



## SUSTAINABILITY BRIEF

### **Food Waste Composting**

#### *Recycling & Waste Management Workgroup*

According to the U.S Environmental Protection Agency (EPA), 26 percent of the municipal solid waste (MSW) stream is organic material, namely food waste and yard trimmings. In addition to providing a soil enrichment product, composting organic materials can reduce the volume of MSW, as well as provide economic advantages for communities. As landfills and incinerators reach capacity, reducing the volume of material sent to them offers additional benefits, such as preserving landfill space. Organics buried in landfills generate methane, a greenhouse gas that is 21 times more potent than CO<sub>2</sub>. In many instances, methane gas generated at landfills is captured and used to generate electricity.

Municipalities can choose either to have residents compost at their homes or businesses or they can incorporate food waste into an existing city-wide solid waste collection program. If the decision is to try residential composting, municipalities will need to educate residents about the various methods of in-home or business composting: cold, hot or vermi-composting. Cold composting involves piling green materials with brown ones in a container and allowing for slow decomposition. However, food waste is best left out of this mixture because of rotting.

Hot composting requires a proper ratio of greens to browns, size, aeration, and moisture. This pile should be kept at around 130<sup>o</sup> order to speed decomposition and to kill weed seeds and plant diseases. This can be accomplished with a compost pile of at least 3 cubic feet which is mixed with approximately a 1 to 1 ratio of greens and browns and kept watered and aerated. Homeowners may find they do not have enough materials to fill the compost, but they could consider a neighborhood compost bin.

Finally, there is vermi-composting which is done with a small bin and many worms, usually the Red Wiggler type. Provide the worms with a bedding source, e.g. wet newspaper, and add kitchen scraps as food. Worms eat the kitchen scraps and bedding and excrete worm castings, ideal as a soil amendment. Moisture, called worm tea flows from the bin and can be used as a liquid fertilizer and natural insecticide.

Municipalities with existing yard waste collection and composting programs may also be able to add food waste. Curbside collection is a relatively new concept in the United States, but many cities have successful programs in place. The most notable of these programs is in San Francisco, CA where 400 tons of food scraps a day are sent to their composting facility. In most of these programs, compostables are collected weekly in a wheeled cart similar to, but smaller than, the current waste containers used by the City of Elgin. The contents of these bins can either be limited to food waste only or may also include yard waste, depending on the program.

Compostable material lists are distributed with the bins to ensure proper use. One main advantage of large scale composting over home composting is the ability to compost items that are otherwise considered non-compostable. These items, including dairy, meat, bones, seafood, and soiled papers can be processed safely in commercial composting due to the high temperature reached in large commercial compost piles.

The feasibility of instituting a curbside food waste collection program in Illinois is more likely now that the state legislature passed Senate Bill 99 to legalize and create better regulations on commercial food scrap composting. Illinois added the Food Scrap Composting Revitalization and Advancement Program (F-SCRAP) to support projects aimed at diverting organic materials, (other than yard waste) from landfills and into composting programs. Such a grant could support the institution of a curbside composting program in our community. While the 2010 application period is already past, a future grant cycle is anticipated by the DCEO. Additional information on this grant can be found at [http://www.commerce.state.il.us/dceo/Bureaus/Energy\\_Recycling/Recycling/](http://www.commerce.state.il.us/dceo/Bureaus/Energy_Recycling/Recycling/).

Once a decision to compost is made, choosing which generators to work with---residential, commercial or others will require further discussions between the municipality and the specific generators. Selecting a generator to target depends on how much volume the composting facility is prepared to handle. Processing food waste in an in-vessel (enclosed) system one of the most common methods used. The organic materials are fed into a drum, silo or other similar equipment where the environmental conditions—including temperature, moisture, and aeration—are closely controlled. In-vessel composters vary in size and capacity, and can be used year-round in cold climates. Although they can process large volumes of waste in a shorter period of time, in-vessel composting generally takes up much less space and is less labor intensive than the traditional windrow method. The apparatus usually has a mechanism to turn or agitate the material for proper aeration. Because they are enclosed, in-vessel composting operations produce very little odor and minimal leachate.

In addition, a complete program will require collection bins, instructions, training, obtaining a hauler and generating publicity for the community as well as feedback. Governmental regulations will determine whether your yard waste facility is now ready to accept food waste. Yard waste facilities may not require a special permit, but adding food waste may. Then there are local zoning ordinances which need to be obeyed before the facility can receive food waste. Finally, marketing the final compost product is a necessary step. Compost from organics can be applied in local parks/forestry programs, sold to local landscapers or made available to the public. The scarcity or expense of chemical fertilizers should enhance the acceptability of the finished compost.

The City should begin looking into a pilot program to test the receptiveness of residents while also working on a plan to institute a large scale curbside composting program. In the meantime, our residents need education on home composting and the City can help to provide this education.

For a copy of this report and more information about Elgin's sustainability initiatives please visit [www.cityofelgin.org/green](http://www.cityofelgin.org/green).