

Food Waste Reduction for Greener Schools in Central VT

Consumed vs. Wasted Food: Report of Findings for Union Elementary School Montpelier, VT



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Overview

Through its “Food Waste Reduction for Greener Schools in Central Vermont” initiative, funded by an EPA Healthy Communities Grant, CVSWMD is supporting schools in reducing food waste, increasing the use of food donation and share tables, and ensuring all remaining food scraps are composted. The first step was the evaluation of food consumed vs. food wasted by students in your cafeteria. This involved CVSWMD completing tray waste audits on 12/18/2018 and 12/19/2018 and a cafeteria trash and compost bucket audit on 1/14/2019. The following is a report on the findings from these audits, a comparison to other schools involved with this grant project, and a list of suggested strategies to reduce food waste and increase diversion of food scraps to your cafeteria compost buckets.

Tray Waste Audit Results

Methods

CVSWMD completed two tray waste audits with the help and cooperation of Union Elementary School (UES) food services and maintenance staff. As students filed through the lunch line, they were given tags with different numbers on them to wear around their necks. Once the students filled their lunch trays, CVSWMD staff took a photo of the tags with the full trays. Students then ate their lunch and the finished trays were photographed, along with the numbered tags, right before students sorted their trash, recycling and food waste. Using the photos as a before-and-after comparison, CVSWMD staff rated how much of each food item on each tray was wasted using a 0-4 scale. A 0-rating meant that all of the food was eaten, while a 4-rating meant that the entire portion was left untouched. CVSWMD staff collected and weighed all of the wasted milk to deduce the average amount wasted. Below is an example of a before and after images from Bradford Elementary and the rating given to this particular tray.



Food Item	Rating
Pizza	0
Salad	4
Ranch Dressing	1
Chickpeas	0

This methodology was adapted from [Cornell's Smarter Lunchroom Movement](#)'s guide to tray waste audits. With these numbers, it is easy to obtain averages and rates of selection for each food item or category of food item.

Data

Results for Tray Waste Audits:

Food Option	Category	% Selected	% Wasted	Total Weight Wasted (lbs)	Shareable Item?
Egg Sandwich	Entrée	73%	42%	16.899	No
Sandwich	Alt. Entrée	23%	33%	2.483	Yes
Soup	Alt. Entrée	4%	42%	0.76	No
Peaches	Fruit	44%	31%	5.263	No
Banana	Fruit	27%	30%	3.825	Yes
Pears	Fruit	8%	41%	1.391	No
Vegetables	Vegetable	19%	49%		No
Chocolate Milk	Milk	67%	13%	7.5	Yes
White Milk	Milk	16%	47%	5.35	Yes
Hash brown	Side	56%	8%	0.715	No

Table 1: Tray waste audit results from 12/18/2018 at Union Elementary School.

Food Option	Category	% Selected	% Wasted	Total Weight Wasted (lbs)	Shareable Item?
Chicken and Rice	Entrée	57%	27%	7.395	No
Sandwich	Alt. Entrée	43%	35%	1.785	Yes
Soup	Alt. Entrée	5%	43%		No
Grapes	Fruit	54%	77%	6.655	No
Applesauce	Fruit	27%	38%	3.268	No
Pears	Fruit	8%	18%		No
Cucumbers	Vegetable	13%	22%		No
Carrots	Vegetable	8%	11%		No
Broccoli	Vegetable	11%	58%	6.655	No
Chocolate Milk	Milk	72%	22%	13.756	Yes
White Milk	Milk	11%	60%	4.828	Yes

Table 2: Tray waste audit results from 12/19/2018 at Union Elementary School.

Table 1 and 2 show the rate of selection for each item, how much was wasted, whether that item is considered 'shareable' (if whole and uneaten/unopened, could be left on a share table), and the category of that item (used for comparing between different days and schools). These are just snapshots and are intended to be used as benchmarks, not standalone sets of data.

The most selected items were the featured entrée and side, grapes, peaches, and chocolate milk. The least selected items were the soup, pears, and carrots.

The most wasted items were white milk, vegetables, soup, and the egg sandwich. The least wasted items were the carrots, cucumbers, pears, and chicken & rice.

Data (Cont'd.)

Below is the comparison of Union Elementary School's results to the average of the 8 schools participating in this project. Note that these numbers were generated using the total average for each school and do not take into account the size or population of each school.

