



Pollution
Prevention
Institute

Feed people, not landfills

Barb Goode

K-State Pollution Prevention Institute

June 26, 2018 – Sixth National Rural Grocery Summit





Pollution Prevention Institute

Mission: promote sustainability through environmental education and services to industry, institutions and communities. These services include environmental compliance and pollution prevention technical assistance.

PPI is 100% grant supported



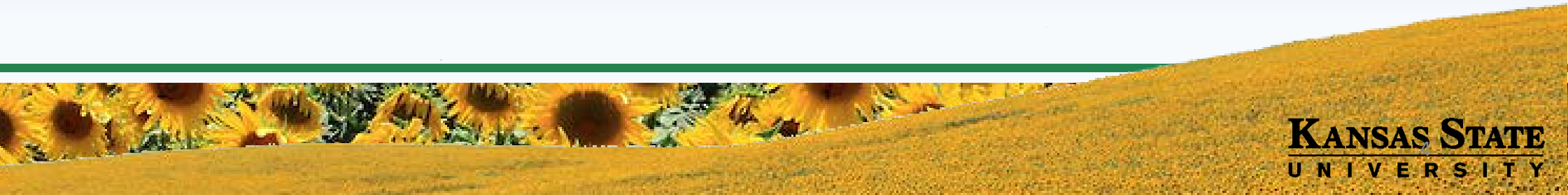
Overview

- The food waste problem
- The EPA food recovery hierarchy
- Feed people, not landfills
- PPI food recovery projects





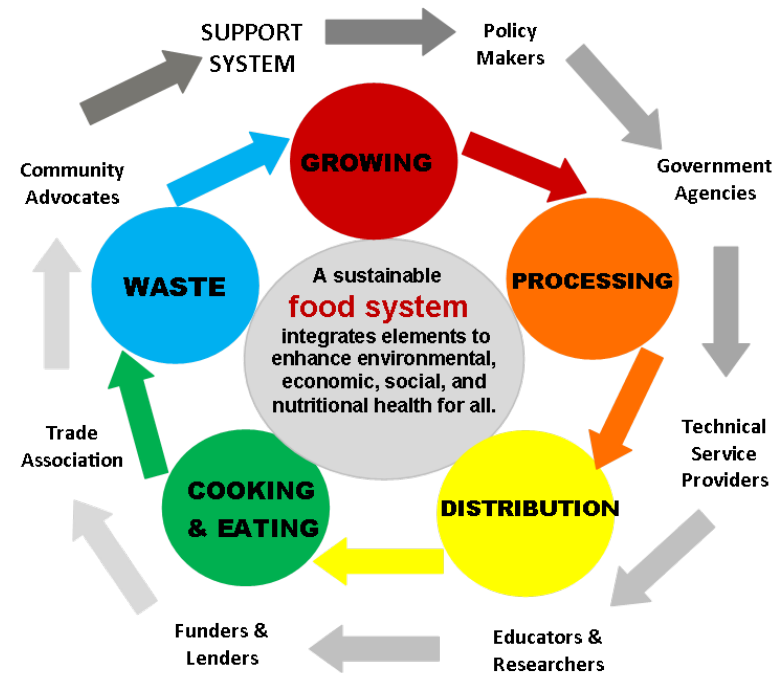
The Food Waste Problem



Food production and resource use

- Getting food from the farm to your plate uses
 - 16% of U.S. **energy**,
 - 50% of U.S. **land**, and
 - 67% of all **freshwater** used in the U.S.

Yet, 40% goes uneaten!



Source: NRDC, WASTED: HOW AMERICA IS LOSING UP TO 40 PERCENT OF ITS FOOD FROM FARM TO FORK TO LANDFILL, 2017
www.nrdc.org



MORE THAN JUST FOOD

THE U.S. WASTES TONS OF RESOURCES WHEN WE WASTE FOOD

1,250 CALORIES PER PERSON PER DAY
THAT IS HALF OF THE RECOMMENDED DAILY INTAKE FOR ADULTS

19%
OF ALL
U.S.
CROPLANDS
THAT IS MORE
LAND THAN ALL
OF NEW MEXICO

21% OF U.S. LANDFILL
CONTENT



THE NO. 1 CONTRIBUTOR BY WEIGHT

18%
OF ALL
FARMING
FERTILIZER
WHICH CONTAINS
3.9 BILLION POUNDS
OF NUTRIENTS

2.6% OF ALL U.S. GREENHOUSE
GAS EMISSIONS ANNUALLY



37 MILLION PASSENGER VEHICLES' WORTH

21% OF THE U.S. AGRICULTURAL
WATER USAGE



MORE THAN: TEXAS + CALIFORNIA + OHIO

\$218,000,000,000

WHICH IS EQUAL TO 1.3% OF THE U.S. GROSS DOMESTIC PRODUCT (GDP)

Source: NRDC, WASTED: HOW AMERICA IS LOSING UP TO 40 PERCENT OF ITS FOOD FROM FARM TO FORK TO LANDFILL, 2017
www.nrdc.org

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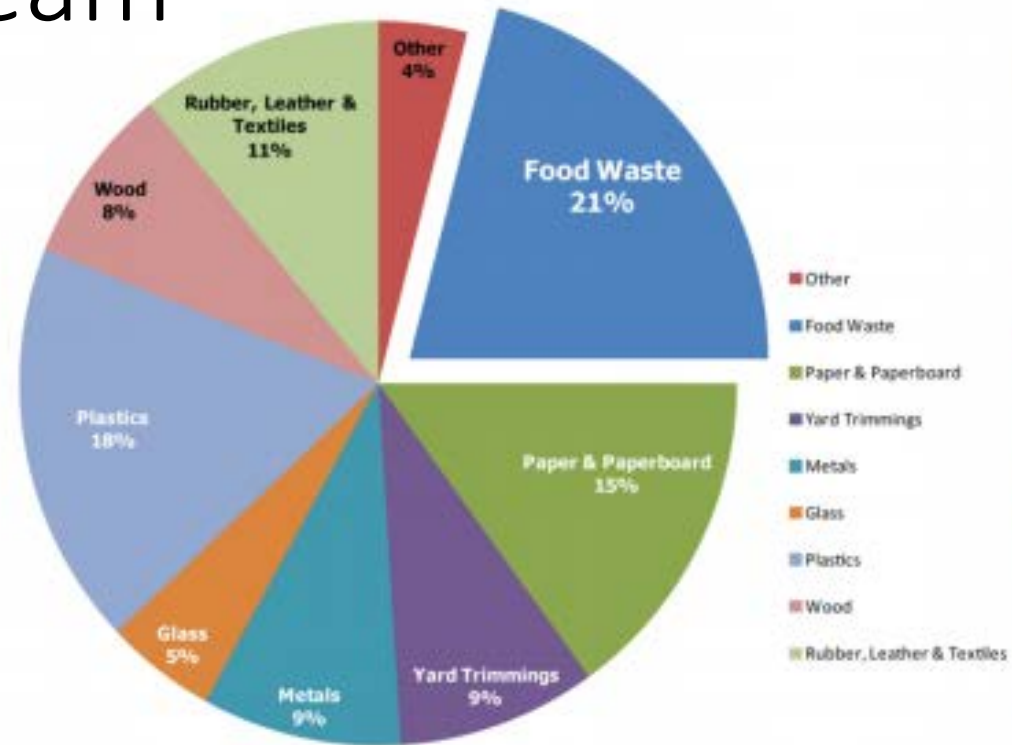


Each apple that's thrown
away uses enough water to
flush a toilet seven times.

