

US EPA ARCHIVE DOCUMENT



Don't Throw Away That Food

Strategies for Record-Setting Waste Reduction



The Waste Reduction Record-Setters Project fosters development of exceptional waste reduction programs by documenting successful ones. These programs can be used as models for others implementing their own programs to reduce garbage. This fact sheet packet is oriented toward commercial and institutional food discard generators, and highlights record-setting food recovery programs.

Food discards: what are they and where do they come from?

Food discards (fūd dis-kārdz): food preparation wastes and uneaten food from households, commercial establishments, institutions, and industries.¹

Major generators: restaurants, supermarkets, produce stands, school cafeterias, hospitals, food processors, farmers, hotels, prisons, employee lunch rooms, and community events.

Examples: leftovers, outdated bread, wilted lettuce, surplus canned goods, vegetable peels, and fruit pits.

Why recover food discards?

According to the U.S. Department of Agriculture Economic Research Service, if 5% of consumer, retail, and food service food discards from 1995 were recovered, savings from landfill costs alone would be about \$50 million dollars annually.² Recovering 5% of losses from these three sources "would represent the equivalent of a day's food for each of 4 million people."³ Food discards comprise 6.7% by weight of the total U.S. municipal solid waste stream. In 1995, 14,000,000 tons of food discards were generated. Of this, only 4.1%, 600,000 tons, was diverted, or recovered, from the traditional disposal destinations of landfills and incinerators.⁴

Almost any business can successfully create fewer discards by buying less, and can divert food discards from landfills. Businesses with record-setting food diversion programs are recovering 50 to 100% of their food discards and reducing their overall solid waste by 33 to 85%. Often, recovery of food and other organics is just one part of a successful overall waste reduction program that realizes both environmental and economic benefits. Your program can allow you to:

- Avoid trash collection and disposal fees;
- Provide food to the needy;
- Recover the nutrient value of the food as compost or animal food;
- Help your community meet local and state waste reduction goals;
- Sustain local industries and jobs; and
- Create an improved public image for your business.

Recovery Options

Your choice of recovery methods will depend on many factors. These include the quantity and type of food discards, availability of space for on-site recovery, existence of haulers and/or end users for off-site recovery, and program costs. Food discard recovery methods include making donations, processing into animal feed, rendering, and composting. Off-site methods involve food discard generators, haulers, and end users.

Food Donations

Non-perishable and unspoiled perishable food can be donated to local food banks, soup kitchens, and shelters. Local and national programs frequently offer free pick-up and provide reusable containers to donors. To encourage food donations, all 50 states and the District of Columbia have enacted "Good Samaritan" laws that protect from liability those donors who take adequate measures to prevent food spoilage or contamination.

Animal Feed

Recovering food discards as animal feed is not new. In many areas hog farmers have traditionally relied on food discards to sustain their livestock. Farmers may provide storage containers and free or low-cost pick-up service. Coffee grounds and foods with high salt content are not usually accepted, as they can be harmful to livestock.



At least one company is using technology to convert food discards into a high-quality, dry, pelletized animal feed. Food discards are also used to make pet food.



Rendering

Liquid fats and solid meat products can be used as raw materials in the rendering industry, which converts them into animal food, cosmetics, soap, and other products. Many companies will provide storage barrels and free pick-up service.

Composting

Composting can be done both on- and off-site. Available land space as well as haulers and end users in your area will help you decide which is better for you. If you compost on-site, you will need to consider carbon/nitrogen ratios. Food scraps provide most of the nitrogen, while bulking agents such as newspaper, cardboard, and wood chips provide carbon. The moisture and carbon content of your food discards will determine how much bulking agent you should add. Temperature and aeration are other important factors that will determine how long it takes materials to compost. Composting can take many forms:

- *Unaerated Static Pile Composting:* Organic discards are piled and mixed with a bulking material. This method is best suited for small operations; it cannot accommodate meat or grease.

- *Aerated Windrow/Pile Composting:* Organics are formed into rows or long piles and aerated either passively or mechanically. This method can accommodate large quantities of organics. It cannot accommodate large amounts of meat or grease without frequent turning and careful temperature and moisture control.

- *In-vessel Composting:* Composting vessels are enclosed, temperature and moisture controlled systems. They come in a variety of sizes, and have some type of mechanical mixing or aerating system. In-vessel composting can process larger quantities in a relatively small area more quickly than windrow composting and can accommodate animal products.



- *Vermicomposting:* Worms (usually red worms) break down organic materials into a high-value compost (worm castings). This method is faster than windrow or in-vessel composting and produces high-quality compost. Animal products or grease cannot be composted using this method.

