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# Environmental Stewardship: Reducing Food Waste while Improving Food Security

Sponsored by  
The Resilient Communities Project  
and  
The Economic Development Fellows (EDF) Consulting Program  
University of Minnesota

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## U of MN EDF Program

- The Economic Development Fellows (EDF) Consulting Program connects local companies or municipalities with graduate and professional students and postdocs at the University of Minnesota
  - Teams work with the client to identify project goals and develop strategies to address unique challenges
  - Wide range of project types, including product development, market entry, etc.
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# Resilient Communities Project

- Connects local government agencies in Minnesota with University of Minnesota students to advance community resilience and student learning through collaborative projects
  - 2018–2019 Project Partners: Ramsey and Scott Counties
  - Second semester of partnership between EDF and RCP
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# Reducing Food Waste While Improving Food Security

- Project Goal: Research information concerning wasted food and the challenges that exist in getting it to sources where it can be distributed for human consumption.
  - Secondary: Conduct interviews with local businesses/organizations to get a picture of the local landscape and identify issues specific to this region.
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# Objectives

1. What percentage of food discarded in Ramsey County could be diverted for human consumption?
  2. What are challenges/barriers to diverting edible food, and who are the players that can help address this issue?
  3. How have other local governments and their partners sought to address these issues, and what can Ramsey County learn?
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## Main Findings

- Open-Source Technology may be used in managing food supply chain operations for businesses & non-profits
  - The Ternary Model of food waste allows organizations to effectively communicate regarding their food waste issues and needs
  - Through facilitation of long-term relationships between stakeholders, Ramsey County may maximize sustained impact while minimizing their own effort
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## Main Findings cont.

- Drawing from case studies, Ramsey County may find success in:
    - Targeting of lower-power stakeholders (e.g. individuals, small local businesses) in the food waste stream as opposed to higher-power stakeholders (e.g. chain grocery retailers)
    - Redistribution of waste to higher in the food waste hierarchy
  - Based on survey results, a combination of policies centered around the three-tiered approach of “Provide, Educate, and Encourage” may be most effective at addressing barriers to food waste reduction, donation, and composting.
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# Presentation Outline

1. Food Waste Ternary Model
2. Stakeholder Analysis
3. Gaps Analysis of Previous Work
4. Case Study Analysis
5. Stakeholder Survey
6. Wrap-Up

We will take questions at the end of each section.

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# Food Waste Definition

- Purpose: provide introduction to Open-Source Technology
  - Manage food supply chain operations
  - Assist non-profits, create future directions
  - Frameworks that meet specific needs of stakeholders

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# Open-Source Software

- Software whose source code is available for users to modify
  - Users may study, change, and distribute software
  - Collaborative nature of the software
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# The Open Source Way

- Red Hat: Open-source software company recently acquired by IBM
  - Vision: exchange of free-flowing ideas allowing users to learn about and further ideas, participate in open and collaborative manner finding solutions to complex problems, etc..
  - Put diverse stakeholders into one arena to work together
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# Open-Source & Food Security

- Possibility with Ramsey County: Create network of open innovation designed to develop efficient food systems
  - Universal meeting point for stakeholders
  - Ground-up operating system
  - Predictive statistical analysis
  - Sharing of repetitive data - optimize general systems for open use
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# Ternary Model Proposal

- Living definition of what food waste is, based on an organization's mission
  - Adaptive food diversion suggestions
  - Categorization (ranking) of donated food
  - Case Study
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# Ternary Model: Pros & Cons

## Pros:

- Single technology contributor that generated revenue
- Meets technical needs based on a client-to-client basis
- Technology controlled by one organization

## Cons:

- Feasibility
  - Implementation and cost
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# Future Recommendations

- Create community of all stakeholders
  - Foster community engagement
  - Partner with larger corporations after design of minimally viable product
  - Summary: determine vital stakeholders, create basic open dialogue probin for interests
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# Food Waste Model Questions?

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# Stakeholder Analysis: Purpose

- Analyze scope of stakeholders and how more effective engagement of groups/individuals may lead to equitable food justice-based outcomes
  - Provide a foundation, framework and tools for engagement efforts, especially to create highest impact with fewest possible resources
  - Provide framing and context for other aspects of research/project
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## Definitions and Scope

- Stakeholder: any living entity or grouping of living entities that can directly or indirectly influence or be influenced by Ramsey County's effort to reduce and divert food waste
  - Heavy emphasis on people and groups thereof, but other entities were not fully excluded
  - Scope: limited to (1) local and (2) national/regional entities with a presence in or close relationship with Ramsey County
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# Framework

- Brainstorm and cast a wide net to understand full scope of influence and ensure key players aren't missed
    - ~50 determined
  - Group stakeholders into categories to better identify and understand similarities in influence and approach
    - Five groups: For profit, nonprofit/public, large spaces, individuals/households, and nature/environment
  - Not all stakeholders equal in value to analysis & potential impact, so must bifurcate and prioritize effectively
  - Search for parallels in engagement strategies for different stakeholders and ways to sustain - both to maximize influence with limited county resources
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# Stakeholder Analysis - Tools

- Developed to provide Ramsey County useful ways to organize and build upon information. Intended to be...
  - working documents rather than final products
  - shared, edited and refined among stakeholders as resource libraries

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# Stakeholder Analysis - Tools

First tool: detailed breakdown and analysis of each stakeholder

- Sheets split into groups determined in “framework”
  - Examples of each stakeholder
  - Power : Interest : Current Engagement = Overall Priority
  - Unique benefits and costs from stakeholders’ point of view
  - Specific methods of engaging stakeholders
  - General comments
  - <https://docs.google.com/spreadsheets/d/1aiQHD-xClQ6gdE2d3vE3uLb7bJpXWu9psPvA6HIQhCQ/edit#gid=0>
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# Stakeholder Analysis - Detail

Stakeholder Group	Examples	Power 1-10 (10 = highest)	Interest 1-10 (10 = highest)	Current Engagement 1-10 (10 = highest)	Overall Priority 1-10 (10 = highest)	Benefits	Costs	Engagement Opportunities	Contacts
Grocery Stores	Cub, Whole Foods, Aldi, Co-ops	10	10	7	10	tax benefit, publicity w/ community and corporate HQ, increased differentiation, reduced cost of waste discarding, increase likelihood that people will reciprocate when they can afford it, strengthen local relationships, reduce wasted inventory space	time (research, coordination, managing food flow), may pay fees in diversion partnerships (NOT the case w/ SHH and likely others), slight reduction in incentive for "making the sale"	survey, educational handouts, Ramsey County "club" membership (w/ online directory listing), "pledge 1%" enrollment, introductions to and public recognition from nonprofits like SHH, working "top down" by connecting w/ corporate HQ, delivery trucks gather store discards and make last stop at nonprofit, inventory efficiency/tracking, policy changes, facilitated dialogue between stakeholders, spoiler alert app	store mgr or corporate & branch sustainability dept/person
Grocery at Diversified Retail	Target, Walmart	10	10	8	10	tax benefit, publicity w/ community and corporate HQ, increased differentiation, reduced cost of waste discarding, increase likelihood that people will reciprocate when they can afford it, strengthen local relationships, reduce risk in entering grocery niche, reduce wasted inventory space	time (research, coordination, managing food flow), may pay fees in diversion partnerships (NOT the case w/ SHH and likely others), slight reduction in incentive for "making the sale"	survey, educational handouts, Ramsey County "club" membership (w/ online directory listing), introductions to and public recognition from nonprofits like SHH, working "top down" by connecting w/ corporate HQ, delivery trucks gather store discards and make last stop at nonprofit, policy changes, facilitated dialogue between stakeholders, spoiler alert app	store mgr or corporate & branch sustainability dept/person
Restaurants - non-chain/local	St. Paul Grill, Urban Growler, Pazzaluna	9	9	5	10	tax benefit, publicity w/ community, increased differentiation, reduced cost of waste discarding, increase likelihood that people will reciprocate when they can afford it, strengthen local relationships, reduce wasted inventory space	time (research, coordination, managing food flow), may pay fees in diversion partnerships (NOT the case w/ SHH and likely others), slight reduction in incentive for "making the sale"	survey, educational handouts, Ramsey County "club" membership (w/ online directory listing), "pledge 1%" enrollment, introductions to and public recognition from nonprofits like SHH, last shift delivery drivers, inventory efficiency/tracking, policy changes, facilitated dialogue between stakeholders, spoiler alert app, copia/meal connect app	store mgr/owner
Restaurants - chain/national	McDonalds, Caribou, Chipotle, Panera	9	9	7	10	tax benefit, publicity w/ community and corporate HQ, increased differentiation, reduced cost of waste discarding, increase likelihood that people will reciprocate when they can afford it, strengthen local relationships, reduce wasted inventory space	time (research, coordination, managing food flow), may have to pay some fees in diversion partnerships (NOT the case w/ SHH and likely others), slight reduction in incentive for "making the sale"	survey, educational handouts, Ramsey County "club" membership (w/ online directory listing), "pledge 1%" enrollment, introductions to and public recognition from nonprofits like SHH, working "top down" by connecting w/ corporate HQ, last shift delivery drivers, policy changes, facilitated dialogue between stakeholders, spoiler alert app, meal connect app	store mgr or corporate sustainability dept/person
Farms/Producers	UMN Agriculture dept, Frogtown Farm, Growing West Side	8	8	6	10	tax benefit, publicity w/ community, increased differentiation, reduced cost of waste discarding (including by better managing amount produced), increase likelihood that people will purchase when they can afford it, strengthen local relationships, reduce wasted inventory space	time (research, coordination, managing production flow), may have to pay some fees in diversion partnerships (NOT the case w/ SHH and likely others)	survey, educational handouts, Ramsey County "club" membership (w/ online directory listing), "pledge 1%" enrollment, introductions to and public recognition from nonprofits like SHH, farmers market and other point-of-sale "recycle" bins, inventory efficiency/tracking, policy changes, facilitated dialogue between stakeholders, spoiler alert app	MN Farmers Union, Farmer's Markets
	El Burrito Mercado,					tax benefit, publicity w/ community, increased differentiation, reduced cost of waste discarding, increase likelihood that people will come when they can afford it, strengthen local relationships, reduce	time (research, coordination, managing food flow), slight reduction in incentive for	survey, educational handouts, Ramsey County "club" membership (w/ online directory listing), "pledge 1%" enrollment, introductions to and public recognition from nonprofits like SHH, create truck group where nonprofit is their "last stop," inventory efficiency/tracking, policy changes, facilitated dialogue	