Source: Waste. 2013. UNEP (Video)



Food accounts for 21% of the American waste stream



Source: EPA Food: Too Good to Waste Implementation Guide and Toolkit



U.S. Annual Household Food Waste

76 billion pounds =
238 pounds food/person/yr
=
\$450/person/yr =
\$1,800/yr for a household
of four



One month waste for family of 4

Source: ReFED A Roadmap to Reduce US Food Waste by 20 Percent,
(2016) www.refed.com.



What gets lost in retail?



What gets lost in retail?

- Baked goods
- Produce
- Meat
- Seafood
- Ready-made foods



Source: ReFED Retail Food Waste Action Guide, 2018



Reasons for Retail Level Losses

- What are reasons food gets wasted at rural grocery stores?



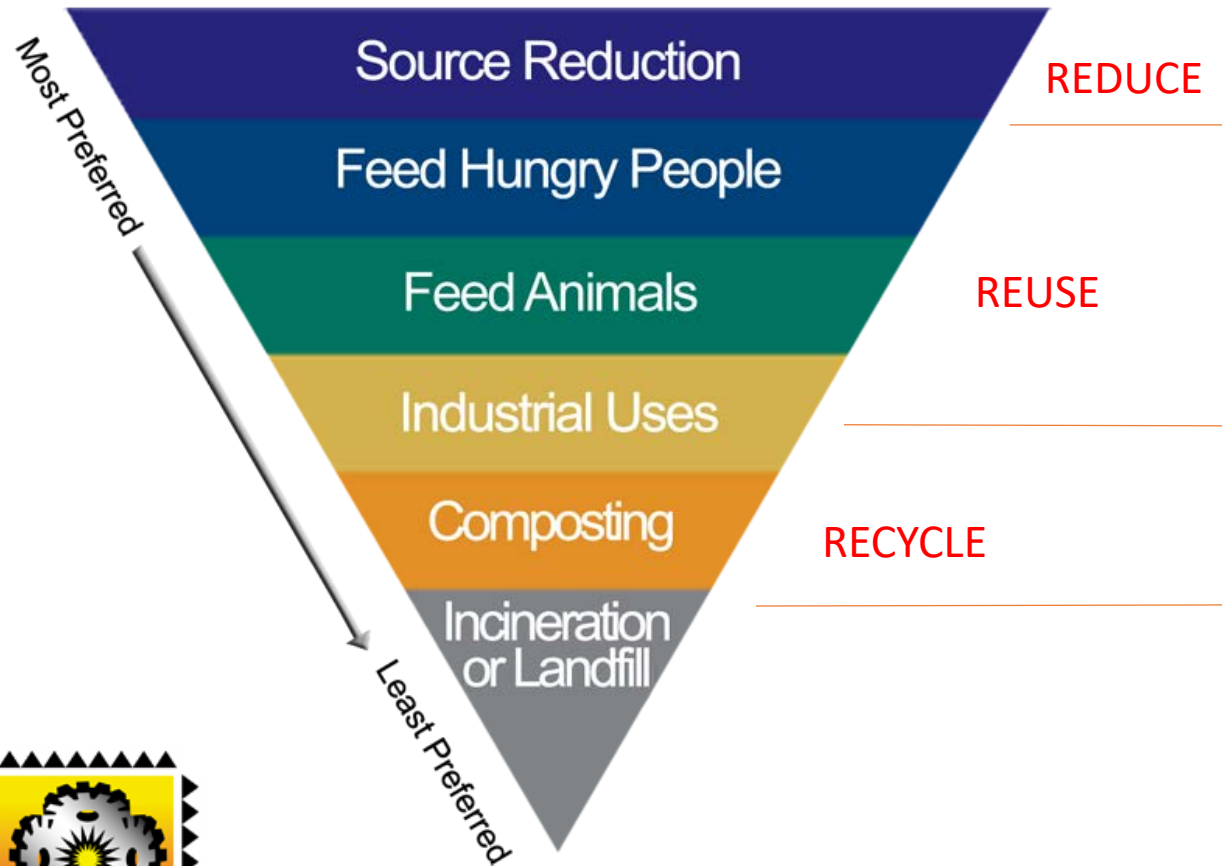
Reasons for Retail Level Losses

- Dented cans
- Damaged packaging
- Unpurchased holiday foods
- Spillages
- Bruising
- Improper storage
- Inadequate storage
- Overstocking
- Blemished/oddly-shaped produce



Food waste reduction opportunities

Food Recovery Hierarchy



Up to 40% food in US is never eaten → \$218 billion/year → wasted resources

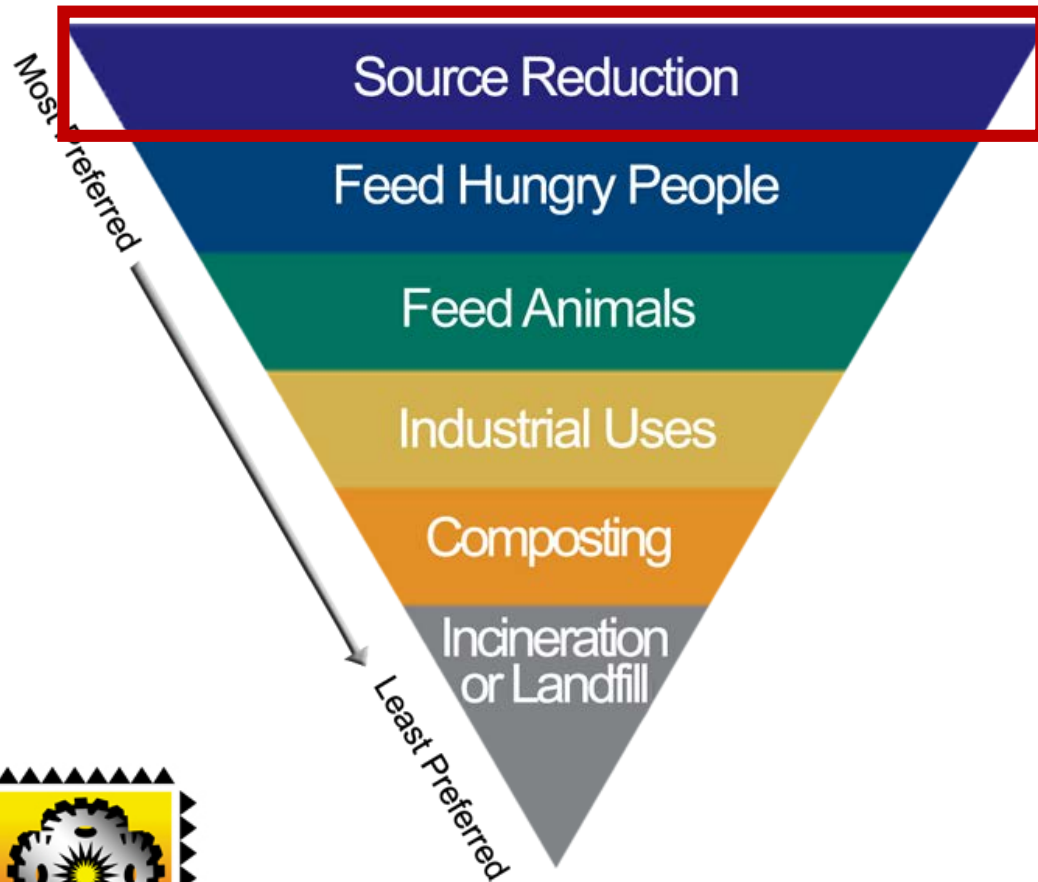
1 in 8 Americans (42 million) struggles to put enough food on the table

