Issue Paper #9
Organics Diversion

9.1 Overview

Broome County (County) currently provides several options for residents and businesses in the County to divert organics (yard waste, food scraps, wood waste) from the waste stream including:

- Large-Scale Composting – Yard waste (including leaves, brush, grass clippings and tree limbs) was banned from the Broome County Landfill (Landfill) in 1989. The County has a designated area at the Landfill for composting these materials. Finished compost is offered to County residents, while supplies last. In addition to the Landfill, yard waste may also be delivered to Boland's Top Soil in Conklin or Robinson Hill Nursery in Johnson City for proper disposal/composting. Most garbage haulers in the County offer curbside collection of yard waste as either part of their regular collection service or for an additional fee. The Village of Endicott operates a yard waste compost facility that serves Endicott, the Town of Union and the Town of Vestal.
- Backyard Composting – The County encourages backyard composting and offers a fact sheet and basic information on the County's Solid Waste web page. The County also contracts with Cornell Cooperative Extension (CCE) for direct educational outreach and CCE has a composting education program that includes home composting. Together the County and CCE promote backyard composting through workshops, classroom programs, bin sales and ad campaigns.
- Grasscycling – The County encourages residents to leave grass clippings on the lawn instead of bagging them, as a waste reduction measure. The County has a Grasscycling brochure posted on the Solid Waste web page and encourages residents to call CCE for more information.
- Food Donation – The County encourages donation of non-perishable food items to local food pantries and lists several locations that accept food donations in its Recycling/Reuse Guide located on the Solid Waste web page.

This issue paper will address options for expanding the current programs as well as alternative options for the County to consider in an attempt to increase organics diversion in Broome County.

9.2 Diversion Options

9.2.1 Large-Scale Composting

Currently the County actively composts yard waste using the windrow method at the Landfill. In an effort to increase diversion, the County could consider composting additional materials such as biosolids (the nutrient-rich organic materials resulting from the treatment of sewage sludge) and/or food waste.

9.2.1.1 Biosolids Composting

Currently the County accepts biosolids that are delivered to the Landfill and the material is buried. The disposal of biosolids is a County-wide issue and diversion options for biosolids will be discussed in more detail in the evaluation of alternative technologies section of the County's Local Solid Waste Management Plan update.

9.2.1.2 Food Waste Composting

Commercial/industrial/institutional (CII) food waste (typically generated from grocery stores, hotels, restaurants, and institutions such as universities, hospitals and prisons) is an ideal feedstock for composting. The material usually consists of pre-consumer food waste such as raw fruit and vegetable peelings and meat waste,[1] as well as post-consumer waste such as leftovers. In addition, certain types of paper (including non-recyclable waxed corrugated cardboard, paper towels, paper plates, etc.), can also be diverted from the garbage and composted.

Residential food waste is also an ideal feedstock for composting, however, it is logistically more difficult to collect than CII food waste. The collection of food waste is discussed in Section 9.2.4 of this issue paper.

The downstream diversion of food waste will be discussed as part of the municipal solid waste (MSW) composting options in the alternative technologies evaluation section of the County's Local Solid Waste Management Plan update.

9.2.2 Backyard Composting

Currently the County encourages backyard composting and contracts with Cornell Cooperative Extension (CCE) for direct educational outreach. CCE distributes a quarterly composting newsletter and has a Home Composting Demonstration Site for members of the community to visit that features commercial and homemade compost bins. Also, the County sells backyard compost bins (at cost) year round at the Landfill.

In an effort to increase backyard composting, the County and CCE could consider offering more workshops throughout the year and increase the advertising for compost bin sales. In addition, the County could consider expanding the Backyard Composting information on the Solid Waste website to include more information such as

[1] Typically fats, meats, and bones are acceptable in large-scale, properly managed composting systems.

troubleshooting, health and safety, preventing animal nuisances, pH and temperature control, etc. Links to other organization's backyard composting websites are provided in Section 9.10 - Resources.

9.2.3 Small-Scale Vermicomposting

Vermicomposting (composting with worms) is an easy way to divert food waste from the garbage by turning food scraps into a rich soil amendment. It can be done indoors, requires little space, and is odorless, if maintained correctly. Vermicomposting typically utilizes redworms, also called "red wigglers," because the species thrive in small, confined spaces and they tolerate a wide range of conditions. CCE usually offers a worm composting workshop for Broome County residents every year. Attendees receive a worm container, bedding and starter worms all free of charge. In addition, CCE also holds an annual vermicomposting workshop specifically designed for school teachers.