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# Stakeholder Analysis - Tools

## Second tool: Cross Engagement Matrix

- Describes ways stakeholders can engage each other in unique ways
  - Methods should allow sustained engagement with minimal effort from Ramsey County,
    - Results in higher impact with reduced demand on limited county resources
    - May or may not require initial facilitation by Ramsey County
  - Top left corner focuses on universal engagement methods
    - Can be used to engage all types of stakeholders at once - best use of limited resources
  - <https://docs.google.com/spreadsheets/d/1CMkg5ZkyKx5AUPF2rCJOnPHyuZT9x9HrMgyRCX74XUg/edit#gid=0>
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# Cross-Engagement Matrix

Stakeholder Type	ALL	For Profit Companies	Public Orgs/Nonprofits	Large Spaces	Individuals/Households	Nature/Environment
ALL	Community forum/events, integrative leadership org with select reps from each stakeholder group to meet monthly (e.g. Itasca Project), education campaigns/events, explicit alignment on shared goals/processes/definitions/infrastructure, modeling/adapting ideas from other stakeholders, develop and share assessment resources, establish cmty gardens and/or drop off locations, leveraging tech/apps/software, develop case studies to describe how relationships can work, explicit and public joint ventures					
For Profit Companies		modeling/adapting ideas from similar stakeholders (including but not limited to others in Ramsey County), form support groups of similar function leaders or related cmtes across orgs, pool resources/infrastructure for efficiency, develop and enforce standards	direct food donations, seminars/workshops for employees, direct/indirect monetary contributions, volunteer groups, pool resources/infrastructure (e.g. delivery trucks), create laws/ordinances that dictate how companies approach waste	include low waste amt in contract, offer discount/refund to orgs that book space and keep waste low, allow/require renters to take or divert leftover food when the event ends	employees influence/choose companies partially based on their diversion/waste efforts, create employee or neighborhood groups, companies/houses have drop off locations for employees/neighborhood	Be thoughtful of how owned/leased buildings can creatively influence/incorporate nature and environment, encourage/facilitate employees use of local food sources (community gardens, local farms/producers, etc.), include in mission/vision/values, limit building on undeveloped land
Public Orgs/Nonprofits			modeling/adapting ideas from similar stakeholders (including but not limited to others in Ramsey County), form support groups of similar function leaders or related cmtes across orgs, pool resources/infrastructure for efficiency, develop and enforce standards	direct food donations, connect space food vendors to food diversion nonprofits, free/discounted educational advertising, discounted use of space, educate space on how to run efficiently, create laws/ordinances that dictate how spaces approach waste	volunteer, monetary donations, serve on boards, employees influence/choose companies partially based on their diversion/waste efforts, create employee or neighborhood groups, companies/houses have drop off locations for employees/neighborhood	Be thoughtful of how owned/leased buildings can creatively influence/incorporate nature and environment, encourage/facilitate employees use of local food sources (community gardens, local farms/producers, etc.), include in mission/vision/values, limit building on undeveloped land, protect land through policies
Large Spaces				modeling/adapting ideas from similar stakeholders (including but not limited to others in Ramsey County), form support groups of similar function leaders or related cmtes across orgs, pool resources/infrastructure for efficiency, develop and enforce standards	Petition and publicize preference for spaces that limit waste, utilize spaces that limit waste for personal events, understand and use green space efforts correctly and educate and encourage fellow attendees to do so as well	Be thoughtful of how space(s) can creatively influence/incorporate nature and environment, include in mission/vision/values, limit building on undeveloped land
Individuals/Households					modeling/adapting ideas from similar stakeholders (including but not limited to others in Ramsey County), form support groups of similar function leaders or related cmtes across orgs, pool resources/infrastructure for efficiency, develop and enforce standards	Volunteer, educate and advocate to others about how to positively influence nature/environment, use home space efficiently and creatively incorporate nature/environment, consume less
Nature/Environment						modeling/adapting ideas from similar stakeholders (including but not limited to others in Ramsey County), form support groups of similar function leaders or related cmtes across orgs, pool resources/infrastructure for efficiency

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# Stakeholder Analysis - Tools

## Third Tool: Supplemental Word document to detailed worksheets

- Created upon recognizing limited functionality of spreadsheets
  - Includes summary of top suggestions to engage multiple stakeholders: integrative leadership coalition, facilitate “in group,” and organize library of resources/support
  - Provides links to stakeholder examples - ideally of how they are already being engaged and contact info
  - Expansion of links to engagement resources and ideas
  - <https://docs.google.com/document/d/1EhmHHkCxVcP40C76jVkY5UoBo4xYccjAehfJpSDRz3c/edit>
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# Stakeholder Analysis Supplement

## For Profit Businesses

### Stakeholders

1. Grocery Stores ([Cub](#), [Whole Foods](#), [Aldi](#), [Co-ops](#), [STP Commerce Directory](#))
2. Grocery at diversified retail ([Target](#), [Walmart](#))
3. Restaurants - non-chain/local (St. Paul Grill, Urban Growler, Pazzaluna, [STP Commerce Directory](#))
4. Restaurants - chain/national ([McDonalds](#), [Caribou](#), [Chipotle](#))
5. Farms/Producers (incl. [Farmer's markets](#) & association branches like [MN Farmers Union](#))
6. [Food trucks](#) & [Caterers](#) (incl. Brick & mortar subsidiaries like [El Burrito Mercado](#) and [Kincaid's](#))
7. Food Manufacturers (General Mills, Summit Foods, Old Dutch)
8. Food mass transportation services ([C.H. Robinson](#), [Murphy Warehouse](#), [Trademark Transport](#))
9. Food small scale transportation/delivery (Grubhub, Bitesquad, UberEats)
10. Farm suppliers/support (e.g. seed, equipment, fertilizer, flash freezers - [CHS](#), [Winfield United](#))
11. Hotels and other lodging ([STP Commerce Directory](#))
12. Major non-food corporations ([Ecolab](#)), incl large nonprofits ([MPR](#))
13. Major office buildings and leasing companies (e.g. [CSM](#), [Colliers Intl](#), [CBRE](#))
14. Small local non-food businesses (Neighborhood Associations like [Grand Ave Biz Assoc](#))