In 2015 – USDA and EPA joint goal to reduce food waste 50 percent by 2030



Source Reduction

Food Recovery Hierarchy



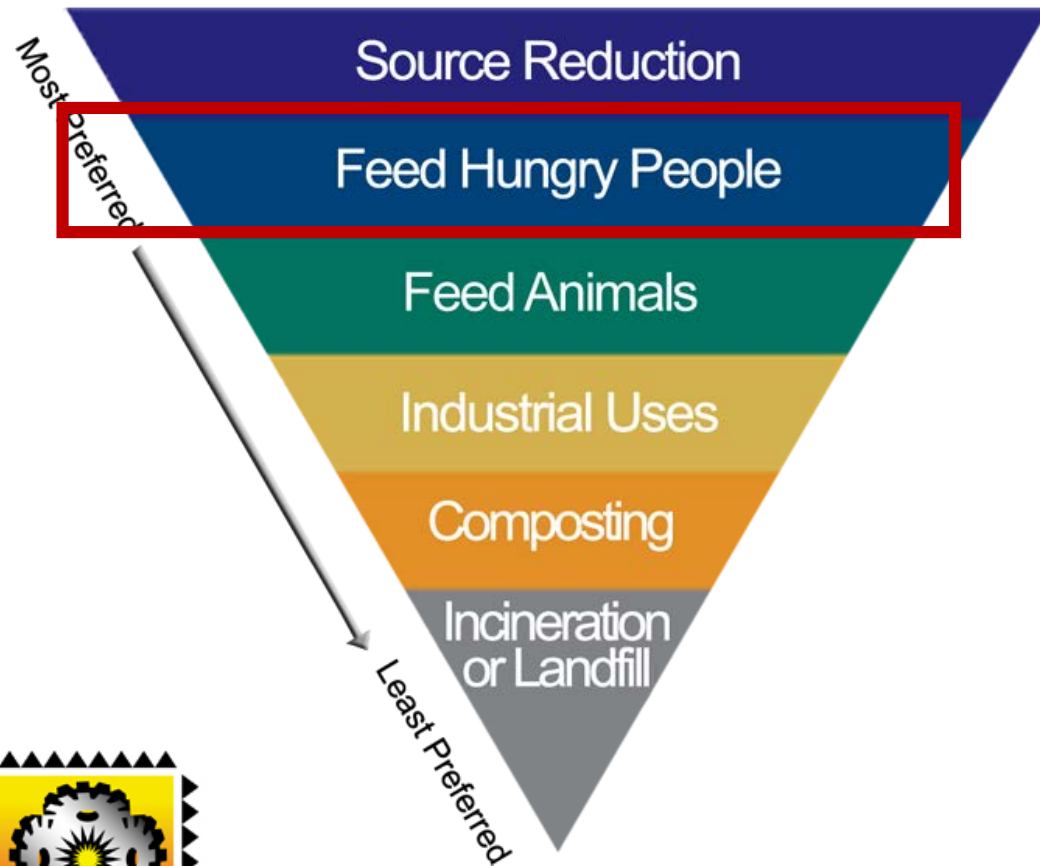
- Food waste baseline assessment
 - Estimate amount and types of food wasted
 - Identify root causes for food waste
 - Determine what portion was edible

Barrier to preventing wasted food is lack of standardized food date labels



Feed Hungry People

Food Recovery Hierarchy

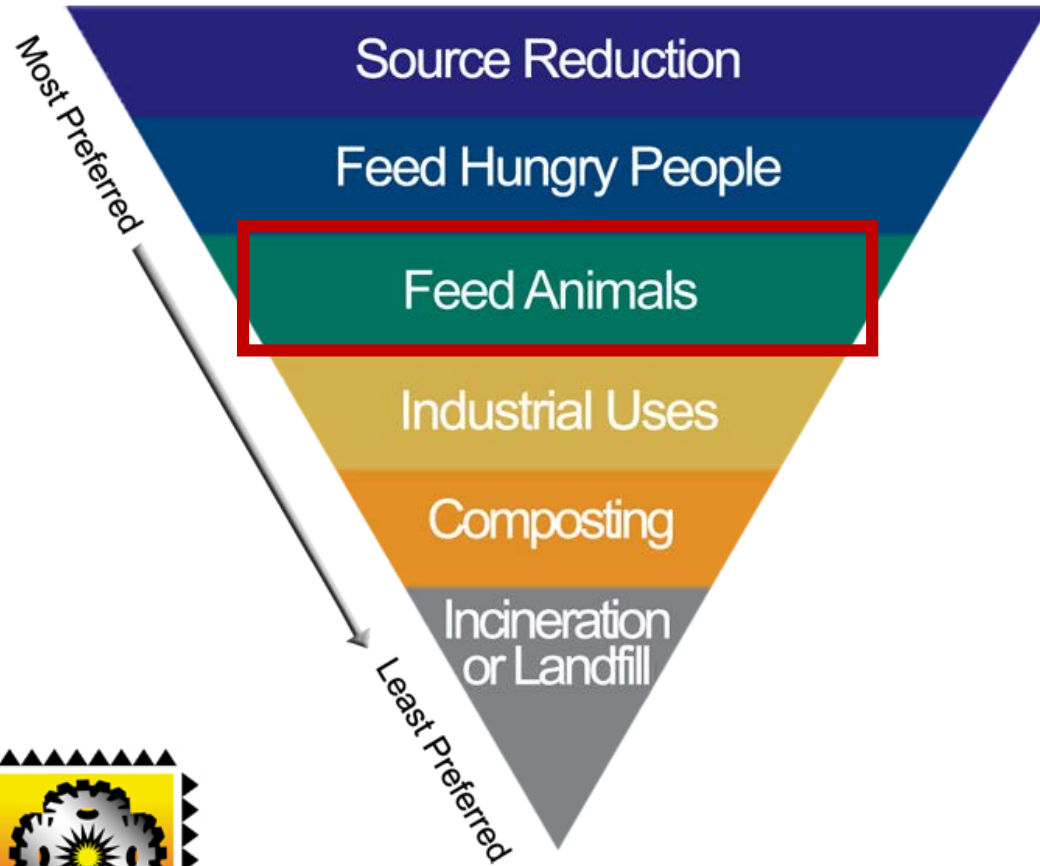


- 1 in 8 Americans (42 million) struggles to put enough food on the table - food insecure
- Donate surplus food to—
 - Food banks
 - Shelters
 - Soup kitchens
- Barriers
 - Transportation
 - “Liability”