One option the County may consider to increase worm composting, is to add a vermicomposting webpage to the County's Solid Waste website. The information could include how to start a worm composting bin, troubleshooting, and where to purchase redworms. In addition, the County could consider having a "worm sale" once a year. Vermicomposting can be an educational project for school children and could be incorporated into the County/CCE's waste reduction and recycling outreach efforts.

9.2.4 Food Waste Collection/Diversion

Nationwide, food waste accounts for an estimated 12.5 percent[2] of MSW. At a time when many recycling programs have hit a plateau, food waste is commonly the next segment of MSW to be tapped for diversion. Collecting food waste is often more challenging than collecting typical recyclable materials. Some of the hurdles to collecting food waste from both residential and CII generators include space considerations, the costs of collection containers and vehicles, and the distance to the composting/processing facility.

Currently, there are no large-scale facilities in the County that actively compost post-consumer food waste or co-compost food and yard waste. The State University of New York (SUNY) Binghamton campus composts some food waste in a static pile and transports some to Pennsylvania where it is co-composted with yard waste and manure. Frito-Lay in Kirkwood has a pre-consumer organic waste recycling program that produces livestock feed. Delaware County, east of Broome County, owns and operates an MSW co-composting facility near Walton, New York. Large-scale food waste or organics composting facilities are typically more economically viable in locations that have high tipping fees for MSW disposal (>$50/ton), whose construction and/or operations are subsidized in some way, or where there are specific long-term economic considerations that lower the present worth cost over a 20-year

[2] Source: "MSW Generation, Recycling, and Disposal in the United States: Facts and Figures for 2007," U.S. EPA. http://www.epa.gov/epawaste/nonhaz/municipal/pubs/msw07-fs.pdf

planning period (e.g., landfill air space). Nevertheless the following information on food waste collection and diversion is provided for the County's reference, as food waste diversion opportunities may arise in the future.

9.2.4.1 Residential Collection

As mentioned in Issue Paper #8 – Zero Waste, several communities in the United States have implemented curbside collection of residential food waste and food-soiled paper (e.g., paper towels, napkins, paper plates, tissues, etc.) in the same container as yard waste. Links to some of these programs (including Seattle, WA; San Francisco, CA; Alameda County, CA; Cedar Rapids, IA; and Hutchinson, MN) are provided in Section 9.10 - Resources. The co-collection of food waste with yard waste is possible in places where processing facilities receiving the materials are permitted to accept both food and yard waste.

While some of the program examples are located in communities much larger than Broome County, it should be noted that two residential organics collection programs are operating on a smaller scale: Hutchinson, Minnesota, with a 2007 population estimate of 13,929 and Cedar Rapids, Iowa with a 2007 population estimate of 126,396.

Most residential food waste collection programs utilize lidded, wheeled carts and automated collection vehicles for the curbside collection of food and yard waste. Because the County does not operate or manage the collection of MSW, recyclable materials or yard waste in the County, the issue of purchasing or using carts for organics collection would have to be researched and discussed with the municipalities and private haulers who operate collection programs within the County. The issues would be similar to those discussed in Issue Paper #10 – Single-Stream Recycling Collection Methods, Bins vs. Carts and include, but not be limited to:

- Cost of carts;
- Compatibility with haulers' current collection vehicles;
- Cart maintenance; and
- Residents' lack of space to store carts.

In addition to the types of carts referenced in Issue Paper #10, many organics collection programs are using aerated carts such as SSI Schaefer's "Compostainer"[3] or IPL's "Bio Cart."[4]

While the quantities of organic materials may increase with the use of wheeled carts, there is also the potential for an increase in contamination of "non-targeted" materials (items that are defined by the County as not acceptable) to be placed in the carts. Some residents may place garbage or recyclable materials in their organics cart if they are confused about the program, their trash container is full, or as a way to avoid purchasing specially-marked bags, such as those required for garbage collection in the City of Binghamton.

[3] Source: SSI Schaefer website. http://www.ssi-schaefer.ca/WR/WRproAP.html#wr2
[4] Source: IPL website. http://www.ipl-plastics.com/Afficher.aspx?page=197&langue=en

9.2.4.2 Commercial/Industrial/Institutional Collection

Implementing a food waste collection program with the CII sector can be easier than implementing a residential food waste collection program, because there are fewer generators so education tends to be more site-specific or one-on-one. Also, because of the larger quantities generated, a commercial business can often use a dumpster, a roll-off container, or a compactor for food waste which many haulers are capable of servicing using their current fleet of collection vehicles.

