

3. FOOD SERVICES

Businesses often provide food and beverage services for their employees — from simple pantries equipped with vending machines to cafeterias and lavish dining rooms. As in shipping and receiving, reducing the waste associated with food and drink is a matter of minimizing the use of packaging and containers and maximizing opportunities for reuse. But this business area also creates its own form of waste: the food itself and the dishes, cutlery, napkins, and other supplies used to serve and consume it.

This section identifies specific ways to reduce seven types of waste generated by food services:

- ☞ **Inventory waste** — spoiled and damaged food
- ☞ **Food preparation (prep) waste** — excess ingredients and rinds and peelings from fruits and vegetables
- ☞ **Waste from food prepared but not served**
- ☞ **Plate waste** — food that is taken but not eaten
- ☞ **Food-related waste** — serveware (plates and utensils), napkins, and takeout containers
- ☞ **Packaging waste** — transport containers, cans and cartons, and packets of condiments and other single-use items
- ☞ **Kitchen maintenance waste** — paper towels, detergents, and other cleaning supplies

Inventory Waste

Efficient inventory management eliminates the spoilage and damage that lead to waste. For example, stockpiling and hoarding should be avoided.

- ☞ Routinely check the quality of incoming items to ensure usability.
- ☞ Rotate perishable stock at every delivery to avoid spoilage. In the back-to-front system, new product is placed at the back or bottom of shelves, while older product is rotated to the front or top.
- ☞ Date all products on the day of delivery to distinguish them from older items.

- ☞ Arrange refrigerator, freezer, and dry storage areas to facilitate product access and rotation.
- ☞ Check coolers and freezers regularly to ensure that no items have fallen behind the shelving and spoiled. To prevent freezing, store produce as far away from the condenser unit as possible.
- ☞ Wrap freezer products tightly and make sure they are used in a timely fashion to minimize waste caused by freezer burn.
- ☞ Store food in reusable containers instead of in plastic wrap.
- ☞ Reuse or recycle aluminum foil used to cover pans and food trays.

Food Preparation Waste

Prep waste can result from spoilage, inaccurate estimates of the amounts of ingredients needed, and wasteful kitchen practices. Educating kitchen staff about waste prevention strategies is critical to reducing this waste.

- ☞ Buy locally (and organically) grown food. This will guarantee you the freshest foods in season and avoid both the pollution associated with transporting food over long distances and the chemicals used to preserve it.

Waste Tracking

- *At the Thunderbird Hotel's Totem Pole Restaurant in Bloomington, Minnesota, the head chef used a computerized inventory system, along with routine visual checking, to track the amount of waste generated per meal. By examining the types of food entering waste containers, the restaurant's staff was able to modify food preparation procedures and reduce food waste by 20 percent.⁷⁴*
- *The Boston Market restaurant chain also uses a computer program to monitor food inventories. Every day, leftover food is weighed and the amount fed into the computer. The program then calculates the difference between used and remaining food inventories, providing a daily estimate of preparation and storage losses. The chain reports that food loss has declined from 5 percent to 1 percent since use of the inventory tracking program began.⁷⁵*

- ☞ Rely more on already prepared foods than on dishes prepared from scratch. This may mean buying pre-cut vegetables or precooked/already prepared dishes (e.g., fish fillets) that only need to be heated up. Because portion size is predetermined, these foods reduce the chance that ingredients will be wasted.
- ☞ Plan menus so the same fresh ingredients are used up in different recipes, instead of being wasted if employees order less of one dish.⁷⁶
- ☞ Consider generating recipes by computer so the quantity of ingredients used can be adjusted to the expected number of portions served.
- ☞ Use vegetable and meat trimmings to make soup stock.
- ☞ Incorporate leftovers into other recipes. For instance, raw vegetables and other leftovers can be used in soup; tomato ends can be used in sauce made from scratch.
- ☞ Avoid the use of unnecessary garnishes, such as lemon slices and parsley sprigs.
- ☞ Discourage unnecessary discards by improving kitchen procedures.

Central Prep

Food service facilities can reduce their own generation of waste by using pre-cut fruits and vegetables, but waste will still be generated elsewhere. On the other hand, centralized preparation can result in less waste by providing more opportunities for using excess food. For example, potato left over from french fry production can be recovered by food processors and used in other products, such as dehydrated potato flakes and potato starch. Automated processes, too, can sometimes reduce production waste. Eggs taken out of their shells by processing machines can lower the rate of processing loss, since up to 30 percent of egg whites will stick to the shell when eggs are shelled manually.⁷⁷

Saved from the Dumpster

- *At Florida Atlantic University in Boca Raton, the food service director noticed that kitchen workers were routinely discarding usable items like slightly blemished tomatoes and onions. In*
- *response, he replaced garbage cans at individual workstations with transparent tabletop receptacles that make*
- *discarded items visible. This measure has reportedly led to “dramatic reductions in production waste” by making*
- *workers feel more accountable for the food they discard.*⁷⁸

Waste from Food Prepared but Not Served

Waste from food that is prepared but not served can be caused by fluctuations in the number of people taking meals and/or in the demand for particular items. Since running out of food is not an option, food service facilities tend to err on the side of overproduction. The goal is to keep this excess to a minimum and to make good use of leftovers.⁷⁹

- ☞ Keep records of the demand for particular foods and use them in menu planning. Hot soup, for instance, is more popular in winter than in summer months.

