

Food Service/Cafeteria Waste Reduction Suggestions & Guidance

Through implementation of waste minimization practices, school district food service managers can lower overhead expenses and reduce disposal costs while still providing for the nutritional needs of students. School districts can reduce waste 40 – 60% by implementing policies that reduce the amount of uneaten food, reduce or eliminate disposables, address food prep waste and packaging, and implement recycling and composting.

Cafeteria Waste Audit

The first step in reducing the amount of waste a school cafeteria produces is to conduct a waste audit of both the kitchen prep area (“pre-consumer”) and the student dining hall (“post-consumer”). See [NERC’s Waste Audit and Waste Assessment](#) and [Waste Assessment](#) and [Waste Audit forms](#) for specific information.

Once completed, the results of the waste audit will provide an overview of existing food service practices and how they generate inefficiency and waste. Questions to be addressed in the waste audit include:

- What is being thrown out and why?
 - Is there a waste reduction or reuse option for dealing with it?
 - Could it be recycled or composted?
- If it is food that went bad, was it incorrectly dated or not rotated?
- Were cooked items burnt?
- Are certain items given in too large a portion?
- What waste reduction and waste diversion practices are already in place?
 - Are all personnel participating in these efforts?

The answers to these questions will guide the development of a plan for waste reduction and cost savings.

Waste Tracking

When considering food service waste reduction practices, it is important to have a handle on existing waste generation and costs, including wastes resulting from kitchen preparation, spoilage, and cafeteria waste. A simple tracking system that uses a paper log can be easily implemented. Information from the log can later be transferred to a computer spreadsheet program if desired.

The tracking system should record:

- The type of food waste,
- The reason for the loss (e.g., overproduction, spoilage, trim waste, burned items, etc.),
- The estimate of loss (measuring by number of portion or count, volume, or weight), and
- The date and time and the recording employee name

Every item thrown out by cafeteria workers should be recorded in the log at the time of discard. The cafeteria manager can review the log and input the data into a computer, if tracking in a spreadsheet program or for a more permanent record. Discarded food items, trends, and observations should be discussed with the kitchen team. Once waste reduction practices are implemented, the tracking system can help to document actual waste reduction.

The U.S. Environmental Protection Agency has a free [log book](#) for tracking available (<http://www.epa.gov/osw/consERVE/materials/organics/pubs/food-waste-log.pdf>). See attachment A.

A more complicated tracking system can also include purchasing expenditures. This sort of tracking would be beneficial if the school is interested in a cost analysis of using disposable trays or service ware vs. reusable trays or service ware. For example, if the school currently uses polystyrene trays in the cafeteria and is considering switching to reusable trays, it is important to track tray purchasing, waste disposal, and staff handling (stacking, washing trays, custodial handling of trash, etc.). Expenditures should be extrapolated for several years to fully account for savings in waste reduction, costs involved in washing trays, etc. See the Franklin Associate in depth cost analysis of "[Disposable and Reusable Ware in School Cafeterias](#)," conducted for the School Nutrition Foundation for guidance (http://www.schoolnutrition.org/uploadedFiles/School_Nutrition/110_SNFoundation/Warewash_Study-Summary.pdf).

Program strategies for decreasing waste include offer versus serve, smart food handling techniques, zero waste lunch, reuse, recycling, composting, and purchasing considerations.

Program Strategies

Offer Versus Serve

This program allows students to decline items they do not want. Offer Versus Serve is an acceptable option under the national school lunch and breakfast programs administered by the [United States Department of Agriculture](#) (see Website for Training Manual). It allows students to decline up to two of five required items offered in the reimbursable lunch, and one of the four required food items offered in the reimbursable breakfast. High schools are required by the Department of Agriculture to provide the Offer Versus Serve program.

When offered a food choice, along with options for portion sizes, sauces, dressings, or toppings, students are more likely to eat the food items selected instead of wasting them. This will result in significant cafeteria waste reduction; helping school districts save money through avoided purchasing and disposal costs. With more choice and "lunch appeal," cafeterias may find that more students purchase lunches, resulting in increased revenue for the school. With this approach, students tend to consume more fruits and vegetables because they choose what they like. Inviting student participation in menu planning, meal preparation, feedback, and taste tests is a way to gain more student support and decrease waste.