Pre-consumer commercial food waste, such as trimmings produced by restaurants and grocery stores, is ideal for composting because it tends to be produced in higher volumes and is less likely to be contaminated with packaging.

Grocery stores have a financial incentive to reduce their waste stream because not only is trash service expensive, but trash takes up valuable space. In some communities, stores have contracted for organics collection or they backhaul compostable materials to a distribution center where it is directed to a composting facility.

Some grocery store food discards may be packaged in plastic wrap, which does not decompose and can pose handling issues in a compost system and contamination issues if not screened out at the end of the process. To reduce the impact of plastic packaging, grocery stores should be educated to remove packaging prior to setting out material for collection, and the finished product should be screened to make sure no stray plastic bits remain. Fats, meats, and bones are acceptable in a large-scale composting system.

The Windham Solid Waste Management District (WSWMD) in southern Vermont accepts old corrugated cardboard (OCC) and non-recyclable paper in its commercial composting program for economic reasons. While they had preferred to recycle OCC back into paper products, it was not economical to dispatch a separate truck for OCC collection and a truck for organics collection in their rural service area.[5]

In Seattle, post-consumer commercial food, such as cafeteria waste contaminated with takeout containers, paper plates, cups, etc. is diverted and processed by co-composting it with yard waste. A key to success with post-consumer food waste is that the containers and cutlery must be compostable. Many products advertise that they are "biodegradable," although whether a material that claims to be biodegradable can *actually* be composted is dependent on the receiving facility and its processes. Therefore a material testing and approval program, such as the one managed by Cedar Grove Composting[6], the private company that processes Seattle's post-consumer cafeteria waste, is suggested before biodegradable items are accepted in the food waste program.

The St. Paul, Minnesota Independent School District recently implemented a large-scale, post-consumer food waste composting program. This district has more than 42,000 students and 80 different schools. In the 2007/08 school year, 52 schools within the district implemented a food-for-livestock program. Each of these sites has

[5] Source: "Public/Private Partnering Facilitates Organics Diversion," by Robert Spencer, BioCycle June 2008. http://www.jgpress.com/archives/_free/001662.html

[6] Source: Cedar Grove Composting website. http://www.cedar-grove.com/services/compost.asp

trained its students and staff to source-separate their food waste in the cafeterias. The food waste is then cooked per Minnesota Animal Health Standards and fed to pigs. The program is estimated to reduce the volume of commercial waste requiring disposal by nearly 30 percent. This has resulted in cost savings to the district because of reduced MSW collection costs realized through a resource management program.

As collection and processing capacities develop over time, it is expected that more communities will consider mandatory diversion and/or disposal bans for food waste.

9.3 Rules and Regulations

The management of organics composting, including siting and permitting, is regulated at the state level with the exception of biosolids and animal manures. In New York, composting biosolids is regulated by both State and Federal regulations.

New York state requirements for facilities involved in composting of sewage sludge, food, yard and other solid wastes are subject to regulation under the Comprehensive Revisions and Enhancements to Title (6 NYCRR) Subpart 360-5: Composting Facilities[7]. The regulations apply to the construction and operation of composting and other organic waste processing facilities for mixed solid waste, source separated organic waste, biosolids, septage, yard waste and other solid waste. These requirements include general requirements, pollutant limits, operational standards, monitoring, record keeping and reporting. Permitted facilities in New York must submit an annual report pertaining to the above requirements.

Local regulations related to the collection of organics typically include hauler licenses/permit requirements and published ordinances.

9.4 Implementation Requirements

Currently the County actively composts yard waste (including leaves, brush, grass clippings and tree limbs) in windrows at the Landfill. In an attempt to increase organics diversion from the Landfill, the County would need to research and evaluate its diversion options. Composting food waste (with MSW) and biosolids will be discussed in the alternative technologies evaluation section of the County's Local Solid Waste Management Plan update.

Expanding backyard composting and small-scale vermicomposting could be done with increased staff effort. However, to implement a large-scale food waste diversion program (separate from an MSW composting program) would require the development of the infrastructure needed to collect and process the material. As stated previously, there are no facilities in the County that actively compost food waste or co-compost food and yard waste at this time. Whether a public or private facility is developed, the County would need to consider:

- Facility permitting;

[7] Source: NYSDEC website. http://www.dec.ny.gov/regs/4411.html

- Acquisition of feedstock;
- Management/monitoring of composting operation;
- Health and Safety;
- Cost; and
- Other site-specific considerations.

In addition, the collection of the organic material would need to be evaluated for both the residential and commercial sectors and would include, but not be limited to:

- Collection container options and compatibility with haulers' current collection vehicles;
- Public Education; and
- Cost.

The County may want to consider implementing a pilot study to gather more data on the logistics and effects of an organics collection program.

Public/private ownership and operation of a food waste/organics composting facility may be an option for the County to consider. Typically, such partnerships would utilize the financing advantages of the public sector entity (i.e., lower cost of capital) and the operational expertise of the private sector. If the County considered this option, staff time would be needed to develop and distribute a Request for Information (RFI) to firms with capabilities and interest in providing the services of composting organic materials. The approach could include an incentive in which the County provides the land for use at a minimal cost and then contracts with a private firm to operate the processing facility.

Another option the County may consider researching is a food waste-to-livestock program. Such a program has not been implemented in New York State and would require approval from the state's Department of Agriculture and/or Department of Health.

The County may consider establishing an organics diversion working group or committee. The group could be charged with researching the various diversion options, identifying barriers to each option, and be asked to make specific recommendations to the County's solid waste management staff.

9.5 Education Tactics

The education requirements of implementing an expanded organics diversion program will depend on the diversion options that are ultimately chosen: backyard composting, vermicomposting, residential and/or commercial food waste collection, etc.

The County should continue to work with CCE to promote backyard composting, grasscycling, vermicomposting (for residents and schools), composting workshops, and compost bin sales.

The option that would require an increased level of public education would be a food waste collection and composting program. In order to receive feedstock that is appropriate for composting and free of contaminants, County staff would need to educate the generators of the food waste (i.e., residents, restaurants, institutions, grocery stores, etc.) as well as the collectors (haulers) of the food waste.

Educating residents would require a coordinated plan to disseminate public information before the program is to be implemented (direct mailings, coverage in community newspapers, local cable access programs, neighborhood advisory groups, etc.) as well as during implementation and throughout the life of the program (cart tags/notices). The City of San Francisco's contracted hauler uses photographs to educate customers what materials should be placed in what cart (garbage, recycling, compostables).[8]

One example regarding education and training grocery store employees to separate food waste for composting can be found in an article on Whole Foods Market stores[9] that was previously provided to the County in Issue Paper #8 - Zero Waste.

The County currently provides technical assistance to businesses. This service may be in higher demand if the County implemented a food waste collection and composting program. Certain businesses may need a waste audit to determine if they generate enough food waste to participate in the program.

As with any program change, the County's website should be kept up-to-date with diversion program information. Many people have come to rely on their municipalities' website for solid waste-related instructions and it is a relatively low-cost means of providing information.

9.6 Capital and Operating Expenses

Implementing an expanded organics diversion program may incur considerable costs to the County. The extent of the capital and operating expenses depends on the option(s) considered by the County.

Dedicated staff time would be required to analyze each diversion option. If the County were to be involved in the development and operation of a food waste composting facility, the capital expenses would be great. Costs could include, but not be limited to: land acquisition, costs associated with designing and constructing the composting facility, equipment required to handle and process the organic feedstocks, labor required to operate the program, etc. However, if a food waste composting facility were to be developed by a private entity, the County could have less capital expenditures. Regardless of the approach, a large capital expenditure for a food waste collection and diversion campaign would be the ongoing promotional and education pieces. Additional staff time would be required to monitor the program and work with the private haulers on collection issues.

[8] Source: "Food Waste Diversion Promoted on the Street," by Rhodes Yepsen, BioCycle March 2009. http://www.jgpress.com/archives/_free/001833.html

[9] Source: "Composting at the World's Largest Natural Foods Supermarket Chain," by Molly Farrell, BioCycle November 2004. http://www.jgpress.com/archives/_free/000309.html

A successful organics diversion program would inevitably reduce the amount of waste requiring disposal, thus reducing the revenue from tipping fees received at the Landfill and possibly reducing Landfill operating expenses.

9.7 Diversion Potential

As part of Broome County's Local Solid Waste Management Plan update, R. W. Beck assessed the County's waste stream for future diversion potential. R. W. Beck identified recent waste characterization studies completed for communities with demographics and solid waste management systems similar to those of Broome County. Together, the County and R. W. Beck selected the 2005 composition results for Cedar Rapids/Linn County, Iowa from the Iowa Statewide Waste Characterization Study as an appropriate comparison. Table 9-1 lists the estimated quantities of organic material in Broome County's waste stream that were calculated by applying the County's 2007 MSW landfill tonnage (148,904 tons)[10] to the organic composition portion of Cedar Rapids/Linn County's MSW.

