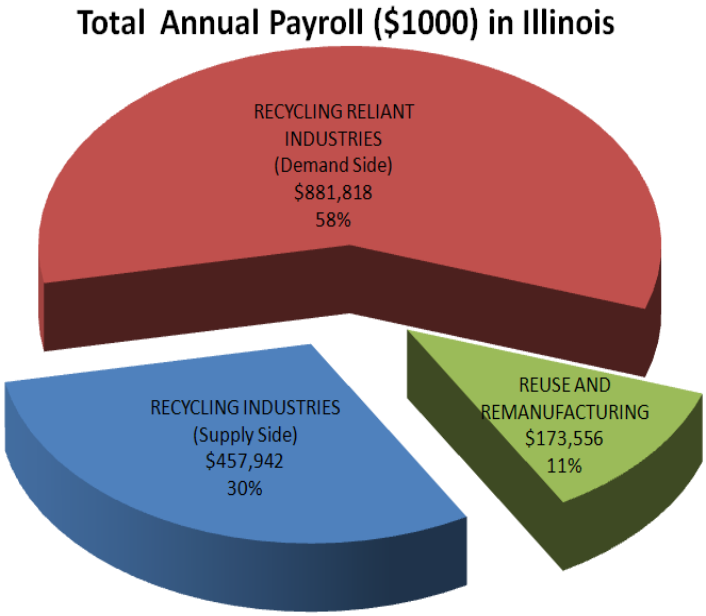


c. Payroll

The 40,000 jobs provided $1.5 billion dollars in annual payroll, with payroll roughly paralleling the employment distribution among recycling industries, recycling-reliant industries, and the reuse and remanufacturing industries. However, employee pay was higher in recycling-reliant industries, reflecting better paying manufacturing jobs.

a. **Figure ES.3**

Total Annual Payroll ($1000) in Illinois

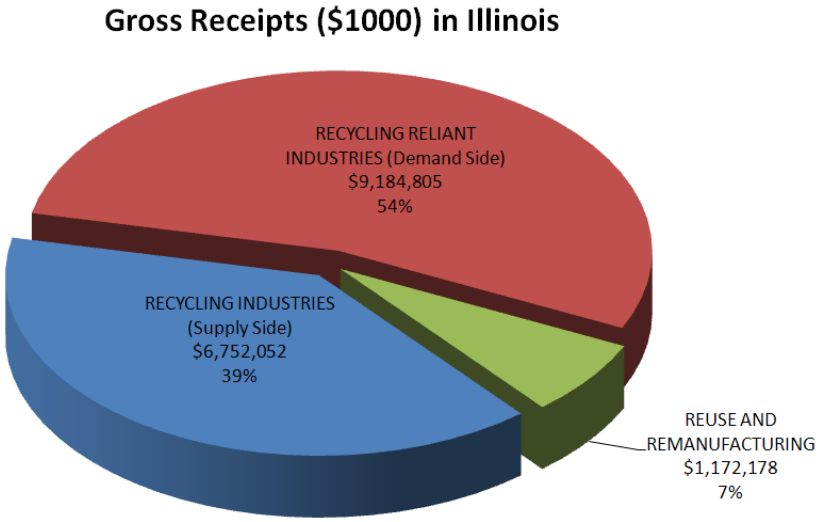


d. Gross Receipts

A total of $17 billion (rounded) in gross receipts were generated by the recycling, recycling reliant, and reuse and remanufacturing industries. Thirty-nine percent of gross receipts were generated by the recycling industries, with 54 percent generated by the recycling reliant industries. Only 7 percent of gross receipts were generated by the reuse and remanufacturing industries, which tend to deal in lower value materials, but may have significant environmental benefits.

a. **Figure ES.4**

Gross Receipts in Illinois



e. Indirect and Induced Effects

This Study Update presents estimated indirect and induced effects for each of the 26 sectors. Indirect effects measure the value of additional economic demands that the recycling, recycling reliant and reuse and remanufacturing industries place on supplying industries in the region. Induced effects accrue when workers in the direct and indirect industries spend their earnings on goods and services in the region. These indirect and induced effects were estimated using the IMPLAN model. The multipliers reported for each sector can be used by economic development agencies to support investments in recycling reliant (especially) industries. However, because of the all inclusive nature of this study, the indirect and induced effects cannot be added to the direct economic impacts when reporting on the economic contribution of recycling to Illinois without double-counting (see Part III for an explanation of the model and methodology).

However, as discussed in more detail in Part III of the report, a "whole model" approach was used to develop a rough estimate of the total (direct, indirect and induced) impact of the recycling, recycling reliant and reuse industries in Illinois without significant double-counting. Table ES.2 illustrates that, using the "whole model" approach, the recycling, recycling reliant, and reuse and remanufacturing industry contributed roughly 111,500 jobs, $3.6 billion in payroll (labor income), and $30.3 billion in gross receipts (output) to the State of Illinois in 2009.

a. Table ES.2

Indirect and Induced Impacts (rounded)

Impact Type	Employment	Labor Income	Gross Receipts
Direct Effect	40,000	$1,500,000,000	$17,100,000,000
Indirect Effect	34,000	$1,200,000,000	$7,100,000,000
Induced Effect	37,500	$886,000,000	$6,100,000,000
Total Effect	111,500	$3,600,000,000	$30,300,000,000

Attachment E

Illinois Commodity/Waste Generation and Characterization Study May 22, 2009

Executive Summary Only

Commissioned by:

dceo

ILLINOIS DEPARTMENT OF COMMERCE AND ECONOMIC OPPORTUNITY

Contracted by:

Illinois Recycling Association

Since 1980

Prepared by:

CDM

Executive Summary

Introduction

The Illinois Department of Commerce and Economic Opportunity (DCEO), Division of Recycling and Waste Reduction, commissioned the Illinois Recycling Association (IRA) to develop a Commodity/Waste Generation and Characterization Study. Camp Dresser & McKee Inc. (CDM) was contracted by IRA to conduct the study. This study will assist DCEO in fulfilling its recycling and waste reduction related missions:

- Supporting efforts to increase the quantity of materials recycled or composted in Illinois.
- Supporting efforts to develop and expand markets for recyclable materials.
- Supporting efforts to advance the self-sufficiency of the recycling industry in Illinois.

In Illinois, there are three primary laws that address the management of solid waste: The Solid Waste Management Act (SWMA), the Solid Waste Planning and Recycling Act (SWPRA) and the Illinois Environmental Protection Act (EPAct). Each of these laws includes important language that guides the management of solid waste in Illinois.

The SWMA, adopted in 1986, establishes the following waste management hierarchy, in descending order of preference, as State policy:

1. Volume reduction at the source [of generation];

2. Recycling and reuse;

3. Combustion with energy recovery;

4. Combustion for volume reduction; and

5. Disposal in landfill facilities.

Under the SWPRA, adopted in 1988, all Illinois counties as well as the City of Chicago shall develop and implement comprehensive solid waste management plans that are required to place a substantial emphasis on recycling and landfill alternatives, encourage recycling and source reduction, and to promote composting. Each county waste management plan is required to be updated and reviewed every 5 years by IEPA to ensure compliance with the purpose and provisions of the Act. Each plan must include provisions for the implementation of a recycling program(s) designed to recycle 25 percent of the municipal waste generated in their jurisdiction. SWPRA acknowledges that recovering certain materials from municipal waste will decrease flows to landfills, aid in the conservation and recovery of valuable resources, conserve energy in manufacturing processes, increase the supply of materials for state industries, and substantially reduce the need for municipal waste incinerators.

The EPAct contains Illinois' environmental regulations and this legislation establishes requirements for the issuance of permits for pollution control facilities such as landfills and transfer stations. (Recycling centers and "clean" material recovery facilities (MRFs) do not require permits.) It also regulates the disposal of used tires and garbage. In addition, The EPAct also establishes fees that support DCEO's and IEPA's solid waste management programs.

The EPAct also contains provisions that prohibit a variety of items from being disposed of in Illinois' landfills. The following items are currently banned: landscape waste; lead-acid batteries; whole waste tires; "white goods" (appliances); and used motor oil. The Electronic Products Recycling and Reuse Act, signed into law on September 17, 2008, advances a producer responsibility model for managing end-of-life electronics and will ban covered electronic devices from being landfilled in Illinois starting January 1, 2012.

Purpose

In order to effectively manage resources and waste pursuant with the intent of the SWMA, SWPRA, and EPAct, it is important to understand the types and quantities of materials generated, the generating sectors, the quantities that are potentially recoverable and those that are otherwise disposed. Acquiring this data can enable sound policy and program design, implementation and program analyses for both the public sector and private sector. The data gained from this Study can be used for strategic planning; developing future legislative initiatives; evaluating effectiveness of current recovery efforts; targeting programs and educational efforts to advance recovery of commodities; providing guidance to state agencies and local governments; and aid in fulfilling the responsibilities required under the SWMA, SWPRA, and EPAct by local governments or management districts. This is the first statewide report to study this data in Illinois.

Project Tasks and Objectives

The following tasks and objectives outline the activities that were conducted as a part of this Study:

Waste Characterization – Develops the composition and quantification of the municipal solid waste (MSW) originating and disposed within the state;

- Determine the aggregate composition of Illinois' MSW disposed statewide according to the material categories;
- For the State as a whole, differentiate and compare MSW composition of defined material categories disposed from the Residential, Industrial/Commercial/Institutional (ICI), and C&D generation sectors;
- For the State as a whole, differentiate and compare MSW composition of defined material categories generated and disposed from urban and rural areas by residential and ICI sectors;
- Determine the estimated recovery rates by material types, and in gross aggregate, being recovered by subtracting out the amount that will be estimated as being disposed from generation data;
- Identify key opportunities for diversion, recovery (including composting) or reuse of specific types of disposed material categories; and
- Identify the types and quantities of disposed materials generated from residential, commercial and C&D sectors that could be recoverable and the estimated value of those materials based upon Midwest markets.

Waste Generation - Develops the quantity of MSW generated within the state;

- Determine the estimated generation of Illinois' MSW by generating source:
- By pounds per capita per day (PCD), differentiating urban and rural values;
- By the Illinois EPA's seven regions in aggregate;
- By county;
- Statewide in aggregate; and
- Comparison of findings to national data.