### Engagement Ideas/Resources

1. Create [informational documents/pamphlets like this](#) from Hennepin County
    - a. [NRDC website library](#) has many educational materials as well
  2. Inform/Educate the public: <https://www.youtube.com/watch?v=g3VtpgzNMIE> and lots of other videos online - might be worth compiling them in one list that stakeholders can access
    - a. And share information about how it benefits them (and their bottom line) ([example](#)). And [guides to measure waste](#).
  3. Helpful apps/programs to reduce/divert waste: [Meal Connect](#), [SimpleOrder](#), [IBM Food Trust](#), [Spoilert Alert](#), [Food Cowboy](#), [Food Rescue Us](#), [Copia](#)
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# Limitations & Next Steps

- Opportunities not tested as part of this analysis
    - Though other team members did look more into metrics and case studies of what has been done in other places along with surveying several high priority stakeholder groups
    - Will require some trial and error to find out what works well specifically for Ramsey County
  - Time limitation
    - One-semester project - this is really a continuous improvement effort. Tools were drafted by our team but will be most effective if refined by Ramsey County with direct and explicit input from stakeholders
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# Stakeholder Analysis Questions?

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# Gaps Analysis: Introduction

- Approximately 15% of MSW categorized as food waste
    - 39.73 million tons of food waste generated in 2015
      - 2.10 million tons composted (5% of total)
      - 7.38 million tons combusted for energy (19% of total)
      - 30.25 million tons sent to landfill (76% of total)
  - Challenges in changing trends:
    - Organics category
    - How much does food waste contribute to organic waste?
    - Impact of food waste strategy changes on waste stream
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# SCORE Report: Overview

- Report generated by Select Committee on Recycling and Environment (SCORE)
- Collects information on waste from counties
  - In Minnesota, 10% of MSW comprised of organics
  - Food comprises 5.5% of organic waste in Minnesota, but 14.8% in metropolitan areas

# SCORE Report: Analysis

Description		Ramsey County	Hennepin County	Washington County
Revenues	Service Fees	\$11,606,554	\$3,805,263	\$3,071,940
	Processing Facility Tip Fees	\$330,993	\$0	\$0
Expenditures	Planning and Administration	\$3,301,104	\$2,085,439	\$338,174
	Recycling	\$2,614,650	\$1,567,008	\$0
	Organics	\$950,286	\$689,525	\$113,205
	Source Reduction	\$0	\$33,500	\$0
	Waste-to-Energy Processing	\$3,021,470	\$0	N/A
Organics Collected for Recycling (tons)	Food-to-Livestock	41,623	24,308	15,536
	Food-to-People	2,663	0	835



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# Food Waste Reduction & Rescue

- Households the greatest contributor to food waste
    - Challenges: lack of motivating factors for waste reduction
  - Retailers handle large amounts of food, receive tax benefits, have incentive to reduce waste fees
  - Push to increase redirection of food
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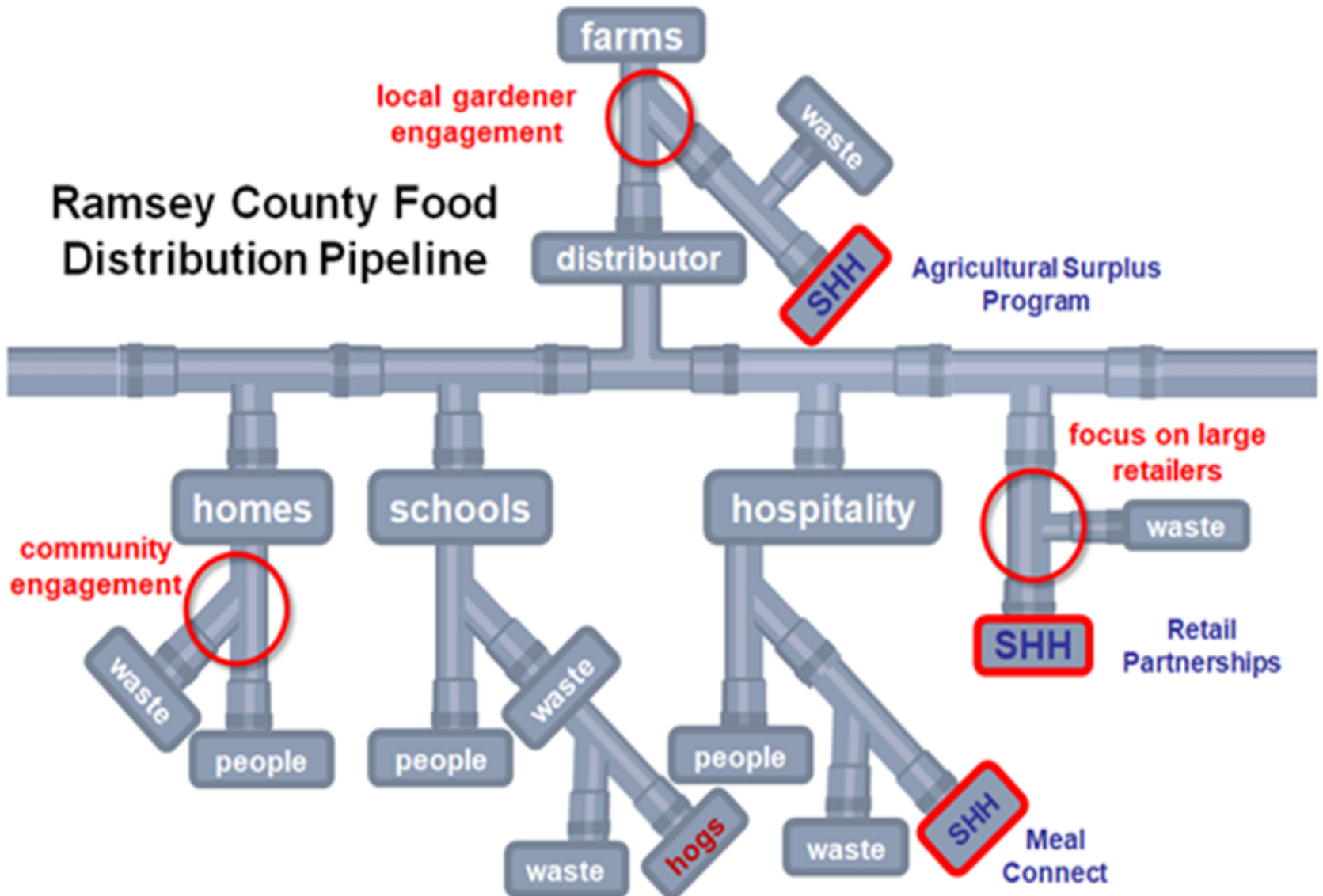
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# NRDC Strategies

- National Resource Defense Council (NRDC): pilot studies in different cities
- Recommendations include:
  - Establish baseline levels of food waste
  - Engage local businesses & communities
  - Incentivize produce donations from farms
  - Expand food donation infrastructure



# Twin Cities Food Rescue Ecosystem



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# Ramsey County Opportunities

- Opportunities in partnering with Second Harvest Heartland:
    - Waste distribution higher in the hierarchy
    - Refusal of blemished produce
    - Consumer education
  - Renegotiation of waste fees for non-profits
  - Expansion of food rescue infrastructure?
    - County-specific baselines
    - Gaps in food waste pipeline
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# Case Study Analysis

- Diverse range of strategies available to address current gaps
  - Types of programs that may be low-hanging fruit
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# Strategy: Consumer Education Campaigns

- Inform consumers about food waste problem
    - Different modes of information distribution
  - Aims of campaigns as:
    - Value-centered: focus on moral obligation
    - Skills-centered: teach consumers skills they can use
  - [Boulder/Broomfield County School Recycling and Environmental Education Program](#) (Colorado); [Feedback](#)
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# Strategy: Gardener Engagement

- Gleaning: collecting food from gardens, orchards or other agricultural lands that otherwise would not be harvested and eaten
  - Transportation of gleaned produce
  - [Urban Harvesting Program](#) (San Francisco)
  - [Garden Lease Program/Homegrown Minneapolis](#)
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# Strategy: Food to Livestock

- Diverting food to livestock is below priorities of reducing wasted food & donating food to hungry people
    - Above composting or sending food waste to landfill
  - Primary benefits: replace other sources of animal feed, resources that go into creating these products
  - [KDC Agribusiness](#) (New Jersey)
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# Strategy: Expanded Organics Recycling Services

- Municipal service: residential food waste collection programs increased 87% in the United States from 2014 to 2017
  - Examples:
    - [Portland, OR](#): yard waste organics expanded to include food waste
    - [Austin, TX](#): all properties must provide recycling for tenants and employees as of October 2017 - part of “zero waste” by 2040
    - [San Francisco, CA](#): composting and recycling mandatory for all residents and businesses
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# Strategy: Food Waste Drop-Off Sites

- Local sites for residents to recycle food scraps
    - Over half of current programs reportedly established in last 3 years
  - 25 of 30 respondents to 2017 BioCycle survey reported program success
  - [Western Lake Superior Sanitary District](#) (Duluth, MN)
  - [Tompkins County](#) (New York State)
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# Strategy: Recycling Contract Negotiation for Businesses

- Offer discounted recycling services to businesses
    - Incentive for recycling; high potential for diverting waste
  - [Love Food Not Waste](#) (Eugene, OR)
    - Businesses may sign up for food waste recycling services at 20% below garbage hauling rates
  - [Cupertino, CA](#)
    - City goal of diverting 75% of Cupertino's waste from landfills
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# Strategy: Anaerobic Digestion

- Process by which organic material is broken down by microorganisms in absence of oxygen
    - Methane gas produced can be captured; used as an energy source
  - [Digester Renovation with Alternate Power Sources](#)  
(West Lafayette, IN)
    - Repurposing of existing anaerobic digester at wastewater treatment plant
  - Hennepin County, MN
    - Request for qualifications published (October 2018) in search of partner companies
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# Strategy: Donation Matching Software

- Appropriate technology may improve the efficiency and scale of food rescue
    - Connect food donors with recipients based on food needed, storage available, timing of transport and delivery
  - Food Rescue US (formerly Community Plates)
    - Connects food retailers, volunteer food transporters, and food pantries/meal programs
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# Strategy: Small Business Consulting Services

- Understanding problem of food waste, cost-saving potential, and solutions are first steps for businesses
    - In-person or online consulting sessions with professionals
  - Food Waste Experts:
    - Consultants provide information and solutions aimed at reducing food waste
    - Target: restaurants, schools, hospitals, hotels, etc.
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# Case Study Conclusions

- 2 major categories:
    - Targeting lower-power stakeholders
    - Redistribution of waste to higher in the food waste hierarchy
  - Case studies: focus on engagement of low-powered entities
  - Overall, strategies involve engaging variety of stakeholders; promoting redistribution of food waste across the hierarchy
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# Gaps Analysis & Case Study Questions?

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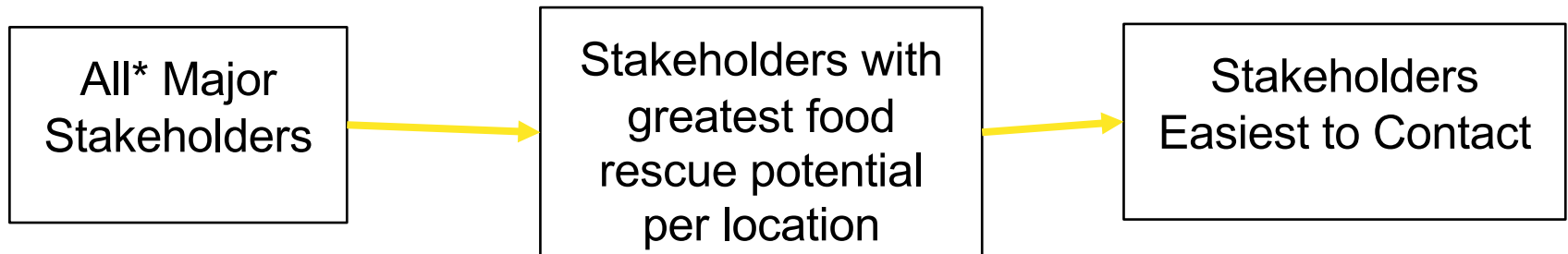
# Survey of Food Waste & Donation: Ramsey County

- Objective in Scope of Work: survey of issue stakeholders
  - Addressed 2 of 3 key questions:
    - What are the **barriers** to diverting edible food from the point of waste to people experiencing food insecurity in Ramsey County?
    - Who are the **players** that can help to address this issue (e.g., businesses, schools and other institutions, government, community garden organizations, consumers, etc.), and what role can they play?
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# Stakeholder Selection

- Residential
- Restaurants & Caterers
- Colleges & Universities
- K-12 Schools
- Hospitality
- Health Care
- Events & Recreation Facilities
- Correctional Facilities
- Grocers & Markets
- Food Wholesalers & Distributors
- Food Manufacturing & Processing

- Grocery Stores
- Institutional Food Service
- Local Grocery Stores
- Schools
- Hospitals

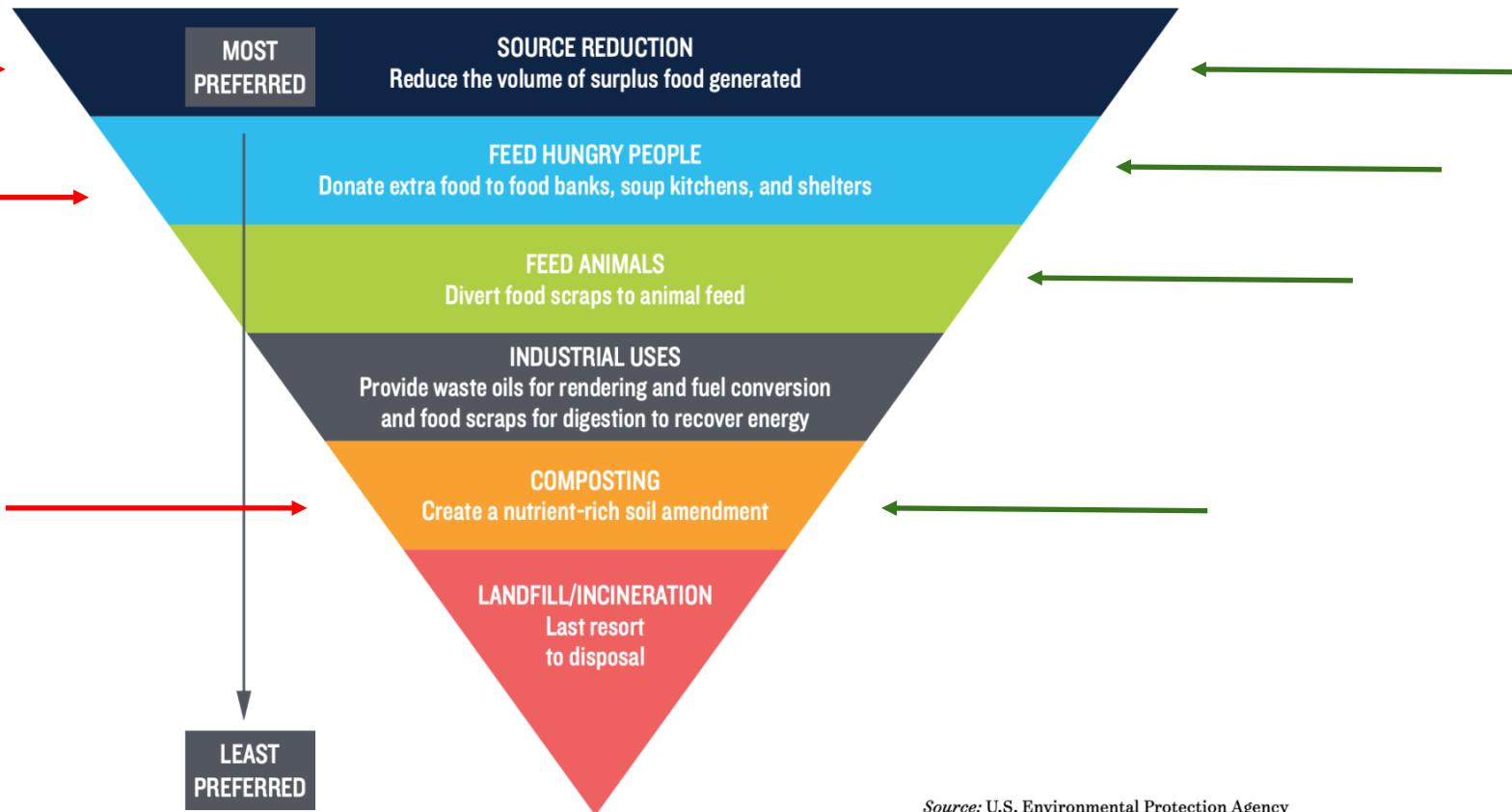


\* Displayed figure contains a subset. Figure taken from NRDC Report (2017) Estimating Quantities and Types of Food Waste at the City Level