Model Programs — Diversion Strategies and Rates

Record-Setting Program	Diversion Strategies	Materials Collected	Food Discards and Other Organics Recovered (tons per year)	% Estimated Food Discards and Other Organics Recovered	% Total Waste Stream Recovered*
Del Mar Fairgrounds, California	Off-site composting; on-site vermicomposting; rendering	Discards from fair food vendors, paper plates, cups, napkins, towels; vegetable and fruit scraps and other discards from on-site kitchen; cooking oil	51 (1996)	75%	85%
Fletcher Allen Health Care, Vermont	Off-site composting; rendering; donations	Kitchen food prep discards, leftovers from steam tables; grease; edible produce	90 (1997)	90%, pre-consumer	33%
Frost Valley YMCA, New York	On-site composting	All pre- and post-consumer food scraps and leftovers	80 (1997)	100%	53%
Green Workplace Program, Government of Ontario	Off-site composting; on-site composting	Pre- and post-consumer discards from 27 government restaurants and cafeterias	1,650 (FY96)	70%	60-80%
Larry's Markets, Washington	Off-site composting; rendering; donations	Produce and floral trimmings and spoils, waxed cardboard; meat and fish trimmings; canned goods	870 (1995, est.)	90%	64%
Middlebury College, Vermont	On-site composting	Kitchen food prep discards and post-consumer leftovers from cafeterias and snack bars, waxed corrugated cardboard	288 (1996)	75%	64%
New York State Department of Correctional Facilities	On-site composting at 30 facilities; off-site composting at 17 facilities	Kitchen food prep discards, post-consumer leftovers including chicken bones; some sites accept paper towels and mixed cardboard	6,200 (FY97)	90%	80%
San Francisco Produce Recycling Program, California	Donations; animal feed; off-site composting	Edible, non-salable produce; inedible produce; spoiled produce and trimmings	1,500 (June 1996 - August 1997)	Greater than 50% from participating businesses	NA
Shop Rite Supermarkets, New Jersey	Off-site composting; rendering	Floral and produce trimmings and spoils, out-of-date bakery items, old seafood, soiled paper products, food spills, out-of-date dairy and deli products, waxed corrugated cardboard; meat products	3,000 (1997)	80%	90%
University of Massachusetts, Amherst**	On-site composting	Kitchen food prep scraps, pre-consumer leftovers, post-consumer discards	250 (September 1996 - August 1997)	50%	48%

* Reflects the total waste reduction achieved from comprehensive waste reduction efforts. As such, these recovery rates reflect reductions from all types of waste and are not limited to organics recovery.

** No case study on this program is available at this time.

Running A Food Recovery Program

Some Questions and Answers

Q How can I create a record-setting program?

A There is more than one way to create and measure a successful food recovery program. Successful programs usually have two defining qualities: they greatly reduce the amount of food discards sent to the landfill or incinerator, and they save money in comparison to other disposal methods. Furthermore, most model programs are part of a more comprehensive waste reduction program.

Doing a basic waste audit before beginning your program will help you gain an understanding of what is in your waste stream. This baseline information also serves as a marker for

measuring diversion rate and change in spending.

Depending on the

composition of your waste stream, the best method of

food discard recovery may be a combination of methods.

Involving employees in the beginning and continuation of your program, and training everybody well in how and why to participate have also proven to be key elements in a successful program. As more people are trained and interested in a program, and feel ownership of it, the more likely they will be to collect food discards with little contamination at a high recovery rate. This will ensure you have a high-quality, high-value product. Adding food discard recovery responsibilities to employee job descriptions will help show that you are serious about creating a strong program.

Q Will beginning a food composting program cost much?

A Start-up costs are typically low. For example, Shop Rite Supermarkets in New Jersey had only to pay for the rental of extra dumpsters and for the additional organics pick-up. If you choose to compost on-site with special equipment, costs can be higher. Your current equipment, plans for your composting program, and available space will all determine your start-up costs.

Q How can I run a cost-effective program?

A How cost effective your program is mainly depends on the difference between your current hauling and tipping costs and those of the program you decide to implement. For composting, fees are usually significantly less than trash fees. You may also be able to sell finished compost. Food banks and renderers usually provide free pick-up, allowing programs to avoid 100% of their trash costs.

Q If I collect organics for composting or animal feed, am I destined to live with vectors and foul odors?

A No. Most businesses that collect kitchen and table scraps avoid these problems by keeping organics in covered containers. Many refrigerate containers until pick-up. A Waste Specialist at Fletcher Allen Health Care, where containers are picked up daily, says that they avoid vector and odor problems by keeping their containers clean and their organics "moving."

Q Are composting and providing animal feed viable options for urban businesses?

A Yes. Commercial composting facilities in or near cities will take your food discards. Farmers are close enough to many urban areas that they will pick up from your business. Wholesalers and retailers throughout San Francisco participate in a food discard recovery program which includes providing food for cattle.



Record-Setters Reap Benefits

▶ Avoid trash collection and disposal fees

Through composting, Shop Rite supermarkets in New Jersey avoid an average of \$90 per ton in landfill tip fees and spend an average of \$33 per ton to tip compostables off-site. This represents a savings of \$57 per ton.

With high recovery rates, you can have your trash dumpsters picked up less frequently, or use smaller dumpsters for the same pick-up frequency.

▶ Provide food to the needy

The San Francisco Food Bank collects over 37 tons of edible food a month from wholesalers and distributes it to local service agencies.