Feed Animals

Food Recovery Hierarchy

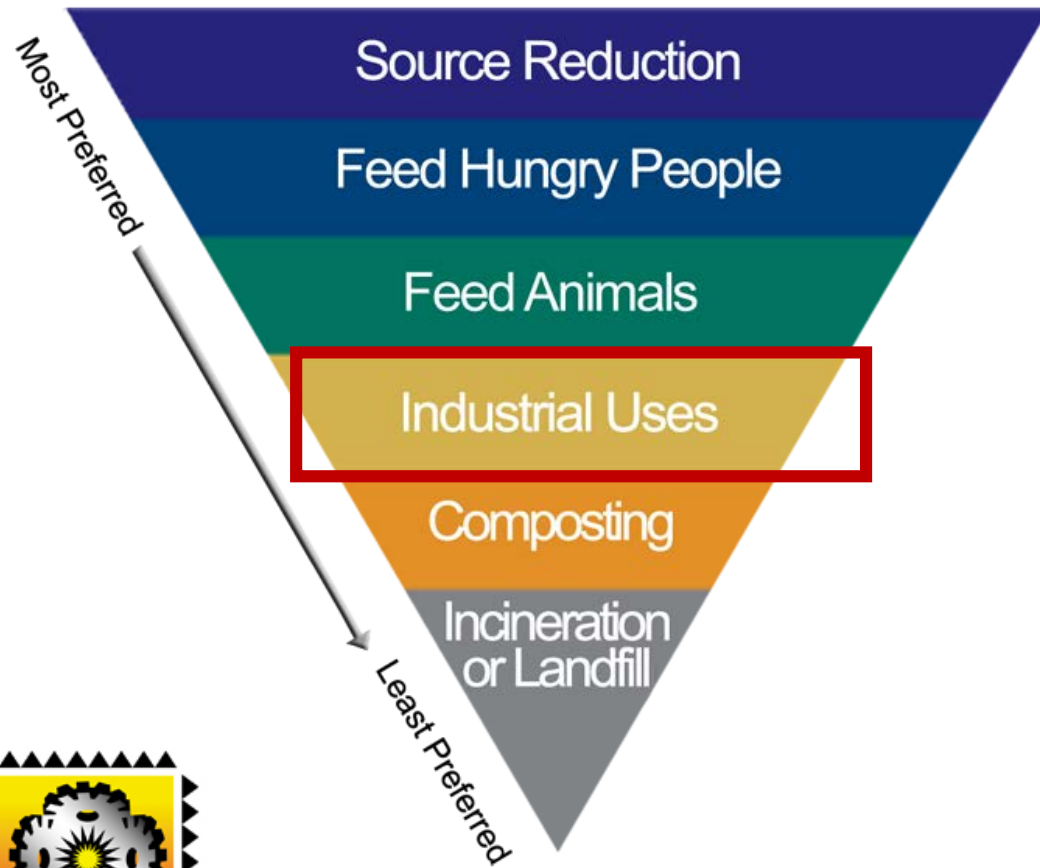


- Provide to area farms and zoos
 - Vegetable trimmings
 - Post-consumer plate waste
- Barriers
 - Some states ban food donation for animal feed
 - Strict diets in corporate operations