For this analysis, it was assumed that certain paper grades such as newspaper, corrugated cardboard, magazines, high grade office paper and mixed recyclable paper (box board, junk mail, etc.) would be recycled through typical residential and commercial recycling programs, rather than composted.

Table 9-1
Cedar Rapids/Linn County MSW Composition Percentages Applied to Broome County 2007 MSW Landfill Tonnage

Material Group	Material	CR - Linn Co Avg Percent Comp.	Broome County 2007 Tons
Paper	Compostable Paper	7.1%	10,541
Yard Waste	Pumpkins[1]	0.7%	1,088
Yard Waste	Yard Waste	0.9%	1,290
Food Waste	Food Waste	12.4%	18,477
Wood	Non-Treated	4.2%	6,268
Other Organic	Other Organic	1.2%	1,787
Total Tons			39,451

[1] The Iowa Statewide Waste Characterization sorting events were conducted between September and November of 2005 so "Pumpkins" was a separate material subset of Yard Waste.

From this analysis, it is estimated that the County may have more than 39,450 tons of organic material available in the MSW stream. In addition, the County accepted 2,121

[10] Source: Landfill Tonnage by Material from "Broome County Executive Summary, Division of Solid Waste Management, As of December 31, 2007 – Final." The tons include General MSW plus Municipal MSW from Cleanup Events.

tons of yard waste for composting in 2007 and approximately 7,000 tons of sludge was accepted at the Landfill for disposal.[11]

To determine the current and future organic waste quantities available to the County, R. W. Beck recommends the County survey large private industrial and commercial solid waste generators in an attempt to gather data including the tonnages generated and the tonnages recycled, composted or diverted for each organic material.

9.8 Addressing Stakeholder Concerns

Stakeholder concerns regarding an expanded organics diversion program will depend on the option(s) considered by the County. Concerns may include, but not be limited to:

- Resistance from residential and CII stakeholders to an organics collection program;
- Concerns from business owners regarding perceived increases in time and labor to divert multiple materials;
- Concerns from haulers and municipalities that currently operate their own collection programs being required to collect and haul an increased number of source-separated materials;
- Concern that the costs associated with implementing a residential curbside cart-based collection program for organics may be high; and
- Concerns related to siting and permitting issues for a food waste composting facility.

Depending on the approach taken by the County, one stakeholder group that could be concerned with a food waste composting facility (if it were located at the Landfill) would be the Landfill Citizen Advisory Committee (CAC). As a subgroup of the Environmental Management Council, the CAC acts as a liaison between the County and the communities adjacent to the Landfill and provides public input regarding the design, construction and operation of the Landfill. The County retains all power and responsibility for decisions at the Landfill but must consult with, solicit and consider the views of the CAC.

The County could schedule meetings with the CAC to first discuss the organics composting options that the County is considering and get feedback from the CAC, and then keep them updated as the County moves forward with studying the feasibility of certain options, perhaps ultimately choosing an option, going out for bids, etc.

As discussed in Section 9.4 – Implementation Requirements, the County may consider establishing an organics diversion working group or committee. This group could report to the CAC to keep them informed of the research of various organics diversion options and identification of barriers to each option.

[11] Source: Landfill Tonnage by Material from "Broome County Executive Summary, Division of Solid Waste Management, As of December 31, 2007 – Final."

9.9 Benefits and Drawbacks

Implementing an expanded organics diversion program has benefits as well as drawbacks, as outlined below.

9.9.1 Benefits

Potential benefits of increased organics diversion include:

- A decrease in the amount of waste disposed at the Landfill, thus preserving airspace and extending the life of the Landfill;
- A decrease in some odor-causing wastes from the Landfill working face; and
- Benefits related to the increased use of finished compost, a by-product of organics diversion, (by residents, landscapers, the County, etc.) include a reduction in need for fertilizers, providing nutrients to deficient soils, prevention of soil erosion and nutrient run-off, and feedstock for land reclamation projects.

The benefits to implementing a residential curbside cart-based collection program for organics may include, but not be limited to, the following:

- Increased convenience to residents by switching to lidded, wheeled carts;
- Increased quantities of organic materials collected due to adding food waste to the diversion program in addition to yard waste;
- Improved residential neighborhood aesthetics by reducing the amount of yard waste litter caused by windy conditions as well as having uniform containers for every household;
- Protection of organic materials from excess moisture on rainy days, which can make materials and containers heavier when manually collected;
- An increase in productivity by the haulers because the collection crews would be able to service more households in one day than they are able to service using the current, manual collection method; and
- The potential to lower haulers' workers compensation claims because workers would be doing less lifting compared to the current manual collection of yard waste.