Food Category	UES % Selected	District-wide Avg % Selected	UES % Wasted	District-wide Avg % Wasted
Entrée	64.6%	55.8%	35.2%	27.3%
Alternative Entrée	37.9%	47.1%	35.3%	35.1%
Fruit	83.9%	53.4%	31.4%	33.8%
Vegetable	25.3%	73.3%	44.1%	35.3%
Milk	83.2%	61.8%	24.1%	18.3%

Table 2: Tray waste audit results grouped by category from Union Elementary School and from all 8 schools participating in the grant project.

Food Waste Audit Results

Methods

Cafeteria lunch trash and food waste in compost buckets, generated during lunches, was collected and analyzed by CVSWMD staff on 1/14/2019. CVSWMD staff sorted through the trash to separate out true trash, items that could have been recycled, and items that could have been composted. Each of these categories were weighed.

Data

Results from the cafeteria trash waste audit:

Cafeteria Trash Waste Audit Results	UES 1/14/19	District-wide avg % contamination
Total Trash	8.65 lbs	-
Compostables in Trash	0.7 lbs (8.1%)	29%
Recyclables in Trash	0.05 (0.6%)	8%

Table 3: Results from the UES trash audit (cafeteria only) on 1/14/2019 and the average from all 8 schools participating in this grant project.

Recommended Strategies

The Smarter Lunchrooms Movement from Cornell University is a research-based set of guidelines to minimize food waste in schools. They provide 60 strategies to nudge students to choose (and eat) healthy lunches. While these strategies are generally aimed at improving nutrition by getting students to eat more fruits and vegetables, they overlap with food waste reduction as well. Find the full list of strategies here: <https://www.smarterlunchrooms.org/scorecard-tools/smarter-lunchrooms-strategies>

Keep it up! Your school already utilizes the following the recommended strategies:

- Several types of cut up fruits are offered daily, along with several types of vegetables (both cooked and raw)
- A self-serve station is available for students to add condiments/spices to food
- Cafeteria staff are helpful, always smiling, and create connections with students
- The lunchroom is well decorated with student artwork and has ample natural light and even some extra space
- Recess comes before lunch for all grade levels
- Your school has one of the lowest trash contamination rates due to the low number of disposables served at lunch, your fantastic sorting station, and a great school culture.

Below are some short-term and long-term tweaks that could increase food consumption at lunch. CVSWMMD can help you with both funding and organizing events (e.g. taste tests).

I. Short-term Adjustments

a. Emphasize Featured Meals

1. Label the featured meal each day with a creative name and advertise using as many avenues as possible (menu boards, announcements, newsletters, etc.)
2. Display the featured meal on a sample tray that is visible as students move through the line
3. When using local food or food from the MHS garden, heavily advertise the meal. Hype up any ingredients that are special or interesting.
4. Any menu board should be printed legibly and be readable from at least 5ft away. Consider installing a menu board with tomorrow's lunch near the exit of the cafeteria.
5. Consider holding a naming contest for a featured meal that includes local foods.

b. Focus on Flavors

1. Refresh the sign and advertise your school's flavor station.
2. Increase the amount of condiments and flavorings available at the flavor station. Advertise any interesting flavors along with the featured meal menu.
3. Raw sliced veggies should be paired with dips like ranch, hummus, or salsa

c. Cafeteria Layout

1. Place the share table in a visible spot and advertise it using permanent signage. The flavor station table could be used to also serve as a share table.
2. Refresh the student artwork in the cafeteria, focusing on food related art wherever possible!
3. Open all blinds to let in as much light as possible.

II. Longer Term Adjustments

- a. Consider installing a system for students to pre-order lunch meals. This can be used as a guideline for food prep, and can help students anticipate lunch.
- b. Consider installing a small salad bar for students to choose their own veggies. Be sure to incorporate shallow pans to reduce wasted salad bar food.

Funding

Funding for kitchen/cafeteria infrastructure improvements may be available through the EPA Healthy Communities Grant. Once strategies are identified, please notify CVSWMD of the specific purchased your school would like to make. To make accounting simpler, **CVSWMD will make any eligible purchases, requested by your school, through the grant.** If your school is interested in going further than the EPA grant funds allow, you may also apply for a School Zero Waste Grant through CVSWMD, up to \$2,500, for anything waste reduction-related.

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Appendix I: Examples

Flavor Stations:



Featured Meals:



Examples (Cont'd):

Menu Boards:



Salad Bars:

