



Food Waste Prevention and Recovery Assessment

2015 Report

Prepared for

*Seattle Public Utilities
and
The City of Seattle's Office of Sustainability and Environment*

Prepared by

The University of Washington Center for Public Health Nutrition

Written by

*Jennifer Otten, PhD, RD,
Sara Diedrich, MPH, RD, Katherine Getts, MPH, and Christine Benson*



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Executive Summary

INTRODUCTION

Food waste is a major environmental, economic, and ethical problem. 30-40% of food in the United States goes uneaten, ending up in landfills where it contributes to greenhouse gases. Meanwhile, a vast network of anti-hunger agencies works to provide food for the millions of Americans who don't have enough to eat. Food-generating businesses such as grocery stores, institutions, catering departments and restaurants also generate a large amount of food waste, some of which is donated, but barriers to efficient and effective food donation still exist. Public agencies are in a position to provide support both for anti-hunger agency operations and for food waste reduction in food-generating businesses.

The purpose of this report is to provide a current summary of challenges and opportunities in commercial food waste prevention and recovery in Seattle. The intent in gathering this information is to help inform whether Seattle Public Utilities and/or other City departments might have a role to play in fostering prevention and recovery.

METHODS

From April through October 2015, 26 in-depth interviews were conducted to understand the challenges and opportunities in commercial food waste prevention and recovery. Eight anti-hunger agencies, five public agencies and one non-governmental organization, and 12 food-generating businesses were interviewed. Interviews were recorded and transcribed, and the transcriptions were coded to highlight themes that emerged from the data.

FINDINGS

Anti-hunger agencies work to aggregate and re-distribute food to the hungry. Interviewees identified several major challenges that impact their work:

- Not enough food, particularly nutritious food, is being donated to food banks
- Inadequate storage space – particularly for perishables - is the single most cited challenge
- The near-immediate perishability of certain donations and the fact that many donated foods are close to expiration results in donated food that must be disposed before it can even be used, as well as high compost bills
- Difficulty in coordinating efficient and expedient pick-up or delivery of donations

Despite these barriers, anti-hunger agencies are resourceful. They identified a variety of *promising practices* that can make their work more successful, including logistics improvements, farm-to-food

bank relationships, on-site gardens, technology improvements, third-party transport organizations, increased funding for operations, and outreach to generate and educate donors.

Public agencies work on food waste prevention programs at the household, business and school levels, and on a variety of food donation programs. Challenges to public agency work include:

- Difficulty understanding the importance of food waste prevention work (versus food donation and composting) within the agency
- Perception among food-generating businesses that they are not wasting significant amounts of food
- A lack of knowledge by food donors about laws protecting them from food safety liability when they donate
- Staff turnover in food service that limits the effectiveness of public agency work (e.g., training and technical assistance)

Promising practices utilized by public agencies to overcome some of these barriers include combining funding sources with other departments or agencies, coordinating with other agencies and non-governmental organizations, and using a conversion factor to equate different types of food donation metrics.

Food-generating businesses in this report can be organized into two major types: grocery stores and restaurants/institutions (serve ready-to eat food).

Grocery stores generate food waste due to cosmetic imperfections, expiration dates, damaged items, and food returns.

Challenges to preventing food waste are customer expectations of food quality, and misconceptions about sell-by/use-by dates.

Strategies grocery stores use to reduce food waste include tight inventory management, communication and tracking across departments.

Restaurants and institutions generate food waste due to food trimmings, planned overproduction, spoilage, and food served to customers that they do not eat.

Challenges to preventing food waste include employee turnover and the need for regular training, competing priorities for employee time and attention, and unpredictability of consumer purchases.

Strategies employed by restaurants and institutions to reduce food waste include tight inventory management, employee trainings, small-batch cooking, waste audits, reducing portion sizes, and education initiatives.

All food-generating businesses interviewed donate food because they want to put edible food to the best use by feeding hungry people. Challenges faced by grocery stores include food safety concerns, unreliable donation pick-ups, and difficulty establishing the food donation process, while restaurants and institutions most frequently mentioned a lack of space to store items awaiting pick up, lack of space at food banks to store large donations, unreliable or inconvenient pick-up schedules.

Businesses also discussed the fact that composting costs not only money, but time, and consumers do not always sort food waste correctly into the compost bin.

Promising practices identified by food-generating businesses to reduce food waste include creation of a resource guide that explains the how, what and when to donate, assistance with waste audits, providing a central location for food donation, financial incentives to donate food, and formation of roundtable for businesses to collaborate on food waste reduction.

CROSS-SECTOR CONSIDERATIONS also emerged from the interviews and are described in further detail in the full report:

- **Consider the relationship between food waste prevention and food recovery efforts**
As food prevention efforts succeed, less food waste is generated which results in less food donated to anti-hunger agencies. Public agencies should be mindful of this tension as they support both food waste prevention and provision of healthy food for hungry people.
- **Make food donation a priority for food-generating businesses**
The majority of food-generating businesses interviewed said that while they donate food because they want to see it put to good use, they have no financial incentive to donate food and it requires valuable staff labor and time. Making food donation a priority through incentives may bolster food recovery efforts and provide a consistent source of donations for anti-hunger agencies, even as food waste hopefully decreases over time.
- **Better understand what consumer attitudes and expectations are surrounding food waste and their interplay with consumer and business practices.**
Businesses act in response to perceptions about consumer desires, and this can result in food waste that may be unnecessary, such as overstocking produce displays for visual effect. Research about consumer attitudes and expectations about food waste is needed to understand which food waste prevention strategies can be implemented successfully.

RECOMMENDATIONS Out of these findings the team developed 11 high-level recommendations to increase food waste prevention and recovery in the commercial sector. They are in table form on the following page, and explained in full in section VI.

Food Waste Prevention, Diversion and Recovery Recommendations for City of Seattle

Take an integrated (systems) approach to food waste

System level approaches help identify core problems and integrated solutions across multiple stakeholders.

Use EPA's Food Recovery Hierarchy as a framework to prioritize food diversion efforts

- *Use messaging that integrates prevention, recovery, and composting across all of the City's food waste diversion efforts*
- *Dedicate staff time to food waste prevention and recovery*

Develop a Food Waste and Recovery Roundtable

- *Provide a forum to facilitate involvement of and communication between stakeholders and to foster a comprehensive approach from prevention to composting, across all sectors/stakeholders*

Explore opportunities to leverage funding across agencies or programs to expand food waste diversion efforts

- *Identify food waste intersections between departments that could lead to joint funding and/or staff collaboration*
- *Consider using future compost fines to fund food waste prevention and donation programs or food waste diversion education*

Collaborate regionally and nationally

- *Pursue opportunities to collaborate with state, county, and national agencies as well as other local governments*
- *Pursue opportunities to collaborate with other coalitions and non-governmental agencies*

Measure to create meaning

Measurement helps us to know the scale, build awareness, and identify priorities.

Develop and implement standard food waste metrics

- *Support the use of standard food waste metrics to regularly measure amount of food diverted and compare within and between sectors over time*
- *Use metrics developed to inform SPU's Solid Waste Plan Update and other relevant policies*

Develop a Seattle Food Waste Challenge to engage the public (across sectors) in helping to measure

- *Use the Challenge to get more granular data (i.e. catering and institutional kitchens vs upscale restaurants) in order to understand food waste reduction potential by sector*
- *Include qualitative stories in addition to quantitative data to capture the full picture*

Keep food waste on the radar

- *Use data gathered from above efforts to continue raising awareness and to develop a campaign*

Avoid waste in the first place (lead with prevention)

The most preferred pathway for food waste reduction in the EPA hierarchy is source reduction.

Make food waste apparent

- *Develop a second phase of piloting food waste prevention measurement with businesses*
- *Develop food waste assessment for other types of businesses (e.g. quarterly mailings to businesses comparing their food waste to that generated by their peers)*
- *Provide support to businesses in conducting food waste audits*

Make the case for food waste from the consumer level to the food service industry

- *Integrate food waste prevention best practices into culinary and food service training*
- *Highlight successes (case studies, publicity, forums, model prevention policies)*
- *Interview consumers to determine if perceptions of consumer expectations are true*
- *Educate consumers to push businesses to take prevention steps*
- *Educate consumers on best-by, sell-by, and use-by dates*
- *Build awareness in youth and by extension, greater awareness with parents/adults*

Support the food donation / recovery system

The second most preferred pathway for food waste is donation of edible foods

Increase infrastructure and capacity of the emergency food system

- *Explore ways for food banks to acquire infrastructure that helps move and store perishable food*
- *Develop new tools and technologies such as apps*
- *Evaluate fee reductions or waivers (compost, parking) for anti-hunger agencies so they have more funding available to purchase nutritious food*
- *Support the development of a corps of volunteers (e.g. by partnering with FoodCorps or other agencies that connect food-system volunteers to communities)*

Increase donations of nutritious foods to the emergency food system

- *Strengthen farm-to-food bank connections*
- *Explore how to increase processing of perishable foods to be used by emergency food system*
- *Investigate transportation options for moving food from donors to food banks*
- *Support food procurement strategies that get beyond the challenges of transporting and storing perishable food*

Food Waste Facts

30-40% of food in the United States goes uneaten.³²

Americans throw out the equivalent of \$165 billion of food each year.³²

Over 97% of food waste generated ends up in landfills.³³

Food waste in landfills generate methane as it anaerobically decomposes; methane has 25 times the impact on climate change compared to carbon dioxide.⁸

One in six Americans is food-insecure.³²

Reducing food losses by 15% would be enough to feed more than 25 million Americans.³²

I. Project Background

The Problem of Food Waste

Food waste is a major environmental, economic, and ethical problem. In 2010, Americans wasted approximately 31% of food, equal to 133 billion pounds, or 20 pounds per person per day.¹ Of this, only 5% was diverted to composting and the rest constitutes the single largest component of municipal solid waste in the United States.² Much of this wasted food is edible and could be brought to food banks and meal programs to feed families in need. The U.S. Department of Agriculture (USDA) estimates that 14% of Americans are food insecure³ while 13.7% of people were food insecure in Washington State between 2012 and 2014.⁴

In Seattle, food and compostable food packaging constitute the largest component of readily divertible material in both residential and commercial sectors' garbage⁵ comprising approximately 30% of both residential and commercial waste streams.^{5,6} A 2013 Seattle Public Utilities study of residential waste found that 32% of food waste was "edible scraps" (either leftovers or unprepared food) and 68% was non-edible scraps.⁷ Within the commercial sector, restaurants generated the second largest volume of solid waste in 2012, with food representing 53% by weight of restaurants' garbage, and compostable or food-soiled items constituting another 9% by weight.⁶

In landfills, food waste has no oxygen so it decomposes anaerobically instead of through aerobic decomposition. This anaerobic decomposition process generates methane, a harmful greenhouse gas, which has 25 times the impact on climate change compared to carbon dioxide.⁸ The economic cost of food wasted in the U.S. in 2010 was estimated to be \$162 billion.¹ Part of this cost consists of the inputs needed to grow this food (land, water, fuel, agricultural chemicals, and labor) which are also wasted when this food is not utilized.

For all of these reasons, Seattle now has a requirement to compost all food waste and compostable food-soiled packaging. While this law will increase the recycling rate and help reduce methane gases,

it may make composting the dominant behavior across all sectors, supplanting and unintentionally discouraging prevention and recovery practices.

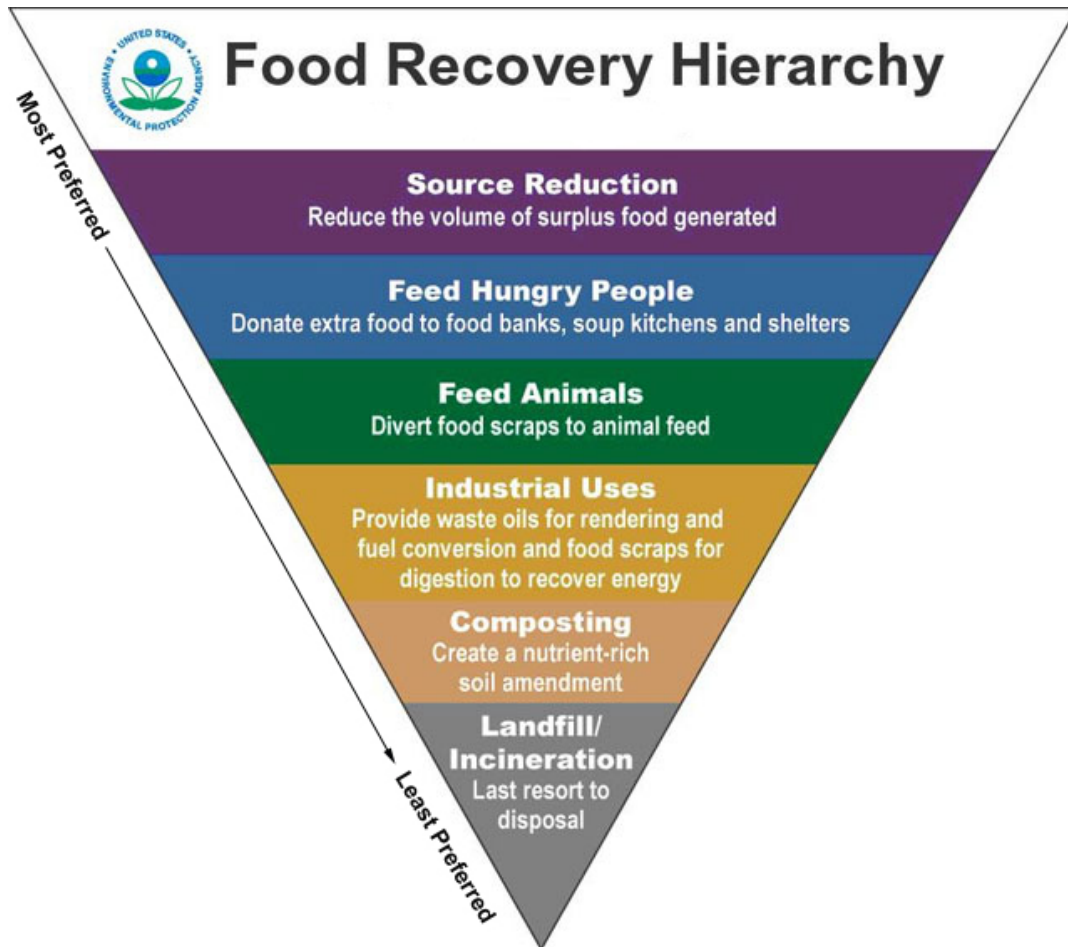
While billions of dollars' worth of edible food is being thrown away, an estimated one in six Americans doesn't have enough to eat.⁹ 679,000 people in western Washington identified themselves as food insecure in 2014.¹⁰ Anti-hunger agencies (food banks, emergency food distributors, meal programs) are a critical piece in the infrastructure for food recovery (donation). They are the primary receiver of food that is still good to eat but stores have taken off their shelves, or that restaurants have prepared but not served. In Western Washington in 2014, the equivalent of 560 million meals were provided by food obtained from food banks, meal programs and government assistance programs.¹⁰ Reducing food losses by 15% would be enough to feed more than 25 million Americans.¹¹

The Purpose and Scope of This Report

The purpose of this report is to provide a current summary of challenges and opportunities in commercial food waste prevention and recovery in Seattle. The intent in gathering this information is to help inform whether SPU and/or other City departments might have a role to play in fostering prevention and recovery. While the commercial sector was the ultimate focus, research was also conducted to reveal barriers and possible solutions in the emergency food system since food banks and meal program providers are intricately involved with many possible commercial sector solutions. In addition, interviews were conducted with public agencies across the country to assess how they may have developed solutions that could be transferable to Seattle or provide insights about challenges to avoid.