Industrial Uses

Food Recovery Hierarchy

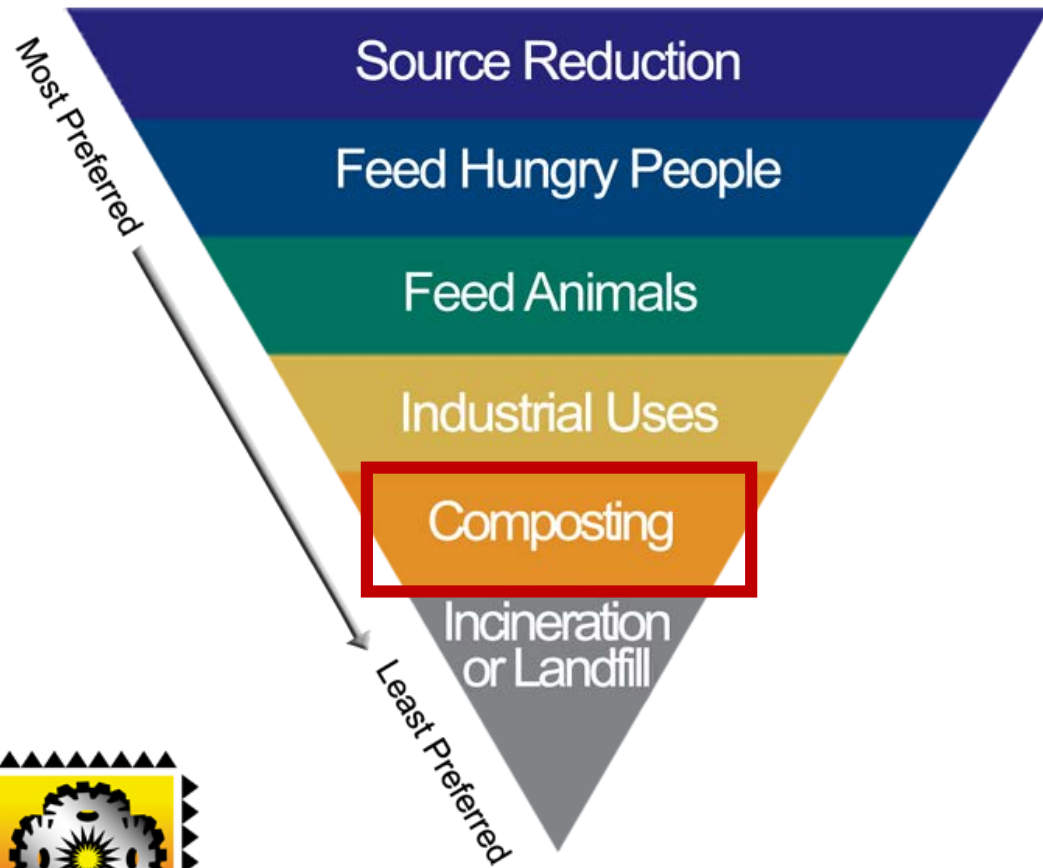


- Anaerobic digestion for energy recovery
- Biofuels from waste oils



Composting

Food Recovery Hierarchy

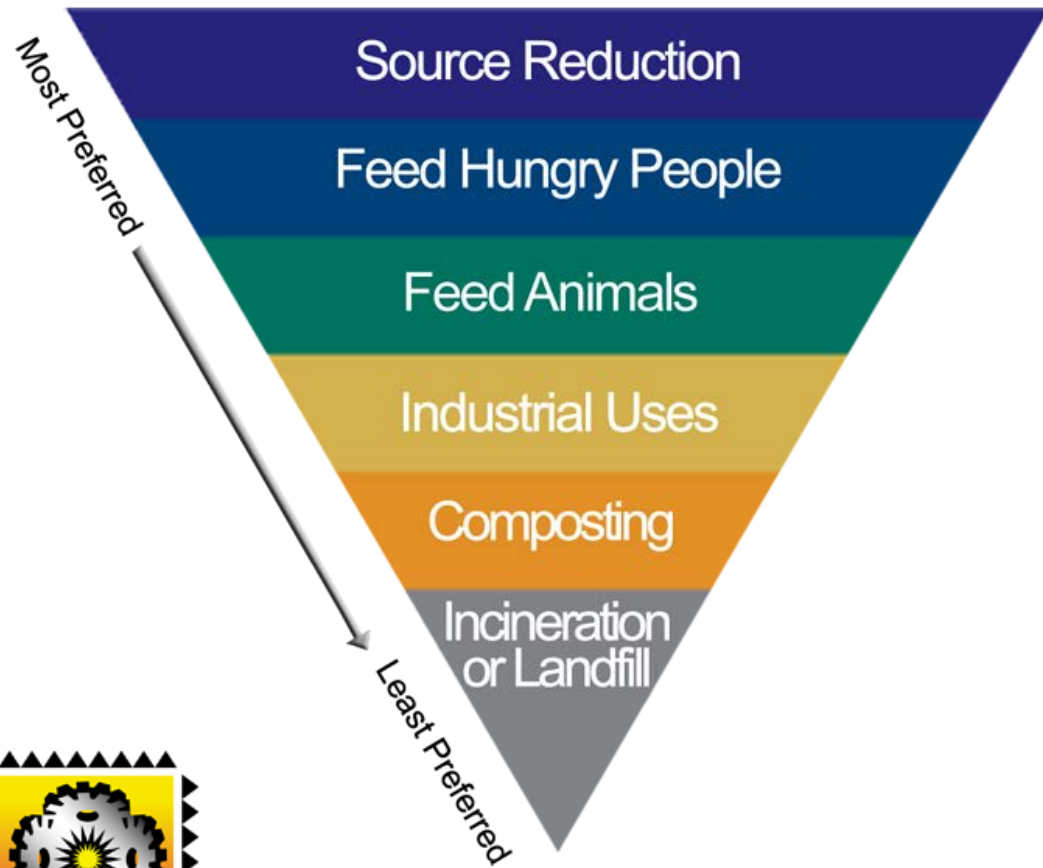


- Create a nutrient-rich soil amendment
- Barrier
 - Lack of commercial composting facilities



Landfilling

Food Recovery Hierarchy



Last resort!



Divert Food Waste from Landfill to People



Food Waste Assessment

- Estimate amount and types of food wasted
 - What portion was edible?
 - What portion could go to animals?
 - Is there an anaerobic digester or composting opportunity?
- Identify root causes for food waste
- Set reduction goals (focus on meat and dairy)
- Adopt best practices



Food Study Table.xlsx - Excel											
Tell me what you want to do...											
Name of Company											
Address											
Price per pound calculator											
Unit in lbs	price per unit	price per lb									
1.5	2.99	1.99333333									
DATE	DEPT. OR SECTION	FOOD TYPE	AMOUNTS TO LANDFILL (lbs)	PRICE (per lb)	PRICE BASIS	DONATED AMOUNT (lbs)	PRICE	PRICE BASIS	Animal Food (lbs)	PRICE	PRICE BASIS
	Deli Dept.	Fried Chicken		\$2.99	Known retail price per pound						
	Deli Dept.	Mashed Potatoes		\$1.89	Known retail price per pound						
	Deli Dept.	Macaroni and Cheese		\$1.89	Known retail price per pound						
	Deli Dept.	Corn			Known retail price per pound						
	Produce	Bagged Salad	30	\$1.99	Known retail price per pound						
SUMS			30	\$12.90		0	\$0.00		0	\$0.00	
Average				\$2.15	Average price from sum of all items.		\$0.00	Average price from sum of all items.		\$0.00	Average price from sum of all items.
Annualized Calculations			30	363	10890	\$23,413.50	0	\$0.00	0	\$0.00	
Daily Sum Pounds of Food (Column D)			Assumed Annual Operation Days	Calculated Annual pounds to landfill	Total Annual Costs for food to landfill	Calculated Annual pounds to Donation	Total Costs for food to Donation	Calculated Annual pounds to Compost/Animal Food/Bio-Digester (pick one)	Total costs for food to Compost/Animal Food/Bio-Digester (pick one)		

Best practices

- Discount imperfect produce and older, slightly damaged items
- Adopt improved inventory management systems
- Use spoilage prevention packaging (e.g., vacuum-packing)
- Allow prepared foods to sell out near closing time (don't replenish)
- Collaborate with retailers and manufacturers to standardize date labeling
- Offer meal kits
- Increase donations to those in need
- Continually train staff

Source: ReFED a roadmap to reduce u.s. food waste by 20 percent






Food Recovery Opportunities

- Field gleaning
- Perishable produce rescue/salvage
- Perishable and prepared food rescue
- Nonperishable processed food collection

Source: USDA., A Citizen's Guide to Food Recovery (1999).



Good Samaritan Food Donation Act



Food Donation Liability in Kansas
A Guide for Donors and Distributors

Many families in the United States, and in Kansas, struggle with nutritious food (this is known as "food insecurity"). In Kansas, it is estimated that 183,000 households, or almost one out of every three, experience food insecurity at least once in 2013.¹ Meanwhile, studies show that each year, more than 40 percent of food goes uneaten in the United States.² Food waste in need diverts unused food from landfills⁴ and assists in reducing household food waste.

The purpose of this fact sheet is to explain the laws governing food donation in Kansas. Readers are encouraged to use this document in tandem with another Public Health Law Center resource on the national food donation law, [Liability Protection for Food Donation](#), for additional information about the federal food donation law.

Why don't more people donate food?

Potential food donors may be reluctant to donate unused food to the needy for a variety of reasons. Some may fear liability for an illness or injury caused by someone eating the donated food³ or

This fact sheet is funded by the Kansas Health Foundation to increase access to and consumption of healthy food in Kansas.