# Survey Development

Barriers

Assessment



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# Final Survey Sections

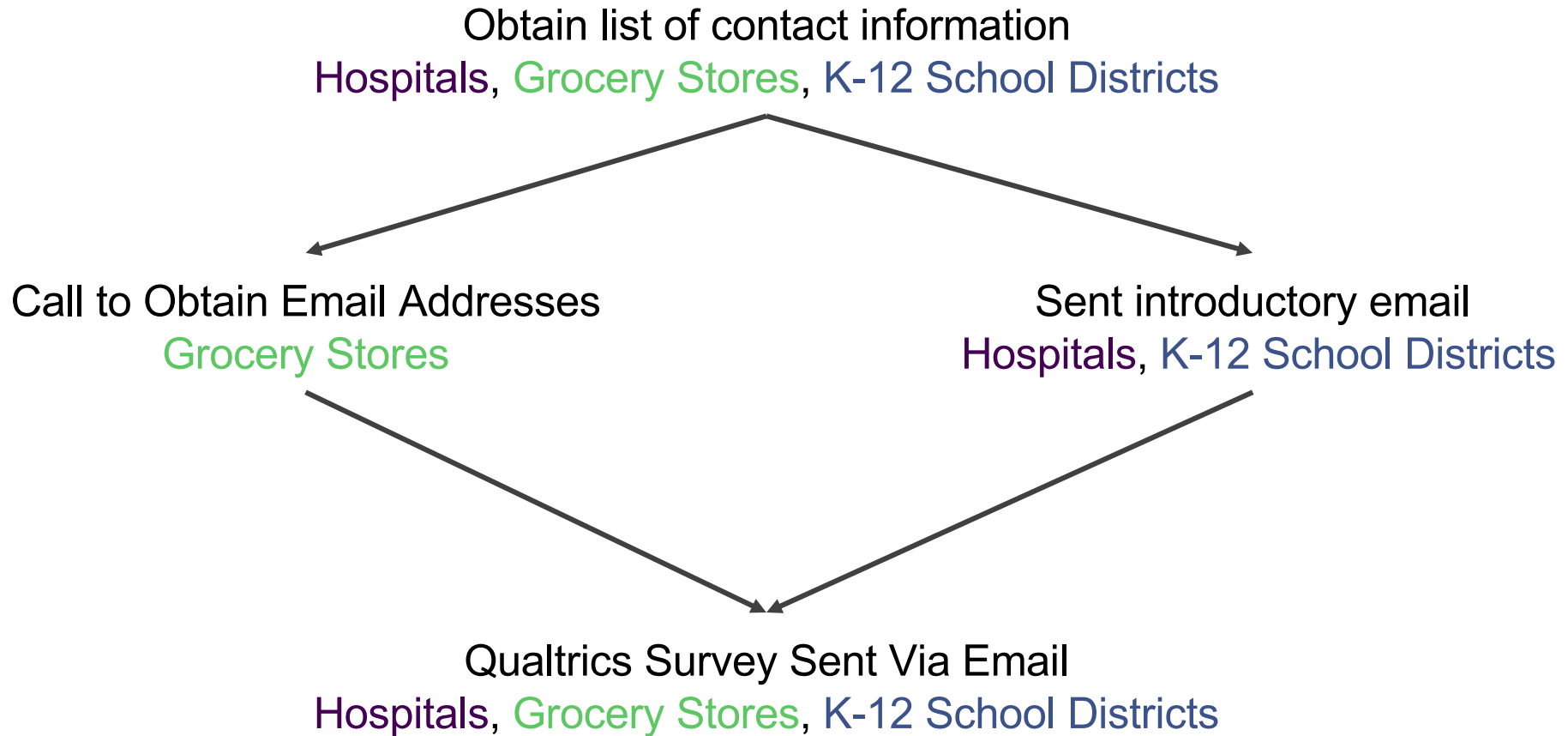
Survey Completion  
0% ————— 100%

There are **five** sections in our survey. The section you are about to start is highlighted.

1. Institution Demographics (~1 min)
  2. Assessment of Food Waste & Food Donation (~6 min)
  3. Barriers to Food Waste Reduction (~5 min)
  4. Institution Thoughts on Food Waste & Food Donation (~2 min)
  5. Conclusions (~3 min)
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# General Procedure



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# Final Participant Makeup

Table 1: Sampling information for Ramsey County Food Waste & Recovery survey.

	Contacted	Declined	No Answer	Given Survey	Completed Survey
Hospitals	3	0	1	2	1
School Districts	6	0	0	6	6
Local Grocery Stores	92	18 (19.6%)	48 (52.2%)	26 (28.2%)	12 (13.0%)

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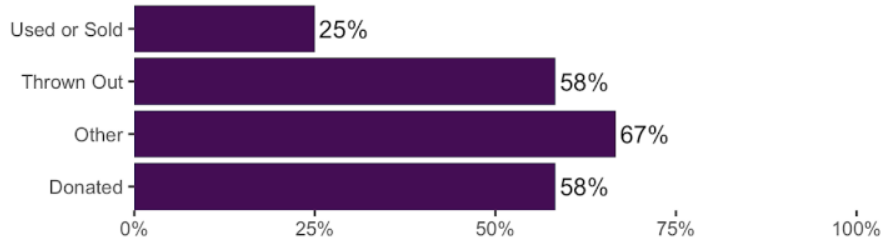
# Survey Results

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# Assessment of Food Waste/Donation

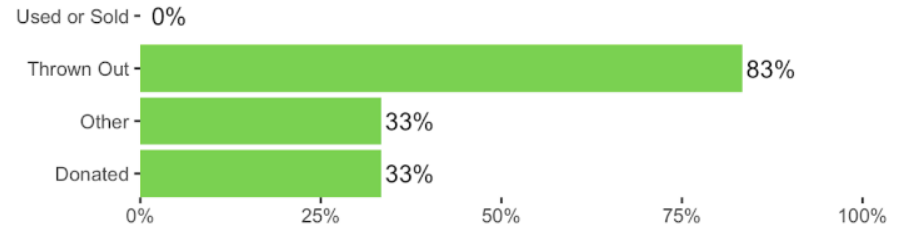
## Grocery Stores

What happens to food that is out of date?