The report follows the U.S. Environmental Protection Agency (EPA) Food Recovery Hierarchy which specifies that managing food waste should prioritize prevention (source reduction), recovery (feeding hungry people and animals) and recycling (for industrial uses or composting) to maximize social and environmental benefits. While augmenting prevention and recovery are the main goals of this research, composting is also discussed as part of the commercial experience and the management of food waste in Seattle. Finally, this report also includes connections to consumers as a result of their influence on commercial sector practices.

Figure 1. U.S. Environmental Protection Agency Food Waste Recovery Hierarchy



SUMMARY OF RELEVANT POLICIES

There are a variety of policies at the federal, state and local levels regarding food waste management, food waste reduction, and food donation. These policies set the context for what food waste generators – individuals, organizations, institutions, and businesses – are allowed to, incentivized to do, or prohibited from doing with their food waste, as well as specific constraints or considerations. What follows is a non-exhaustive list to guide the reader in understanding the context surrounding this issue.

Federal:

- **EPA/USDA Goal: 50% reduction in food waste by 2030¹²**
In 2015 the U.S. Environmental Protection Agency and the U.S. Department of Agriculture set the first-ever national goal of food waste reduction in the United States,

calling for a 50% reduction by 2030. There is hope that this will spur food waste reduction across sectors, but at this time there is no enforcement of this goal.

- **Food donors are exempt from liability**¹³

The Bill Emerson Good Samaritan Food Donation Act of 1996 was enacted to encourage donation of food to certified non-profit organizations. This law exempts donors from liability for injury arising from consumption of the donated food, as long as there is no gross negligence or intentional misconduct (i.e. the donations were made in good faith). To date, there has never been an attempted lawsuit to circumvent this law.¹⁴
- **Food donations are tax-deductible**¹⁵

Section 170 of the Internal Revenue Code allows C and non-C corporations that donate food to 501(c)3 non-profit organizations that feed hungry people to receive an enhanced tax deduction equal to the cost of the goods and up to half their unrealized gross profit. The deduction amount is determined by the difference between the wholesale and retail value of the donated food.
- **Federal food donations are encouraged when appropriate**¹⁶

The Federal Food Donation Act of 2008 requires that a clause be included in any contract with a federal agency equaling or exceeding \$25,000 that involves the supply or sale of food that encourages the contractor to donate surplus edible food to 501(c)3 non-profit organizations that feed hungry people.
- **Excess food from school meal programs can be donated**¹⁷

The Consolidated and Further Continuing Appropriations Act of 2012 amended the National School Lunch Act by clarifying that it is legal to donate surplus food from federally funded school meal programs.
- **Food for animal feed must be treated before consumption**¹⁸

Waste fed to swine must be treated to inactivate disease organisms that pose a risk to swine health.

Washington State:

- **Food donors are exempt from liability**¹⁹

The Good Samaritan Food Donation Act RCW 69.80.031 parallels the federal law in exempting food donors of liability from injury caused by food donated in good faith.
- **Regulations for food safety and handling**²⁰

The Washington State Retail Food Code details safety standards for food served or sold to the public in Washington State.
- **Regulations for composting facilities**²¹

The Washington Administrative Code 173-350-220 regulates facilities that treat solid waste by composting.

Local:

- **Food Waste Requirements: City of Seattle Ordinance #124582**²²
As of January 1, 2015 single-family residences, multi-family residences, and businesses are prohibited from putting significant amounts of recyclable paper, cardboard, glass and plastic bottles and jars, aluminum and tin cans, as well as compostable food soiled paper towels, paper napkins, pizza boxes, and food waste in their garbage containers.
- **Zero Waste Resolution 30990 (2007)**²³
The city will recycle 60% of the waste produced within the city by 2015
The city will recycle 70% of the waste produced within the city by 2025
- **King County Board of Health Code: Food Safety regulations**²⁴
The Code of the King County Board of Health parallels the Washington State Retail Food Code in regulating food safety for food service establishments.
- **Seattle Food Action Plan (2012)**²⁵
The Seattle Food Action Plan, as one of its four top-line goals, states: Food-related waste should be prevented, reused or recycled. Identified strategies to achieve that goal include:
 - Prevent edible food from entering the waste stream
 - Increase composting of non-edible food
- **Seattle Climate Action Plan (2013)**²⁶
Included in the Seattle Climate Action Plan are six actions to implement by 2015:
 - Launch programs to support edible food donation
 - Help community kitchens find efficiencies and reduce waste
 - Help households and businesses reduce food waste through better planning, purchasing, storage and preparation
 - Increase enforcement of residential and business recycling and composting requirements
 - Expand investment in existing residential and business programs for reuse and organics management to reach more residents and businesses
 - Focus grants on schools to establish system-wide collection for food and yard waste

In addition, by 2020, the CAP calls for a 50% reduction in methane emissions from landfill, and to have 70% of waste diverted from landfill to recycling and composting by 2022.

The CAP also emphasizes the need to consider the impact of all proposed strategies on social equity. To this end, it states:

To enhance equity, climate change preparedness strategies should 1) prioritize actions that help vulnerable populations to moderate potential impacts and to cope with the consequences of climate change and 2) incorporate input and perspectives from members of the vulnerable populations

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SUMMARY OF RELEVANT PRIOR RESEARCH BY SEATTLE PUBLIC UTILITIES:

Since the late 1990s, Seattle Public Utilities (SPU) has been involved in commercial food waste prevention and recovery efforts via research and infrastructure grants. In order to provide background and context for the current research, the following section summarizes these efforts.

Anti-hunger Agency Partnerships

As part of an early assessment, SPU identified the lack of equipment as one of the primary barriers to expanding food recovery in Seattle.²⁷ In 1996 SPU made its first major investment in food recovery by granting \$80,000 to Food Lifeline for the purchase of three refrigerated trucks and food preparation and storage equipment.²⁸

Later, a 2006 report for SPU and King County Solid Waste identified three major barriers to edible food rescue²⁹:

1. Negative perception or unwillingness of food-generating businesses to donate food due to concern about liability, lack of knowledge about the Good Samaritan Law, and concerns about proper food handling and food safety issues
2. Lack of resources – both infrastructure and staffing
 - Donors lack reliable pick-up services
 - Anti-hunger agencies lack adequate storage space, refrigeration, and freezing capacity
 - Anti-hunger agencies lack adequate staff
3. Lack of information about how and where to donate

In 2006, SPU initiated the Food Recovery Program to aid anti-hunger agencies in diverting food from the commercial waste stream. SPU also helped fund Food Lifeline's Seattle's Table program to link anti-hunger agencies in Seattle with food-generating businesses.²⁸

Between 2006 and 2010, SPU provided \$394,021 in grants for anti-hunger agencies to purchase equipment to safely transport, store and utilize excess edible food. Over a ten-year period, this investment is projected to divert 22,957 tons of edible food from the waste stream as a result of these grants. Also in 2008, SPU worked with seventeen food banks to start compost

collection programs for food that could not be distributed to food bank clients. SPU funded the first two years of compost collection for the food banks, diverting an estimated 539 tons of surplus food from the landfill. SPU renewed its food recovery efforts in 2014, contributing \$30,000 to a large refrigerated van operated by Operation Sack Lunch (OSL) to transport prepared food safely from food establishments to food deserts in Seattle. In its first four months of operation, OSL used the van to increase their food recovery by over 25 tons.

A 2014 progress report for SPU's Food Recovery Program²⁸ found that:

- Anti-hunger agencies reported increased demand for food and inconsistent donations
- Every single anti-hunger agency interviewed was interested in more food donations
- The equipment purchased with SPU grants is aging and needs to be replaced

Commercial Food Waste Prevention Pilots

From February 2008 to May 2009, SPU piloted food waste prevention protocols in two large-scale commercial food operations. This work was led through a partnership with LeanPath, a company that helps food-service businesses reduce food waste through a tracking system, software, and technical support. LeanPath recruited one university and one hospital, and SPU and these institutions shared the cost of purchasing the LeanPath tracking equipment and technical support. Over a period of approximately 14 months, food waste was reduced by 18.3% at the university and 31% at the hospital. The hospital expanded LeanPath protocols to two other campuses and continues to monitor their food waste through this system eight years later. These pilots showed the value of measuring waste to encourage prevention practices and also identified the challenges of this system when faced with limited staff time and staff turnover.^{7,30}

II. Project Methods

Participants and Procedure

From April through October 2015, 26 in-depth interviews were conducted to understand the challenges and opportunities in commercial food waste prevention and recovery.

Anti-Hunger Agencies

Eight anti-hunger agencies representing food banks, meal program providers and anti-hunger distributors were interviewed for this report. Selection of these agencies was based on achieving a diversity of size, range of clients of varying ages and racial/ethnic backgrounds and cross section of geographic locations. Anti-hunger agencies interviewed for this report were from different geographic areas in Seattle.

Public Agencies

Five public agencies were interviewed, representing cities, counties and the federal government plus one non-governmental organization that serves as an intermediary between businesses, food banks and a local government. All are located outside of Seattle and are primarily on the West Coast.

Commercial Sector

The research team interviewed twelve businesses that included grocery stores, restaurants, and food service institutions (e.g., hospitals, universities). In identifying targeted businesses, the City of Seattle hoped to learn from businesses that were part of the food recovery system (actively donating) as well as businesses who were not donating to understand barriers to using food donation as a business practice. However, despite many efforts to recruit non-donors, the research team was not able to gain the perspectives of non-donors. Only businesses who were already active in food donation participated in this research.

In all, thirty-seven participants were contacted and a total of twenty-six interviews were conducted. Interviews were conducted in person or over the phone (as chosen by the participant) and lasted an average of one hour. All interviews were conducted by the same researcher to ensure consistency.

Semi-structured interviews

A semi-structured interview format was used by the research team because it was both uniform and flexible and allowed for new topics and follow-up questions to emerge from the interviewees themselves. A total of eight interview guides were developed through a literature

review of food waste prevention and recovery strategies within each sector. These eight interview guides consisted of three standardized guides (one for each sector) and five additional guides that were modified to include questions about food waste prevention and recovery strategies unique to particular interviewees. These interview guides consisted of a series of open-ended questions that were peer-reviewed by Seattle Public Utilities' Survey Review Panel as well as the lead Office of Sustainability and Seattle Public Utilities staff working on this project. The standardized interview guides can be found in Appendix B.

Description of Data Analysis

Interviews were audio-recorded and professionally transcribed verbatim. An inductive approach was used to guide data analysis. Using the interview guide, a preliminary codebook with themes for each sector was created by the research team. Additional themes were identified as they emerged from the data. This process continued until agreement was reached that the codebook contained all relevant themes. Using the finalized codebook, two researchers independently coded two transcripts from each sector and reviewed coding conflicts reconciling them by discussing the discrepancies and reaching consensus. Generally, 80% agreement on themes was reached on the 6 sample transcripts. One researcher coded the remaining transcripts using Dedoose Software and summarized interviews within each sector by theme.

Ethical Issues

The University of Washington Institutional Review Board approved the study. Participants received written and verbal information about the study prior to providing verbal informed consent to participate. Personal identifiers were removed from the data and the results were reported in aggregate.

Limitations of this project

A relatively small number of anti-hunger agencies were interviewed for this report and may not be representative of the range of anti-hunger agencies in the Seattle area. The public agencies interviewed were primarily located in the Northwest region, so their responses cannot be generalized to public agencies in other regions. Additionally, the food-generating businesses interviewed for this report did not include small, independent cafes/restaurants, and convenience stores. Other types of food-generating businesses were represented by only one business, so their opinion may not be reflective of the group as a whole. Nearly half of the food-generating businesses contacted for interview declined to participate in this study and thus selection bias may affect the findings reported above. Finally, no consumers were interviewed for this report, so the findings about consumers are limited to perceptions of this group by interviewees from food-generating businesses and public agencies.

III. Summary of Findings

The most salient findings from our interviews are included here, organized by sector. Full results for each sector –anti-hunger agencies, public agencies, and food-generating businesses - are located in Appendix C.

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Findings from Anti-Hunger Agency Interviews

Eight anti-hunger agencies of varying sizes and that serve clients of varying ages and racial/ethnic backgrounds were interviewed for this report. Anti-hunger agencies interviewed were from different geographic areas in Seattle.

❖ Metrics

Metrics are important to demonstrating impact and identifying key points of leverage. Interviewees were asked what metrics they use to track food donation. We found that the metrics used to communicate the scale of anti-hunger agency operations vary considerably across agencies. Many reported the number of clients served in terms of people per hour or over a period of time, while others reported the number served in terms of bags, pounds or meals distributed. This makes it challenging to make comparisons between anti-hunger agencies or understand the full impact of their collective work.

❖ Anti-Hunger Agency Activities

Anti-hunger agencies (food banks, emergency food distributors, meal programs) are a critical piece in the infrastructure for food recovery (donation). They are the primary receiver of food that is still good to eat but stores have taken off their shelves, or that restaurants have prepared but not served. To make the best possible use of food – feeding it to people - food banks, meal programs, and emergency food distributors are critical links in the system. The better they function in receiving food and getting it out – quickly – to people who can eat it, the less food goes to waste.

❖ Challenges to Food Recovery and Distribution for Anti-Hunger Agencies

In these interviews, anti-hunger agencies identified several common challenges to their work recovering and distributing food to the hungry:

- **Not enough food, especially nutritious food, is being donated to food banks.**

The interviewees made clear that demand for food – particularly nutritious, perishable food – is high in the anti-hunger sector. All anti-hunger agencies interviewed reported a need for more food donations and that they are actively seeking new donors. As one anti-hunger agency interviewee stated, “When the economy tanked the crowd started growing . . . 2014 was the starkest of those years when we had a 32% increase in demand.”

However, increased demand is not being matched by increased food donations. Half of the anti-hunger agencies interviewed said that food donations have decreased over the past five years. And anti-hunger agencies are increasingly striving to make healthier foods available to clients. As one interviewee stated, “On a day when we’re going to do 1,000-1,500 people, you can see the diabetes; you can see the obesity and you can see the heart disease. I mean, you can see it just walking, the people who really need good food. We’re really pushing nutrition as part of our mission.” Despite regular donations of produce and protein, anti-hunger agencies are still purchasing 5-40% of these types of food because there is not enough healthy food available in the food recovery stream and they prioritize serving healthy foods to their clients.

- **Inadequate storage space is the most common challenge.**

The most common challenge for anti-hunger agencies to obtaining more food – particularly for perishable items -- is inadequate storage space. Storage space was an issue for both large and small anti-hunger agencies, suggesting storage will be a limiting factor no matter the size of the agency. More space, as well as systems that support tight inventory management to prevent perishable food from spoiling, are needed to overcome this challenge.

Storage space for perishable items – walk-in cooler space - is particularly limited. While anti-hunger agencies stated they favor produce, protein and dairy donations, these items come with the additional challenge of maintaining proper temperatures to keep them safe and maintain their quality.

- **The perishability of donations is a big concern.**

In the words of one interviewee, “[Donors] want to donate the product when it’s too late, and it’s unusable and costing us a fortune in compost bills...I mean, if it’s at that point, then they should toss it and they should pay their own garbage bill.” The food donation system is a balance – donors are donating food that is, for one reason or another, un-sellable, but anti-hunger agencies are giving that food to people who need to eat. This balance is particularly salient with perishable donations, but perishable foods are also the nutritious foods most in-demand by clients.

If anti-hunger agencies are unable to manage their perishable inventory because they receive too many donations of foods near expiration, these expired foods are put in the compost container. Anti-hunger agencies must pay these compost fees and noted they can get expensive, with fees reaching a couple hundred dollars a month. Additionally, sorting through spoiled or expired donations takes valuable time away from more important tasks of anti-hunger agencies.

- **Coordinating the pick-up or delivery of donations is another barrier.**

Individual food banks and meal programs receive food donations both directly – from stores and restaurants – and also through distributors like Food Lifeline, Northwest Harvest, and Operation Sack Lunch. These distributors coordinate the pick-up and delivery of millions of pounds of food annually. Food banks and meal programs also pick up donations from local stores and restaurants themselves. Coordinating the pick-up or delivery of these donations – which may become available during evening hours or weekends when anti-hunger agencies are not open – emerged as the second most common challenge for anti-hunger agencies to obtaining more food. Pick-ups also require staff time and money, so anti-hunger agencies must determine whether pick-up of donations – which may be small – is worthwhile compared to other work needed to get food to their clients.

- **Promising Practices for Anti-Hunger Agencies**

Despite these challenges, the anti-hunger system recovers food and provides meals to hungry people each day. Throughout our interviews, anti-hunger agencies identified promising practices to improve operations and enhance their ability to serve their clients while keeping food out of the waste stream. The following solutions came up during interviews:

Logistics improvements. To increase the efficiency of their anti-hunger agency operations, one agency implemented a logistics improvement program that focuses on streamlining standardized activities and processes. With the help of a specialist, they made small changes such as rearranging their storage and pick-up areas to decrease wait time for clients and better manage their food inventory. In the words of the agency: “Over the course of the last year, we conducted dozens and dozens of experiments and made small changes here and there that eventually added up to pretty dramatically reducing our guest wait time by about 60%, and is allowing us to get 120-140 people through in an hour, whereas before we were lucky to get 50-60 through in an hour. We are able to do that without any reduction in quality or quantity of food that we were giving away.” This kind of analysis with small continuous improvements resulted in improved storage, food distribution and more.

Farm-to-food bank relationships. Five anti-hunger agencies receive donations from farmer's markets or local farms increase healthy food access for their clients. To amplify this farm-to-food-bank relationship, one anti-hunger agency partners with a neighborhood farmers market by distributing monetary vouchers to their clients that can be used at a local farmer's market. In this way, the food bank is able to support the farmers market while the farmers market supports the anti-hunger agency by donating leftover produce. These market vouchers also expand the fresh produce options for the anti-hunger agency's clients.

On-site gardens. To increase the amount and quality of produce available for clients, another anti-hunger agency would like to grow produce onsite using hydroponic/aquaponic systems and another suggested the development of a food processing system to process perishable items into foods with longer shelf life. For example, in the past one anti-hunger agency was able to utilize a local cannery to transform abundant fall donations of Washington apples into apple chips and applesauce for their clients. This extended the shelf life of the apple products and offered the anti-hunger agency clients more variety.

Technology. Anti-hunger agencies also offered ideas about how they could use technology to quickly connect donors to anti-hunger agencies and also allow them to track their food inventory and clients more effectively. Two anti-hunger agencies suggested creating an electronic alert system which donors could use to notify anti-hunger agencies about available food donations. One anti-hunger agency described this as being a city-wide program that all donors and anti-hunger agencies could access. When a new food donation is available, a message would be sent to anti-hunger agencies stating the type and quantity of food available and then anti-hunger agencies could sign-up for the donation.

Using iPads to record the type and amount of food donated upon pick-up is another technological solution offered by two anti-hunger agencies. Another suggested using QR codes to track food inventory and barcodes on client ID cards to speed up the check-in process at their anti-hunger agency. Importantly, these technological solutions may only be appropriate for anti-hunger agencies capable of and comfortable with technology. One anti-hunger agency specifically mentioned they would continue to track food donations using paper methods even if there is an electronic alternative because their anti-hunger agency system is set up best for paper usage.

Third-party transport organizations. Anti-hunger agencies discussed third party organizations that pick up food from donors and bring it to anti-hunger agencies. These organizations aim to help anti-hunger agencies overcome the transportation barrier discussed above. Some of these third parties are volunteer or non-profit organizations that are staffed by a few volunteers who transport food on their bikes while others are larger organizations with paid staff members and

vehicles. The majority of anti-hunger organizations interviewed said they were familiar with this concept of third party transporters. Others mentioned that the large emergency food distributors in Seattle somewhat fill this role, and another said their volunteer teams serve this purpose. Each of these options has tradeoffs - some of these organizations transport small quantities of food, others try to serve the entire region, so don't fully meet the needs of each food bank or meal program.

Increased funding for operations. Food banks raise money in various ways to support their operations, including (for many) funding from the City of Seattle Human Services Department. All anti-hunger agencies noted the need for increased funding to support their operations and their food recovery programs. Interviewees noted that SPU's current process for small infrastructure grants could be simplified. Three additional anti-hunger interviewees noted that they pay significant compost fees, and that reduced compost bills would allow them to use the money currently going to compost bills to purchase additional food.

Outreach to generate and educate donors. All anti-hunger agencies requested the city help to increase donation of food to anti-hunger agencies through public outreach or policy approaches. Strategies suggested included donor education about how/what to donate and Good Samaritan Laws; regulations or financial incentives for the commercial sector to donate food; or utilizing city partnerships to create connections with non-traditional donors such as schools. One interviewee said, "Trying to find levers in the community to increase the diversion to the food banks would be important, and so whether that's through public education; whether that's through regulations; whether that's through increased financial incentives and/or grant opportunities to nonprofits to improve how much food that they recover before it's wasted."

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Findings from Public Agency Interviews

Five public agencies and one non-profit were interviewed for this project, in order to learn about successful initiatives, challenges, or opportunities that may inform the City of Seattle's work. These agencies represent cities, counties and the federal government, plus one non-profit that serves as an intermediary between businesses, food banks and a local government. Agencies were located across the United States, but were primarily located on the West Coast. The roles of these agencies ranged from overseeing one local food waste prevention or recovery program to multiple programs, some with a national focus.

❖ Metrics

Metrics are important in communicating to policymakers and demonstrating impact. Many public agencies said they have recycling or composting goals in their cities or counties, but there was not a clear way of connecting food waste prevention and donation efforts to those goals. In some cases, prevention can actually decrease recycling or composting goals, making it all the more difficult to demonstrate the value of prevention. With the current public sector focus on data and impact, having clear prevention goals – and the ability to measure progress toward meeting those goals – is increasingly important. But few of the agencies interviewed had established prevention goals or measurement systems.

❖ **Public Sector Activities**

- **Food Waste Prevention**

Public agencies worked on a variety of food waste prevention programs aimed at preventing food waste in different settings, including households, schools, and food-generating businesses. The types of resources offered vary from agency to agency and sector to sector.

Three agencies have designed educational programs or toolkits aimed at preventing food waste at the **household level**. They reach residents through Facebook pages, newsletters, videos and Pandora music ads and offer strategies and tools to help consumers shop smart, properly store food, and plan meals to prevent food waste. While these programs were originally intended for household use, one agency’s toolkit has been successfully used by schools and cities, demonstrating these strategies can be scaled and utilized by other populations.

Two public agencies have concentrated their food waste prevention efforts on the food waste practices of **food-generating businesses**. These efforts include waste specialists who provide an assessment of food-generating businesses’ waste practices and then assist in developing waste prevention, recycling and donation programs for the business; and grants to local, non-commercial kitchens (e.g., universities, K-12, institutions, hospitals, healthcare, and social service agencies) to subsidize the cost of utilizing LeanPath equipment and technology for one year. LeanPath is a company that helps food service staff mostly reduce their pre-consumer food waste by measuring the amount and types of food disposed and identifying the reasons for their disposal.

Another public agency interviewed has concentrated their prevention efforts at local **schools**. Starting with recycling and compost programs, these efforts have grown considerably over the years and have shifted towards food waste prevention. Interestingly, the cafeteria changes that led to the greatest food waste prevention successes of this program may also be effective in promoting healthy lunchroom eating. These include putting milk dispensers in schools to prevent milk carton and milk waste, using durable flatware, bulk condiment dispensers,

promoting recess before lunch, educating students about taking only what they can eat, and changing food service techniques such as offering sliced rather than whole fruit.

- **Food Donation**

Public agencies also work on a variety of food donation programs. Three agencies provided grant funding to food banks to advance their goals and infrastructure, two developed donor-to-food bank matching programs, and another created a national initiative for businesses to commit to reducing food waste. Local context plays a large factor in determining where agencies place their focus.

One of the most common ways public agencies support food recovery programs is through **grant funding to local food banks**. Among agencies interviewed, public funding was used to hire full-time drivers, launch grocery rescue or produce recovery programs, and purchase equipment such as fork lifts, trucks, coolers etc. Two of these agencies have also funded third party organizations that help transport donations to food banks after large events. Related, one of these agencies also hosts workshops for event directors to educate them about the importance of food donation.

Another public agency completed a **waste observation study** where they tracked how food moved through 100+ food-generating businesses with a goal of identifying the best points for food waste prevention and recovery interventions. The results of the study were originally used to develop a **food donation guide for donors**. Over time, the agency expanded this into an electronic **program that matches donors with food banks** in three different counties and also **provides food safety and liability information** for donors.

This electronic matching program is very similar to another online platform developed by another public agency. Through county and private funding, the agency developed a **county-wide, coordinated food recovery program**. This agency has developed an online system and app that donors can use to be matched with local food banks and has developed food safety guidelines/training programs for donors. They also serve as an information sharing platform and offer grants to local food banks for capacity building. One unique component of this program is that after completing a donor certification process, which the agency is offering grants to pay for, the donors receive a recognition certificate they can display in their business window informing the community of their donation practices. Additionally, the food recovery program operates with volunteer drivers who pick up food from donors and bring donations to food banks. This alleviates the food bank's transportation barrier discussed in the anti-hunger agency results section.

Finally, another agency implemented a **national food waste reduction initiative** in which organizations such as grocers, educational institutions, restaurants, faith organizations, sports and entertainment venues and hospitality businesses are able to join. The agency educates organizations about the environmental costs of wasted food and frames solutions using the EPA's Food Recovery Hierarchy (e.g., prevent food waste, donate food when prevention is not possible and compost food unsuitable for donation.) Organizations that join receive technical assistance through webinars and an online database to plan and track their food waste prevention and recovery activities. Businesses also receive recognition through awards and social media.

❖ **Challenges to Public Agency Food Waste Donation and Prevention Work**

Public agencies encountered challenges to food waste recovery and prevention work. Some of these challenges are internal to the agency or the public sector, while others are challenges in working with the private sector businesses who would be implementing the prevention work.

Internal agency challenges. Agencies noted that one barrier to prevention is that food donation and composting programs can be seen as easier to understand, implement, and measure than food waste prevention programs. Furthermore, competing priorities can make it difficult to fund, staff, or resource food waste prevention and recovery programs. A particular concern raised is that the volume of food waste that can be managed through prevention and recovery, even if well documented and well-executed, is much smaller than the volume that can be managed by composting. For an agency that is looking at the entire volume of food waste, prevention and recovery can seem small. For this reason, it is important to identify the multiple goals that can be met through food waste prevention and recovery, in addition the volume of food that can be diverted.

External challenges. Public agencies have encountered external barriers when trying to implement donation and food waste prevention programs in food-generating businesses. Businesses have told them that they do not have time to set up a donation system or are concerned about food safety liability because they are either unaware of the Good Samaritan Laws or have their own food safety policies/non-donation policies that limit them from donating food or donating certain types of food. Staff turnover is high in food service, increasing the need for frequent staff training. An agency working with LeanPath commented that many businesses assume they are not wasting food, so they are uninterested in waste prevention efforts.

❖ **Promising Public Agency Practices**

Public agencies have devised strategies to overcome some barriers in their food waste prevention and recovery efforts, but more are needed. The potential solutions identified by interviewees were primarily three types: funding, coordination, and measurement.

Funding. One agency combined public health and solid waste dollars to fund a hunger awareness media campaign that increased support for food recovery programs among different sectors. This initial investment in a media campaign led to increased ongoing investment in and public and stakeholder support for food recovery programs. Another agency used a referendum in the 1990s to impose a \$6/ton fee on all refuse accepted for landfilling, with 10% specifically allocated to source reduction efforts. The fee has since increased, and the agency is able to raise about \$8 million annually.

Coordination. One state developed a food policy council, which connected state agencies and NGO's from the public health, nutrition and economic sectors. With their varied expertise, they were better able to influence the local legislature to support food waste prevention and recovery programs. In another location, an outreach coalition of cities and counties was formed that combined their funding and resources to develop media campaigns geared toward educating their communities on the importance of food waste prevention and recycling.

Measurement. One agency addressed some of the measurement challenges identified earlier by developing a conversion factor to translate varied donation metrics into a single comparable unit of measurement. The donors can record their donations using whatever metric they choose, and then the public agency uses a conversion factor to equate those metrics.

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Findings from Commercial Sector Interviews

Twelve food-generating businesses were interviewed for this report:

- Five grocery stores including one organic store, two large national chains, one small local chain, and one discount grocery store.
- Seven institutions/restaurants including one chef-owned fine-dining restaurant, one casual sit-down restaurant chain, one hospital-based cafeteria, one large catering service, two large food service operations designed to serve employees or college students, and one prepared food wholesale distributor.

All food-generating businesses, which have been shorthanded to 'businesses' throughout this section, have operations in the Seattle Metropolitan area although some are businesses with a

national presence. Due to the very different nature of these businesses, results from grocery store interviews and restaurant/institution interviews have been separated for clarity.

❖ **Metrics and Targets**

All businesses interviewed reported using a variety of metrics to measure the food waste they generate, such as pounds, tons or dollar amounts. Measuring the food waste put into the compost can be more challenging, and none of the businesses interviewed measured the food waste put into the garbage because, due to composting laws, it should not be put there. Some food generating businesses reported having official targets for limiting food waste, while others do not.

Grocery Stores

❖ **Primary Sources of Food Waste in Grocery Stores**

Grocery stores cited many reasons for food waste including cosmetic imperfections, expiration dates, recalls, damaged items and food returns. Cosmetic imperfections, such as bruises on produce, was the most commonly cited reason for food waste generated at grocery stores. All grocery stores cull their produce daily to remove cosmetically imperfect produce because they believe that customers will not buy these items. Expiration and food spoilage was the second most common reason food waste was generated. One grocery store said they deliberately remove items from their shelves before the sell-by date and donate these items to the food bank to ensure they don't expire before reaching the food bank. Other reasons for food waste mentioned by a few grocery stores were food recalls, buyer pulls, or damaged goods due to dropped items, ripped bags, etc. Less common reasons for food waste included over-ordering mistakes and customer returns, which were cited by one grocery store each.

❖ **Food Waste Prevention in Grocery Stores**

Grocery stores described many challenges to food waste prevention. The most frequent challenge cited was dealing with **customer expectations** and **misconceptions about sell-by/use-by dates**. All stores interviewed believed that consumers expect perfect produce stocked in abundance, and the need to stock items in large quantities. They also discussed the need to pull products close to their sell-by date because consumers will not buy them, despite the fact that they are still safe to eat. Other common challenges were the unpredictability of food quality, weather, and employee behavior.

Grocery stores have developed strategies to reduce the amount of food waste entering the waste stream including **tight inventory management**, **communication across departments**, and

tracking food waste for each department. When asked directly, most grocery stores were unwilling to try additional food waste prevention strategies such as selling discounted blemished/bruised produce or stocking less, food citing economic and quality concerns.

Restaurants/Institutions

❖ Primary sources of food waste in Restaurants/Institutions

Restaurants and institutional food service generate pre-consumer food waste (such as trimmings and overproduction of items) and post-consumer food waste (patrons' leftovers).

- Pre-consumer food waste generated in restaurants/institutions is donated, composted, or put in the garbage by staff.
- Post-consumer food waste goes either into recycling, compost or garbage streams. The two most common sources of food waste were food trimmings and over-production, followed by spoilage and consumer behavior.

❖ Food Waste Prevention in Restaurants/Institutions

Restaurants and institutions face many challenges with food waste prevention. On the pre-consumer side, challenges include **employee training/turnover**, **competing priorities for employee time and attention** and **unpredictability of consumer purchases**.

Restaurants and institutions have developed strategies to reduce both pre- and post-consumer waste. Pre-consumer waste reduction strategies most often mentioned were **tight inventory management**, **employee trainings**, **small-batch cooking**, and **waste audits**. Post-consumer waste reduction strategies include **reducing plate/portion sizes** and consumer **education initiatives**. When asked directly, restaurants/institutions were unwilling to verbally cue customers for to-go boxes for consumers, citing food safety concerns and the added cost of to-go boxes. Others are unwilling to decrease portion sizes due to customer expectations.

❖ Food Donation

- **All Food-Generating Businesses:**

All of the food-generating businesses interviewed donate to anti-hunger agencies. Few of the businesses interviewed track their food donations. Some businesses said tracking was challenging or not worthwhile, while others said they should be tracking these donations. The primary reason businesses interviewed donate food is to ensure it is being put to its best use by

giving it to those in need. Relationships with anti-hunger agencies are dependent on adequate donations, and when food waste is prevented, donations decrease.

- **Food Donations by Grocery Stores:**

The majority of grocery stores interviewed set up their donation programs independently by calling up anti-hunger agencies or visiting them in person. One national company set up a donation process through a Feeding America partnership. Many others said they prefer to work with nearby food banks to support their local community.

Grocery stores cited many challenges to the donation system including **food safety concerns, unreliable donation pick-ups, and difficulties with establishing the donation process**. Three grocery stores discussed the desire to donate perishable items that are safe to eat, but doing so comes with the additional challenges of finding a place to store the items while awaiting pick-up or dealing with internal/corporate business policies that regulate what can be donated. Three grocery stores also discussed the challenge of donation pick-ups. If a pick-up does not happen due to logistics or staffing issues at the anti-hunger agency, these food donations have to be composted. This is why one grocery store pointed out the need for store champions who are invested in the donation process so if problems arise, such as a missed pick up, employees at the stores are able to work around this problem. Finally, another grocery store discussed the challenge of setting up the donation process in the first place. The interviewee expressed the need for resources that described what to donate and how to set up the donation schedule.

- **Food Donations by Restaurants/Institutions:**

The majority of restaurants and institutions use Food Lifeline or another larger organization to help set up their donation system. Some of these interviewees reported that their catering department generates the largest volume of food donations that they give to anti-hunger agencies. These businesses discussed many different challenges to food donation such as **space to store items awaiting pick-up, the inability of some food banks to accept large quantities, and unreliable or inconvenient pick-up schedules**. Other less mentioned challenges included the **complexities of preparing food for donation, the time burden of training staff** in how to donate food, and **a lack of resources on how to donate food**.

- ❖ **Compost for all Food-Generating Businesses**

Businesses also talked about the time and cost associated with composting. This is one of the reasons why two of the grocery stores have started using WISERg technology; it is cheaper than composting and they can sell the fertilizer produced back to consumers. Businesses that

generate post-consumer food waste reported that consumers often do not correctly sort their food waste into the right receptacle and much ends up in the garbage. Two of the national businesses also said that lack of composting infrastructure in other areas of the United States was the biggest challenge to composting.

❖ Promising Practices

Many of the businesses interviewed had their own ideas for ways the food waste prevention and food donation systems could be improved.

The creation of a donation resource. Several businesses discussed the need for a resource that explains to businesses ‘how’, ‘what’ and ‘when’ to donate to anti-hunger agencies was mentioned by several interviewees. One said, “I think if there was a resource that was readily available that said, “Here’s how you do it and this is the pickup date,” and just something that answered commonly asked questions like “can I donate frozen products?” We don’t know. Do they have a freezer? Is a freezer big enough for what we want to give them? I don't know.”

Assistance with waste audits. Assistance from the city with conducting waste audits to determine what is being thrown away and how much it is worth financially was also mentioned. One business said, “It’s always difficult doing waste audits, because you’ve got to find a place to do it. Not every hauler has a facility where you can do that, and I certainly don’t want to do it in my parking lot.” Another reiterated this: “Getting in there and saying, ‘Hey, did you know that you threw away \$4,000 worth of whatever today?’ I mean, that’s motivating.”

Providing a central location for food donation. The idea of a central drop-off point where businesses can take donations and know they will be safely handled and distributed was another solution offered by an interviewee: “I’d love to just have one place where you can just drop everything off, and you don’t have to like check in and you don’t have to like wait with a buzzer or something. You just drop off all the food there and it just goes from there to wherever.”

Financial incentives to donate food. Not all interviewees were aware of the federal tax incentives for food donation. Some had other ideas about ways to make food donation financially appealing: “Now, I think that there was talk of a tax code where you got like 150% of what you donated, the value of what you donated for food to alleviate hunger in these types of programs. If that were the case, I would imagine that rather than doing it sporadically and incidentally, more grocery stores would do it as a focus, because now they’ve got a huge incentive to do it.”

Business collaborative for reducing food waste. One interviewee brought up the idea of a space for businesses to discuss and collaborate on food waste reduction efforts: “Even if there was a platform in the city for business partners to get together like once a quarter and talk about opportunities as well as what we can do to make things better together as a group would be extremely beneficial, and to my knowledge there is not anything right now.”

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These findings from our interviews with anti-hunger agencies, along with findings from the commercial sector and other public agencies, inform the recommendations in section VI of this report.

IV. Cross-Sector Considerations

Food waste is an issue common to food-generating businesses/institutions, anti-hunger agencies, and public agencies. From these findings emerged some overarching points heard across all three sectors that are worth considering as the City of Seattle determines the best ways to meet the needs of each sector in reducing food waste. These points are not necessarily solvable with one program or intervention, but may inform program planning and long-term strategic thinking about food waste.

- **Consider the relationship between food waste prevention and food recovery efforts**

From these interviews emerged the point that as businesses increase the amount of food waste they are preventing – the preferred action on the EPA’s food recovery hierarchy – the amount of food that can be donated subsequently decreases. Public agencies should consider this tension as they support both food waste prevention and provision of healthy food for hungry people. Public agencies should consider the sources from which anti-hunger agencies will receive food donations several decades from now if national and local efforts to reduce food waste are successful. This possibility reinforces the need for public agencies to be a partner in ensuring viable solutions for getting nutritious food to anti-hunger agencies (and hungry people), such as purchasing or growing their own food.

For example, the City of Seattle provides funding to Seattle food banks each year to purchase nutrient dense foods. This is a way the public sector can help anti-hunger agencies to purchase the healthy foods that they need most. Purchasing this food allows for getting food that has a longer shelf-life once it reaches a client’s home, and by pooling the orders of multiple food banks, the cost of food is reduced. The City of Seattle also provides the use of public land to the non-profit Solid Ground to manage a giving garden at Marra Farm in South Park. The food grown on this 1-acre farm is donated to food banks.

It is also worth highlighting that there are a variety of programs, in addition to food banks, for getting food to hungry people, such as the federal Supplemental Nutrition Assistance Program (SNAP) and Supplemental Nutrition Program for Women, Infants, and Children (WIC). The majority of food bank clients get their food in multiple ways, including shopping at grocery stores, often using SNAP and/or WIC dollars. For many hungry families, food bank donations supplement what their dollars are able to buy, but are not their sole source of food³¹.

Protecting and expanding the safety net is another crucial anti-hunger policy. An increase in SNAP benefits would enable clients to meet more of their food needs through purchasing at grocery stores rather than receiving food from food banks.

- **Make food donation a priority for food-generating businesses**

Food-generating business interviewees said they primarily donate food because they would rather see it go to those in need than to the compost or landfill. The majority of interviewees said they had no financial incentive to donate food and discussed the valuable staff labor and time it takes to manage their donation process. One grocery store interviewee said it was easier to pull fresh food off shelves to be donated than to sort through near-expired food to determine what can be donated versus composted. Thus, another idea for formalizing the food donation system could be to develop permanent programs that make it easy and cost-effective for food-generating businesses to donate food. For example, a program that incentivizes businesses to donate a percentage of all their food well before its expiration, or one that informs businesses of food banks' current food needs to help provide them with the most in-demand foods with a tax incentive are two ways public agencies could help improve the emergency food system.

- **Better understand what consumer attitudes and expectations are surrounding food waste and their interplay with consumer and business practices**

Understanding consumer beliefs, attitudes and expectations about food waste is needed to understand which food waste prevention strategies can be implemented. For example, grocery stores reported that much of their food waste is due to spoilage that happens as a result of having overstocked shelf displays. Grocery stores believe that consumers will not pick the last item on a shelf – even when it is perfectly fine to eat – and this belief results in a large amount of food waste. Additionally, food-generating businesses with “front-end” food waste consistently reported that consumers do not properly sort their food waste, even in facilities with clearly labeled containers. Interviewees surmised this may be due to consumer’s lack of interest in sorting food waste or a lack of “know-how”. Research about consumer attitudes in these areas will provide valuable information about this important group and inform the development of food waste reduction policies and best practices.

V. Recommendations

Based on the findings above, this research identified 11 high-level recommendations to increase food waste prevention and recovery in the commercial sector.

1. Take an integrated (systems) approach to food waste

- **Use EPA's Food Recovery Hierarchy as a framework to prioritize food diversion efforts**

This hierarchy visually explains food waste diversion and was referenced by several commercial sector interviewees, suggesting that some food-generating businesses are already familiar with this framework. Adoption of the EPA hierarchy as a framework lends credence to the City's food waste diversion work. Use messaging that integrates prevention, recovery, and composting across all of SPU's food waste diversion efforts. Furthermore, dedicate staff time to food waste prevention and recovery.

- **Develop a Food Waste and Recovery Roundtable**

Multiple interviewees from the commercial sector suggested a forum where business leaders can discuss food waste diversion efforts. The Roundtable provides a forum to facilitate involvement of and communication between stakeholders and to foster a comprehensive approach from prevention to composting, across all sectors. Keying in other stakeholders such as anti-hunger agencies, public agencies, schools districts, and farmers market organizations will facilitate cross-sector communication and collaboration.

- **Explore opportunities to leverage funding across agencies or programs to expand food waste diversion efforts**

A common challenge mentioned in interviews with public agencies was a lack of funding for food waste diversion work. Explore creative ways to generate funding such as using compost fines to fund food waste prevention and donation programs or food waste diversion education. One public agency interviewed charges a fee for every ton of refuse entering the landfill and then funnels 10% of the collections to food waste diversion work.

- **Collaborate with partners regionally and nationally**

Leveraging relationships with other public agencies will bolster support for food waste work. Pursue opportunities to collaborate with state, county and national agencies, as well as other local governments. One public agency interviewee reported that the creation of a consortium of cities and counties pooled funding sources to support coordinated media campaigns for their

region. Also pursue opportunities to collaborate with other coalitions and non-governmental agencies.

2. Measure to create meaning

- **Develop and implement standard food waste metrics**

A consistent finding across sectors interviewed for this study is a lack of standardized metrics, which represents a lost opportunity for monitoring and evaluating food waste diversion efforts. Support the use of standard food waste metrics to regularly measure the amount of food diverted at each level of the EPA hierarchy in different sectors and to compare within and between sectors over time. Establishment of a feedback loop (regarding how the City gathers data and shares that data back from generators and the public) will show how the City as a whole and individual businesses are making progress. Finally, use metrics developed to inform SPU's Solid Waste Plan Updates and other relevant policies.

- **Develop a Seattle Food Waste Challenge to engage the public (across sectors) in helping to measure**

A key group of stakeholders in food waste diversion is the public. Rolling out and supporting the use of standardized metrics in a city-wide campaign will engage residents in measuring and reporting food waste alongside other sectors. The Seattle Food Waste Challenge could provide granular data (i.e. catering and institutional kitchens vs. restaurants) in order to understand food waste reduction potential by sector. Include success stories/qualitative data in addition to quantitative data to capture the fuller picture beyond numbers.

- **Keep food waste on the radar**

Generate ongoing support for food waste reduction by creating a feedback loop for gathering and sharing data with the public to demonstrate progress of both the City and the commercial sector in reducing food waste.

3. Avoid waste in the first place: lead with prevention

- **Make waste apparent**

There appears to be a disconnect between the actual amount of waste generated by consumers and businesses and their perceptions of this amount. Support awareness of food waste by

developing a Phase II LeanPath pilot with institutions. Develop other forms of food waste tracking and comparison for commercial businesses, such as a quarterly comparison of food waste between similar types of businesses. Provide support to businesses in conducting food waste audits by providing staffing and space to sort and analyze.

- **Make the case for food waste from the consumer level to the food service industry**

Food waste prevention needs to be the default operating structure for consumers and all types of food-generating operations. Develop targeted, industry-specific programs to promote food waste prevention. Integrate food waste prevention best practices into culinary and food service training. Educate consumers on best-by/sell-by/use-by dates and food storage tips. Empower consumers to encourage businesses to take prevention steps. Interview consumers to determine if business perceptions of consumer expectations are actually true, and then share these findings with the commercial sector. Build awareness of food waste in youth by working with Seattle Public Schools. Highlight successes in the form of case studies, publicity, forums, and model prevention policies.

4. Support the food donation/recovery system

- **Increase infrastructure and capacity of the emergency food system**

The emergency food system needs public agency support to function optimally. Explore ways to increase physical space for food banks and fund more drivers and trucks. Develop new tools and technologies that will increase connectivity and efficiency, such as an app that connects donations with anti-hunger agencies or that tracks food bank inventory with QR codes. Evaluate fee reductions or waivers (i.e. compost collection, parking) for anti-hunger agencies that free up funds for obtaining nutritious foods. Support the development of a corps of volunteers for food banks.

- **Increase donations of nutritious foods to the emergency food system**

A main finding was the need of anti-hunger agencies for nutritious foods and the challenges of acquiring and storing these perishables. Strengthen farm-to-food bank connections and support innovative food procurement strategies such as food bank gardens, gleaning from local farms, and grow-a-row programs in P-Patches and citizen gardens. Investigate transportation options for moving food from donors to food banks more efficiently.

VI. Appendices

Appendix A: Glossary of Terms

Compost: Organic matter that has decomposed and is recycled as a fertilizer

Diversion: The process of diverting food waste away from landfills

Emergency food system: The network of agencies that operate programs such as food banks and meal programs to distribute food to those who are food-insecure

Food waste: Any food that is not sold at the business. Food waste includes excess meals generated, food scraps, trimmings, or unfinished food discarded by customers

LeanPath: Software program that helps restaurant staff reduce their pre-consumer food waste by measuring the amount and types of food disposed and identifying the reasons for their disposal

Post-consumer food waste: Food discarded by a consumer (i.e. food leftovers)

Pre-consumer food waste: Food discarded that is not made into a product (i.e. trimmings, peels, etc.) or food discarded before it reaches a consumer (i.e. food left on buffet tables)

Prevention: Reducing the volume of surplus food generated

Recovery: Edible food that is recovered to be distributed to feed hungry people

WISErg: Bio-tech system that converts food scraps into a nutrient-rich liquid that's refined into fertilizer. Grocers and commercial kitchens use it to dispose some types of food scraps

Appendix B: Interview Guides

Appendix B-1: Oral Consent Script

Hello, this is **NAME** from the University of Washington. Earlier this month, we set up this time to talk to you about food waste and recovery efforts in your organization. Is this still a good time to talk?

(If “no,” try to schedule another time, if “yes,” keep reading)

Great, I will now read you the consent script. We do this so you will understand what it means to participate in this project and how we will be using the information you provide in this interview.

This interview will last approximately 60-90 minutes.

- The degree of risk is perceived as very minimal in this project, although you may be uncomfortable when asked certain questions. You are not required to answer the questions and may end the interview at any time.
- Results from this project will help us learn about ways to prevent or recover edible food waste and increase access to healthy food.
- This interview will be audio recorded if that is okay with you. Recordings will be destroyed once contents have been transcribed-no later than October, 2015. Your name will not be linked with your answers- all interview results will be combined so that your answers are not identifiable to you.
- If you have questions about your rights as a research subject, you may call the Human Subjects Division at (206) 543-0098.
- Participation is voluntary.

Do you have any questions about this project?

Do you consent to participating in this interview?

(If “yes,” continue with interview. If “no,” thank them for his/her time)

Appendix B-2: Anti-Hunger Agency Interview Guide

Name of Organization:

- 1) What is your role within the organization?
- 2) How long have you had this position?

Before we get started, I'd like to clarify the focus of our research. While directing food waste to compost facilities is one way of diverting food out of the waste stream, our focus is on preventing it from going into the waste stream in the first place. We know that anti-hunger agencies obtain food for their clients by receiving donated foods in many forms, which results in keeping edible food out of the waste stream. We will call this "recovery." Some people also use the term "food rescue". When we ask about your food recovery programs, we are not talking about food you may have purchased for distribution.

Questions about food bank/meal program:

- 3) We recognize that you do a lot of things; we just want the big picture here. Tell us about your organization and what your food recovery program does.
- 4) How much food tonnage does your program recover (on average) over a year?
 - a. Are there other metrics you use to track food that's donated or food taken by your clients?
 - b. Do you use any technology to measure food recovered?
- 5) What share (percentage) of the food you provide at your food bank comes from recovered food as opposed to food your food bank purchases itself?

Questions about donors:

Definition of model donor: (any of the following)

- Shares the same desire/commitment as anti-hunger program to get food to those in need
 - Long, established partnership between anti-hunger agency and donor
 - Seamless food donation pick-up schedule
 - Donates food that can be well utilized by anti-hunger program
- 6) What are the characteristics of your model donors? (What makes them easy to work with?)
Prompts: long-standing partnership, consistent donations, desirable food donations, seamless donation pick-up process, etc.

- 7) How have you both overcome barriers (together or separately) to make this partnership successful?
- 8) Who are the donors you would partner with if you could?
 - a. What has kept you from partnering with these donors?
- 9) What types of donors have you chosen not to work with and why? (What are the characteristics that make them hard to work with?)

Prompts: too logistically difficult to work with each store manager, inconsistent quantities, bad previous history, small volumes, not the right types of food, etc.

 - a. Do you know if there are other agencies who are working with these donors that you've chosen not to participate with?

Questions about food donations:

- 10) What types of food are most recovered?
- 11) Are there foods you focus on obtaining or would like to get more of and why?

Prompts: Produce?
- 12) Are there certain foods you have a hard time getting food bank clients to take?

Prompts: bulk items, heavy/large items, foods that require refrigeration, foods clients are unfamiliar with/don't know how to cook, etc.
- 13) Are there particular challenges with donations of produce or other foods?
 - a. If so, what are they?
- 14) Do you collaborate with farmers/farmer's markets/food hubs to get more fresh produce?
 - a. If so, how does it work? Do you have a food bank staff member go to the farm/farmer's market to collect the food?
 - b. If not, what has prevented you from working with them?
- 15) What do you do with food that is leftover at your food bank/meal program? Is there a cost involved in disposing of the food?

Prompts:

 - a. *Send to the landfill?*
 - b. *Collaborate with food waste collection service (composters or bio-digesters?)*
 - c. *Collaborate with animal feed programs?*
- 16) If your organization started receiving more food, would you be able to keep up with it? (*i.e. Would you have a place to store it or a volunteer to pick it up?*)

- 17) We've heard about 3rd party organizations such as Food Shift and Food Runners in the Bay Area. These businesses are connecting with grocers and restaurants, providing pick up services and dropping off to food banks and meal program providers. Does your organization work with similar 3rd party orgs and if so how does it work? If NOT, have you heard from sister organizations like Food Lifeline about their experiences with 3rd party food collectors?
- Does the 3rd party add to competition for food or conversely help increase collection that wouldn't happen otherwise?
 - Does the organization compete for the same funds?
 - How long have you been working with this 3rd party collector?

Questions about barriers/needs/ways to improve program:

- 18) What are the factors that help your food recovery program run smoothly?

Prompts:

- Food donation pick-up coordination?*
- Adequate equipment to pick-up and store food?*
- Adequate space to store donated food?*
- Positive, long-lasting partnerships with donors?*
- Excellent volunteer and/or staff team?*

- 19) What are the barriers or challenges in your food recovery program, if any?

Prompts:

- Competition with other anti-hunger agencies for donations?*
- Lack of equipment or storage space?*
- Lack of time to collect food donations/Cannot pick up donations during evening hours?*
- Staff/volunteer shortages?*
- Staff turnover that disrupts donor relationship?*
- Minimal outreach efforts with food-donors about donation process and benefits?*
- Low volume/inconsistent food donation?*
- Undesirable food donations (food that clients do not take)*
- Cannot partner with smaller retailers due to financial/staffing constraints? (Food Lifeline said it's easier for them to work with corporate level donors, so they can gain leverage to the entire chain of stores)*

- 20) What are your ideas for how your agency could improve their food recovery program?

Prompts: *logistics of food donation, types of donated food, etc.*

- 21) Is there any technology (tracking food donations/waste) that you wish existed? Or that does exist and you'd like to utilize?

- 22) If you wanted to learn more about resources or programs that address food waste prevention and recovery where would you go? Who would you ask?
- 23) Do you currently or in the past have you worked with any public agencies? (SPU, City of Seattle Human Services Department)
- a. If so, can you describe the type of guidance and support they provide (or provided) you?
Prompt: partnership, funding, connections, technical assistance, etc.
- 24) What type of support would be most useful to receive from city, county, or state public agencies?
- Prompts:
- a. ***If they answer ‘funding’ – ask funding for what?***
 - i. *New equipment to transport and store donations?*
 - ii. *Funding for staff – truck drivers, logistics coordinators, etc.*
 - iii. *System to coordinate and recruit volunteers – internal or external?*
 - iv. *System to recruit donors and provide them with info about why, what and how to donate?*
 1. *Seattle/King County’s Solid Waste Division has a website called “What do I do with...?” that provides a list, map and contact info of food banks and meal programs that business or individuals can donate leftover food <http://your.kingcounty.gov/solidwaste/wdidw/category.asp?CatID=9>*
 - v. *Partnerships with culinary schools or food waste collection services to dispose of food waste?*
- 25) We are going to conduct interviews with businesses in the commercial sector. We are hoping to interview: 1) your model donors, 2) donors who are doing something unique, 3) potential donors you would like to recruit, and 4) donors that pose a challenge to recruiting.
- Who would you recommend that we talk to? Can we have the contact information from any of these donors?

Thank you so much for your time. Your insights are greatly valuable to us and will greatly enhance the quality of our report. **Would you like us to share our findings with you?**

“As we discussed at the outset of this interview, the information you have shared with us today about the work of your organization on food recovery and prevention is confidential and will not be tied to you or your organization. However, the City of Seattle and Seattle Public Utilities—the funders of this research—are very interested in helping to support your food recovery and prevention efforts, actions, and programs and reaching out to you to provide this support. Thus, we would like to ask if you would consent to sharing your name and/or the name of your organization in connection with the interview we have just conducted so that they may reach out to help support your work. If not, we will keep your information confidential and your data will be de-identified. If so, we want to make sure you understand that because these two entities are public organizations that any materials we do share with them will become public documents that could be available upon request (“Freedom of Information Act”). Can

you please let us know if you do or don't consent to our sharing your name or the name of your organization in connection with the interview we have just conducted?"

Appendix B-3: Public Agency Interview Guide

Name of Public Agency:

Background information on agency: *Sara will write a summary of what she can find out about each program online.*

26) What is your role within the organization?

27) How long have you had this position?

Questions about programs:

Before we get started, I'd like to clarify the focus of our research. While directing food waste to compost facilities is one way of diverting food out of the waste stream, our focus is on preventing it from going into the waste stream in the first place. We're interested in how public agencies are encouraging the avoidance of food waste. In the interview, we will call this "prevention." And when this is not possible, we also want to understand what strategies your agency might be using to recover edible food so that it goes to food insecure individuals instead of the waste stream. We will call this "recovery." Some people also use the term "food rescue."

28) What are the strategies or programs your organization is involved in that promote food waste **prevention**?

- a. *Prompts: Funding programs like LeanPath or the EU's FORWARD training program at restaurants or institutions, education or awareness campaigns directed to the public or businesses about food waste, etc.*

2) What are the strategies or programs your organization is involved in that promote food waste **recovery**?

- a. *Prompts: Helping connect grocers/hotels/hospitals/restaurants to food banks or farms to food banks; paying for refrigerated transportation or other equipment; education about Good Samaritan laws and benefits of donation vs composting;*

29) Who have you partnered with or funded to work on these programs?

- a. What does this relationship look like?
 - i. *Prompts: Grant funding, training, connecting anti-hunger organizations with commercial sector, partnering with other City depts. /public agencies to leverage funding, enacting legislation, etc.*
 - ii. Prompts (these could still be good prompts))
 - iii. Enhanced outreach?
 - iv. Infrastructure grants/support for storage/transportation/communication
 - v. Case studies?
 - vi. Innovation and/or collaboration among rescue organizations?

30) Do you have particularly good partners that operate on a national scale and might make good partners in the Northwest?

Prompts

- a. Grocers
 - b. Restaurant chains
 - c. Food service providers (Bon Appetit, distributors)
 - d. Lean Path
 - e. Anti-hunger or gleaning org
- 31) Have you monitored or evaluated these food waste prevention/recovery program(s)?
- a. If so, what metrics do you use?
 - b. Can you share your quantitative/qualitative results with us?
 - c. Do you gather metrics other than solid waste (i.e. health benefits, climate change, etc.)
- 32) Which of these strategies or programs do you view as most effective or successful?
- a. Why?

Questions about barriers/challenges to these programs:

- 33) What have been the challenges/barriers (if any) you've encountered when trying to implement these programs (insert here the names of the programs brought up in #2 and 3)?

Prompts:

- a. *Lack of support from local government?*
 - b. *Lack of support from businesses?*
 - c. *Lack of collaboration with anti-hunger agencies?*
 - d. *Lack of support from other public agencies in city/state?*
 - e. *Lack of understanding about the root of the problem (solutions may not address the real issue)?*
 - f. *Lack of knowledge about what to do about it?*
 - g. *Lack of system for addressing it?*
 - h. *Not a high priority in an environment of limited resources?*
- 34) Which challenge/s of those do you view as the greatest and why? Or which of these challenges has really gotten in the way of being able to implement or run programs effectively?
- 35) (If applicable) How have you overcome these barriers?
- 36) How do you make the case (to decision makers) that these programs are needed/effective/should be funded?
- a. What data do you use?
 - b. Which metrics are compelling?
 - c. What are the compelling rationales for each audience? (Audiences could be elected officials, leadership at your agency, the public interest, etc.)
 - i. Were there other decision makers you needed to convince?
 - d. What key policies support on-going work in this area?

Prompts

- i. Recycling goals
- ii. Climate change
- iii. Public health benefits

iv. Economic benefits

Questions about how these programs could be improved or ideas for new programs:

37) How do you think these food waste prevention and recovery programs could be improved?

Prompts:

- a. *Funding? If so, what would the funding go toward?*
 - b. *Education about the benefits of food waste prevention for grocers/hospitals/restaurants (save money, less food wasted) and recovery (tax incentives, help feed others, prevent food from going to landfill, etc.)?*
 - c. *Provision of resources (case studies from other cities/states that have successful regulation in place)?*
 - d. *Forming/strengthening partnerships? Who would you partner with? What sort of ongoing need is there for relationship strengthening?*
- 38) Are there any other food waste prevention and recovery programs you would implement in your locality if you could?
- a. *Prompt: Any new/novel strategies you've heard about? Technology?*
- 39) What has kept you from implementing these programs and/or what would it take to implement the program?

Questions about Partnerships

- 40) Who are the other public agencies that are involved in food waste in your locality? Are they engaged in food waste prevention and recovery?
- 41) How do you coordinate or work together?
- 42) Are there other agencies or non-profits doing similar work in your area that you are not already partnering with? If so, why are you not working with them? What are they doing and how does your work complement one another?
- 43) We are planning to interview 5 other public agencies on this topic - Are there other City/County departments or local nonprofits that you would recommend we talk with? Or any industry associations or national organizations that have helped you develop your program and would be helpful in our research?

Closing questions /final thoughts

- 44) What advice would you give to another public agency that is hoping to strengthen/develop food waste prevention and recovery programs?
- 45) Do you have any additional or closing thoughts on the topic of food waste prevention and recovery?
- 46) Do you have any resources you could share with us?
- a. *Prompts: Legislation, programs, websites, training tools, etc.?*

Thank you so much for your time. Your insights are greatly valuable to us and will greatly enhance the quality of our report. **Would you like us to share our findings with you?**

“As we discussed at the outset of this interview, the information you have shared with us today about the work of your organization on food recovery and prevention is confidential and will not be tied to you or your organization. However, the City of Seattle and Seattle Public Utilities—the funders of this research—are very interested in helping to support your food recovery and prevention efforts, actions, and programs and reaching out to you to provide this support. Thus, we would like to ask if you would consent to sharing your name and/or the name of your organization in connection with the interview we have just conducted so that they may reach out to help support your work. If not, we will keep your information confidential and your data will be de-identified. If so, we want to make sure you understand that because these two entities are public organizations that any materials we do share with them will become public documents that could be available upon request (“Freedom of Information Act”). Can you please let us know if you do or don’t consent to our sharing your name or the name of your organization in connection with the interview we have just conducted?”

Appendix B-4: Commercial Sector Interview Guide

Introduction: *The City of Seattle is working on a ‘Food Waste Prevention and Recovery Assessment’ project to better understand food waste prevention and recovery with a specific focus on the commercial sector. We are interviewing 3 sets of key informants: anti-hunger agencies, public state/local government agencies, and commercial sector businesses. From each of these we are trying to capture a greater understanding of current barriers, motivations, and opportunities to determine potential roles for our local government to reduce food waste.*

Name of Business:

Zip code:

- A. Please state your name and position:
- B. How long have you worked with “X” organization?
- C. How many customers does your business serve each month across all your stores in Seattle?
- D. How many employees do you have at your stores in Seattle?
- E. Is your business registered as a Woman or Minority-Owned Business?

Before we get started, I’d like to clarify the focus of our research. While directing food waste to compost facilities is one way of diverting food out of the waste stream, our focus is on preventing it from going into the waste stream in the first place. We’re interested in how businesses are encouraging the avoidance of food waste. In the interview, we will call this “prevention.” And when this is not possible, we also want to understand what strategies your business might be using to donate edible food so that it goes to food insecure individuals instead of the waste stream. We will call this “recovery.”

First we want to broadly understand how much food “waste” is generated at your business, where it goes and where it comes from.

1) Do you know how much, on average, of your food inventory is not sold each month? (*i.e. becomes ‘waste’ or surplus.’*) *If they answer in tons, ask them:*

1A) And roughly, what percentage is that of your total food inventory?

2) Where does that food go? If you need to break it down into food categories (i.e. produce, deli, etc.) please do so.

- A) Garbage
- B) Compost
- C) Donated to food bank
- D) Donated to animal feed
- E) Other

3) And on average, how much food ends up in each pathway per month?

Prompts: Expiration dates, spoilage, blemished/bruised products, seasonal products, change in inventory, etc.

- A) Garbage
- B) Compost
- C) Donated to food bank

- D) Donated to animal feed
- E) Other

4) What are the primary reasons food enters these pathways?

- A) Garbage
- B) Compost
- C) Donated to food bank
- D) Donated to animal feed
- E) Other

This next set of questions refers to food that enters the compost and garbage pathways. We'll talk about food that's donated later in the interview. When we say "thrown away," that means into the garbage or compost.

5) What types of food most often end up being disposed of into the garbage and compost?

6) What are the incentives or benefits, if any, for your company to prevent food from being thrown away?

7) What methods or strategies have you put in place that help you prevent or limit the amount of food that is thrown into the garbage or compost container?

8) Does your company have targets for limiting the amount of food disposed of? (i.e. 20% of your inventory will be disposed of due to bruised/blemished produce, food trimmings, etc.)

9) **IF YES**, who sets these targets (corporate targets? Individual store/location targets?) AND how do you track it?

10) What are the challenges your business faces in preventing food from being thrown away? **On another note, are there any challenges your business faces to composting?**

11) Are there any ways you currently help your customers prevent the food they buy from going to waste? If not, would you be interested in someone from SPU following up with you?

12) These are other methods/strategies that help businesses limit the amount of food wasted.

Read only examples that would be applicable to interviewee:

Restaurants: smaller menus, smaller portions/half-orders, cook-to-order food, reducing trimmings and peels, proper food handling and storage, use of specials to use up inventory, waste audits, encouraging patrons to take home leftovers in recyclable/compostable containers, etc.

Grocery stores: item level analyses to change ordering patterns, discount offerings for out-of-date promotional items/slightly damaged goods, buy-one-get-one-later programs, product display redesign, allowing prepared foods to run out near closing, consumer education on food quality and expiration dates (sell by dates, blemishes, etc.)

Institutional settings: scheduling lunch after recess so kids have more time to eat, tray-less cafeterias, plate sizes, cook-to-order food, room service at hospitals, etc.

Have you done anything like these in the past or are you still doing them?

- a. If you've tried, but are no longer doing "X", why are you no longer doing it?
- b. If not, would you be willing to try any of these strategies and what?

c. What would motivate you to try some of these strategies?

Now we'll turn to questions about food donation.

13) Do you donate any food? If so, who do you donate to? What is the system you have set up with that organization like?

14) How did you figure out how to set up this donation process? (i.e. connect your organization with food banks or meal programs?)

15) How often do you donate? How much? (What % of your total food waste is donated?) What types of foods are being donated or are not being donated?

16) How long have you been donating and has this changed over time?

17) What are the benefits to your organization of donating food? Why do you donate?

18) What works well with this donation process?

19) What doesn't work well with this donation process?

Prompts:

a. Ability to obtain collection service within a narrow window of time

b. Amount of storage space needed for food donations

c. Limited time window for donating fresh produce

d. Uncertainty of where or how to donate

e. Reliability of collection service

f. Concern about liability for donated items

g. Owner or company resistance to donating food

h. Surplus amounts are not enough to donate

i. Don't have time to look into the donation process

j. Too much staff turnover/training

k. Regulatory requirement (mandates to destroy returned products-grocers; "expired" food)

20) What would help address or overcome those barriers?

21) How much control do you have over food donation at your business? If you aren't the lead person for this, then who decides? Is it a corporate level policy? (this second question may not be appropriate for smaller businesses.)

22) Are you working with any public agencies at the corporate or local level?

a. If so, what has been your role?

b. If not, have you wished you could partner with a local public agency to further your waste prevention goals?

23) Is there anything else you'd like to add?

Thank you so much for your time. Your insights are greatly valuable to us and will greatly enhance the quality of our report. **Would you like us to share our findings with you?**

“As we discussed at the outset of this interview, the information you have shared with us today about the work of your organization on food recovery and prevention is confidential and will not be tied to you or your organization. However, the City of Seattle and Seattle Public Utilities—the funders of this research—are very interested in helping to support your food recovery and prevention efforts, actions, and programs and reaching out to you to provide this support. Thus, we would like to ask if you would consent to sharing your name and/or the name of your organization in connection with the interview we have just conducted so that they may reach out to help support your work. If not, we will keep your information confidential and your data will be de-identified. If so, we want to make sure you understand that because these two entities are public organizations that any materials we do share with them will become public documents that could be available upon request (“Freedom of Information Act”). Can you please let us know if you do or don’t consent to our sharing your name or the name of your organization in connection with the interview we have just conducted?”

II. Commercial Sector Interview Questions: NON-DONORS

Name of Business:

Zip code:

- A. Please state your name and your role within the organization
- B. How long have you worked with “X” organization?
- C. How many customers does your business serve each month across all your stores in Seattle?
- D. How many employees do you have at your stores in Seattle?
- E. Is your business registered as a Woman or Minority-Owned Business?

Throughout the interview, we know there may be different terms you use for things like ‘food waste’ or ‘food waste prevention,’ so please feel free to use your own terms. I may ask you to define these terms as well as we go along.

First we want to broadly understand how much food “waste” is generated at your business, where it goes and where it comes from.

1) Do you know how much, on average, of your food inventory is not sold each month? (*i.e. becomes ‘waste’ or surplus.’*) *If they answer in tons, ask them:*

1A) And roughly, what percentage is that of your total food inventory?

2) Where does that food go? If you need to break it down into food categories (*i.e. produce, deli, etc.*) please do so.

- A) Garbage
- B) Compost
- C) Donated to food bank
- D) Donated to animal feed
- E) Other

3) And on average, how much food ends up in each pathway per month?

- A) Garbage
- B) Compost
- C) Donated to food bank
- D) Donated to animal feed
- E) Other

4) What are the primary reasons food enters these pathways? *Prompts: Expiration dates, spoilage, blemished/bruised products, seasonal products, change in inventory, etc.*

- A) Garbage
- B) Compost
- C) Donated to food bank
- D) Donated to animal feed
- E) Other

This next set of questions refers to food that enters the compost and garbage pathways. We'll talk about food that's donated later in the interview. When we say "thrown away," that means into the garbage or compost.

5) What types of food most often end up being disposed of into the garbage and compost?

6) What are the incentives or benefits, if any, for your company to prevent food from being thrown away?

7) What methods or strategies have you put in place that help you prevent or limit the amount of food that is thrown into the garbage or compost container?

8) Does your company have targets for limiting the amount of food disposed of? (i.e. 20% of your inventory will be disposed of due to bruised/blemished produce, food trimmings, etc.)

9) **IF YES**, who sets these targets (corporate targets? Individual store/location targets?) AND how do you track it?

10) What are the challenges your business faces in preventing food from being thrown away? **On another note, are there any challenges your business faces to composting?**

11) Are there any ways you currently help your customers prevent the food they buy from going to waste? If not, would you be interested in someone from SPU following up with you?

12) These are other methods/strategies that help businesses limit the amount of food wasted.

Read only examples that would be applicable to interviewee:

Restaurants: smaller menus, smaller portions/half-orders, cook-to-order food, reducing trimmings and peels, proper food handling and storage, use of specials to use up inventory, waste audits, encouraging patrons to take home leftovers in recyclable/compostable containers, etc.

Grocery stores: item level analyses to change ordering patterns, discount offerings for out-of-date promotional items/slightly damaged goods, buy-one-get-one-later programs, product display redesign,

allowing prepared foods to run out near closing, consumer education on food quality and expiration dates (sell by dates, blemishes, etc.)

***Institutional settings:** scheduling lunch after recess so kids have more time to eat, tray-less cafeterias, plate sizes, cook-to-order food, room service at hospitals, etc.*

Have you done anything like these in the past or are you still doing them?

- a. If you've tried, but are no longer doing "X", why are you no longer doing it?
- b. If not, would you be willing to try any of these strategies and what?
- c. What would motivate you to try some of these strategies?

Now I'm going to ask you about donating food to food banks or meal programs. It sounds like this is not one of your primary pathways where your unsold food is directed.

13) What are some of the reasons you don't use this pathway (donate food?)

Prompts:

- a. Ability to obtain collection service within a narrow window of time*
- b. Amount of storage space needed for food donations*
- c. Limited time window for donating fresh produce*
- d. Uncertainty of where or how to donate*
- e. Reliability of collection service*
- f. Concern about liability for donated items*
- g. Owner or company resistance to donating food*
- h. Surplus amounts are not enough to donate*
- i. Don't have time to look into the donation process*
- j. Too much staff turnover/training*
- k. Regulatory requirements (mandate to destroy returned products-grocers; "expired" food)*

14) What might motivate your company to donate food?

15) How much control do you have over food donation at your business? If you aren't the lead person for this, then who decides?

Thank you so much for your time. Your insights are greatly valuable to us and will greatly enhance the quality of our report. **Would you like us to share our findings with you?**

"As we discussed at the outset of this interview, the information you have shared with us today about the work of your organization on food recovery and prevention is confidential and will not be tied to you or your organization. However, the City of Seattle and Seattle Public Utilities—the funders of this research—are very interested in helping to support your food recovery and prevention efforts, actions, and programs and reaching out to you to provide this support. Thus, we would like to ask if you would consent to sharing your name and/or the name of your organization in connection with the interview we have just conducted so that they may reach out to help support your work. If not, we will keep your information confidential and your data will be de-identified. If so, we want to make sure you understand that because these two entities are public organizations that any materials we do share with them will become public documents that could be available upon request ("Freedom of Information Act"). Can you please let us know if you do or don't consent to our sharing your name or the name of your organization in connection with the interview we have just conducted?"

Appendix C: Complete Findings by Sector

FINDINGS FROM ANTI-HUNGER AGENCY INTERVIEWS

Eight anti-hunger agencies of varying sizes and that serve clients of varying ages and racial/ethnic backgrounds were interviewed for this report. Anti-hunger agencies interviewed were generally located in downtown or south Seattle neighborhoods. Below are common themes from interviews with supporting, illustrative quotes.

Metrics

- **The metrics used to communicate the scale of anti-hunger agency operations vary considerably across agencies.**

By design, the anti-hunger agencies that interviewed ranged considerably in the scale of their operations. However, despite offering the same or similar services, the metrics they used (i.e. to track clients served, meals served, and donations received) varied greatly making it challenging to compare their scale, as illustrated in the boxes below. For example, many reported the number of clients served in terms of people per hour or over a period of time, while others reported the number served in terms of bags, pounds, or meals. In addition, while some agencies only provided food as the service, others included nutrition education as part of that service.

Agencies varied in how they reported the scale of clients served.

Many reported the scale they served in terms of people per hour or over a period of time:

- *“120-140 people through in an hour”*
- *“18,000-19,000 people a month just last year”*
- *“We range from serving a couple hundred families a month to thousands”*
- *“Last year we served over 1,800 people with our food services and another about 300 with nutrition education”*
- *“720,000 people a month who use the services”*
- *“Between 1,000-1,100 families a week”*
- *“5,600 this past year”*

Others used bags, pounds or meals to report their scale:

- *“We do 40,000 grocery bags a year and we do 162,000 meals”*
- *“We serve approximately 500,000 meals a year”*

- *"We put together 1,800 meals a day"*

Agencies varied in how they reported the scale of food donations.

Some reported donated food in pounds or tons over different periods of time:

- *"900,000 pounds of food that was recovered or donated"*
- *"775,000 pounds per year"*
- *"We expect to distribute 32 million pounds of food this year. Of the 32 million, 70% is donated."*
- *"We're recovering on average a half a million to three quarters of a million pounds of food a year."*
- *"We're procuring about 40,000 pounds a month."*
- *"Last year we brought in about 17.3 million pounds."*
- *"I think last year it was 212 tons"*
- *"Since 2005, we have rescued and redistributed over 3 million pounds of food."*

Others used dollars or meal conversions to report their donations.

- *"Last year we estimated that we used \$1.9M worth of rescued food in the organization."*
- *"We assign a monetary value to it. That changes from year to year. We assign that value based on the Feeding America's evaluation, which currently is \$1.72 I think per pound."*
- *"We use a meal conversion."*
- *"We conservatively estimate at \$2.99 a pound."*
- *"We are required to report that poundage in a variety of different categories, and so that would be meat, dairy, fresh fruits and vegetables, bread, and then dry goods, dry canned goods."*

Food Donation

- **The most common donations are produce, protein, bread, and shelf-stable products. Despite these regular donations of produce and protein, anti-hunger agencies are still purchasing 5-40% of these types of food because there is not enough healthy food available in the food recovery stream.**

Seven of eight anti-hunger agencies said produce and/or protein items are their most common food donations. However, all eight anti-hunger agencies reported purchasing more produce, proteins, and dairy products to fill the nutritional gaps in the food recovery system (see box below.) One interviewee said purchases of these items meet or exceed \$140 thousand dollars per year.

Interviewees said:

"We have been working very hard over the years and will continue to do so to gain more sources of donations of fresh produce and good, quality protein."

“We have a number of people we purchase from...because in the emergency food system, a lot of the foods that are available are just not suitable for a healthy diet.”

“You’re not getting the resources that are needed to provide nutritionally dense meals because what was being donated and what is still being donated is a lot of food that is not appropriate for human consumption.”

- **Anti-hunger agencies are in need of more food donations to keep up with increased demand. They are especially in need of healthy food items, particularly produce and protein, because they prioritize serving healthy foods to their clients.**

Every anti-hunger agency interviewed reported a need for more food donations and that they are actively seeking new donors. Five anti-hunger agencies stated traditional donors in their neighborhoods, like grocery stores and restaurants, already have established relationships with other anti-hunger agencies, and two anti-hunger agencies stated there are not enough grocery stores located in their areas to utilize. For these reasons, anti-hunger agencies are seeking non-traditional donors, such as farmers, drug stores, wholesalers and schools, to obtain more donations.

At the same time, an increased demand for anti-hunger agency services has emerged over the past few years in response to economic downturns. As one anti-hunger agency interviewee stated, “When the economy tanked the crowd started growing...2014 was the starkest of those years when we had a 32% increase in demand.” However, increased demand is not being matched by increased food donations. Half of the anti-hunger agencies interviews said that food donations have decreased over the past five years.

Anti-hunger agencies strive to make healthier foods available to clients, as illustrated in the box below. This theme was heard across all eight interviews with five anti-hunger agencies stating the least desirable donated foods are unhealthy food, artisan breads and unfamiliar foods. This push for healthier food means anti-hunger agencies are competing with other anti-hunger agencies for healthier donations. They also reported having to turn away unhealthy donations, due to their limited storage capacity, to ensure there is space for healthy donations.

Interviewees said:

“On a day when we’re going to do 1,000-1,500 people, you can see the diabetes; you can see the obesity and you can see the heart disease. I mean, you can see it just walking, the people who really need good food. We’re really pushing nutrition as part of our mission.”

“We’re very cognizant of what the health repercussions are with the food that we are serving to the populations that are challenged with hunger or that do not have choices.”

“Last year we started our healthy food movement. We had this transition of moving more towards brown rice, purchasing organic and not always accepting donations because there can be fillers and be full of sugar.”

“We are after healthy foods. Healthy food is a big topic. We’re currently in the process of developing standards by which we procure food. That’s going to result in that we’re actually going to be turning down donations and being very particular about our purchases. That’s going to be a real challenge for us, but we feel that this is a direction...the whole food security system should go.”

FOOD DONATION CHALLENGES

- **The most common challenge for anti-hunger agencies to obtaining more food – particularly for perishable items -- is inadequate storage space. Systems that support tight inventory management to prevent perishable food from spoiling are needed to overcome this challenge.**

One of the most common barriers to recovering more food is inadequate storage space especially for perishable items. While anti-hunger agencies stated they favor produce, protein and dairy donations, these items come with the additional challenge of maintaining proper temperatures to keep them safe and maintain their quality. Storage space for both perishable and non-perishable items was an issue for both large and small anti-hunger agencies suggesting storage will be a limiting factor no matter the size of the agency.

If anti-hunger agencies are unable to manage their perishable inventory because they receive too many donations of foods near expiration, these expired foods are put in the compost container. Anti-hunger agencies must pay these compost fees and noted they can get expensive with fees reaching a couple hundred dollars a month. Additionally, sorting through spoiled or expired donations takes valuable time away from more important tasks of anti-hunger agencies.

Interviewees said:

“I think that the second biggest challenge to space is the inventory management. It’s our responsibility to make sure that every single person has an opportunity to receive our highest quality items. We can make educated guesses, but we don’t know what the demand for an item will be, or what that demand for our service will be on any given day. It does happen on occasion where we get produce items that we limit, and then find out that we have more than enough. We could have given out all of it, and so then it sits in the warehouse and it goes bad or something like that in a very short period of time. That happens on occasion as well and contributes to some of our waste.”

“Perishability is a huge, huge, huge concern.”

“When we receive a donation there may only be a certain amount of time left that it’s either going to taste good, or that it’s going to be food safe...If a donation has about two days left on it and we’re distributing it today, then the client getting that only has a day to eat it or prepare it. That’s of limited usefulness.”

“[Donors] want to donate the product when it’s too late, and it’s unusable and costing us a fortune in compost bills...I mean, if it’s at that point, then they should toss it and they should pay their own garbage bill.”

“If we as food banks become dumping grounds for compost, it really kind of prevents us from being better at what we’re trying to do which is to feed hungry families in our community.”

- **The second most common challenge for anti-hunger agencies to obtaining more food is coordinating the pick-up or delivery of donations.**

The majority of anti-hunger agencies do not operate during evening hours or weekends when a lot of food donations become available. However, some anti-hunger agencies have extended their work hours to accommodate donors’ weekend schedules. Pick-ups also require staff time and money, so anti-hunger agencies must determine whether pick-up of donations is worthwhile. Many said they appreciate donors who can deliver donations to their anti-hunger agency or donors that donate on a consistent schedule for this reason. This saves staff time and allows the anti-hunger agencies to plan pick-ups in advance. One anti-hunger agency also noted staff turnover on the donor end can result in decreased donations and emphasized the need for donors to train multiple staff members on the donation process.

Interviewees said:

“We are a community nonprofit. We are not available 24/7 to recover food...we are going about donation recovery 7 days a week, which is something that has come about because of how we need to work with some of our partners. We’re doing that, but then at the same time calling at 9:00 at night isn’t really going to necessarily work for us.”

“It’s not always economical to send a paid staff person to a small business where most of their donations are going to be tiny.”

“Obviously, if someone can bring the food to us, that’s nice, if we don’t have to use our staff time and vehicles to go and get something.”

“In any sector we work with there is a lot of change in staff. So then when there is a change in staff, we see a drop in pounds [donated].”

- **Scaling up the food distribution system creates additional barriers for smaller anti-hunger agencies.**

Three anti-hunger agencies noted that they have lost relationships with some donors because of consolidation of donations through large anti-hunger food distributors. Before this consolidation, smaller anti-hunger agencies had individual partnerships with donors. While these agencies still receive donations from the large distributors, these agencies have had to form new relationships with donors to fill the gaps. Despite this, all anti-hunger agencies said they still benefit from the role large distributors play in the food recovery system; their large size allows them to pick up donations which are then equally distributed to smaller anti-hunger agencies.

FOOD DONATION Solutions

- **Anti-hunger agencies have come up with innovative solutions such as implementing a logistics improvement program, joining the Neighborhood Farmer’s Market Alliance, or growing their own produce on site to help improve their programs and increase donations.**

To increase the efficiency of their anti-hunger agency operations, one agency implemented a logistics improvement program that focuses on streamlining standardized activities and processes. With the help of a specialist, they made small changes such as rearranging their storage and pick-up areas to decrease wait time for clients and better manage their food inventory. The benefits of this program are described in the box below.

Interviewee said:

“Over the course of the last year, we conducted dozens and dozens of experiments and made small changes here and there that eventually added up to pretty dramatically reducing our guest wait time by about 60%, and is allowing us to get 120-140 people through in an hour, whereas before we were lucky to get 50-60 through in an hour. We are able to do that without any reduction in quality or quantity of food that we were giving away.”

Five anti-hunger agencies receive donations from farmer’s markets or local farms to both support the local farmer’s market and farmers and to increase healthy food access for their clients. To amplify this farm-to-food-bank relationship, one anti-hunger agency partners with a neighborhood farmers market by distributing monetary vouchers to their clients that can be used at a local farmer’s market. In this way, the food bank is able to support the farmers market while the farmers market supports the anti-hunger agency by donating leftover produce. These market vouchers also expand the fresh produce options for the anti-hunger agency’s clients.

To increase the amount and quality of produce available for clients, another anti-hunger agency would like to grow produce onsite using hydroponic/aquaponic systems and another suggested the development of a food processing system to process perishable items into foods with longer shelf life. For example, in the past there was a local cannery one anti-hunger agency was able to utilize that turned their abundant fall donations of Washington apples into apple chips and applesauce for their clients. This extended the shelf life of the apple products and offered the anti-hunger agency clients more variety.

Interviewees said:

“These are vouchers produced by the Neighborhood Farmers Market Alliance used to purchase produce. We provide them to all of our customers if they want them. It’s \$6 worth of vouchers at each go-round and then it’s a couple of times a year. The last couple of years we reimbursed around \$10K worth of produce purchases by our customers at the farmers market. For us it’s a couple of reasons why we do that. One, it’s an opportunity to support the farmers that support us through donations. Another important consideration is getting customers the food that they want and need, knowing that we have a very small space and can’t always have the variety of options that they would want. This is another way to give them that fresh and healthy food.”

“Another thing that we want to do is grow some food onsite using hydroponics and/or aquaponics eventually, instead of trying to do a raised bed garden or a soil-based agriculture site onsite. We want to do hydroponic beds on the roof and grow thousands of greens every month.”