Prior to implementing an Offer Versus Serve program, contact the State Department of Education, Nutrition Services Division Field Services representative designated for your county to obtain specific guidelines for implementation of the program. Once designed, be sure to educate school personnel, management, students, and parents about the program and invite suggestions and feedback.

Smart Food Handling Techniques

Improper storage and handling contributes to wasted food. In cafeterias and food service establishments, from 4 - 10% of all food purchases become pre-consumer food waste¹, including food waste from overproduction, trim waste, expiration, spoilage, overcooked, contaminated, and dropped items. Reduction in both pre-consumer and post-consumer waste offers school cafeterias significant opportunities for waste reduction and cost savings.

¹ "A Short Guide to Foodservice Waste Management Best Practices," by Lean Path

Accurate recording of pre-consumer waste in a log is essential. Use the log to help determine if storage and prep procedures need adjusting. Consider holding staff discussions, involving cafeteria and custodial staff, to review waste data, set waste minimization goals, and develop revised procedures, policies or menus. Add a “waste discussion” to regular staff meetings.

Food Purchasing and Storage

- Monitor food thrown away due to overproduction, expiration, spoilage, trimming or handling issues. Implement incentives and procedures to reduce this waste.
- Improve inventory control to reduce excess and out-of-date inventory.
- Purchase shelf-stable food supplies in bulk when sales volume and storage space allow.
- Adjust inventory levels on perishables to reduce waste due to spoilage or dehydration.
- Consider buying precut lettuce when pricing makes sense.
- Check produce deliveries carefully for rotten or damaged product, and reject any substandard product.
- Rotate perishable stock at every delivery to minimize waste due to spoilage. Place the newest items in the back and the oldest items are rotated to the front.
- Arrange refrigerated and dry storage areas to facilitate easy product access and rotation.
- Improve labeling of materials so that contents, expiration date, and storage and handling instructions are clearly indicated.
- Clean coolers and freezers regularly to ensure that food has not fallen behind the shelving.
- Store raw vegetables and other perishables in reusable airtight containers to prevent unnecessary dehydration and spoilage.
- Wrap freezer products tightly, label, and date them. Make sure they are used in a timely fashion to minimize freezer burn.
- Rehydrate vegetables (e.g., celery, lettuce, carrots, broccoli, etc.) that have wilted by trimming off the very bottom part of the stalk and immersing in warm water (100°F) for 15 to 20 minutes. Pre-cool hot foods (in an ice bath) before refrigerating.
- Reuse leftover foods that have been stored at proper temperature within two days of preparation to prevent waste due to spoilage.
- Refuse samples or food donations that will become waste.
- Work with suppliers to minimize and return packaging and shipping materials.

Meal Preparation

- Review menus to identify and reduce or eliminate frequently wasted items.
- Pre-plan secondary uses for menu items in the case of overproduction (using appropriate food safety guidelines and storage).
- Redesign menu cycles to improve opportunities for secondary use of food (e.g., chicken sandwiches, chicken casserole, and then chicken soup).
- Use hourly or daily production charts to minimize over prepping.
- When prepping food, only trim off what is not needed. When appropriate, use vegetable and meat trimmings for soup stock.
- Offer smaller portions for those who want to eat less.
- Adjust the size of meal portions if food is consistently disposed.

Supplies and Equipment

- Implement a monthly cleaning and maintenance program for all equipment.
- Keep refrigeration systems in good running order to prevent unnecessary spoilage and reduce energy costs.
- Keep oven equipment calibrated to prevent over baking.
- Create incentives for staff to reduce breakage of china and glass.
- Place rubber mats around bus and dish washing stations to reduce china and glass breakage.