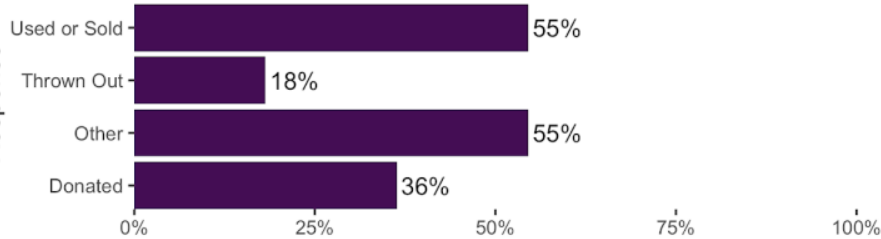


## K-12 School Districts

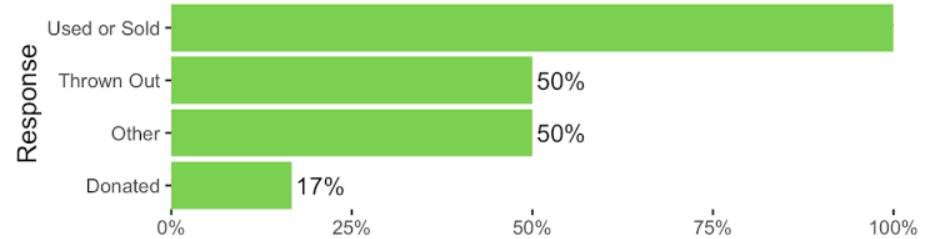
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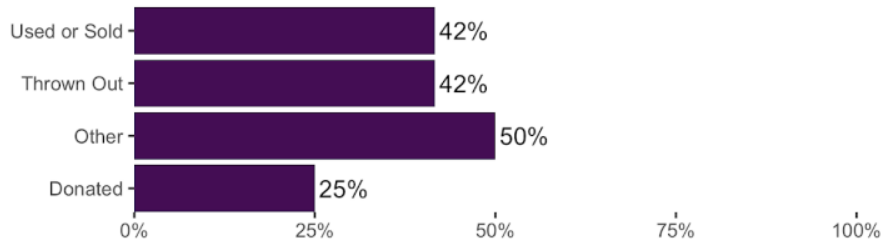
What happens to food that is close to expiration?



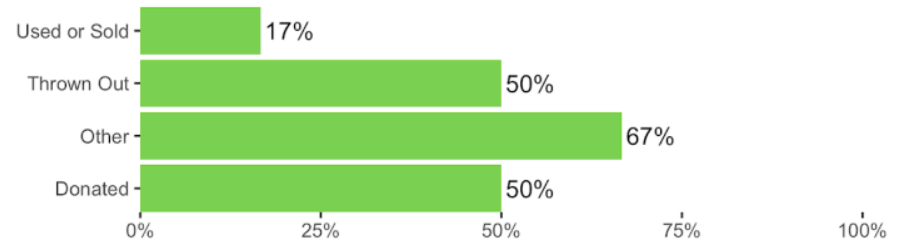
What happens to food that is close to expiration?



What happens to food that has damaged packaging?



What happens to food that has damaged packaging?



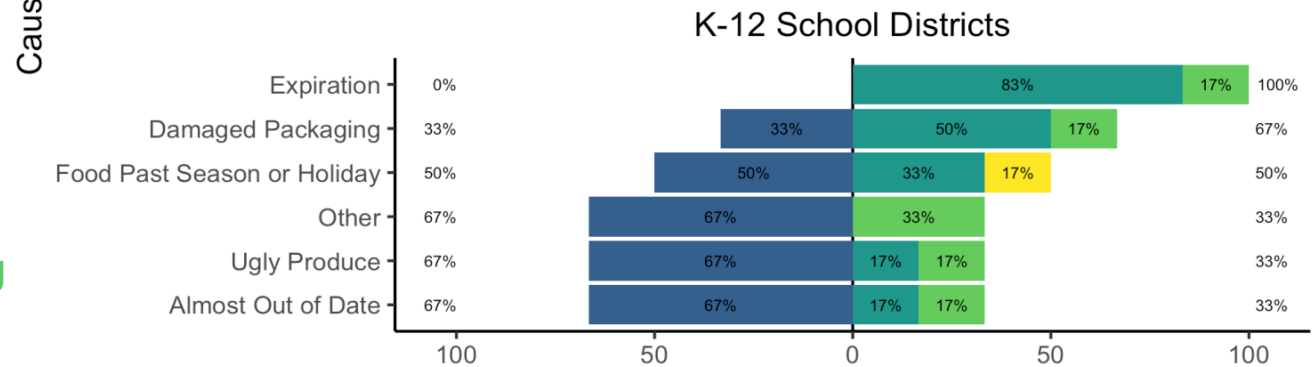
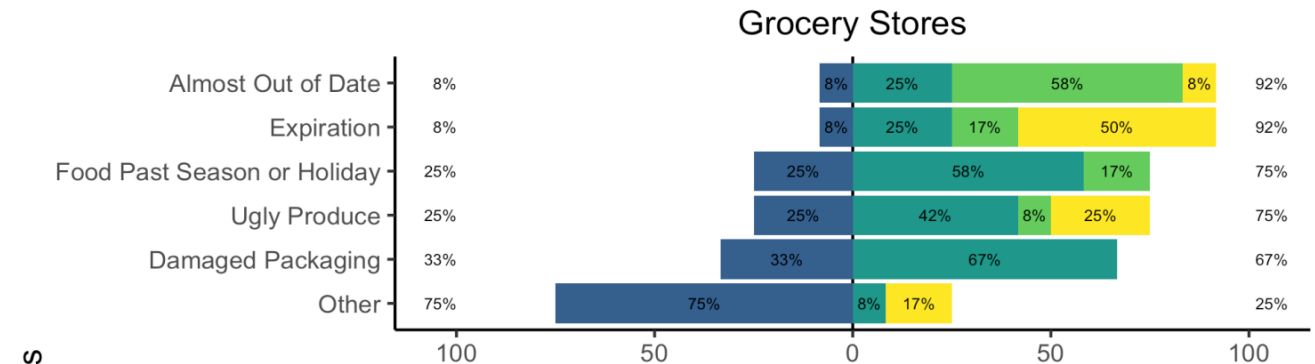
% that said 'Yes'

% that said 'Yes'



# Causes of Unsaleable Food

- Almost out of date
- Food expiration
- Ugly produce



- Food expiration
- Damaged packaging

Percentage

Response   ■ Not a Cause   ■ Minor Cause   ■ Moderate Cause   ■ Major Cause

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## Diagnosis of Food Donation

- 42% of grocery stores & 33% of school districts donate
  - Donated to: Hallie Q Brown Community Center, Keystone Food Shelf, Neighborhood House, 12 Baskets and the Ralph Reeder Food Shelf
  - Many respondents donate vegetables and fruits
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# Food Waste Attitudes

“How important is it to your institution to reduce food waste?”

## Grocery Stores:

58.3%	Extremely Important
33.3%	Very Important
8.3%	Moderately Important
0%	Slightly Important
0%	Not at all Important

## K-12 School Districts:

16.7%	Extremely Important
83.3%	Very Important
0%	Moderately Important
0%	Slightly Important
0%	Not at all Important

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# Food Waste Attitudes

“Does your institution have an expressed commitment to reducing food waste?”

Grocery Stores - 91.7%

K-12 School Districts - 16.7%

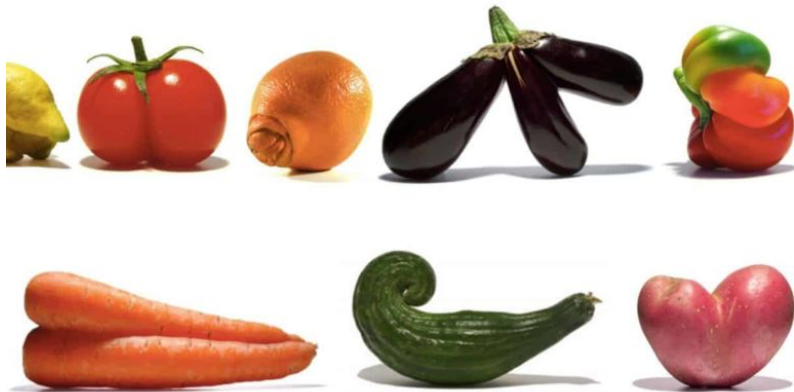
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# Food Waste Attitudes

“Does your institution sell ugly produce?”

Grocery Stores - 41.7%



“Does your institution use ugly produce in its pre-made dishes?”