- ☞ Keep track of attendance patterns. If a dining room stays open late for lunch but only a few customers come in, a lot of unserved food may have to be discarded.

- ☞ Prepare smaller amounts of food throughout the course of a meal. Instead of making large amounts ahead of time, prepare pasta, potatoes, and vegetables over a shorter period as demand warrants to reduce the amount discarded later.

Donating Excess Food

- *Food service establishments often have leftover food that they choose not to serve again, but which is still edible. Hundreds of programs throughout the United States accept packaged, prepared, fresh, frozen, and baked food and deliver it to soup kitchens, homeless shelters, senior citizens' programs, and day-care centers.*
- *Restaurants at Walt Disney World teamed up with one program, called Second Helpings (part of Second Harvest Food of Central Florida), to distribute 594,000 pounds of leftover food, or 792,000 meals, to needy individuals.*
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Second Helpings is a member of Foodchain, a Kansas City-based national coalition of prepared and perishable food programs that advises organizations interested in starting donor programs. You can reach the organization on the Web at www.foodchain.org, or call (800) 845-3008.⁸⁰

- ☞ Set out items at salad bars, steam trays, and buffets in smaller containers and replenish them more often.
- ☞ When preparing for catered events, avoid over-ordering of bagels, pastries, sandwiches, and other perishable items.
- ☞ Freeze leftovers and keep them in reserve. Careful menu planning will make it easier to incorporate leftovers into future meals. Some leftovers (such as lasagna) can be served as an additional entrée on the following day.
- ☞ Encourage employees to take home extra food.
- ☞ Donate unneeded but still edible food to a local food bank or homeless shelter.

Good Samaritan Food Donation Act

Recent legislation provides uniform national protection to citizens, businesses, and nonprofit organizations that in good faith donate, recover, and distribute excess food.

The Bill Emerson Good Samaritan Food Donation Act became law in October 1996. The act encourages the donation of food and grocery products to nonprofit organizations such as homeless shelters, soup kitchens, and churches for distribution to needy individuals.

The act states that, absent gross negligence or intentional misconduct, donors shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food. It also establishes uniform definitions pertaining to the donation and distribution of nutritious foods and helps ensure that donated foods meet all quality and labeling standards of federal, state, and local laws and regulations.

Although the Bill Emerson Good Samaritan Food Donation Act takes precedence over the various state “Good Samaritan” statutes, it may not entirely replace them. The act creates a uniform minimum level of liability for donors nationwide. But state statutes may still provide protection beyond that guaranteed in the federal statute.⁸¹

Plate Waste

The reasons for plate waste range from poor food quality and insufficient time for meals to wasteful habits and bad judgment in selecting food. Education and good communication can reduce the amount of food that is taken but not eaten, at least in the short term.⁸²

- ☞ Start a “think before you eat” campaign to reduce food waste and the use of single-use items such as napkins and condiment packages.
- ☞ Evaluate portion sizes and consider offering half- or smaller portions. This may require buying uncut foods (including meat and produce) rather than foods that are already cut to size and ready to use.⁸³
- ☞ Switch to smaller plates.
- ☞ Use a food grinder or food pulper system to reduce the volume of waste for disposal. A local pig farmer may be willing to take the pulped food to use as animal feed, though some states and municipalities do not allow the feeding of food scraps to swine. Check with your state and local health departments or the local cooperative extension office.
- ☞ Use compost made from kitchen and food waste for landscape maintenance. Consider worm bins for indoor composting; properly managed, these are convenient and odor-free.

Just All You Can Eat

- *Columbia University’s John Jay Dining Hall serves five lunches, seven dinners, and two weekend brunches every week. Lunch is à la carte and is served to 200 to 300 people a day, while 600 people a day take the “all you can eat” dinners. In 1994, the university conducted an analysis of the facility’s food waste and found that almost a pound of waste was generated per customer at the all-you-can-eat meals (for a total of 520 pounds per meal), compared to only a quarter of a pound per customer at the à la carte meals (for a total of 63 pounds). Clearly, the à la carte system was encouraging customers to take what they intended to eat, and no more. The university began promoting waste prevention through the use of table tents and a poster bearing a photo of discarded food and the announcement,*
- *“It’s All You Can Eat, Not All You Can Throw Away.”⁸⁴*

Food-Related Waste

\$\$ Replacing single-use serviceware with washable plates, utensils, glasses, and cups is the single most effective way to reduce food service waste. This strategy will also reduce the costs of purchasing and disposing of single-use items, but it will bring added costs in the labor and equipment needed for washing and handling.

