Welcome, thank you for joining!

Please type any questions you have using the Q&A feature and Susan will address them at the end of her presentation.

If you are interested in joining the Healthy Food Choices in Schools Community of Practice or have any questions, please contact us at: healthy_food_choices_in_schools@cornell.edu
Zero Waste Lunchrooms: 
The How and Why of Reducing Waste in Your School Lunchroom

Susan Casey  
Zero Waste Schools Program Manager  
Seven Generations Ahead
Seven Generations Ahead

- Nonprofit serving Chicago metro area and Midwest since 2001
- Mission: Promote ecologically sustainable and healthy communities
- Programs include:
SGA’s Zero Waste Schools Program

We work with school staff and students to shift operations and minds towards generating zero waste through source reduction, recycling, composting, and food recovery.

Seven Generations Ahead:

- Helps schools plan effective waste reduction strategies
- Provides on-the-ground support for operational changes
- Educates students and staff about the How and Why of going zero waste
- Connects schools with local partners and opportunities
- Drives policy changes and infrastructure development that promote zero waste.
We help lunchrooms that look like this...
... become zero waste lunchrooms that look like this:
Outline

● Snapshot of lunchroom waste
● Strategies for reducing waste
  ○ Source reduction
  ○ Food recovery
  ○ Recycling
  ○ Composting
● Steps for planning and implementing a zero waste lunchroom
Lunch at a middle school with 983 students:

52% of served food went uneaten.

- Completely uneaten food & milk (24.99%)
- Food scraps (18.16%)
- Leftover liquids (9.19%)
- Consumed food & milk (47.66%)

Seven Generations Ahead
How many of each item went uneaten?

- 82 Diced Fruit Cups
- 30 Bagged Veggies
- 120 Milks
- 71 Bananas
- 19 Oranges

3 out of every 7 servings of applesauce went completely uneaten.

47% of fruit cups (including applesauce) went completely uneaten.

2 out of every 11 servings of milk were unopened.
Lunch at a middle school with 983 students:

Food waste comprised 75% of cafeteria waste in one day.

Total: 449 lbs
(0.5 lb per student)
Factors that may contribute to food waste in schools:

- Not enough time for students to eat (travel time to lunchroom, waiting in line, social time, time to be dismissed)
- Students required to take a certain number and type of food items to meet the requirements of a reimbursable meal
- Lack of understanding about Offer versus Serve and milk
- Food items are often heavily packaged, and the packaging may be a barrier to eating (especially when time is short)
- Whole fruits can be more challenging or time-consuming for some students to eat
- And more...
USDA & EPA U.S. Food Waste Challenge: Reduce food waste by 50% by 2030

40% of all food in the U.S. is wasted. 1 out of 7 Americans are food insecure.
EPA Waste Management Hierarchy

Waste Management Hierarchy

Source Reduction & Reuse

Recycling / Composting

Energy Recovery

Treatment & Disposal

Most Preferred

Least Preferred
Source reduction strategies:

**Smarter Lunchrooms Movement**

**Food presentation and service**
- Cut up fruit and veggies to encourage eating
- Use “Offer versus serve”

**Meal scheduling**
- Lengthen the meal periods to give students more time to eat
- Schedule recess before lunch

**Sourcing food**
- On-site gardens for students to grow produce for school meals
- **Farm to School programs**

**Procurement choices**
- Food packaging and service ware options
Offer versus Serve (OVS)

- National School Lunch Program meals consist of five components: fruit, vegetable, whole grain, meat/alternative, and milk.
- Students in schools without an OVS policy receive a tray full of each food component offered that day. The OVS policy allows students to decline up to two items, as long as they take a fruit or a vegetable.
- OVS is optional in elementary and middle schools. The USDA requires high schools to use OVS.
- Schools can reduce plate waste by establishing OVS as their lunch service method for all grade-levels.

Source: Keeping Food Out Landfills: Policy Ideas for States and Localities
Educating Students / Staff about OVS & Milk

“For all grade groups, one cup of fluid milk must be offered daily as a beverage. Students may decline milk under OVS.”

Source: OFFER VERSUS SERVE: GUIDANCE FOR THE NATIONAL SCHOOL LUNCH PROGRAM AND THE SCHOOL BREAKFAST PROGRAM
Farm to School

Procurement
Connects local producers to schools

Education
- Teaches about agriculture, food, health, and nutrition
- Local food in taste tests, snacks, and school meals

School Gardens
Hands-on engagement
Farm to School & Food Waste

- Farm to School - A comprehensive approach to changing students’ attitudes and behaviors around healthy food on their tray

- Farm to School programs reduce cafeteria plate waste (Bontrager et al, 2015; Kropp et al, 2017)

- 17% of schools with Farm to School programs reported a reduction in waste (USDA)

- 9-21% less waste generated from Farm to School meals vs conventional (2018, Hawaii study)
Key IL Farm to School Programs