Grocery Stores - 50%

K-12 School Districts\* - 33.3%

\*None of the schools that make food from scratch indicated that they use ugly produce

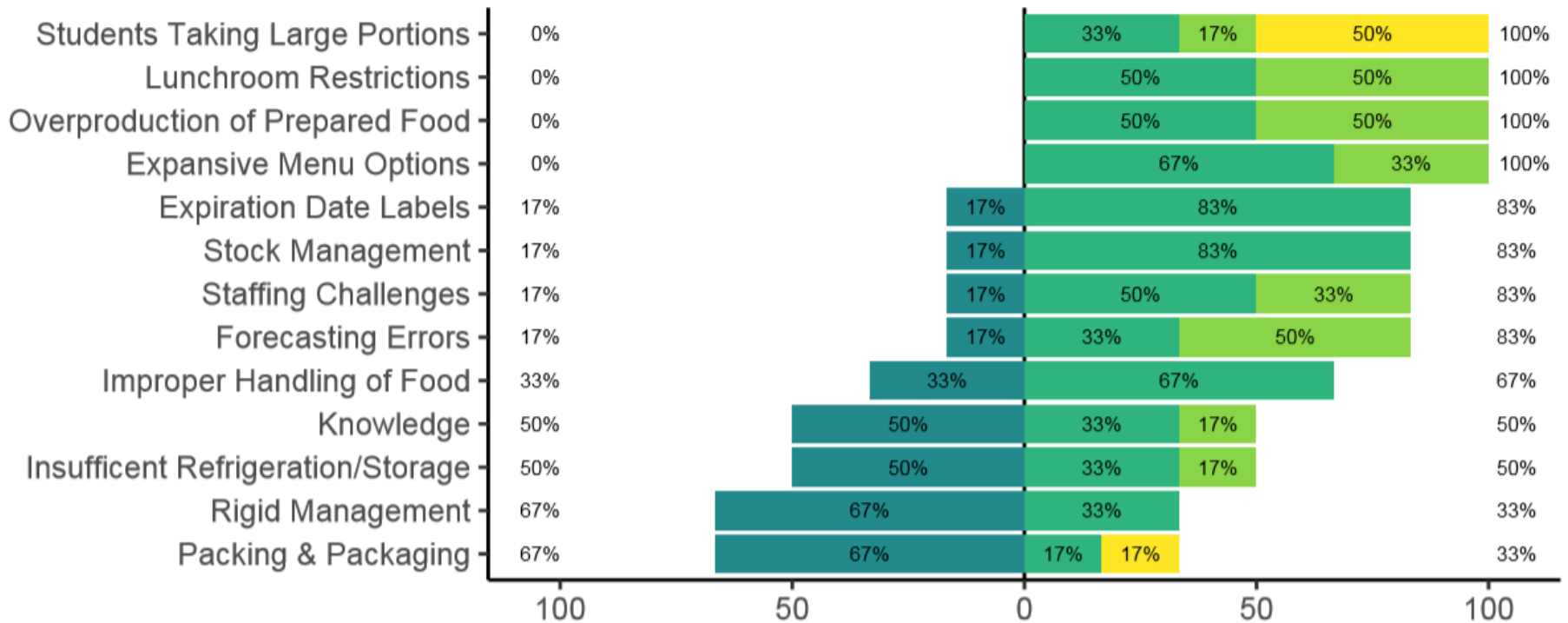
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# Barriers: Food Waste Reduction