Planning Model - Development and implementation of a web based commodity/waste generation and characterization (CWGC) planning model. This model is intended to provide communities or counties a tool to estimate the quantity and composition of waste generated based upon certain parameters as

inputs, or as a default, the results of this study. Specific data can also be entered, such as recycling data, to determine diversion rates.

This report will present the results of these tasks and objectives; determine statewide recycling diversion rate estimates and provide recommendations for future consideration.

Illinois Municipal Solid Waste

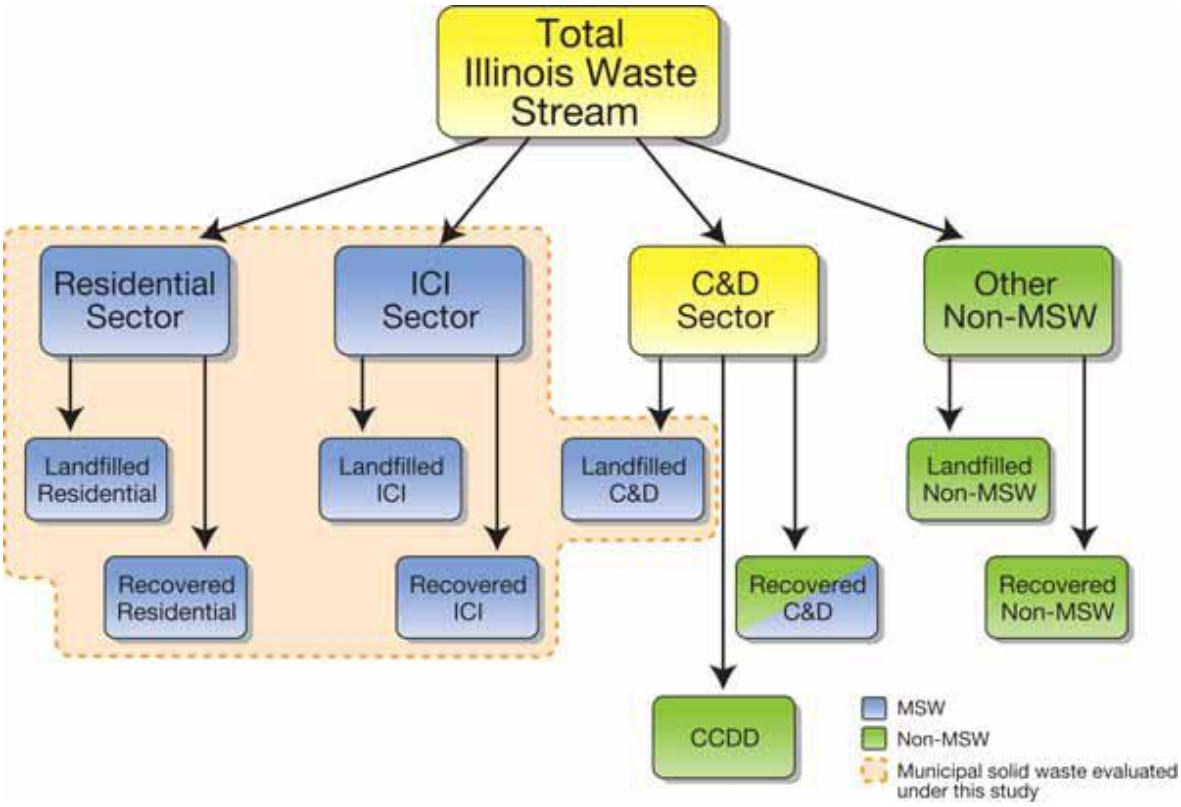
For the purposes of the study, a waste sector is identified by the particular generation characteristics that make it a unique portion of the total waste stream. This study is limited to analysis of the statutory definition of municipal solid waste (MSW or municipal waste), which is defined by Illinois law as "garbage, general household, institutional and commercial waste, landscape waste and construction or demolition debris" as per 415 ILCS 5/3.290 (see Figure 1). As a note, in this report the terms municipal waste and MSW are used interchangeably. Based on the definition of MSW several waste sectors were not considered as part of this study, specifically the following materials were excluded:

- Special waste which includes any of the following per 415 ILCS 5/3.475:
    - potentially infectious medical waste
    - hazardous waste
    - industrial process waste or pollution control waste. (415 ILCS 5/3.235)

- Clean construction or demolition debris (CCDD) is not considered a "waste" if it is separated or processed and returned to the economic mainstream as raw materials or used as fill material (415 ILCS 5/3.160), with the exception of CCDD materials within the definition that are disposed at MSW landfills; and

- Diverted C&D materials.

Figure 1. Illinois Municipal Solid Waste



Principal Findings

MSW Characterization

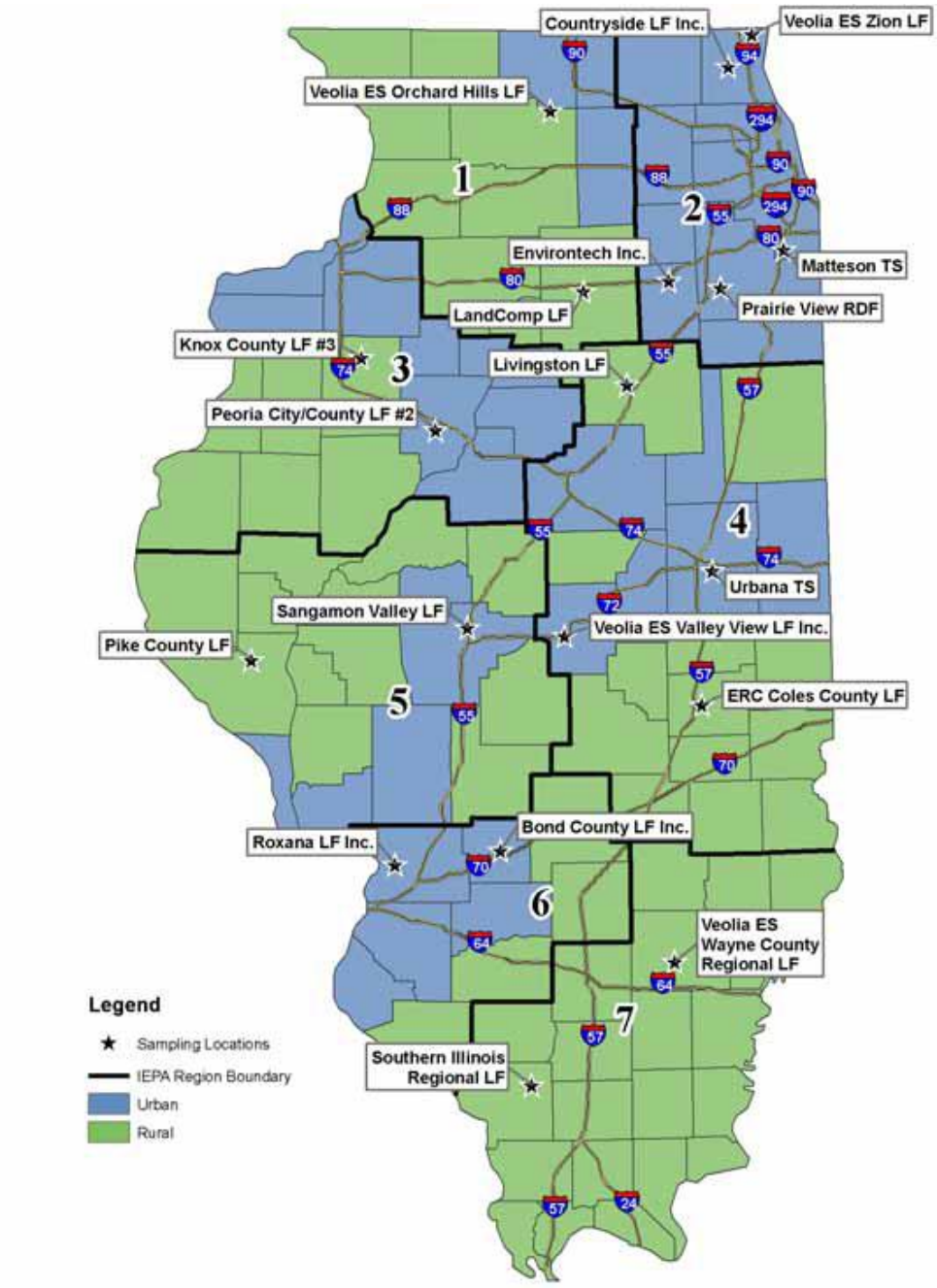
This section develops MSW composition and quantification estimates for the residential, ICI and C&D sectors of MSW originating within the State of Illinois. All of the results in this section are for materials found to be landfilled; landfilled means disposed in landfills or destined for landfills (for data obtained from transfer stations). These composition and quantification estimates are later compared to the MSW generation estimates, to provide an estimate of the recovery efforts in the State of Illinois.

Methodology

A sampling plan was developed for the MSW characterization task to comply with the industry standards for conducting waste characterization studies and the American Society for Testing and Materials (ASTM) standard D5231 for samples size.

This plan was developed to ensure that the samples collected were representative of Illinois' statewide waste stream.

Figure 2. Sample Location Map



Overall, CDM conducted sampling at 19 solid waste facilities located throughout Illinois, 17 landfills and 2 transfer stations (TS), over 20 days between October 2, 2008 and November 14, 2008 (Figure 2). The City of Chicago was not sampled directly during this study; however, samples from a separate waste characterization study conducted by the Chicago Department of Environment (CDOE) were used to develop a comprehensive statewide MSW composition. A total of 315 samples (172 statewide and 143 from Chicago) from the residential and ICI sectors were physically characterized and 150 source separated C&D loads were visually characterized to develop the waste composition profiles provided in this section. A summary of the sample allocation is provided in Table 1**.**

Table 1. Number of Samples by Waste Sector

Table 1. Number of Samples by Waste Sector

Sampling Group	Sample Count		Total Sample Wt.	Mean Sample Wt.
	No.	%	(pounds)	
Residential	169	100%	40,103	237.3
Urban-State	*45*	*26.6%*	*11,364*	*252.5*
Urban-Chicago	*93*	*55.0%*	*21,189*	*227.8*
Rural-State	*31*	*18.3%*	*7,550*	*243.6*
ICI	146	100%	38,793	265.7
Urban-State	*64*	*43.8%*	*15,777*	*246.5*
Urban-Chicago	*50*	*34.2%*	*15,117*	*302.3*
Rural-State	*32*	*21.9%*	*7,899*	*246.8*
Total Res./ICI - State	*172*	*54.6%*	*42,591 (21.3 tons)*	*247.6*
Total Res./ICI - Chicago	*143*	*45.4%*	*36,307 (18.2 tons)*	*253.9*
Total Res./ICI	**315**	**100%**	**78,897 (39.5 tons)**	**250.5**
C&D – State	**150**		**705 tons**	**4.7 tons**

After the samples were collected they were sorted into material categories and weighed. The samples were sorted into 10 material classes; Paper, Beverage Containers, Plastics, Glass, Metals, Organics, C&D, Inorganics, Household Hazardous Waste (HHW), and Textiles. Materials within these classes were further separated into 79 individual material categories as shown in Section 2.2.3.