Serving

- Consider eliminating food trays, especially for older students. This reduces the costs of purchasing and handling trays and reduces food waste as students take only what they will eat.
- Use health department-approved, refillable condiment dispensers instead of individual packets.
- Eliminate plastic service ware packets (containing service ware, straw, and napkin, wrapped in plastic).
- Have staff distribute disposable items like napkins and plastic forks rather than placing them in self-serve stations or use napkin dispensers that dispense one napkin at a time.
- Serve beverages from a beverage gun or dispenser, buy juice/soda mixes in concentrate form, and buy milk in 5-gallon dispenser boxes.
- Have employees use permanent-ware mugs or cups for their drinks.
- Check for discarded trays and flatware before throwing out dining room trash.

Janitorial Supplies

- Use cloth towels for cleaning, rather than the paper equivalents.
- Use plastic trash can liners made of recycled HDPE instead of ones made of LDPE or LLDPE. They contain less raw material, work equally well for most uses, and generally cost less.
- Purchase cleaning supplies in concentrate form.
- Use multipurpose cleaners that can be used for all types of surfaces rather than cleaners that are job specific. Whenever possible, use cleaning agents that are less hazardous or non-hazardous.

Zero Waste Lunch

Fostering school-wide participation in “zero waste” lunch days not only helps to reduce waste but it sets up a waste reduction mindset in students and staff. Start with one day a week and expand it to include the remaining days of the week. Provide information to students and parents about eliminating packaged lunch items, using reusable sandwich and snack containers, lunch boxes, etc.

Encourage friendly competitions between classes to see which ones produce the least waste from their lunches. Have students weigh the garbage at the end of the lunch period, make a graph of the results and post it on the cafeteria wall. Host a “zero waste” fundraiser by selling zero waste lunch kits (a durable lunch bag, thermos, and reusable sandwich and snack containers).

Reuse

- Use reusable trays, dinnerware, and silverware. Conduct a cost-benefit analysis comparing reusable items, compostable items (if composting), and disposable items. Be sure to include purchase costs, disposal costs, water and sewage fees, custodial labor, etc.
- Consider donating surplus edible food that was not served or is packaged. Food can be safely donated to local food recovery organizations.
- Give leftover food that is not suitable for human consumption to local farmers for animal feed, humane

societies or pet owners with small animals (such as chickens).

- Promote the reuse of egg cartons, milk cartons and jugs, steel cans, cardboard boxes, for student art and science projects.
- Add reusable food service items, including 5-gallon buckets to Craig's list or on a Materials Exchange². See NERC's "[Material Exchanges in the Northeast](#)" for an up-to-date list of Materials Exchanges in the region. Post a notice of leftover food available and reusable items on bulletins for parents.
- Announce to teachers, after school programs, and summer programs the availability of surplus materials for reuse.
- Ask suppliers take back shipping boxes for reuse or recycling and to keep you informed about new and existing products that are packaged in ways which can reduce waste.

Recycle

Make waste separation for recycling (and composting) as efficient and easy as throwing things away in the trash. See [NERC's Rural School Recycling Tip Sheet](#).

- Rendering companies will accept fats, meat, bones, grease, and oils.
- Corrugated cardboard, aluminum and tin cans, glass containers, aseptic containers, and most plastics are easily recyclable.

Composting and Vermicomposting

Inedible food scraps from the food preparation or dining area, except meat and dairy products, can be composted on-site or taken to a composting facility that is permitted to accept food scraps. See [NERC's Composting at School Tip Sheet](#).

Purchasing Considerations

Significant waste reduction and cost savings can result from considering waste reduction as part of the procurement practices.

- Can reusable items be used instead of disposable ones?
- Is there a bulk purchasing option or other option with less packaging?
- Will some of this product spoil before it is all used?
- Is there a less-perishable product that is available in bulk?
- Are there recycled or other environmentally preferable products available?
- Is the product packaging recyclable or compostable? Always consider durability as a cost criterion when buying equipment and janitorial supplies.
- Have you looked on Craig's list or a Materials Exchange for the items you need?

Promoting Success

Be sure to ask for feedback from staff, students, and parents regarding the school waste reduction programs and make adjustments as needed. Communicate waste reduction efforts and successes to local solid waste officials, parents, school administrators, and staff. Consider working with teachers to integrate waste reduction, recycling, and composting programs into outcome-based education for students. Involve students in weighing trash before and after implementation of each program. Students can track progress in reducing waste over a set period of time. Post a graph of the results in the cafeteria and on the school's Website.