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Arkansas Law Notes

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The Legal Guide to the Bill Emerson Good Samaritan Food Donation Act

By James Haley August 8, 2013 2013 Ark. L. Notes 1448
In categories: Administrative Law, Agricultural Law, Environmental Law, Extended Article, Food Law, Health Law, Practice Tips, Students

James Haley
University of Arkansas School of Law
Sponsored by the Women's Giving Circle, University of Arkansas

Introduction

Food waste and food insecurity are both very real and very large problems in the United States. Nonprofit organizations have identified food waste as one of the most significant barriers to food security in the United States.



Harvard Food Law and Policy Clinic
A Division of the Center for Health Law and Policy Innovation

The Bill Emerson Good Samaritan Food Donation Act

Donors or recipients of donated food are generally well-protected by laws designed to provide a baseline of protection for food donors.¹ The Emerson Act covers individuals, officers of businesses and nonprofit organizations, and gleaners—volunteers who harvest surplus crops for a nonprofit organization that distributes the food to the needy.

Donations must meet the following criteria as they are met:

- Donations must be made in good faith.
- Donations must be made to a nonprofit organization that distributes the donated food to the needy.
- Donations must be made to a nonprofit organization that distributes the donated food to the needy.

Donors must donate qualifying foods, unless specific reconditioning steps have been taken. Those that meet "all quality and labeling standards imposed by Federal, State, or local laws," even if they are not "readily marketable due to appearance, age, or other conditions."² State and local quality and labeling laws vary, and donors must comply with those laws.³

Reconditioning: If a food does not meet all applicable federal, state, and local laws, it may be reconditioned by the Emerson Act as long as (s)he follows all of the following conditions:

- The nonprofit of the nonconforming nature of the product;
- The nonprofit reconditions the item so that it is compliant;⁴ and
- The standards for reconditioning the item.⁵

Recipients cannot pay anything of monetary value for the donated food. For nonprofit a nominal fee for distribution, the Act allows the nonprofit to charge a nominal fee to cover handling and processing costs.⁶

Liability: The Emerson Act: So long as the above criteria are met, the donor does not hold a donor liable unless the donor acts with gross negligent or conscious conduct (including a failure to act) by a person or organization that was made that the donated food was likely to have harmful consequences.

Intentional Misconduct: Intentional Misconduct is when a person or organization donates "with knowledge . . . that the food is harmful to the health or well-being of another person."⁷

In other words, one should not donate or facilitate the distribution of donated food that one knows is likely to be harmful or dangerous. Unfortunately, the Act gives little guidance on what activities qualify as gross negligence or intentional misconduct. The House of Representatives Report associated with the Emerson Act has indicated that each case must be analyzed individually.⁸ The lack of court cases interpreting the Emerson Act suggests how protective the Act is of donors; research does not turn up a single case related to food donation liability.⁹

In addition to federal liability protections, states are free to enact state level liability protections that are more protective of food donors than the federal Emerson Act.

Source of middle article:
<http://media.law.uark.edu/arklawnnotes/2013/08/08/the-legal-guide-to-the-bill-emerson-good-samaritan-food-donation-act/>
University of Arkansas School of Law – James Haley, Aug 8, 2013

PPI Food Recovery Projects



- # Reducing and Recovering Surplus Food*
- Surplus food can be beneficially used in a variety of ways. The food recovery hierarchy prioritizes methods of reducing food waste.
- ## Assess your food waste:
- Take a quick look at the food you are throwing away and identify potential food recovery opportunities to decrease the amount you generate.
- ## Conduct food waste audit**:
- For more detailed information, track and collect data on the types and amounts of each food waste item you are generating. Collecting this data will help determine if much waste can be reduced by ordering or producing less, how much could be sent to food banks or shelters, and how much could be recycled through animal feeding, rendering, or composting.
- Plan for costs:** Take to national waste organizations, health, town planners, recycling coordinators, and even the mayor or town manager to get support and assistance for your food recovery program. Employee training is also vital to the success of a food waste recovery program. You might want to consider an incentive program for employee participation.
- Determine what food recovery option works best:** Use the information gathered from your waste assessment and audit to determine which food recovery option is best for your organization. The quality of your surplus food and your estimated generation rate will help you consider how to divert food waste. To learn about disposal options and find hauliers in your area, visit your state or county environmental department's Web site. You can also ask your current recycling or waste hauler about hauling your waste to a recovery facility.
- Source Reduction:** Use your waste audit to identify ways to decrease the amount of food waste you generate. Are there any trends in the types and amounts of food waste you produce? If so, consider changing your business operation to buy only what you use.
- ## Source Reduction – Reduce the volume of food waste generated
- Feed Hungry People – Donate extra food to food banks, soup kitchens, and shelters
- Feed Animals – Divert food scraps to animal feed
- Industrial Uses – Provide waste oils for rendering and fuel conversion; and food scraps for digestion to recover energy
- Composting – Create a nutrient-rich soil amendment
- Landfill/Incineration – Last resort for disposal
- Industrial Uses
rendered into a cosmetics. Anarob produce biogas that is used as a multienrich fertilizer.
- Composting:** Food scraps facility for a list of acceptable options is to compost all you have adequate space from business or residential environmental agency to areas and more information the science and technology <http://www.epa.gov/waste/>
- *Graphic and
- Feed People:** You can donate unused or excess food products that meet quality and safety standards to food banks. Many national and local food recovery programs offer free pickups and containers. The Bill
- Waste Logbook - Facilities**
Date: 25-Mar-14
- Notes/Special Events T**
- Time** **Recorded By**
- ** What is a food waste audit? The first step to reducing and recovering surplus food is to identify what is either already donated or goes to waste or in the trash. There are some food wastes that are not suitable for human consumption. Trimming can often be diverted to feed animals.
- Why audit?** What gets measured usually then gets managed and often reduced. Reducing sur industry material, labor and waste hauling.
- Get started:** Check the checklist on the next page (reverses) to begin the food waste audit. The checklist will focus on pre-consumer and post-consumer, often called plate waste. This food waste types of surplus food, pre-consumer wastes and practices. Then, use the food waste log to record specific food waste details and quantities. Depending on the type of surplus food, this audit may be very specific or somewhat general.
- Instructions Day 1**
-

[illegible]

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Kansas Health Foundation projects (2013-14)

Title: FRC feeds Sedgwick County Hungry

Project: Work with Sedgwick County grocery chains to reduce food waste and identify excess food that can be donated to programs that feed the hungry.



Transfer station June 2013



**Large amounts of produce
found in trash**

**Cornhusks account for a
large amount of waste**



**Approximately 30% of
waste was organics**



PRODUCE

Reduce soup options from four to two

- 50% reduction for 6 months – 1,460 lb./yrs.
- Implemented immediately



BAKERY



DELI

Baked and BBQ Baked Chicken

- Recommended reduce production by 50%
- Not eligible for KFB or Quest
- If implemented, 4 tons of waste reduced

[illegible]

DAIRY

First Week's Food Donations to Kansas Food Bank: 26 crates of milk – 111 gallons!