☞ If a complete switch to washables seems overwhelming, try targeting only one item at a time, such as silverware. Run a trial and, if successful, include other items.

☞ Use energy-efficient dishwashing equipment and nontoxic detergents.

☞ Restrict the use of single-use serviceware to take-out orders.

☞ Use washable items for both take-out orders and orders that stay. Charge a deposit to ensure their return.

☞ Move single-use items away from washable ones. Arrange it so customers have to ask to get single-use items, or put them someplace out of the way.

Cups, Saucers, Savings

- *The employee cafeteria at NYNEX, a New York City-based communications company (now Bell Atlantic), serves 700 people daily. Switching to washable serviceware saved \$6000 annually in purchasing costs and reduced the volume of waste for disposal by 45 percent.⁸⁵*

Have a Mug, Hold the Clamshell

- *When Home Box Office, a New York City entertainment company with over 800 employees, decided to eliminate single-use serviceware for food eaten in the cafeteria, it began by offering china mugs (rather than cups) to better compete with polystyrene. Clamshell containers were removed from the salad bar and made available for take-out orders only upon request. To encourage employees to take washable serviceware back to their desks, HBO purchased lighter (glass-tempered) dishes, which also facilitated collection by custodial staff.*
- *As a result of these measures, employees began taking three times as many washable dishes back to their desks. After a nine-week payback period, HBO's savings from avoided purchasing reached \$1,300 a month.⁸⁶*

- ☞ Encourage employees to keep washable mugs, cups, plates, and silverware at their desks instead of taking single-use items.
- ☞ Replace single-use cafeteria trays with washable ones.
- ☞ When washable serviceware is not available, ask take-out customers if they need single-use items rather than automatically providing them.
- ☞ Eliminate the need for serviceware in catered events by serving sandwiches, fruit, cookies, and other finger foods.
- ☞ When catered events require serviceware, encourage the use of washable items by asking caterers to remove price incentives that favor single-use items.
- ☞ Give employees a beverage discount when they use their own cups. Consider providing free company mugs with no-spill lids and eliminating single-use cups entirely.
- ☞ Encourage employees to bring lunch to work in washable containers.

Tray Bien

- *Replacing single-use cafeteria trays with washable plastic trays saves Bell Communications Research (Bellcore) \$55,000 annually. The 5200-employee communications research firm in Piscataway, New Jersey, used to spend about \$50,000 per year on single-use lunch trays and another \$5,000 to dispose of them. Part of a companywide environmental policy, the washable trays avoid the generation of an estimated 5 tons of solid waste per year.⁸⁷*
- *At Columbia University in New York City, replacing single-use with washable trays in one cafeteria has saved \$6,000 per year in purchasing costs.⁸⁸*

May Your Cup Runneth Over and Over

- *The Itasca Medical Center in Grand Rapids, Minnesota, eliminated the use of single-use polystyrene cups by providing washable mugs to its 200 employees (who are responsible for washing them). The mugs cost a total of \$270, but washable cups rarely need replacing — an annual savings in purchasing costs of 58 percent, or about \$94 per year, not including disposal costs.⁸⁹*

- ☞ Eliminate the use of lids on single-use cups for those eating in.
- ☞ Provide condiments, paper napkins, and straws only on request for take-out orders, instead of offering them self-serve.
- ☞ Provide straws for beverages served in bottles or cans only.
- ☞ Use bulk dispensers instead of individually wrapped straws.
- ☞ Provide napkins in dispensers on cafeteria tables instead of at the beginning of food service lines. When piles of paper napkins are set out for the taking, they often become a large part of a business's waste stream.
- ☞ Use washable cloth napkins, tablecloths, and placemats. Used table linens can be made into aprons for kitchen staff or reused as cleaning rags when worn out.
- ☞ Buy smaller and thinner napkins.
- ☞ Discourage employees from taking bags, napkins, and packets of condiments back to the office along with their orders.