9.9.2 Drawbacks

Potential drawbacks of increased organics diversion include:

- An increase in capital and operating expenses;
- An increase in County staff time to research diversion options, determine available feedstocks, design a facility, proceed through a facility permitting process, work with haulers regarding collection issues, etc.; and
- Addressing concerns and potential resistance from haulers and residential and CII stakeholders to an organics collection program.

The drawbacks related to implementing a residential curbside cart-based collection program for organics may include, but not be limited to, the following:

- A potential for increased quantities of contaminants or non-targeted materials to be collected, however education and enforcement efforts can mitigate this risk;
- Implementing a cart-based collection system for organics may impose a financial burden on some haulers to purchase new, fully-automated collection vehicles or retrofit current vehicles with semi-automated cart tippers. These costs are not likely to be included in the hauler's current equipment budget;
- Implementing a cart-based system may impose a financial burden on the County if the County subsidizes the program in any way (e.g., by purchasing the carts);
- Some businesses may not have space for an organics collection container; and
- Some residents may resist the use of carts, siting lack of space to store the cart.

9.10 Resources

Provided below is a list of resources which may be beneficial to the County when researching organics diversion options.

Backyard Composting

- Cornell Waste Management Institute
  http://cwmi.css.cornell.edu/smallscalecomposting.htm
- Maryland Cooperative Extension Home and Garden Information Center
  http://www.hgic.umd.edu/_media/documents/BackyardCompostinghg35pfv.pdf
- U.S. EPA – Backyard or Onsite Composting website.
  http://www.epa.gov/waste/conserve/rrr/composting/backyard.htm
- University of Wisconsin Extension
  http://www4.uwm.edu//shwec/publications/cabinet/composting/CommonBackyardCompostingQA.pdf

Small-Scale Vermicomposting

- Maryland Cooperative Extension Home and Garden Information Center
  Indoor Redworm Composting
  http://www.hgic.umd.edu/_media/documents/IndoorRedwormCompostingHG40pfv.pdf
- New York Worms
  http://www.nyworms.com/vermicomposting.htm

Curbside Collection of Food Waste

- Alameda County, California
  http://www.stopwaste.org/home/index.asp?page=528

- BioCycle, "Diverting Food Residuals in Minnesota," by Roberta Wirth, September 2005. http://www.jgpress.com/archives/_free/000525.html#more
- BioCycle, "Organics Cart and Container Trends," by Nora Goldstein, October 2007. http://www.jgpress.com/archives/_free/001469.html
- City of Cedar Rapids, Iowa http://www.cedar-rapids.org/solidwaste/prepare.asp
- City of Hutchinson, Minnesota – Curbside Organics Collection http://www.ci.hutchinson.mn.us/composting.html#curbside http://www.ci.hutchinson.mn.us/pdf/organiccompostprog.pdf
- King County, Washington http://your.kingcounty.gov/solidwaste/garbage-recycling/food-collection.asp
- City of Olympia, Washington http://www.ci.olympia.wa.us/city-utilities/garbage-and-recycling/organics-and-yard-waste/organics-and-yard-waste-the-basics.aspx
- Resource Recycling, "Getting Organics to the Curb," by John Jaimez, May 2005.
- City of San Francisco, California http://www.sfrecycling.com/residential/composting.php?t=r
- City of Seattle, Washington – Food & Yard Waste Collection http://www.seattle.gov/util/Services/Yard/Yard_Waste_Collection/index.asp
- SWANA, "Curbside Collection of Residential Food Waste," December 2008 (available free of charge to SWANA members). http://swanastore.stores.yahoo.net/cucoofrefowa.html.

Food Waste-to-Livestock

- Hennepin County, Minnesota http://www.co.hennepin.mn.us/portal/site/HCInternet/menuitem.3f94db53874f9b6f68ce1e10b1466498/?vgnextoid=f866b70a699fc010VgnVCM1000000f094689RCRD
- North Carolina Division of Pollution Prevention and Environmental Assistance http://www.p2pays.org/ref/20/19926/P2_Opportunity_Handbook/7_II_A_5.html
- University of Minnesota http://www.mntap.umn.edu/food/67-FeedingFood.htm