² A Material Exchange provides an opportunity for schools, businesses, and others to exchange unwanted/unusable products that would otherwise be discarded, to list unwanted items that others may want, and/or to locate free/inexpensive materials that can be used. It may be a Web-based exchange or have a geographic location, such as a "swap shop."

Sources

- [California Department of Resources Recycling and Recovery \(CalRecycle\)](#)
- [Food for Thought, Restaurant Guide to Waste Reduction and Recycling](#)
- [City and County of San Francisco](#)
- [A Short Guide to Food Waste Management by LeanPath](#)

Additional Resources

- NERC's [Rural School Waste Reduction, Recycling, and Composting Tip Sheets, Case studies, and Webinar presentations](#).
- [Berkeley Unified School District's food policy](#) incorporates goals of recycling, reusing, composting, and purchasing recycled products.
- The [Rethinking School Lunch Guide](#) provides ideas and strategies for changing your school meal programs, promoting health, and increasing ecological understanding.
- USDA Food Service [Environmental Management](#)
- [School Lunch Program, Cafeteria Managers' Views on Food Wasted by Students](#) Summary and link to report from the U.S. General Accounting Office. The study reports that 42% of all cooked vegetables and 30% of all raw vegetables and salads are wasted. Eighty (80) percent of 2,000 cafeteria managers felt that the Offer Versus Serve program is an effective way to reduce food waste.
- [Stowe Elementary School](#) in Duluth Minnesota has adopted significant cafeteria waste reduction strategies. The cafeteria uses only reusable food containers, utensils, and napkins, with students separating their items as they return their trays after lunch. Much of the school's food waste goes to school worm composting bins. Used paper towels throughout the school are saved and reused for worm bedding. These waste reduction efforts have resulted in a 50% drop in garbage expenses.
- See [WasteFreeLunches.org](#) for examples and success stories on zero waste lunches.

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Pre-Consumer Food Waste should be tracked every day. Every item thrown away by foodservice workers should be recorded on either a paper logbook or with an automated food waste tracking system.

1. Track pre-consumer food waste at the time of discard. Record waste on the logbook immediately prior to placing it in the trash, compost or garbage disposer.
2. If donating food to a food bank, record all food donations on the waste logbook immediately prior to donation (or placing in the donation holding area).
3. Record the type of food and the reason why it is being discarded on the logbook. These are the two most important pieces of information that will reveal opportunities for change.
4. Record how much is being wasted.
5. If you have a scale, the best option is to place the food in an empty bus tub and weigh the waste. Record its weight in the logbook (including the weight of the bus tub). Later, a manager can subtract the known tare weight of the bus tub.
6. If you do not have a scale, record the number of portions leftover or the volume (1/2 a pot, 2 gallons, etc.)
7. Chefs and Managers should review yesterday's waste logbook at the beginning of the following day's shift.
8. The top 5 waste items should be discussed with the kitchen team at a pre-shift meeting. Ask the team for ideas to reduce those items.
9. Review progress on the Top 5 items every week until the amounts drop.
10. If you have time, keep an Excel spreadsheet with your daily waste totals (less tare weights) so you can see progress. Alternately, use specialized food waste tracking systems which automate this record-keeping and reporting.

Post-Consumer Food Waste should be tracked periodically, usually once per month.

1. Use a logbook or automated tracking system just like with pre-consumer food waste.
2. Because post-consumer food waste will include many different foods, it will not be possible to track specific foods or loss reasons. Instead, track the total weight of the trash (or another standardized metric such as number of trash cans or number of trash bags).
3. Keep a record of total weight or count of post-consumer food waste in an Excel sheet or automated tracking system.
4. When measuring post-consumer waste, always do so on your busy day and track subsequent measurements on the same day of the week. For example, always do your post-consumer study on Saturday if that is your busiest day. With this approach, you will have comparable data.
5. Make sure to look at the food in the garbage and note any trends. There may be items that customers do not like which should be removed from the menu. In other cases, you may find portions need to be adjusted to avoid waste.

For more information, visit www.epa.gov/foodscraps.