Summary of 2013 intern recommendations for Dillons

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Grocery	2.7 tons	\$2,058	Planned
Produce	36 tons	\$2,863	Implemented
Bakery			
Bolilo Rolls	2.5 tons	\$14,202	Implemented
Donuts	2.1 tons	\$9,079	Partially Implemented
Deli	5.4 tons.	\$29,955	Recommended
Total savings *	48.7 tons	\$58,157	
GHG reductions *	33 metric tons CO2e		

2013 P2 Intern Results

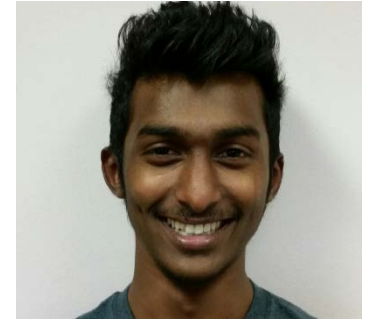
2014 P2 Intern Results

Summary of 2014 P2 intern recommendations for Dillons Food Stores

Project description	Annual estimated environmental impact	Annual estimated cost savings	Status
Deli BBQ baked chicken	0.5 tons	\$3,500	Recommended
Deli baked chicken	0.4 tons	\$2,300	Recommended
Deli small sides	1.4 tons	\$6,000	Implemented
Produce	26.6 tons	\$14,000	Implemented
Bakery	12.8 tons	\$1,000	Implemented
Water	1,300,000 gal	\$7,000	Implemented
Total savings	41.7 tons waste diverted 1.3 million gallons of water saved	\$33,800	
GHG reductions *	67.2 metric tons CO2e (MTCO₂E)		



Feed People, Not Landfills (2017)



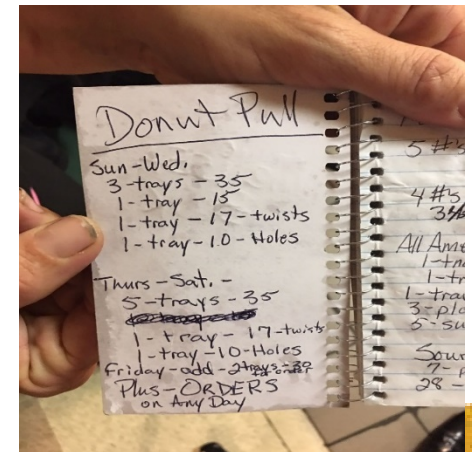
Venkatesan (Venki)
Gunasekaran, WSU
industrial engineering



2017 retail grocery findings: small chains

Small chain -

- Worked with two store.
- Both stores used mark downs for produce, then collected for local farmer to use for animal feed (about 9.1 tons/year)
- Excess bakery items go to trash, not aware of KFB option (2.4 tons/year)
- Kept hand-written logs of excess food





2017 retail grocery findings: large chains

Larger chain - behavior change needed

- Large chain has the resources and infrastructure in place
- Top management training and support needed to make progress



2018 Food Recovery Projects - NE KS

- Two projects
 - KDHE/CDC grant
 - Lawrence – Douglas County Health Department grant
- Goal is to:
 - Identify resources for food diversion,
 - Identify best practices,
 - Recommend change, and
 - Develop guidance for future technical assistance with sources in food waste management



2018 Food Recovery Projects - NE KS

CDC/KDHE grant

- Shawnee and Wyandotte counties (Topeka and Kansas City, KS)
 - High rates of food and health disparity as well as food deserts
 - Target up to 20 industrial, commercial and institutional facilities
 - Food recovery focusing on source reduction and diversion to hungry populations and animals.
 - Began Oct. 2017. Final report due July 15, 2018



2018 Food Recovery Projects - NE KS

CDC/KDHE grant

- 18 partnerships secured for research and technical assistance.
 - K-12 schools (public and private) – 5
 - Grocers – 5
 - Workplace cafeterias – 2
 - Hotels/convention center – 1
 - Hospitals/ Skilled nursing facility – 4
 - University – 1
- Feeding America's MealConnect app for mobile and desktop -
 - Harvesters and their agency partners
 - Kansas Food Bank and their agency partners



2018 Food Recovery Projects - NE KS

- CDC/KDHE grant
 - Early numbers: data finalization in progress

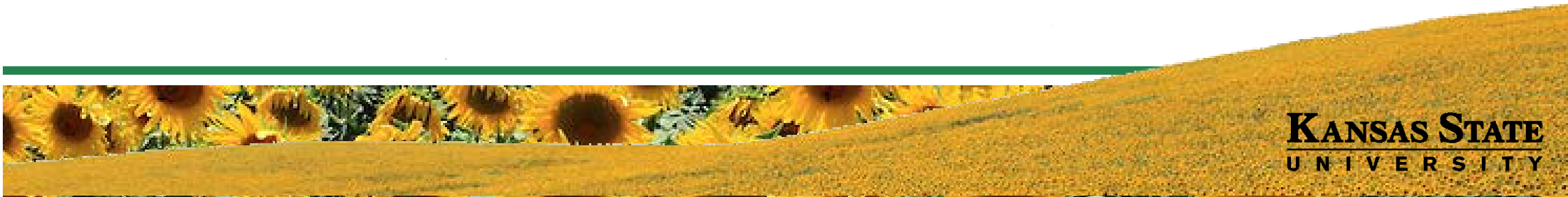
Source Type	Estimated annual tons of food that could be diverted from the landfill	Estimated annual environmental impact	Estimated annual economic impact
K-12 schools	21	12 metric tons CO ₂ e	\$7,047
Grocers	51	27 metric tons CO ₂ e	\$343,932
Workplace cafeterias	0.7	0.3 metric tons CO ₂ e	\$8,444
Hotels/convention center	3.4	1.8 metric tons CO ₂ e	\$11,036
Hospital/skilled nursing facility	78.9	30.6 metric tons CO ₂ e	\$208,872
University	14.2	8 metric tons CO ₂ e	\$24,816



2018 Food Recovery Projects - NE KS

Lawrence -Douglas County Health Department funding

- Began Oct. 2017. Report due June 30
 - 6 public schools
 - 1 university
- Data still under review
- Food recovery guidance for public schools and universities in review for publication on the PPI website, www.sbeap.org





FOOD RECOVERY. SIMPLIFIED.

Feeding America's MealConnect links your food donations with local nonprofits. For free.