Shrinking Napkins

Florida's Walt Disney World resort reduced the size of the paper napkins supplied in dispensers by 25 percent, decreasing waste by 263,085 pounds annually. The resort was able to keep the original dispensers by folding the napkins in a different way.⁹⁰

Napkin Gluttons

A study at two University of Michigan dining rooms showed that in the one where customers took napkins from dispensers at the beginning of the cafeteria line, an average of 3.3 napkins were used at every meal. In the dining room where napkin dispensers were placed on tables, each person used an average of 1.4 napkins per meal.⁹¹

Packaging Waste

Packaging is typically the largest category of waste after food in food service operations.

- ☞ Find out from food distributors if products are available with less packaging. Inspect all deliveries to identify packaging that could be eliminated or reduced and work with vendors to get the desired change. If necessary, issue new purchasing specifications requiring reduced packaging.
- ☞ Request that vendors use reusable shipping containers for items like bread and rolls, and avoid buying fruits, vegetables, and meats packaged in nonrecyclable waxed corrugated boxes.
- ☞ Ask food distributors to take back packaging for reuse or recycling.
- ☞ Ask caterers to reduce or take back delivery and presentation packaging.
- ☞ Purchase foods such as flour and grains in bulk to reduce the volume of packaging waste. Then dispense them into refillable containers.
- ☞ Replace individual milk cartons with a bulk milk dispenser. Refill it with milk delivered in 5-gallon bags on reusable plastic crates rather than by the gallon. If smaller quantities are unavoidable, 8-ounce milk pouches or recyclable plastic jugs are preferable to waxed cartons, which are typically not recyclable (though some communities do recycle milk cartons).

At James Madison University in Harrisonburg, Virginia, corrugated packaging accounts for approximately 10.4 percent of the waste generated by the school's largest dining hall.⁹²

Just a Straw, Please

○ *Instead of the usual 8-ounce cartons, the cafeteria at the Itasca Medical Center in Grand Rapids, Minnesota, now provides pouches of milk to its customers. This has reduced the custodial labor associated with discarding the more voluminous cartons and brought a cost savings of \$276 a year.⁹³*

- ☞ Purchase juice, iced tea, and hot chocolate in bulk or concentrate and serve them from reusable containers.
- ☞ Dispense carbonated drinks from refillable cylinders instead of offering bottles and cans.
- ☞ Offer condiments (cream, sugar, and artificial sweeteners; honey and syrups; jams and jellies; salt and pepper) in health department-approved refillable dispensers rather than individual packets. Keep the dispensers in a central location instead of at individual tables, and refill them with condiments purchased in bulk.
- ☞ Buy coffee beans and grind them on-site instead of using packets of pre-measured coffee.
- ☞ Buy reusable/unbleached coffee filters.
- ☞ Reuse large plastic jugs and other containers for storage and for holding prep items.
- ☞ Reuse wooden fruit boxes. Employees and charitable institutions may be able to use damaged ones for fireplace or wood-stove kindling.

Bulk Purchasing



Aramark, Inc., one of the nation's largest food service providers, reduced its purchasing costs by replacing single-serve packages of milk and condiments with dispensers located in common areas of the food court at Cleveland State University.⁹⁴



Purchasing agents at Disney World order certain products in bulk. For instance, tomato paste delivered in 55-gallon drums has eliminated the use of 86,000 cans, and mustard packaged in 48- instead of 24-ounce jars has reduced discards of corrugated boxes by 6000 pounds.⁹⁵



Kitchen Maintenance Waste

- ☞ Use cleaning chemicals without toxic ingredients wherever possible.
- ☞ Purchase cleaning products in bulk and concentrate form. Provide dilution machines to ensure that the correct amount of water is added.
- ☞ Reduce spills and waste by purchasing dry, concentrated dishwasher chemicals and keeping them in dispensers.
- ☞ Instead of steel wool, use spun-glass pads — soaped or unsoaped — for scrubbing pots and pans. These last longer than steel pads and don't rust.
- ☞ Use washable rags instead of paper towels.
- ☞ Use cloth-roll towels or hot-air dryers instead of paper towels.
- ☞ Use unbleached paper towels with recycled content.
- ☞ Use large-roll paper towels or smaller or lighter-weight paper towels.
- ☞ Replace single-use paper hats and aprons with washable ones.
- ☞ When dining facilities are remodeled, redye tablecloths and napkins to match the new color scheme instead of replacing them.
- ☞ Install a magnet on garbage containers to recover silverware accidentally thrown away with food waste.
- ☞ Reduce the need for pesticides by storing food in airtight containers and removing garbage from the premises at closing time.
- ☞ Hold periodic staff training sessions on correct equipment use and maintenance.
- ☞ Purchase new refrigerators and freezers that are CFC-free and dispose of used refrigeration appliances with dealers who recycle CFCs. For more information on chlorofluorocarbons and other ozone-depleting substances, see the US EPA's ozone depletion Web page at www.epa.gov/docs/ozone/index.html, or Ozone Action's site at www.ozone.org.