Landfilled MSW Composition

Figure 3 shows the percentage, by weight, of each of the ten material classes for landfilled MSW. C&D, Paper, Organics, and Plastic account for over 82% (25.3%, 23.4%, 20.7% and 13% respectively) of landfilled MSW.

Figure 3. Composition of Landfilled MSW by Material Class

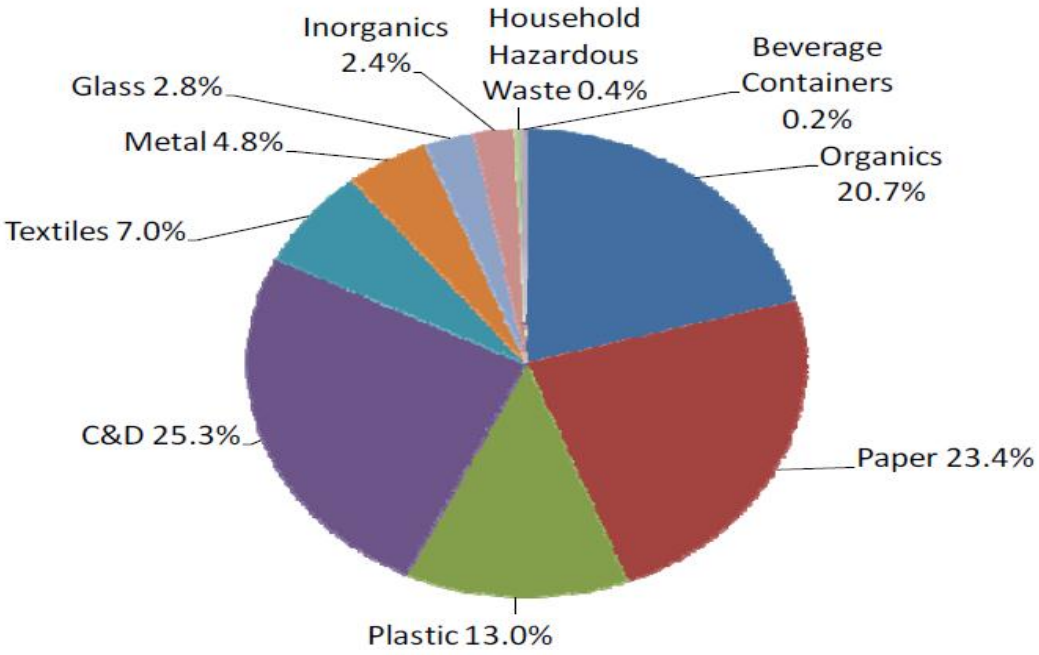


Table 2 lists the top ten material categories that were found in landfilled MSW. These ten individual categories account for over 46% of landfilled MSW. Food Scraps and Uncoated OCC/Kraft account for approximately 22% (12% and 10% respectively) of landfilled MSW.

Table 2. Top Ten individual Material Categories in Landfilled MSW

Component	Waste Composition %	Cum. %
Food Scraps	12.0%	12.0%
Uncoated OCC/Kraft	10.0%	22.0%
Treated Wood	4.0%	25.9%
Other Rigid Plastic Products	3.3%	29.2%
Gypsum Board	3.1%	32.3%
Other Textiles	3.0%	35.3%
Compostable Paper	3.0%	38.3%
Newsprint	2.7%	41.0%
Mixed Paper - Recyclable	2.7%	43.7%
Composition Shingles	2.6%	46.4%
Total	**46.4%**	

Comparison of Landfilled MSW Composition by Waste Sector

The overall waste stream is relatively similar to the residential and ICI MSW sectors as these two sectors comprise the majority of the landfilled waste stream, when compared to the C&D sector. As anticipated there are numerous classes where the C&D sector differs from the residential and ICI sectors. Approximately 86% of the C&D sector consists of material categories that fall within the C&D class of materials (e.g., composite shingles, concrete, wood, etc.) and 14% of the C&D sector consists of material categories that fall within the nine other classes of waste materials (e.g.,Paper, Plastics, HHW, etc.).

Residential and ICI waste sectors have many commonalities (Figure 4). The majority of the material classes fall within the 90% confidence interval. However, when the residential composition profile is compared to the ICI composition profile, Paper, Glass, Organic and C&D material classes were statistically different. The other material classes were not statistically different. The 90% confidence interval means that 90% of the time the composition results will be within the error bars (+- %). There is significantly more Paper (mainly uncoated OCC/Kraft) and C&D disposed by the ICI sector, while there is significantly more Glass and Organics disposed by the residential sector.

Figure 4. Comparison of MSW Waste Sectors Composition

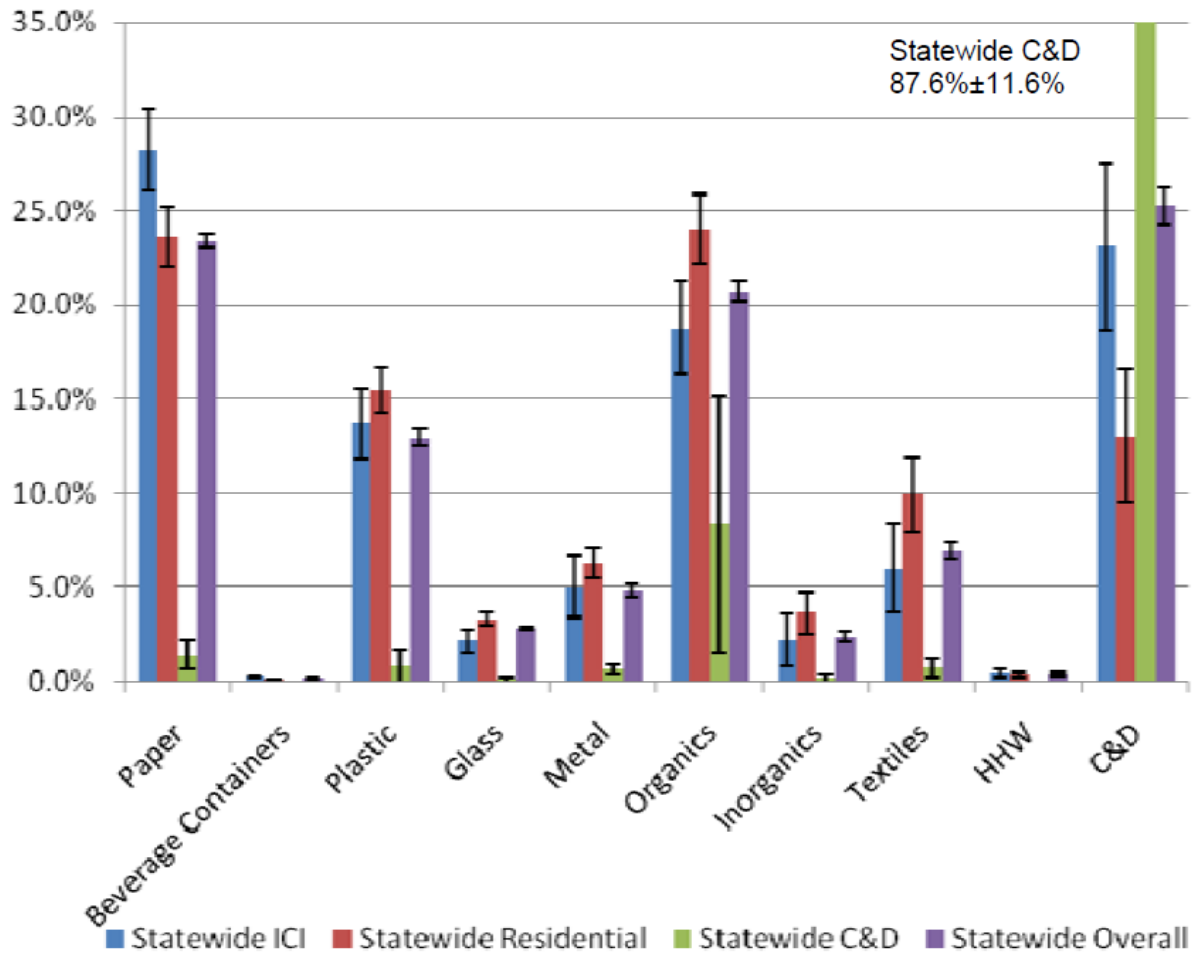


Figure 5 compares the waste composition profiles for the Residential waste sector and its subsectors. When considering the residential MSW waste, the majority of the material classes fall within the 90% confidence interval for the rural and urban sectors, with the exception of the Paper and Textiles classes. There is significantly more paper disposed within the rural counties of Illinois and there are significantly more textiles disposed within urban areas of Illinois.

