



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 160 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 – initially designed 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 Seven Generations Ahead and the IFSC in January 2015. The final report is 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.

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

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

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

Water Quality

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 Illinois rivers and lakes, 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

Many cities and counties are facing the prospect of declining landfill capacity and costly future landfill siting and development. The City of Toronto avoided \$300 million in new siting and landfill development costs by building two anaerobic digester 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

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, place-based industry that creates more jobs per tonnage than landfills or incinerators, and has great potential to add jobs to our economy.

Greenhouse Gases

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 CO₂ 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

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 full potential was realized, a biogas industry could produce energy to power 1 million American homes.

III. The Importance for Illinois

As Illinois 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 while 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 problems. Composting 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 supports 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. Composting will help Illinois to achieve its goal of reduced greenhouse gas emissions as part of our overall efforts to contribute to our nation’s shift toward sustainable economic development.

Lastly, Illinois has invested time, resources and energy to become a leader in materials diversion from landfills – being one of the first states to institute a yard waste ban. Removing food scraps from landfills will help Illinois maintain its waste reduction leadership role and achieve higher rates of waste reduction.

A summary of the benefits of developing a robust food scrap composting industry in Illinois include:

- the greater potential for job creation that composting has in relation to landfilling (4:1), and the opportunity to create a local Illinois industry using material that is currently being thrown away;
- the benefit of extending the capacity of current landfills;
- greenhouse gas emission reductions related to reduced methane from landfills;
- the carbon sequestration benefits of compost which support reduced ghg emissions reduction goals;
- the benefits of healthy, nutrient-rich soil for water conservation, landscaping and agricultural;
- the need to replenish our Illinois soils with nutrients and reduce the use of synthetic chemical fertilizers that contaminate our waterways;
- harnessing renewable energy and other useful byproducts of using anaerobic digestion technology to manage food scraps.

IV. Economic Development Potential

Capturing value, seizing new market opportunities and taking advantage of the assets that are present locally are strong principles upon which to grow local economies. Due to its nature, composting is a local activity, requiring the transport of organic material to facilities that can create a high end use product. As an asset, food scraps are currently being discarded, and are an unused resource that could be tapped to develop a viable composting industry, provide feedstock for waste-to-energy anaerobic digester projects, feed animals, or in some cases -where the quality of food meets reuse guidelines - could be diverted to feed people who are hungry (see US EPA Food Recovery Hierarchy below). In short, depositing food scraps in landfills is in essence throwing away a valuable resource that can support local economic development, social and environmental goals.



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, biosolids, 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 (predominantly yard waste-according to the 2013 IL EPA Permitted Landscape Waste Compost Facilities Report)

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 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, compost site regulations revisions similar to Florida supported the expansion of the composting infrastructure and industry. In New York a combination of compost site regulatory changes, New York City’s recent organics ban, and the State Executive Order #4 requiring all state agencies to implement sustainable strategies (including food scrap composting) are 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. 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.

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

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 allows 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.
- 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.

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.

Recommendations Summary Report - IFSC Report References

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- 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).