Illinois Great Apple Crunch

- Part of Great Lakes Great Apple Crunch
- Annual event every 2nd Thursday of October
- Over 1,000,000 participants crunch across the region

Illinois Harvest of the Month

- Connects producers with schools and teaches staff how to buy & celebrate local food
- Highlights one local fruit or vegetable every month
- Schools receive classroom activities, cafeteria recipes, and promotional materials
Procurement choices impact waste levels

BAD
Polystyrene trays & spork packets

BETTER
Compostable trays & recyclable food containers

BEST
Reusable trays & silverware
Best practice: Plate-stacking to reduce volume

A good practice for polystyrene trays, too!
Share Tables & Food Donation

- Share tables are designated stations where children may return whole fruit & unopened factory-sealed food or beverage items they choose not to eat.
- These items are then available to other children during or after the meal service.
- Leftover food from a share table can be used in future reimbursable meals.
- Leftover food from a share table can also be donated to a community food pantry, or even an in-school food pantry.

Share tables teach students the value of food rather than teaching them to trash it.
K-12 policies that support share tables & food recovery

USDA 2016 memo: The Use of Share Tables in Child Nutrition Programs

The memo outlines recommended steps for setting up share tables, including a list of food items recommended and not recommended for share tables.

“Using ‘share tables’ is an innovative strategy to encourage the consumption of nutritious foods and reduce food waste”

“local and State health and food safety codes may be more restrictive than the FNS requirements”

“CNP operators should discuss plans for a share table with their local health department and State agency prior to implementation.”
K-12 policies that support share tables & food recovery

Illinois State Board of Education’s School Nutrition Programs Administrative Handbook School Year 2018-2019

“...All alternatives permitted by program regulations and State and local health and sanitation codes should be exhausted before discarding food.”

“Options may include using leftovers in subsequent meal services and offering ‘sharing tables.’”

“CNP operators are able to claim the reimbursable meal at the point of service even if a child then puts one or more of the meal components on the share table. When food items are left on the share table at the end of the meal service, that food can be used in later meals that are claimed for reimbursement.”

“...excess food may be donated to a nonprofit organization, such as a community food bank or homeless shelter”
Chicago Public Schools’ FoodShare Program

Eligible items are limited to whole fruit and factory-sealed non-perishables.

9,000+ pounds of produce were donated to food pantries from all program schools in 2014-15

At one school, 5,827 food items were donated to a local pantry in one year.

Challenge:
Many local food pantries have very limited hours.

FOODSHARE

UNEATEN WHOLE FRUIT & UNOPENED NON-PERISHABLES ONLY (NO CHILLED OR HEATED ITEMS)
The Surplus Project:
A partnership of Oak Park River Forest Food Pantry & Oak Park River Forest High School
Created to simultaneously address problems of food waste and food insecurity

● Cafeteria staff package **back-of-the-house surplus prepared foods** into individual meals in recyclable microwavable containers.
● Volunteers transport the packaged food recipient sites.

Other food donors for the Surplus Project include hospitals, a university, a senior center, and a restaurant.
Food scraps diversion for animal feed

LEFTOVERS FOR LIVESTOCK:
A Legal Guide for Using Food Scraps as Animal Feed

Harvard Food Law and Policy Clinic
Food Recovery Project
University of Arkansas School of Law

August 2016
Composting is a way of recycling food scraps and yard trimmings.
Three Ways to Compost in Schools

On-site Composting
Fruit and vegetable scraps collected and mixed with yard trimmings in an outdoor compost bin.

Vermicomposting (Worm Bins)
Fruit and vegetable scraps and newspaper are fed to worms in an indoor bin.
(not suitable for large amounts of food scraps)

Commercial Composting
All food scraps and food-soiled paper are collected and hauled to a commercial compost facility.
On-site Composting

Collect fruit and vegetable scraps in lunchroom sorting station

Students record the weight of food scraps and the temperature of the compost pile (great science/math skills and teamwork).
Students sift the finished compost for spreading on the school flower beds.
Commercial Composting

1. Sort lunchroom food scraps
2. Hauled to a compost facility
3. Food scraps decompose
4. Finished compost sold
Benefits of composting

Reduces impact of landfills
  • Extends landfill capacity
  • Reduces climate-changing methane emissions from landfills

Builds healthier soils
  • Supports soil food web of microorganisms
  • Improves soil structure and water retention, which reduces erosion and irrigation needs
  • Reduces need for synthetic pesticides and fertilizers
Methane is a greenhouse gas that traps 72x more heat than CO2.

20% of all U.S. methane emissions come from landfills.

Keeping food and yard waste out of landfills is one of the easiest & least expensive options for addressing climate change.
Recycling in the Lunchroom & Kitchen

- Recycling, in regions where it’s available, typically costs less to dispose of than trash, resulting in cost savings for schools/districts.