Figure 5. Comparison of Residential MSW Composition

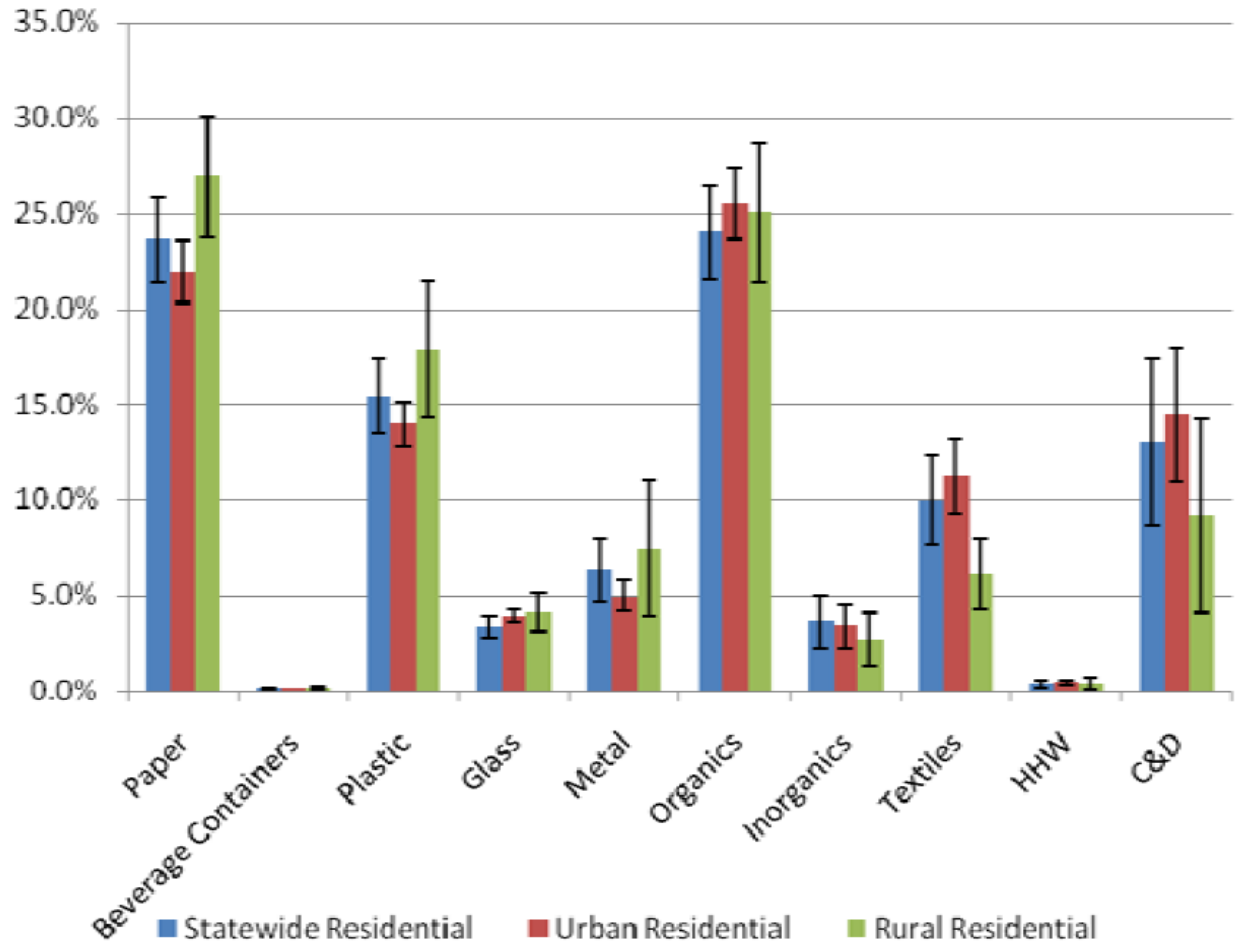
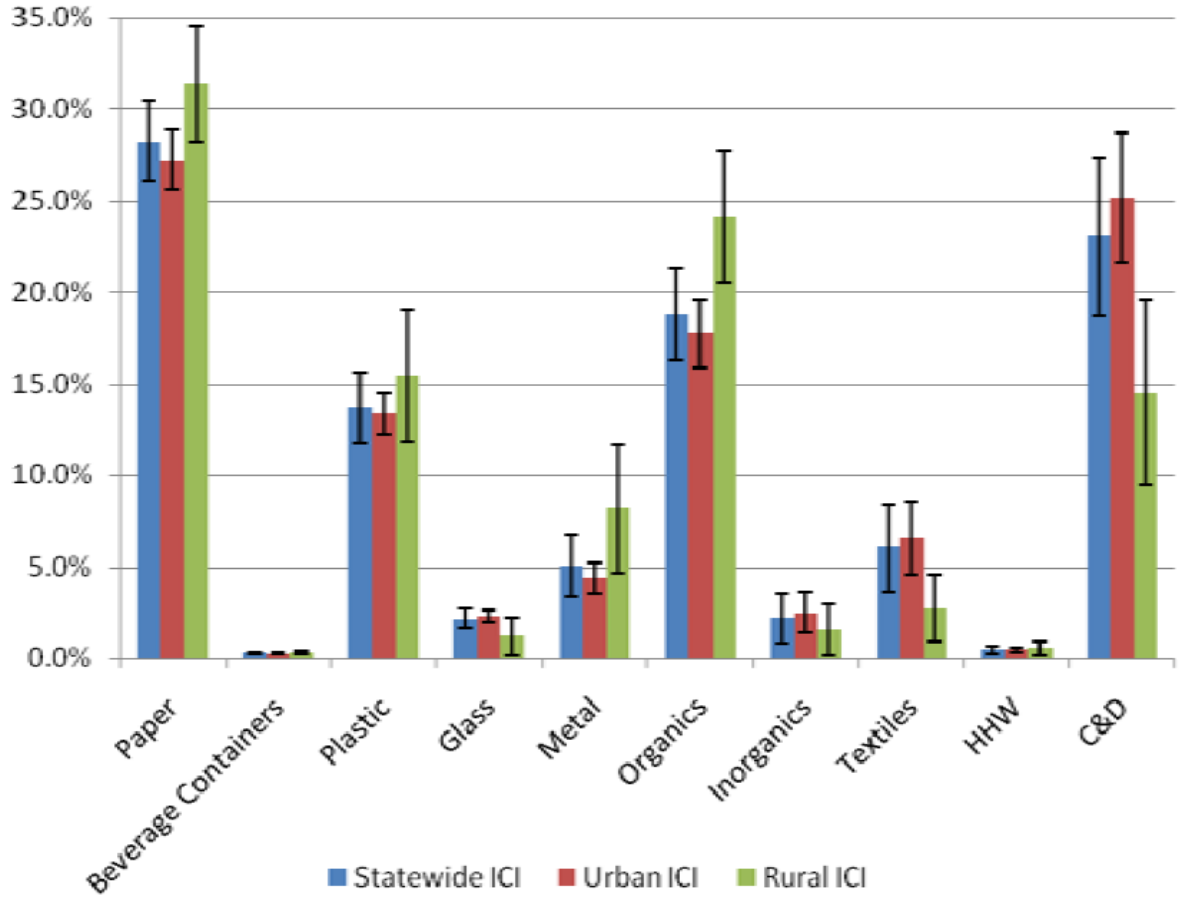


Figure 6 compares the waste composition profiles for the ICI waste sector and subsectors. The majority of the material classes fall within the 90% confidence interval for the rural and urban sectors, with the exception of the Organics and C&D classes. There is significantly more organics disposed within the rural counties of Illinois and there is significantly more C&D disposed within urban areas of Illinois.

Figure 6. Comparison of ICI MSW Composition



MSW Generation

Introduction and Methodology

This task develops statewide, regional, and county-by-county municipal solid waste (MSW) generation estimates. Generation is that quantity of products considered municipal waste entering the waste management system from residential, commercial, industrial, institutional and C&D sources before materials recovery or disposal takes place. To develop the generation estimates, factors based on Illinois specific economic indicators were applied to 2007 national per capita generation rates that were derived from the U.S. EPA report *Municipal Solid Waste in the United States: 2007 Facts and Figures*1. The Illinois factors were adjusted using the composition and waste sector quantity results presented in the report.

Total Statewide MSW Generation

Total statewide MSW generation in 2007 was 18.9 million tons or 8.06 pounds per person per day. Generation by material class is shown in Figure 7. Paper products comprise the largest portion of MSW generated, at 28.3%. C&D was the second largest fraction, at 22.5%. The third largest category of MSW

generation is Organic material, which made up 18.8% of total MSW generation. Plastic products are 11.2% of generation and the remaining categories total 19%. Table 3 depicts the top ten individual material categories and their respective generation in tons.

MSW Generation by IEPA Region is shown in Figure 8. Region 2 generates almost 70% of the total statewide MSW generation. Table 4 compares the per capita MSW generation rates for the seven IEPA Regions. (*U. S. Environmental Protection Agency Office of Solid Waste (5306P). November 2008*.)

Figure 7. Statewide MSW Generation by Material Class

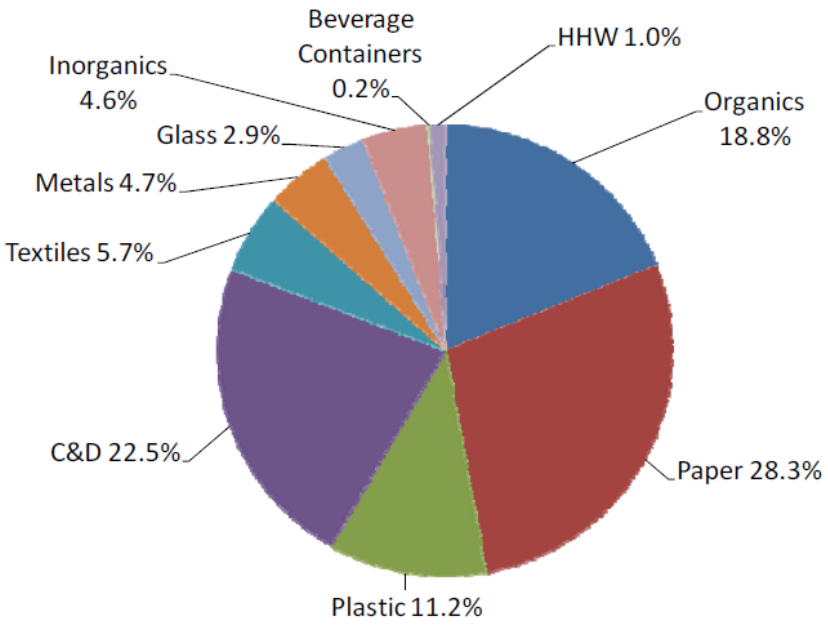


Table 3. Top Ten MSW Generation Individual Material Categories

Category	Waste Composition Tons	Cum. Tons
Uncoated OCC/Kraft	2,436,210	2,436,210
Food Scraps	1,838,100	4,274,310
Newsprint	868,130	5,142,440
Treated Wood	604,760	5,747,200
Other Rigid Plastic Products	586,130	6,333,330
Recyclable Glass Bottles & Jars	520,020	6,853,350
Compostable Paper	474,730	7,328,080
Gypsum Board	472,380	7,800,460
Yard Waste - Compostable	471,250	8,271,710
Other Textiles	463,770	8,735,480
Total	**8,735,480**	

Figure 8. MSW Generation by IEPA Regions (% of statewide generation)

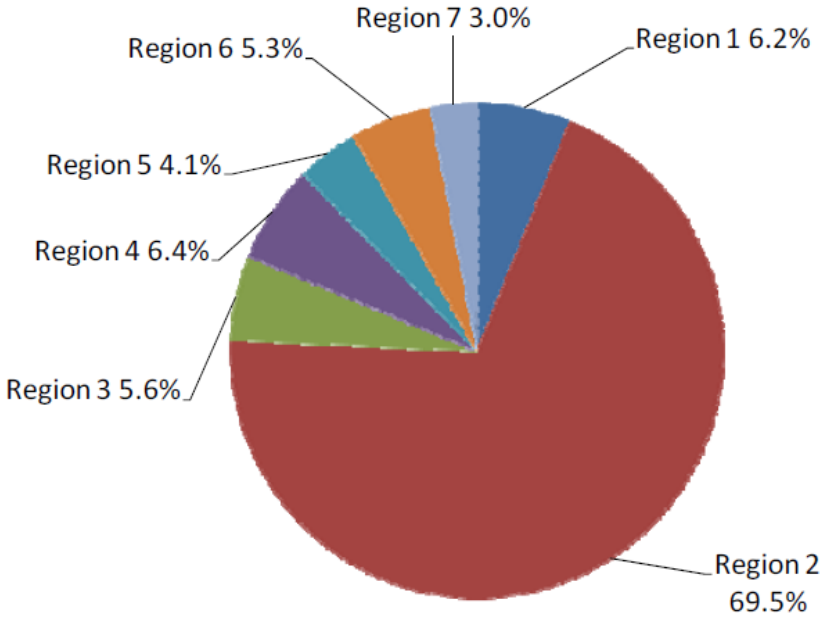


Table 4. Per Capita MSW Generation Rates by IEPA Region

IEPA Region	Waste Generated (per capita day)
One: Northwestern Illinois	7.6
Two: Chicago Metropolitan	8.3
Three: Peoria/Quad Cities	7.7
Four: East Central Illinois	7.6
Five: West Central Illinois	7.6
Six: Metropolitan East St. Louis	7.6
Seven: Southern Illinois	7.2
Total	**8.1**

MSW Diversion Data

It is the intent of Illinois law that the recovery of resources and diversion of commodities from landfills should be a fundamental concept in Illinois management goals and can be accomplished using a variety of strategies including source reduction, re-use, recycling, composting and other techniques. The diversion rate is a key indicator as to the success or failure of recovery efforts. In order to calculate a diversion rate, the quantity of materials generated must be known as well as a knowledge of the quantity of materials recovered using the strategies named above. Unfortunately, the task of ascertaining the quantity of materials being recovered was beyond the scope of this Study. Nonetheless, a diversion rate can be estimated by assuming that the difference between the generation quantities developed in Section 3 – 18.9 million tons, and disposal quantities developed in Section 2 – 15.3 million tons, is the quantity of materials recovered – some 3.6 million tons. Based on this methodology, **the overall Illinois diversion rate is 19.1% by weight.**

Currently there is no mechanism in Illinois that requires the quantity of recovered materials to be reported to a central entity. Therefore, Illinois cannot accurately determine what the diversion rate in the state actually is. Illinois EPA is required to annually publish the Non-hazardous Solid Waste Management and Landfill Capacity Report, which relies on voluntary reporting by county coordinators. According to the 2007 Report, coordinators report that 23.1 million tons of waste is generated and 9.1 million tons are recycled, yielding a diversion rate of 39.3%. Obviously, there are significant discrepancies between the results of this Study and the Report and the diversion rate could not be validated. There are several factors that could account for this difference:

1. This study focuses on solely Municipal Waste whereas the coordinator's data in the EPA Report focuses on landfilled tonnages which can include industrial process waste, special waste and/or clean construction or demolition debris.
2. The data submitted by coordinators is not current for the year – only one third of the 106 reporting entities submitted current data.

3. Data is submitted without an officially adopted calculation protocol to be used uniformly throughout the state. Therefore, what has been reported by some may not be considered by others, or quantities of some materials may not even appropriate to report altogether, and there is likely "double counting" occurring.

Market Values of Landfilled Commodities

One of the sub-goals of this Study is to determine the estimated value of commodities that are landfilled and thus being lost to the overall economy – wasting jobs, natural resources, and contributing to negative environmental impacts. A comprehensive economic evaluation would include direct, indirect and induced economic values of all commodities being landfilled, and is a complete study in and of itself. In light of this, it was determined to focus on the "traditional" commodities typically collected in residential or commercial recycling programs. Recognizing that there are other significant quantities of commodities being recycled, the value presented here then should be viewed as a minimum. The market value was calculated based on the average 2008 commodity values from January 2008 through October 2008 obtained from market data detailed in Section 4.5 for the Midwest region, prior to the temporary collapse of markets that occurred in November**. The direct market value of the landfilled materials shown in Table 4-5 is calculated at over $600 Million.**

MSW Greenhouse Gas Data

Global warming is an issue that has been steadily gaining national and worldwide attention and concern. It is widely agreed that greenhouse gases (GHG) that result from the burning of fossil fuels and other human activities, is contributing to climate change. Illinois has a sustainable energy plan and is a signatory to the Midwestern Greenhouse Gas Accord. Recovering commodities from discarded materials through recycling, composting, and waste reduction strategies can play a significant role in reducing GHG's by reducing emissions. Recovering commodities:

1. Avoids emissions from raw material extraction and transport,
2. Avoids emissions from raw material processing into "manufacturing ready" feedstock,
3. Avoids emissions from landfilling (methane),
4. Sustains forest carbon sequestration,
5. Reuses carbon based plastics indefinitely, rather than one time btu value for combustion.

The Illinois MSW generation and disposal information was inputted into the U.S. Environmental Protection Agency (EPA) Waste Reduction Model (WARM)2, to determine equivalent greenhouse gas emissions resulting from the landfilling of MSW in Illinois and to determine the emission reductions resulting from the quantities estimated to be recovered. The GHG emission factors were developed following a lifecycle assessment methodology using estimation techniques developed for national inventories of GHG emissions. Default values for all variables were used for this model. CDM assumed the national landfill average for methane recovery for flare and assumed default transport distances for emissions that occur during transport to landfills.

The total GHG emissions produced from the annual landfilled MSW (15.3 million tons) is approximately 2,404,563 MTCO2E. This is equivalent to the annual greenhouse gas emissions from approximately 440,400 passenger vehicles or the carbon sequestered annually by 16,800 acres of forest preserved from deforestation3.

The total GHG emissions reduced from materials currently recycled (3.6 million tons) is 8,910,029 MTCO2E, which is equivalent to the annual greenhouse gas emissions from approximately 1,631,900 passenger vehicles or the carbon sequestered annually by 62,300 acres of forest.

Recommendations

CDM recommends the following additional tasks for refinement and expansion of the Illinois Commodity/Waste Generation and Characterization Study:

1. This study focused on the characterization of the statutory definition of Illinois' municipal solid waste (MSW) stream. As such, several components of the overall Illinois waste stream were not included in this study. However, these materials are often disposed in Illinois landfills and the composition and quantity of these materials should be assessed to provide a complete picture of the Illinois waste stream. This study is a first step in developing a picture of the Illinois waste stream. It provides a clearer picture, but is not comprehensive. If the goal is diversion of waste from landfills then an assessment of other materials landfilled/disposed in Illinois is needed. These materials include the following:

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2 EPA's report Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks (EPA 530-R-06-004) describes this methodology in detail. Visit: http://epa.gov/climatechange/wycd/waste/SWMGHGreport.html

http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html.

3 EPA. 2009. Greenhouse Gas Equivalencies Calculator. http://www.epa.gov/cleanenergy/energyresources/calculator.html

a. **Clean construction and demolition debris (CCDD)** – This material is often diverted from landfills and either reused, recycled, used as fill, or disposed at permitted CCDD facilities. This material stream likely comprises a large piece of the gap between MSW and total waste generation. By definition CCDD is not a waste when handled according to the Environmental Protection Act. However, this often poses a dilemma in solid waste management planning, in that CCDD can become a waste if it is mixed with MSW. Theoretically, CCDD also becomes a waste when it is landfilled.

b. **Soil and Alternative Daily Cover** – These materials are accepted at landfills and consume landfill capacity, yet often times these materials are not quantified or included in waste generation estimates. Shredded demolition wood waste is one example of a waste stream that is commonly used for alternative daily cover. Contaminated soil, and occasionally clean soil, is also disposed at landfills.

c. **Special and Non-special Waste** – Industrial process wastes, hazardous wastes, pollution control wastes, declassified special wastes and other special wastes are not part of the MSW stream. These materials are landfilled and the composition of these materials has not been assessed at the state or regional level. Unlike other waste sectors identified, due to regulations stipulating recordkeeping and reporting of these wastes, analysis of this sector would be less difficult.

d. **Landscape Waste** –Landscape (yard) waste is banned from being landfilled in Illinois, yet quantities of this material are often found in landfills. As with other waste streams partially or wholly diverted from landfills, characterization at disposal facilities is not the best method for quantification.

e. **Diverted materials** – For this study, the quantity and composition of diverted materials was estimated based on the difference between generation data and landfilled data. This approach relies too heavily on the waste generation estimates rather than hard data. Having said that, obtaining defendable diversion data is potentially even more difficult, especially when considering source reduction and reuse activities. A study focusing on estimating the quantity and composition of diverted materials, used in conjunction with the results of this study, would assist in finding areas for improving all three of the landfilled, diverted and total generation estimates. Although, the best method to determine the quantity of materials being recovered would be to require annual reporting.

f. **Illinois Waste Disposed Outside Illinois** – This study was conducted at Illinois landfills and therefore the composition of Illinois waste that was disposed outside of Illinois was not obtained. Having said that, it is not unreasonable to assume that the composition of this waste is similar to that disposed of within Illinois.

2. The composition and recovery of materials in the waste stream and its sectors and classes can vary significantly over short time frames based on changes in technology, manufacturing, distribution, regulations, planning efforts, diversion programs, and many other factors. A prime example of this is the inorganics classification which includes electronics devices, televisions, fluorescent lights, etc. and the recently adopted Electronic Products Recycling and Reuse Act. As such, it is recommended that a study similar to the Illinois Commodity/Waste Generation and Characterization Study be conducted periodically, approximately every 5 years.

3. CDM recommends that the distribution of residential, ICI, C&D wastes be further characterized. The data used for this study was developed using gatehouse surveys from one day at each facility. While this provides a reasonable overall distribution for the state, it does not provide sufficient data for estimating the distribution within the individual counties and Illinois EPA Regions.

Illinois Recycling Association Recommendations

The Illinois Recycling Association (IRA) presents this report to the Illinois DCEO, as an initial step to update the status of recycling and commodities recovery in Illinois. It is reasonable to begin this process by gathering disposal data from solid waste transfer stations and landfills in the state of the current volumes of what has been commonly discarded as waste. However, an entire new industry of recovery and

recycling of discards has grown since the passage of the three key solid waste management acts. These advances challenge established definitions of waste and move us closer to waste reduction and recovery goals that were once deemed idealistic.

The Association has worked in cooperation with the State of Illinois to offer educational workshops, seminars, and information links as well as providing a direct connection to a wide variety of recycling services and diversion options for both common and unique discards. In addition, the Illinois Recycling Association is working to compile a comprehensive listing of recycling industries, services, and the government entities responsible for recording recycling data. The association hopes to continue to maintain this database as a resource for those seeking recycling resources within the state.

The recycling industry is in reality a variety of industries, which share a common result. These industries have expanded our body of knowledge, created new manufacturing and recovery technologies, and provided economic growth through creation of jobs and consumer products. The contracted consultant, Camp Dresser & McKee, provided recommendations that are based upon recognizing gaps and inconsistencies of data while conducting this study. There is unarguably more information to be gathered, a re-assessment of our definition and understanding of waste and recovery is needed, and a re-affirmation of attainable waste reduction and recycling goals with benchmark years should be determined and re-visited on a regular basis.

We offer the following recommendations with consideration of the information presented in this study, as well as recognition and appreciation for the progress that our industries have made, often with the assistance and encouragement from State government and new and revised laws approved thus far. The IRA looks forward to continuing our collaboration with DCEO and others committed to research, study and maintain relevant data that serves the recycling and recovery industries in the State of Illinois.

Convene a Commission for Resource Recovery and Disposal

Adopt legislation to establish a Commission that includes the following mission:

a. Study and make recommendations regarding the economics of landfilling wastes and recovering commodities, including full environmental costs and benefits, and the extent to which they are reflected in prices and associated fees collected by the state.

b. Review the extent to which materials with economic value are lost by landfilling and recommend ways to maximize the productive use of discarded materials - including recycling, composting, reuse, and energy recovery.

c. Study and recommend ways that Illinois can minimize the generation of waste materials and evaluate ways to apply “Zero Waste” as a guiding vision to be accomplished by source reduction, reuse, recycling, and composting.

d. Study the management of toxic and nontoxic discards and recommend ways to ensure these are managed in a manner that minimizes environmental impacts and potential burdens to future generations.

e. Study and clarify the role municipalities, residents, businesses, and state government each hold in the use, management, recovery, and disposal of materials and recommend how they can act in concert to attain disposal and recovery goals.

f. Review and recommend changes to existing laws that govern "solid waste" management, recognizing resource management as unique and distinct from solid waste management; that minimize environmental, economic, and social costs to the residents and businesses of Illinois; and that reduce GHG's so that Illinois can achieve and maintain a truly integrated and sustainable materials management system.

Update the Illinois Recycling Economic Information Study (REI)

Illinois DCEO commissioned an REI study nearly a decade ago to determine and quantify the economic benefits of recycling activities. The study showed how recycling and reuse significantly contribute to Illinois' economy. The direct economic impact, at that time, included 2,400 businesses that employed over 56,000 with an annual payroll of $1.8 Billion, and those businesses had annual receipts of $12.3 Billion. The study further concluded that the total economic value (the broader effect of the recycling and reuse industry) including direct, indirect, and induced economic considerations was $34.6 Billion.

Recycling and reuse industries create and retain jobs and generate state and local tax revenues.

It is vital to the state's economic development to understand and support the contribution the recycling and reuse industries make in the state's economy. To foster continued development of recycling and reuse industries, not only for environmental but also economic contributions, a thorough understanding of such contributions is an essential component to sustaining the states' economic well-being. It is recommended that an REI study be conducted and updated on a regular basis, but at a minimum of every 5 years.

Review and Update Solid Waste Planning/Management Laws

Much has changed in the more than 20 years since the Illinois Solid Waste Planning and Recycling Act of 1988 and the Illinois Solid Waste Management Act of 1986 were developed. Review the provisions of each law to recognize the growth of technology, recovery of what was once considered wastes, and the impacts of all waste and recycling activities on the environment.

Plan and Encourage Future Recovery

Certain materials have been identified as constituting a large percentage of the landfilled MSW stream. Some of these materials are significantly below national recycling rates, although recycling processes and markets exist. Research and encourage diversion programs that expand the needed infrastructure, disposal requirements, demand for end product, and education programs that focus on these materials:

- Food scraps;
- Paper, including uncoated OCC/Kraft, compostable paper, newsprint, mixed paper, high grade office paper, boxboard;
- C & D, treated wood, gypsum board, composition shingles;

- Plastics, including PETE, HDPE, Other rigid plastics; and
- Textiles, including carpet, clothing and other textiles.

Develop a Universal Protocol for Calculating Diversion Rates

This study has shown that diversion rates vary significantly depending on the source of the data. A universal protocol for estimating diversion and recycling rates needs to be developed and annual reporting based upon a common calculation of rates should be required. The protocol should establish the materials that should be identified for diversion/recycling (identified as the numerator of the equation) and the definition of materials included in the quantity of the generated materials (the denominator of the equation).

Toxic/Special Wastes

Toxic and special wastes are not included when developing recycling or diversion programs, and so such materials, which are a part of the MSW stream cannot be targeted for source reduction, diversion or recycling. Initiatives and diversion programs should be maintained and expanded to reduce the quantity and toxicity of wastes from being landfilled, such as for Household Hazardous Waste (HHW). This Study found 64,000 tons of HHW are currently being disposed per year. In terms of impacts, while the quantity is comparatively low, the toxicity of HHW significantly outweighs that of other materials.

Attachment F

Illinois Food Scrap Coalition

Food Scrap Composting Challenges and Solutions in Illinois Report
Executive Summary of Recommendations

I. Overview

The Illinois Food Scrap Coalition (IFSC) – with over 140 organizations and individual members – was formed to build upon the growing interest in Illinois to advance food scrap composting across the state. The IFSC promotes the capturing of organic material that is currently being discarded into landfills and converting that material into quality compost that can be sold commercially and used to build soil nutrients, conserve water, sequester carbon, eliminate the use of synthetic fertilizers, and replenish Illinois soils on farms, municipal and private sector landscaping and home garden applications. The IFSC also promotes the creation of renewable energy and other useful by-products through the utilization of anaerobic digestion as an alternative to composting.

This Executive Summary of Recommendations report – designed specifically for the Illinois General Assembly Task Force on the Advancement of Materials Recycling - is part of the larger Food Scrap Composting Challenges and Solutions in Illinois Report, funded by the Illinois Department of Commerce and Economic Opportunity (DCEO) and produced by the IFSC, which will be completed in January 2015. The final report will be the culmination of national and regional research conducted on policies, programs, strategies, and economic development potential related to food scrap composting, and input from stakeholders across Illinois who have participated in five IFSC Food Scrap Composting Challenges and Solutions in Illinois forums in Northeast (Chicago), Northwest (Wheaton), Central (Champaign), Southern (Edwardsville), and Central (Bloomington). The forums provided participants the opportunity to discuss the barriers to advancing food scrap composting across the state and to recommend specific strategies for overcoming those barriers and developing a viable food scrap composting industry in Illinois. The recommendations generated through the forums were discussed, reviewed and organized through meetings of an IFSC Core Team, convened by project lead Seven Generations Ahead with participation from SWALCO, SWANCC, US EPA Region V, Kane County, SCARCE, Illinois Sustainable Technology Center and the Illinois Environmental Council.

This report is designed to support the efforts of the Task Force on the Advancement of Materials Recycling by providing an overview of policies, strategies and recommendations generated through national research and Illinois stakeholder input forums. This report includes recommendations already being worked on by the Task Force – including the SB850 transfer station pilot program, Illinois food labeling and national labeling standards, state procurement policy requiring the use of Illinois compost, and compost site permitting revisions – and hopes to encourage additional strategies that will support the Task Force's initiatives and Illinois' long-term waste reduction goals as they relate to food scrap composting. This initial Executive Summary of Recommendations report does not prioritize its list of recommendations. Priority recommendations based on the greatest capacity to leverage change and the ease or difficulty of implementation will be incorporated in the final IFSC report.

II. The Emerging Composting Industry

Across the nation, composting is developing as a viable, locally-based industry that achieves multiple objectives related to economic development, job creation, cost savings, and environmental sustainability. In 2014, 4,914 facilities across the nation are now licensed to accept organic material – with yard waste

facilities leading the way. Over 180 communities now have residential curbside food scrap collection programs. 20 states have yard waste disposal bans (including Illinois), and a small handful of states have enacted ordinances which ban "organics" including food scraps from entering landfills. Just fewer than 20 states have or are in the process of revising their permitting regulations for yard waste composting facilities to allow for the inclusion of food scraps. Some states have developed landfill diversion goals and regulatory processes to increase recycling, eliminate waste, and divert organic material from landfills toward the higher end uses of compost or biogas.

The prospect of developing a robust composting industry has captured the interest of many policy makers and stakeholders because of the win-win benefits of economic development and environmental conservation. The ability of compost to sequester carbon, rebuild depleted soil nutrients, conserve and retain water, limit erosion, eliminate the use of negatively impactful synthetic chemical fertilizers, and reduce greenhouse gas emissions are strong environmental benefits that, combined with the demonstrated potential to create jobs and develop new local businesses, has made the developing of a composting industry appealing to many states. Some of the benefits include:

Soil Quality Enhancement

Note: In the U.S., 99 million acres (28% of all cropland) are eroding beyond soil tolerance rates, which affect the long-term productivity of the soil (NRCS 2007).

– Compost conditions soil; adds organic matter to soil; prevents nutrient runoff and erosion.

Water Quality

Note: Synthetic chemical fertilizer runoff is contaminating Illinois Rivers and draining into the Mississippi River to the Gulf of Mexico, creating an aquatic life "dead zone" the size of the state of Connecticut (5,960 square miles) since 1995. Dead zones are also significantly impacting other major watersheds, including the Great Lakes and the Chesapeake Bay.

– Compost reduces the need for pesticides and fertilizers that contaminate watersheds and deplete water of oxygen and aquatic life.

Landfill Capacity

Note: The City of Toronto avoided $300 million in new siting and landfill development costs by building two anaerobic digesters processing facilities for a total of $69 million, according to former City of Toronto Solid Waste Management Services Director Geoff Rathbone.

– Diverting organic material from landfills extends landfill capacity, and reduces the need to build new landfills. According to the US EPA, food makes up over 20% of Municipal Solid Waste. Less than 5% of that is being composted.

Economic Development

Note: A recent study on the composting industry in Maryland (Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs and Protect the Bay) found that on a per-dollar-capital investment basis composting in Maryland employs twice as many workers as landfills and four times more than incinerators.

- Composting is a local, placed-based industry that creates more jobs per tonnage than landfills or incinerators, and has great potential to add jobs to our economy.

Greenhouse Gases 3

Note: Landfills are the nation's third-largest source of methane emissions, producing 18 percent of that pollutant. Organic material added to landfills accelerates the production of methane, a greenhouse gas which has 72 times the potency of CO_2 in a 20-year time span, while compost integrated into soil functions as a natural carbon sequestration medium. The technology used to accomplish landfill methane capture is not 100 percent effective, as closed and capped landfills still leak methane gas. Indeed, methods to capture methane from landfills are only 62 percent successful according to the EPA.
- Composting is aerobic decomposition that creates significantly less methane than anaerobic decomposition in a landfill.

Renewable Energy

Note: Diverting food scraps from landfills, in addition to providing feedstock for the generation of compost, supplies anaerobic digestion operations with material to create renewable energy through biogas development. Biogas is a net energy producing process, provides very efficient decomposition, and is a direct replacement for energy created from fossil fuels. According to the American Biogas Council, if the full potential was realized, a cost-effective biogas industry could produce energy to power 1 million American homes.

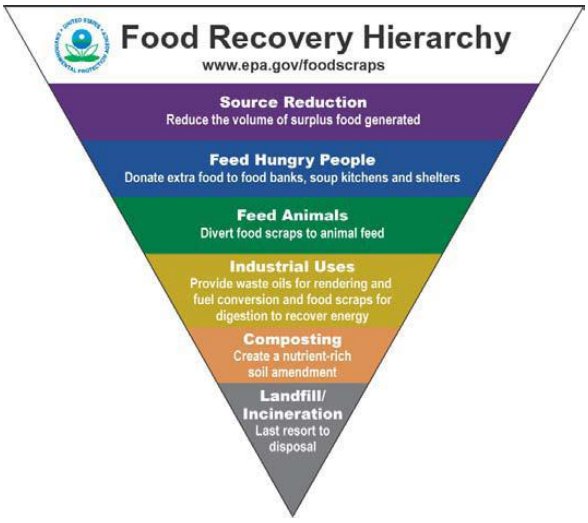
III. The Importance for Illinois

As our state leaders continue the ongoing debate about the strategies that will drive the Illinois economy forward, there is some agreement that part of the solution will be to use our existing asset base to develop local Illinois businesses. Food scrap composting can serve as one piece of the "grow local" puzzle to help Illinois rebuild its struggling economy. The strategy to grow an Illinois composting industry – in addition to job creation – brings with it a strong portfolio of environmental benefits that support greenhouse gas emission reduction, watershed protection goals, and preserving our precious farm land (most regional landfills in Illinois are built in rural areas and consume significant acreages of high quality farmland in many cases) while also extending our state's landfill capacity.

Fertile, nutrient-rich soil is a backbone of Illinois' economy, providing the basis for our high level corn and soy production and their economic benefits. Across the nation, studies are documenting that our soil is eroding and losing its nutrient base, requiring more and more synthetic fertilization which leads to other water quality and economic problems. Composting is not only viable on its own as an industry to develop, but it will help Illinois maintain its competitive edge and long-standing history as a leading agricultural producer.

The Food, Farms and Jobs Act, enacted by the Illinois General Assembly, produced a report that emphasizes the importance of building our local food economy for multiple reasons – economic development, lower costs, greenhouse gas emissions reduction, food security, and development of a local/regional food system that is resilient to changes in climate and security threats. Building an Illinois composting industry through food scrap diversion will support our local food system goals by creating the volume of locally-produced compost that our state will need to replenish our soils and maintain our agricultural edge.

Composting has the potential to be a job-creating industry that has as its basis material feedstocks that are currently being thrown away. Shifting to the development of a composting industry will also preserve our current landfill capacity – which we will need to support disposal of our current rates of non-recyclable/reusable materials. Investing in an Illinois composting industry will support Illinois watershed protection and greenhouse gas emission reduction goals, which have their own related environmental, economic and social benefits.



As the recent State of Composting in the U.S. report states, "Whether on a per-ton basis or on a per-dollar-capital investment basis, composting sustains more jobs than other waste handling options such as landfilling and incineration". Unlike dead-end disposal and incineration, composting creates a value-added product that supports gardening, landscaping, farming, green infrastructure projects, and other end markets that also build Illinois' economy and support additional environmental, aesthetic, and economic goals.

In a landmark study developed by Institute for Local Self Reliance entitled Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay, researchers documented the potential for job creation that the composting industry offers, including the following assertions:

• Composting (including mulching and natural wood waste recycling) operations in Maryland already sustain more total jobs than the state's three trash incinerators, which handle almost twice as much tonnage.

• On a per-ton basis, composting in Maryland employs two times more workers than landfilling, and four times more than the state's trash incinerators.

• On a per-dollar-capital investment basis, for every $10 million invested, composting facilities in Maryland support twice as many jobs as landfills and 17 times more jobs than incinerators.

• An entire new industry of contractors who use compost and compost-based products for green infrastructure has emerged, presenting an opportunity to establish a new made-in-America industrial sector, creating even more jobs.

• Utilizing 10,000 tons of finished compost annually in green infrastructure can sustain one new business. For every 10,000 tons of compost used annually by these businesses, 18 full-time equivalent jobs can be sustained.

*For every 1 million tons of organic material composted, followed by local use of the compost for green infrastructure projects, 1,400 new full-time equivalent jobs could be generated, paying wages from $23 million to $57 million each year.

V. What Leading States Have Done

The top five states that are diverting the greatest volume of organic material (yard waste, food scraps, bio solids, and manure) and creating compost include:

1. California - 5.9 million tons annually
2. Florida – 1.5 million tons annually
3. Iowa – 1.3 million tons annually
4. Washington – 1.2 million tons annually
5. New York – 1.0 million tons annually

*Illinois is diverting 500,000 tons annually (according to the 2013 IL EPA Permitted Landscape Waste Compost Facilities Report)

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In California, the biggest driver was the establishment of the California Waste Management Act of 1989, which required local municipalities to divert 50% of all materials from landfills by the year 2000 through recycling or composting – and its 2013 update to require 75% diversion by 2020 (In September 2014, California passed legislation banning yard trimmings and food scraps from landfills for commercial sector generators). In Florida, a revision of compost site regulations based on the size and type of facilities made it easier to build the composting infrastructure and related businesses. In Iowa, the state instituted a ban on sending yard waste to landfills, which has driven the composting industry. In Washington state, compost site regulations revisions similar to Florida supported the expansion of the composting

infrastructure and industry. And lastly, in New York a combination of compost site regulatory changes, New York City's recent organics ban, and the State Executive 6

Order #4 requiring all state agencies to implement sustainable strategies (including food scrap composting) is driving the high food scrap diversion volume. Average landfill tipping fees for each of the states – compared to Illinois' average fee of $43.46/ton – are as follows: California-$52.07; Florida-$43.65; Iowa-$34.15; Washington-$70.44; and New York-$86.30.

A 2014 MIT study on Municipal Curbside Compostables Collection across the U.S. concluded that the conditions present for the most successful residential programs included an ambitious state or county waste diversion mandate; high or rising landfill costs; nearby processing facilities; and a pre-existing infrastructure for collecting and processing yard waste.

VI. Analysis

In 2013, Illinois diverted just over 500,000 tons of yard waste and food scraps from landfills according to the Illinois EPA. Of that amount, 74,000 tons were food scraps. In 2013, Illinois' total municipal solid waste landfilled was 13.7 million tons. The amount of food scrap is estimated at 13.4% of the amount of material landfilled, or approximately 1.8 million tons. The percentage of food scraps collected and composted in relation to total municipal solid waste landfilled was 0.5% in 2013. In Illinois, 45 facilities are active and accepting organic materials. Of the 45 active facilities, 28 facilities are current 832 permit holders (landscape waste only), 10 facilities have 807 permits (can accept landscape waste and food scraps) and the remainder 8 facilities are 813 permit holders (permit for new or expanded landfill disposal facility to do composting on site).

Many of the barriers that are stalling the advancement of food scrap composting as an industry in Illinois are related to the current costs associated with food scrap composting compared to landfilling, the small scale demand for food scrap diversion by haulers from commercial food scrap generators (restaurants, food markets, institutions, etc.), and the related lack of compost sites permitted to accept food scraps. Sending material to landfills is very inexpensive, comparable in cost to sending food scraps to compost facilities, and at this juncture easier to do. High transportation costs – a symptom of an undeveloped composting infrastructure that has few licensed facilities that accept food scraps – and low landfill tipping fees in Illinois have made food scrap composting an option for only those who understand the benefits of composting and are willing to set up internal systems and go the extra mile to make it happen. In states where tip fees at landfills are much higher than fees for food scraps at compost sites, the market has been able to develop more rapidly.

Illinois' current low tipping fees, lack of policy to drive demand for food scrap composting, and lack of adequate infrastructure – specifically multiple sites spread across the state that can accept and compost food scraps – make the prospect of developing this industry bleak despite the triple bottom line economic, environmental and social benefits that food scrap composting generates. More education is needed to make the case for developing a statewide food scrap composting industry.

VII. Recommendations

The IFSC offers the following recommendations to address the major challenges that currently are impeding the development of an Illinois food scrap composting industry:

CHALLENGE #1 – Need for Education

Policymakers and citizens have not received adequate education about the benefits of developing a food scrap composting industry in Illinois. Education is needed about the urgency and value of the material/resource that we are currently landfilling. 7

PRIORITY SOLUTIONS #1:
1A. Conduct an economic analysis and forecast that demonstrates the opportunity for building a food scrap composting industry in Illinois and related jobs.
1B. Conduct broader education about the environmental benefits of food scrap composting, and shift the dialogue from food as "waste" to food as "resource" that can be harvested to create high value compost and deliver valuable economic and environmental benefits.
CHALLENGE #2 – Low Landfill Tipping Fees
Landfill tipping fees are low in Illinois, which creates a competitive and tough market for advancing food scrap composting and limits Illinois' position as a leader in materials diversion from landfills.
PRIORITY SOLUTION #2:
2A. Restructure the cost of sending material to landfills through policy. Options would include some or all of the following:
i. Enact state legislation to set higher fees for material entering landfills.
ii. Allow counties and municipalities to impose greater surcharges on landfill tipping fees than are currently allowed.
iii. Enact state legislation to impose a greater surcharge by the state on material going to landfills.
iv. Enact Pay As You Throw (PAYT) legislation requiring municipalities to adopt PAYT fee structures for local community garbage collection.

CHALLENGE #3 – Lack of Demand for Composting
There is a "catch 22" lack of demand for food scrap diversion, hauling and composting, and limited infrastructure to meet the current demand which will help develop economies of scale and lower costs that eventually will drive greater demand.
PRIORITY SOLUTIONS #3:
3A. Enact state policies that increase the demand for food scrap composting. Options would include some or all of the following:
i. Enact state legislation banning food scraps and organic material from landfills (similar to Illinois' Yard Waste Ban). Create a "ban with a plan", i.e. – a graduated or tiered "phase in" process that starts with the largest volume generators of food scraps, and allows for the infrastructure and industry to mature before imposing the ban on lower volume producers. Use existing tiered models in Vermont, Connecticut, California, NY City, and Massachusetts as starting points for crafting Illinois policy.
ii. Enact an enforceable state mandate for material diversion from landfill by local counties that requires 50% diversion by 2020 and 75% diversion by 2030.

3B. Put incentives and tax breaks in place that incentivize food scrap generators to compost their food scraps.
CHALLENGE #4 – Lack of Composting Infrastructure 8

The current infrastructure for food scrap composting is in its infancy, which increases costs related to transportation and is inhibiting the expansion of the industry.

PRIORITY SOLUTIONS #4:

4A. Review model state compost facility permitting regulations and processes and revise Illinois compost site regulations based on the size and type of facilities. Adjust current compost site permitting fees and processes to facilitate the acceptance of food scraps by current yard waste facilities or new facilities that can handle food scraps.

4B. Map existing food scrap composting infrastructure, develop a geographical strategy for increasing licensed facilities that compost food scraps to maximize demand, prioritize state investments in the "gap" areas, and provide geographically strategic capital cost state grants/low-cost loans to support compost site and transfer station infrastructure development. Investments need to be coupled with policy that drives demand.

4C. Pending successful implementation, expand to more sites the Public Act 98-0416/SB850 Pilot Program that allow existing landscape waste transfer stations to accept food scraps.

4D. Provide investment incentives in targeted geographical areas for the addition of new landscape waste transfer stations that accept food scraps.

4E. Take advantage of low cost processing infrastructure options that exist currently, and market the acceptance of food scraps to waste water treatment facilities with anaerobic digestion and stand-alone anaerobic digester operations.

4F. Develop and implement a training program for compost sites and landscape waste transfer stations that begin to accept food scraps so that regulations are clear and best practices are implemented to avoid issues with odor, vectors, etc.

4G. Establish 1-day or short-term independent drop-off sites across the state that can temporarily hold food scraps until they are transferred to permitted compost facilities that accept food scraps.

CHALLENGE #5 – Contamination of Food Scraps

Contamination of collected food scrap material inhibits the creation of usable compost and thwarts the development of the composting industry.

PRIORITY SOLUTIONS #5:

5A. Provide grants for education and training in the form of workshops and manuals for food scrap generators (restaurants, food markets, universities, institutions, etc.) to facilitate successful, uncontaminated food scrap diversion. Link grants to policy priorities – i.e. tiered commercial organics ban.

5B. Pass legislation requiring labels on food sold in Illinois to have paper labels (plastic labels create contamination issues).

5C. Facilitate education and communication between food scrap generators, haulers and compost sites – and create a system of checks and balances that catches and significantly reduces contamination at all levels.

5D. Continue Illinois' role at the table leading the development of national standards for labeling (compostable, biodegradable, etc.).

CHALLENGE #6 – Lack of End Market for Compost

End product composting marketing, sales, and education are very limited and are not effectively increasing the demand for Illinois-produced compost. 9

PRIORITY SOLUTIONS #6:

6A. Develop a better end product compost marketing strategy, including advocacy or policy for the use of Illinois-produced compost through state procurement and public sector projects and general procurement by government bodies including municipalities.

6B. Encourage and/or provide grant funding for facilitating "buy local compost" education and market linking between big box retailers (Walmart, Lowes, Home Depot, etc.) and facilities making Illinois-produced compost to increase local sales of Illinois-produced compost.

6C. Develop a consumer-targeted composting media campaign based on effective national models – timed with policy recommendations – that educates the general public about composting benefits, normalizes and promotes composting, and creates a positive image of food scrap composting.

6D. Work with the USDA and State of Illinois to develop incentives on the federal and state level that encourage the use of compost within farming operations (in lieu of synthetic chemical fertilizers that contaminate Illinois and regional watersheds) and help reduce the cost of composting applications. Educate farmers on the benefits of using compost instead of synthetic chemical fertilizers. 10

Recommendations Summary Report - IFSC Report References

1) *Climate Change and Agriculture in the United States: Effects and Adaptation*, United States Department of Agriculture (2013).
2) *Illinois Landfill Projections of Disposal Capacity as of January 1, 2014*, Illinois Environmental Protection Agency Bureau of Land Division of Land Pollution Control Waste Reduction and Compliance Section (July 2014).
3) *Illinois Commodity/Waste Generation and Characterization Study*, Commissioned by DCEO, Contracted by Illinois Recycling Association and Prepared by CDM. (May 2009).
4) *Municipal Curbside Compostables Collection: What Works and Why?, The Urban Sustainability Assessment (USA) Project: Identifying Effective Urban Sustainability Initiatives*
Massachusetts Institute of Technology Department of Urban Studies and Planning - Judith A. Layzer (2014).
5) *Municipal Solid Waste Generation, Recycling, and Disposal in the United States Tables and Figures for 2012*, USEPA Office of Resource Conservation and Recovery (February 2014).
6) Pay Dirt: Composting in Maryland to Reduce Waste, Create Jobs & Protect the Bay, Institute for Self Reliance (2013).
7) *Regenerative Organic Agriculture and Climate Change: A Down-to-Earth Solution to Global Warming*, The Rodale Institute (2014).
8) *State of Composting in the U.S.: What, When, Where & How,* Institute for Local Self-Reliance (July 2014).
9) *Sustainable Materials Management: the Road Ahead,* USEPA (2009).
10) *2010 Recycling Economic Information Study Update for Illinois*, Commissioned by DCEO, Contracted by Illinois Recycling Association and Prepared by DSM Environmental. (November 2010).

Attachment G

Task Force on the Advancement of Materials Recycling

Illinois Environmental Protection Agency
Household Hazardous Waste Collection Program
April 7, 2014

One-Day HHW Collections

IEPA Provides

- 100% Funding For Contract Labor and Waste Disposal
- Contractor Oversight
- Waste Generator Status

Local Co-Sponsor Provides

- Collection Location
- Publicity
- Traffic Control

Most Collections = 39 in 2004
Fewest Collections = 0 in 2010 and 2011
2013 = 7 Collections - $637,000
2014 = 14 Collections Planned - $1,500,000

Long- Term Collections

IEPA Provides

- Waste Transportation
- Waste Disposal
- Waste Generator Status

Local Co-Sponsor Provides

- IEPA Waste Permit
- Collection Site
- Storage Building
- Waste Unloading
- Waste Segregation and Packing
- Publicity

Location	Started	IEPA $$$$
Naperville	1992	$350,000
Rockford	1995	$310,000
SWALCO	1997	$175,000
Chicago	2006	$125,000

School Educational Waste

Mandate – Each School District Every Three Years
Reality – Collections Completed On An "As Needed" Basis
$150,000 Each Year

Partners For Waste Paint Solutions

IEPA Provides

- Reusable Paint Buckets
- Waste Paint Drums
- Waste Paint Disposal

Most Partners = 26 in 2009
Current Partners = 7 in 2014
IEPA Costs = $100,000

Paint Partners Provide

Paint Consolidation
Waste Paint
Reusable Paint
Storage Location

Common Household Hazardous Waste Items

Paint
Motor Oil
Insecticides
Lawn Chemicals
Solvents – Paint Thinner
Cleaners
Drain Cleaners
Aerosols
Pool Products
Old Gasoline
Mercury
Batteries

HHW Disposal Methods

Incineration
Pesticides, Cleaners, Waxes, Paints, Chemicals

Treatment
Acids, Bases, Cyanides, Heavy Metals

Fuel Blending
Paints, Oils, Gasoline, Flammables, Solvents

Recycling
Batteries, Paints, Mercury

Secure Landfill
Asbestos, Batteries