▶ Recover the nutrient value of the food as compost or animal food

At New York Department of Correctional Services facilities, compost made from landscape trimmings and cafeteria food scraps adds rich organic matter to farms and horticulture projects. "Closing the loop" can also save money by giving you access to cheap soil amendment or wholesale organic produce.



▶ Help your community meet local and state waste reduction goals

In 1996 the Del Mar Fairgrounds in Del Mar, California, diverted 85% of its waste stream, including more than 38 tons of food discards. This helped the town of Del Mar meet diversion goals set by the 1989 California Waste Management Law.

▶ Sustain local industries and jobs

Food discard generators typically do not need to hire anybody new to run food recovery programs. However, by recovering food discards for end users, they can help sustain local industries and jobs. Composting facilities, for example, employ four times more people on a per-ton basis than landfills.⁵

The Intervale Foundation, a non-profit organization in Vermont, employs five people full time at its composting site in Burlington.

▶ Create an improved public image for your business

Customers at Larry's Markets in Washington are proud to shop at a store with a strong composting program.

Notes

¹ Adapted from the U.S.

Environmental Protection Agency, *Measuring Recycling: A Guide for State and Local Governments*, 1997, page 11.

² Kantor L.S., Lipton K., Manchester A., and Oliveira V., *Estimating and Addressing America's Food Losses*. USDA, 1997, page 8: Advance release of same article in *FoodReview*, Vol. 20, No. 1, Jan.-Apr., 1997.

³ Kantor L.S., Lipton K., Manchester A., and Oliveira V., 1997, page 4.

⁴ U.S. Environmental Protection Agency, *Characterization of Municipal Solid Waste in the United States, 1996 Update*, 1997, pp. 5-6.

⁵ "Jobs Sustained per 100,000 TPY Handled at Various Operations," Institute for Local Self-Reliance, Washington, D.C., 1997.

Food Recovery Tips

Tips from Record-Setters

- Consult with your local and state recycling coordinators.

These solid waste planners may help locate a market for food discards or provide technical advice.

Some agencies award grant money for innovative projects.

If no end users exist locally, request that local agencies such as the department of solid waste or economic development help develop some.

- Network with other business members to learn about their experiences with food recovery programs.
- Research the haulers and end users in your area.
- Anticipate barriers to a successful program and how you will overcome them. Learn from others. Ask employees what potential problems they see. They, after all, will be responsible for running the program.
- Train food service workers well, and well ahead of program implementation.
- Monitor and periodically re-evaluate your program.
- Use composting diversion to reduce your waste hauling and tipping costs.
- Be creative.



The Waste Reduction Record-Setters Project was developed under a U.S. EPA grant by the Institute for Local Self-Reliance (ILSR). For more information on the project, contact ILSR, 2425 18th Street, NW, Washington, DC 20009, phone (202) 232-4108, fax (202) 332-0463, web site (www.ilsr.org). This publication replaces EPA-530-f-98-002, dated January, 1998.

Tips for Solid Waste Planners

- Provide information on:
 - local food discard end users and haulers;
 - local businesses/institutions recovering food discards; and
 - legislation/regulations.
- Lead by example—institute a food discard recovery program in your office.
- Designate a staff person to encourage organics diversion in the area.
- Sponsor tours or demonstrations of successful programs.
- Fund a pilot program.
- Develop a local composting facility or other end user, if none exists.
- Work with local haulers and composters to provide pick-up service for food discards—maybe include food discard pick-ups along with regular trash pick-ups.

Resources



► General Resources

- State composting councils and environmental or agriculture agencies can provide information on composting
- State veterinarians can provide information on diversion to animal feed
- Local Chambers of Commerce can provide information on area rendering companies
- Local charities, social service agencies, and local chapters of national charities can provide information on food donation
- Yellow Pages or Internet headings such as composting, rendering, recycling, and waste reduction facilities

► Specific Resources

- *BioCycle: Journal of Composting & Recycling* published by JG Press, Inc. (610) 967-4135
- Other EPA fact sheets:
 - Managing Food Scraps as Animal Feed*
 - Donating Surplus Food to the Needy*
 - Waste Reduction Tips for Hotels and Gaming Establishments in Indian Country*
 - Reducing Food Waste in Indian Country*
 - Doing What it Takes to be Waste Wi\$e: Food Manufacturing/Processing Industry*
 Available by calling the RCRA Hotline: 1-800-424-9346 or 1-800-553-7672 for the hearing impaired.
- *Compost: Because a Rind is a Terrible Thing to Waste* by Jean Bonhotal and Karen Rollo. Available from: Cornell University Media Services Resource Center/ 7 Business & Technology Park/ Ithaca, NY 14850, 607-255-2080, FAX 607-255-9946, e-mail: Dist_Center@cce.cornell.edu
- *A Guide to Commercial Food Composting* by Composting Council Research and Education Foundation, 4424 Montgomery Avenue, Suite 102, Bethesda, MD 20814, 301-913-2885
- *A Citizen's Guide to Food Recovery* by the U.S. Department of Agriculture, 1996. Available from the USDA Food Recovery Hotline and National Hunger Clearinghouse by calling 1-800-GLEAN-IT