SAFE



FAST

Start Now

Donate with MealConnect



FREE



CONVENIENT



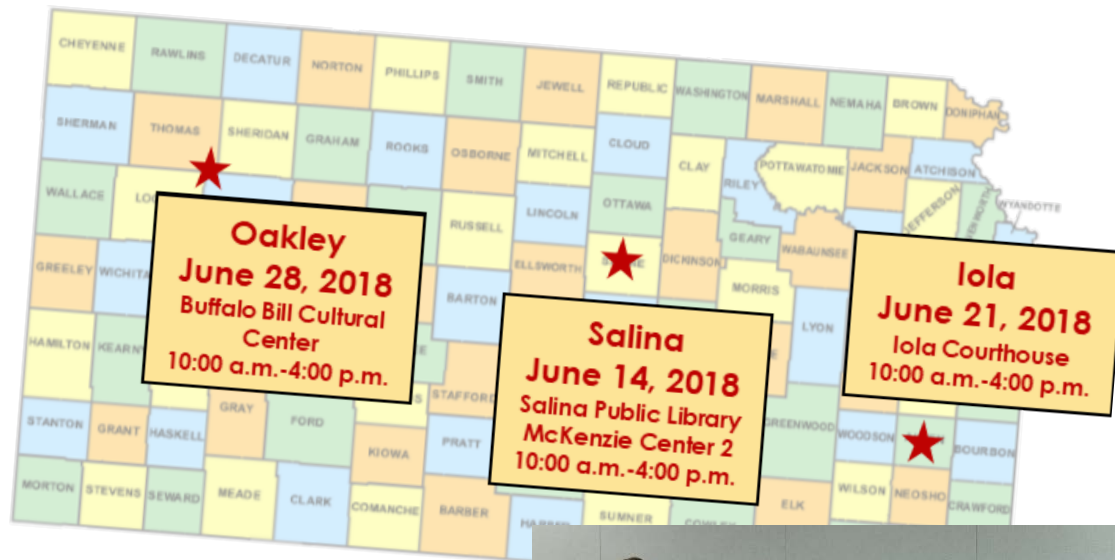
MealConnect PPI partnership

- Several Apps researched by PPI team for Kansas fit
- PPI research found this App best fit –
 - Stable funding through Google and other national partners
 - Feeding America network has established food safety and admin standards
- PPI will assist with App rollout
 - Harvesters in NE Kansas in June
 - Kansas Food Bank in other areas in later summer
- Who will use the App
 - Best fit for occasional donors – caterers, churches, events



USDA Rural Utilities Service Grant

Providing Technical Assistance And Training To Rural Entities To Reduce Food Loss And Find Alternatives To Landfilling Food Waste



Also, coming soon...

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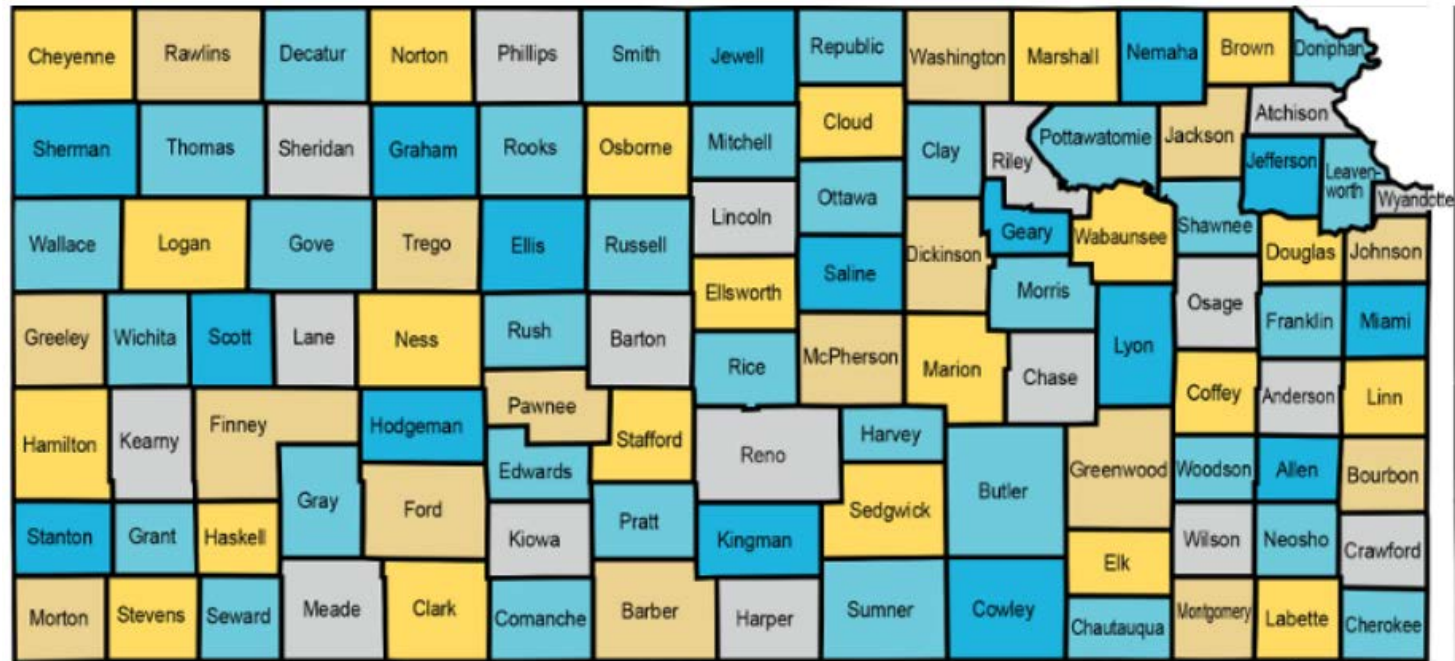
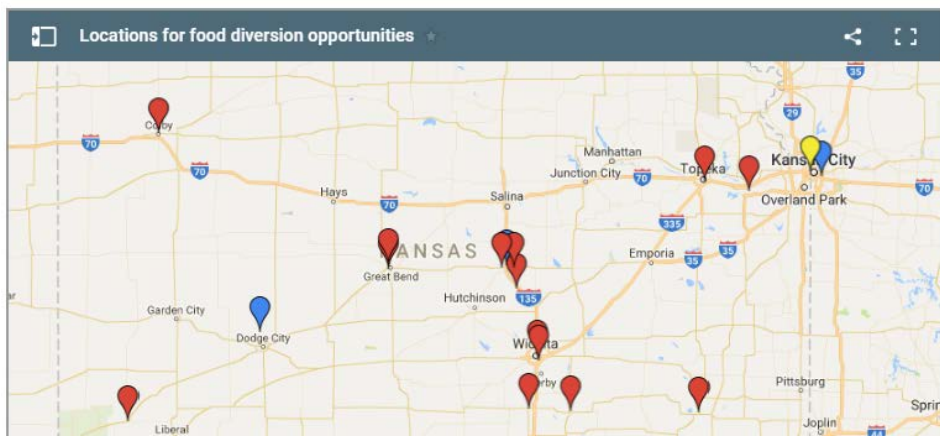
Food Recovery Programs

Overview of Food Recovery programs (2018 update in progress)

Resources for reducing food waste

Map of Kansas food diversion facilities

Are you aware of facilities in your area of Kansas that accept food-related materials, such as food pantries, animal feed operations, biodigesters, or composting facilities? Email or call 800-578-8898 to get it added to the map.



Questions?

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Love Letter to Food