- Need to find out what the hauler accepts and design your recycling system based on that.
Recycling in the Lunchroom
Recycling and Plate-Stacking
Share Table - Recycling - Plate Stacking
Share Table - Recycling - Commercial Composting - Plate Stacking
Chicago Public Schools
Commercial Composting & Recycling Program

Results at Sandoval Elementary, a school of 1,015 students:

Check out our impact!

In One Day
- 257 lbs composted
- 99 lbs recycled
- 167 lbs liquid diverted
- 523 lbs diverted from landfill!

Potential for One School Year
- 46,260 lbs composted
- 17,820 lbs recycled
- 30,060 lbs liquid diverted
- 94,140 lbs diverted from landfill! (about 47 tons!)

Waste Audits of Cafeteria/Kitchen

Baseline
- 629 lbs, 94%
- 38 lbs, 6%

Launch Day
- 257 lbs, 44%
- 167 lbs, 28%
- 99 lbs, 17%
- 63 lbs, 11%

Total 667 lbs
Total 586 lbs

Compost  Recycling  Liquid  FoodShare  Landfill

The Sandoval lunchroom went from 36 big trash bags per day to less than 7 bags per day.
Planning & Implementing Waste Reduction Strategies

**Basic steps**

- Build a Zero Waste Team
- Conduct waste audit (baseline)
- Plan waste reduction strategies using audit results
- Coordinate operational changes
- Educate about the How and Why
  - All students and teachers
  - Kitchen staff/ custodians / engineers
- Implement strategies
- Conduct waste audit to measure impact
- Celebrate and communicate impact
Build a Zero Waste Team

- Administration & Staff
- Custodian & Cafeteria Staff
- Student Ambassadors
- SGA
- PTO/ Green Team
Waste audits:
Provide valuable data and a great way to engage students
Plan waste reduction strategies

- Use your waste audit results as a guide for what strategies may be most impactful
- Consider costs and ease of various options
  - Go for the lowest hanging fruit first
  - Okay to implement strategies in stages
Plan for the operational changes needed

- The flow of students to determine location and number of sorting stations
- Equipment (bins, signs) and supplies (bags) needed - lunchroom and kitchen
- Hauling equipment and service levels
- For food recovery:
  - Check with local health department, if needed
  - Coordinate with local food pantry if planning food donation
Educating Students on the How & Why

School assembly to teach the How and Why of going for zero waste

High school students teach students in neighboring elementary school about composting and recycling.

Student Zero Waste Ambassadors guide and monitor sorting
Curriculum Connections & Service Learning
Zero waste program uniquely integrated at each school

Victor, Solorio Zero Waste Ambassador:
At my elementary school, we didn’t do this. The fact that we’re sharing this experience is amazing. We didn’t do anything at home before this either-- no recycling, nothing. You’d be surprised; a lot of kids do care. Some might do it at first as a service learning project, but once they see the impact they want to be on the Zero Waste Team.

NGSS Aligned Chemistry Unit (HS-PS1-7)
Essential Question: Where does the mass from our garbage end up?
• Students apply knowledge of conservation of atoms and stoichiometry to evaluate the human impact of landfills and incinerators
• Service Project: Students apply principles of conservation of mass to design an improved waste management program at Solorio and to advertise the program to students.
Zero waste program uniquely integrated at each school

Southside Occupational Academy High School:
- Zero waste lunchroom and onsite composting used as job training opportunities in Culinary Arts, Horticulture, and Agriculture programs.
- Field Museum of Natural History - job training site
- Winner of 2017 U.S. Green School Ribbon Award (1 of 58 schools!)
Zero waste program uniquely integrated at each school

McAuliffe Elementary:
Integrates composting program into school-wide focus on sustainable agriculture
Communicate & Celebrate Impact

- Use waste audit results to demonstrate impact
- Take photos of all the steps along the way
- Include benefits
  - Environmental benefits (EPA’s WARM model is good for calculating avoided greenhouse gas emissions)
  - Cost benefits (hauling costs, food costs),
  - Social benefits (amount of food donated; number of students engaged)
- Share your school’s success: newsletters, social media, and announcements
Resources/tools:

Seven Generation Ahead’s Zero Waste Schools website
Seven Generation Ahead’s Zero Waste Schools monthly e-newsletter
Green Lunchroom Challenge (archived, Illinois Sustainable Technology Center)
USDA - U.S. Food Waste Challenge K-12 schools resources
  ● USDA’s K-12 School Reducing, Recovering, and Recycling Food Waste Webinar
  ● USDA’s list of food waste measurement tools
  ● USDA’s Smarter Lunchroom Techniques
Smarter Lunchroom Movement
K-12 School Food Recovery Road Map
Mindful Waste
Washington School Food Share Program Toolkit
Illinois Food Scrap Coalition
Thank You

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Funding for Zero Waste Schools is generously provided by:

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