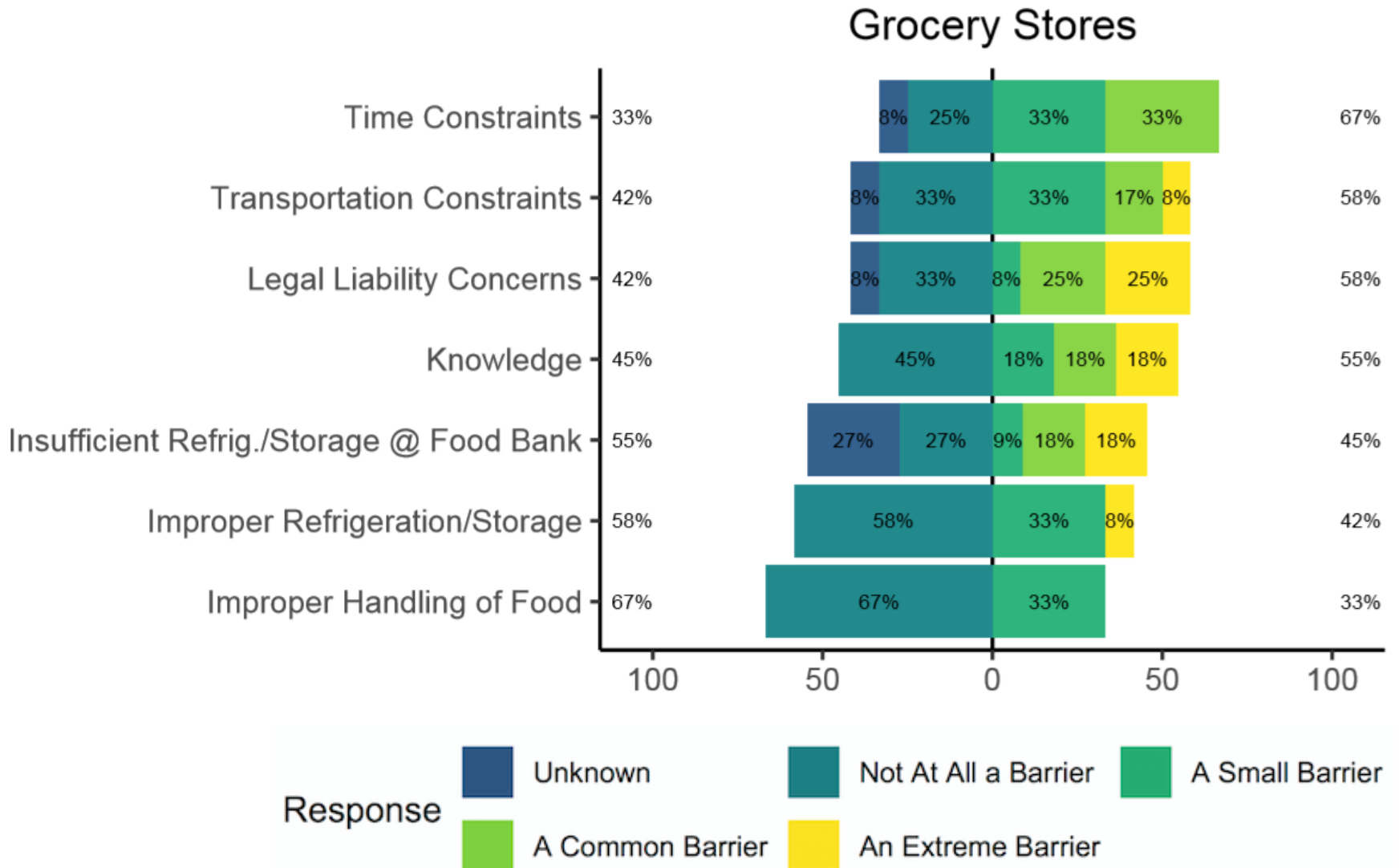


# Barriers: Food Waste Reduction

## K-12 School Districts



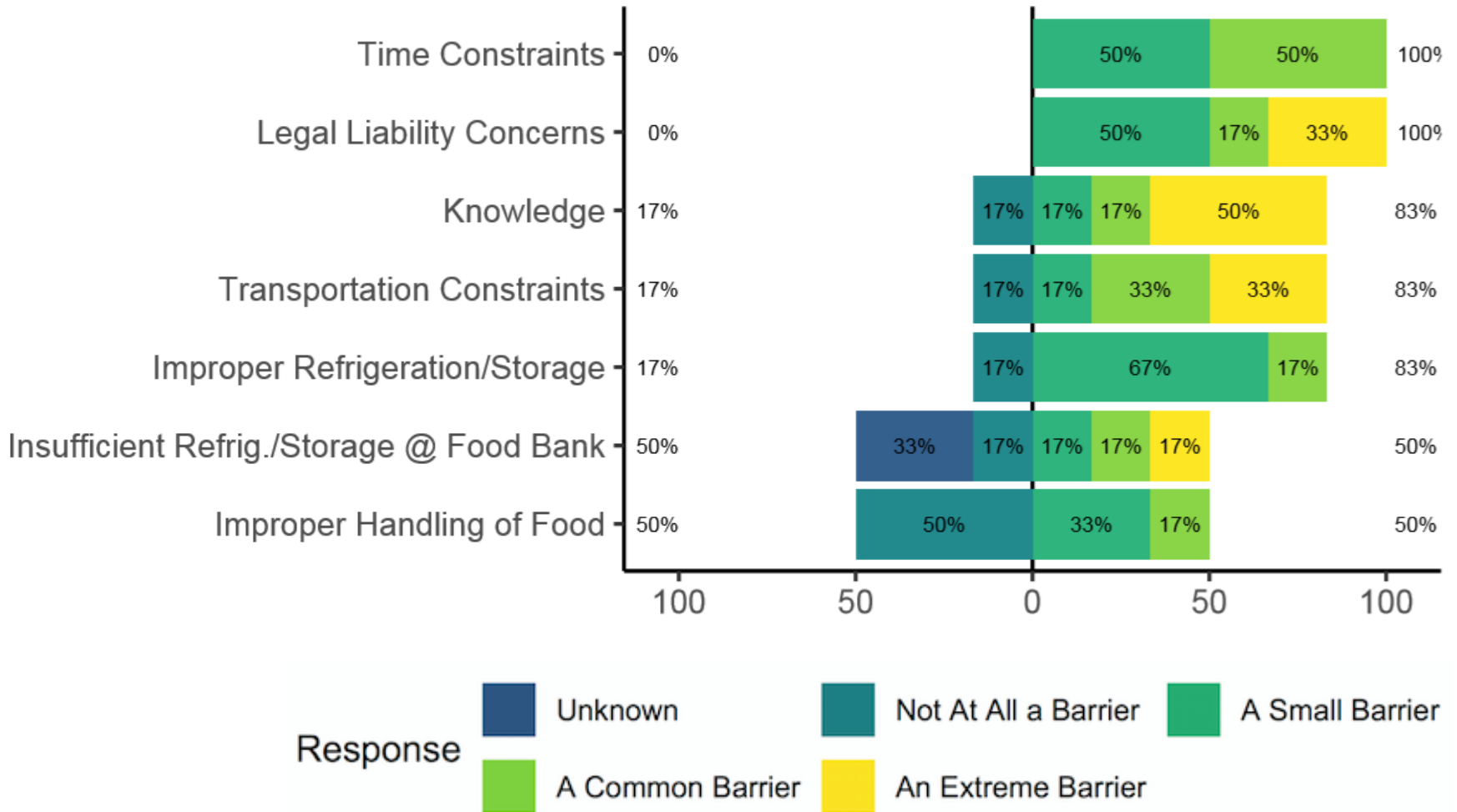
# Barriers: Donation





# Barriers: Donation

## K-12 School Districts

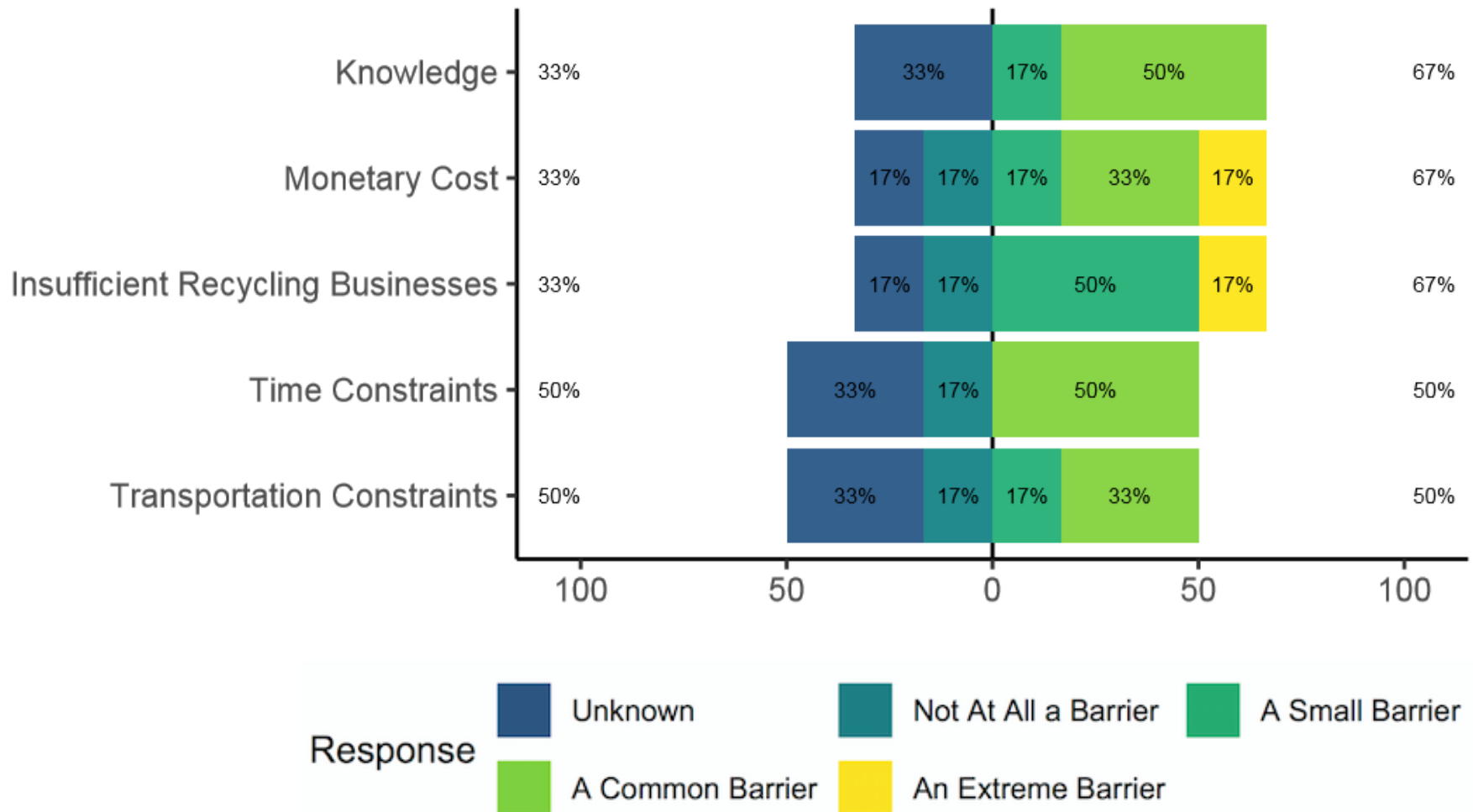


# Barriers: Composting



# Barriers: Composting

## K-12 School Districts



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# What Institutions Are Doing Well

- Positive attitudes toward food waste reduction
  - 42% of grocery stores & 33% of school districts donate to food banks
  - Food that is out of date, close to expiration, or has damaged packaging is not just always thrown away
  - School districts
    - ◆ Managing almost out of date food
  - Grocery Stores
    - ◆ Price reduction
    - ◆ Giving food to employees
-

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# What Institutions Can Improve

1. Donation of food past its expiration date label, when appropriate
  2. Donation of food with damaged packaging, when appropriate
  3. Increased donation of meat/dairy products
  4. Measuring food waste and food diverted
  5. Managing expiration
-

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# Recommendations for Ramsey County Public Health

Provide

Educate

Encourage

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## Recommendations | Provide



→ Education about food waste reduction, food donation, and food composting



→ Options to reduce the time and transportation constraints of food donation



→ Options to reduce the monetary cost of recycling

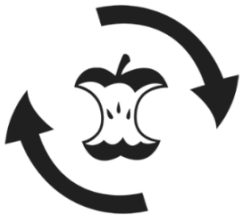
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## Recommendations | Educate



→ Actively educate stakeholders on steps of food donation processes



→ Actively educate stakeholders on organics recycling process



→ Educate survey stakeholders on what they need to know about legal liability when donating food

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## Recommendations | Encourage



→ Use of software/apps to manage food waste or donation, especially within local grocery stores



→ Use of “ugly” produce and marketing “ugly” produce in an appealing way

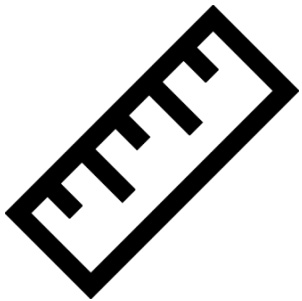
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## Recommendations | Encourage



→ School districts to educate their students about the implications of food waste and encourage their students to eat a full lunch



→ Measurement of food wasted and donated

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## Survey Limitations

1. Sampling Bias
  2. Sampled a Subset of Stakeholders
  3. School Variation within Districts
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Questions on the Survey?

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# Acknowledgements

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Leonel Moreno, Ramsey County

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Thank You!

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