- **Anti-hunger agencies also offered ideas about how they could use technology to quickly connect donors to anti-hunger agencies and also allow them to track their food inventory and clients more effectively.**

Two anti-hunger agencies suggested creating an electronic alert system which donors could use to notify anti-hunger agencies about available food donations. One anti-hunger agency described this as being a city-wide program that all donors and anti-hunger agencies could access. When a new food donation is available, a message would be sent to anti-hunger agencies stating the type and quantity of food available and then anti-hunger agencies could sign-up for the donation.

Using iPads to record the type and amount of food donated upon pick-up is another technological solution offered by two anti-hunger agencies. Another suggested using QR codes to track food inventory and barcodes on client ID cards to speed up the check-in process at their anti-hunger agency. Importantly, these technological solutions may only be appropriate for anti-hunger agencies capable of and comfortable using technology. One anti-hunger agency specifically mentioned they would continue to track food donations using paper methods even if there is an electronic alternative because their anti-hunger agency system is set up best for paper usage.

Interviewees said:

“There are even programs out there that are apps that the donors can use that say that [bzzzz] just got 2,000 pounds worth of mandarin oranges. Can you pick them up?”

“All of the drivers have an iPad instead of having to hold a lot of paper, which also goes into the garbage. Everything goes onto the iPads and then goes into the central system.”

“One of the things that we could improve with that is that we would really like to...incorporate barcodes into our client ID cards to speed up the check-in process. We have also added a number of ideas where we could use tablets or things like that to do any number of different things that could expedite the whole process and reduce the wait time for guests.”

“We could honestly attach [QR codes] to pretty much anything. We could track our inventory better that way. We could even track our own donations or our own paperwork or our own forms that way by just making things more accessible for everyone on our team to access it as quickly as possible”.

“Electronic things don’t always work. Even if they had a program, I probably still would do all the paper. We get a paper invoice from everything that we purchase, everything that we get delivered, and so I would still have paper and so it wouldn't eliminate paper.”

- **Some anti-hunger agencies are interested in utilizing third-party organizations to transport donations while others feel like this role has already been filled or are hesitant to work with them.**

Another innovation anti-hunger agencies discussed was third party organizations that pickup food from donors and bring it to anti-hunger agencies. These organizations help anti-hunger agencies overcome the transportation barrier discussed above. Many of these third parties are volunteer or non-profit organizations that are staffed by a few volunteers who transport food on their bikes while others are larger organizations with paid staff members and vehicles. The majority of anti-hunger organizations interviewed said they were familiar with this concept of third party transporters, but only one of them had worked with a third party organization. Four interviewees said there are a few large food distributors in Seattle that somewhat fill this role and one said their volunteer teams serve this purpose. Another anti-hunger agency interviewee expressed hesitance to work with groups like these if their motivations are not clear; this specific anti-hunger agency has worked with groups like these in the past who tried to solicit donations for their company using the anti-hunger agency’s name. Only one anti-hunger agency interviewee specifically said they would be interested in working with one of these third party organizations.

Interviewees said:

“This year we actually hooked up with a logistics company that goes around to big events and picks up

leftover food and takes it to a food bank...That was nice, but that fell into our laps. We didn't actually solve that problem ourselves. It just kind of happened."

"Well, that's how Food Lifeline is. I mean, they do go to grocery stores and restaurants, and then we get a truck delivery on Tuesdays."

"I cast a wary eye if someone comes to me and says, "Hey, we're collecting on your behalf. Can we use your logo? Can we use your stuff? Can we do this?" Unless you really vet that carefully you don't really know, and so I don't see a whole lot of that...What happens is that they come on to you as a food runner who's trying to get more food, but they're actually a for-profit trying to figure out how to peddle their product."

"We really kind of focused more on enabling our own team of volunteers to kind of do that on our behalf, and so we'll outreach and train volunteers who are looking for a non-direct service sort of role, but still have the interest in supporting our work. I would say that...somebody like the Community Fruit Tree Harvest or City Fruit is probably somebody who is best situated around supporting the work of meal programs and food banks in the sense that...they've got contacts and do the outreach already. They're... well entrenched into the food world."

"Most of our labor is volunteer labor. Part of what they do is retrieve donations, and so we have in-house efforts to do that. Those are folks who go out in the community and do that for us. Yes, wow, if there were people that would do that, that would be wonderful."

A Seattle bike recovery program is "a really great service. It's really great. It's kind of a very niche market. I mean, our food banks work in like thousands of pounds of food a week, and so we're talking about a hundred pounds. I'm not going to diminish it like that, because it's an amazing service, but the hundred pounds compared to the grand scheme of things is really, really small. I mean, it's a great way for people to get involved. It uses volunteer work which is amazing. It connects the local smaller markets that probably wouldn't be involved otherwise."

- **Anti-hunger agencies had specific ideas for how the city could support anti-hunger agencies through funding to help them address internal system challenges. However, some felt the grant process needed to be simplified.**

Grant funding is something all anti-hunger agencies desire to help them improve internal system challenges. For example, three anti-hunger agencies said they would use the funds for transportation fees including driver wages, fuel, and vehicle insurance. Three additional anti-hunger agencies said they would benefit from reduced compost bills noting the money currently going to compost bills could be used to purchase additional food.

Notably, a few anti-hunger agencies feel the city's current grant process itself should be improved if this is the route they choose to support anti-hunger agencies. One interviewee said the process was so inefficient that it prevented another anti-hunger agency partner from even

applying for funding. Anti-hunger agencies also stressed that they would like to be involved in the decision phase before the city implements any food waste recovery programs that would affect them.

Interviewees said:

“Reduced garbage and compost bills...I mean, it’s thousands of dollars a month for garbage. So if they could work a deal to give a discounted rate or something to food banks and meal programs, that would be helpful.”

“Some kind of consistent pool that comes in that is making sure that we have enough drivers; enough fuel to put in the vehicles; that the insurance is being paid for and that kind of assistance would be helpful and is the hardest to get.”

“[SPU] could certainly streamline their [grant] processes and make the whole thing more efficient and less painful... even just the process leading up to getting the money. It just probably took too long. There were way too many things that they asked for that I thought were just kind of unnecessary...I mean, I know at least one other larger food bank that has just chosen not to work with them back when they had that money available several years ago was because of that.”

“I think the concern would be involving the partners and not just creating something to say that look what we did for you...feedback like this is really important...”

- **Anti-hunger agencies also suggested ways the city could support them through multi-faceted outreach and policy approaches aimed at increasing food donations and educating donors about what and how to donate.**

All anti-hunger agencies requested the city help to increase donation of food to anti-hunger agencies through public outreach or policy approaches. Strategies suggested included donor education about how/what to donate and Good Samaritan Laws; regulations or financial incentives for the commercial sector to donate food; or utilizing city partnerships to create connections with non-traditional donors such as schools.

Interviewees said:

“Trying to find levers in the community to increase the diversion to the food banks would be important, and so whether that’s through public education; whether that’s through regulations; whether that’s through increased financial incentives and/or grant opportunities to nonprofits to improve how much food that they recover before it’s wasted.”

“Looking for ways to use [the city’s] contacts that I might not have. The city has vendors and the city does lots of things in the food areas from the Seattle School District.”

“Incentivizing donating food vs putting it in the waste stream...if you make that...beneficial enough to private businesses to do it. I guess that some of that is like education too. I imagine that there are

probably a lot of small businesses that don't realize the benefits from a variety of ways: tax write-offs, utility savings potentially, the disposal fees and kind of all that stuff. There might be a lot of donors that don't realize the benefits of donating."

- **Any support the city provides in food recovery efforts should be sure to reach disadvantaged populations outside the core of Seattle.**

Finally, one anti-hunger agency stressed that any support or resources public agencies provide to increase access to healthy food need to reach communities both inside and outside the core of Seattle. Solutions to address this issue included the development of a mobile food bank or a centralized kitchen used to prepare meals that could be taken to these outer-city areas.

Interviewee said:

"You have all of these disenfranchised populations that are being spread farther and farther out of the core that have no food resources. There is going to be a problem if they don't get the food resources...Everybody thinks that everybody who doesn't have anything to eat only lives in Pioneer Square. You have a glut of food in Pioneer Square and no food in Georgetown, or no food in West Seattle and no food in Lake City."

FINDINGS FROM PUBLIC AGENCY INTERVIEWS

Five public agencies and one non-profit organization were interviewed for this section of the report. These agencies represent cities, counties and the federal government, plus one non-governmental organization that serves as an intermediary between businesses, food banks and a local government. Agencies were located across the United States, but were primarily located on the West Coast. They ranged in capacity from overseeing one local food waste prevention or recovery program to multiple programs, some with a national focus.

Metrics

- **Public agencies used a wide variety of metrics to track and evaluate their food waste prevention and food recovery programs. Public agencies are in need of standardized metrics to effectively track and capture food waste prevention and recovery efforts in addition to a systems approach that might capture alterations in more upstream factors and changes.**

Similar to what was seen in anti-hunger agencies, public agencies are also using different metrics to evaluate their programs. One agency highlighted the importance of developing standardized metrics to measure food waste prevention and recovery efforts across the country and stressed these metrics must capture what agencies are hoping to accomplish. For example, one city lowered their recycling numbers by cutting their paper usage in half resulting in decreased diversion numbers. This reduction in upstream factors (i.e., the diversion numbers) made their efforts appear unsuccessful to their stakeholders (i.e., the local legislature.)

Interviewees said:

“Some of our metrics and goals have been focused on working with sites or funding sites that will generate good case studies or success stories.”

“[LeanPath] provides metrics on how GHGs and water savings.”

“The other [metric] we have looked at, too, and we’ve only discussed it in terms of surplus food recovery in just calories recovered — especially with the senior populations and just looking at the nutrients that potentially are being lost in calories that could be prevented from being lost through food going to the landfill.”

“We receive quarterly reports, and we look at how many tons the [food bank] is diverting.”

“The number of meals that were prepared with the [recovered] food.”

“We do waste characterization studies and we look at how much food is in the waste stream... We’re not looking at the health benefits yet, but that’s something that would be great to look into.”

“We used the waste characterization study information so that we know how much we’re throwing away and from what sectors it comes from.”

“We had good photographic evidence about how much waste was coming from each sector.”

*“We...train and empower 5th grade students to go home and they actually do like a refrigerator cleanout, and some auditing of food waste pre-consumer and post-consumer. I would say that that maybe not in terms of like numbers, but in terms of influence and sharing stories about sharing food waste prevention practices and tips with their families has influenced their waste reduction behaviors...
...What’s great about that is that we can assign sort of the metrics piece as homework, and so students can bring that home and do it as part of a class assignment, as opposed to us just reaching out to a resident and asking them to take on a food waste reduction challenge.”*

“Something that is a barrier, though, is how diversion is measured...[One state] reduced their paper usage...Even though they had addressed the problem in a way that more directly has environmental benefits, it was looked down upon because their diversion numbers were lower...The legislature that couldn't wrap their minds around it.”

“If diversion is the only endpoint, we need to have an honest conversation around how much that actually ties to feeding hungry people and achieving the environmental outcomes that are associated with those policies.”

- **Many public agencies do not have a formalized and overarching goal that drives their food waste prevention and recovery efforts. In addition, agencies are challenged with how to connect prevention and donation efforts and goals with recycling and composting efforts and goals.**

Many public agencies said they have recycling or composting goals their cities or counties are working toward, but there was not a clear way of connecting food waste prevention and donation efforts and goals. One also stated they set a food waste prevention goal, but later realized their language did not allow for the inclusion of food donation.

Interviewees said:

“We as a county have our ... goal which is less than 10% of good stuff gets in the landfill, and so that includes recyclables and compostables. That’s like our broad goal or metric...I think that a challenge that we have...is where food waste prevention fits into that. Especially when we start talking about reaching out to a residential audience, the tracking and metrics become much more challenging. We don’t have any like stated goals or specific direction for those metrics.”

“Our target language states that of those sort of large-scale kitchens in the county that exist that will work with those kitchens to reduce pre-consumer food and other sort of related inputs by 25% ... So when we started working on that target, I realized that there was this opportunity for food donation as well as another way to divert food from landfill, but our target language was really restrictive and didn't totally connect to the rescue or recovery of edible food.”

“It all comes back to where you set the goal point of success drives what you're doing.”

Food Waste Prevention

- **Public agencies worked on a variety of food waste prevention programs aimed at preventing food waste in different settings. Three agencies worked on preventing food waste in households, two worked on preventing food waste in food-generating businesses and one worked on preventing food waste in schools.**

Three agencies have designed educational programs or toolkits aimed at preventing food waste at the household level. They reach residents through Facebook pages, newsletters, videos and Pandora music ads and offer strategies and tools to help consumers shop smart, properly store food, and plan meals to prevent food waste. While these programs were originally intended for household use, one agency's toolkit has been successfully used by schools and cities demonstrating these strategies can be scaled and utilized by other populations.

Two public agencies have concentrated their food waste prevention efforts on the food waste practices of food-generating businesses. One agency provides grants to local, non-commercial kitchens (e.g., universities, K-12, institutions, hospitals, healthcare, and social service agencies) to subsidize the cost of utilizing LeanPath technology for one year in their kitchens. Briefly, LeanPath is a software program that helps restaurant staff reduce their pre-consumer food waste by measuring the amount and types of food disposed and identifying the reasons for their disposal. However, this agency has had challenges recruiting non-commercial kitchens to participate, which will be discussed below. Another agency has a long established program that funds waste specialists. These specialists provide an assessment of food generating businesses' waste practices and then assist in developing waste prevention, recycling and donation programs for the business. The public agency is now focused on working with smaller businesses in disadvantaged neighborhoods.

Finally, another public agency has concentrated their prevention efforts at local schools. In 2008, they helped local schools set up recycling and compost programs. These efforts have grown considerably over the years and have shifted towards food waste prevention. The

greatest success of this program has been putting milk dispensers in schools to prevent milk carton and milk waste. Other program achievements include using durable flatware, bulk condiment dispensers, promoting recess before lunch, educating students about taking only what they can eat, and changing food service techniques such as offering sliced rather than whole fruit.

Interviewees said:

"We have launched a food waste prevention campaign directed at residents. It just gives a lot of great tips on how to utilize food as opposed to composting it or throwing it in the trash."

"Strategies to prevent wasted food at the household level. We're out at fairs and community events distributing information."

"We have a partnership with LeanPath to specifically reach out to non-commercial kitchens for the most part...we basically subsidize the cost for a LeanPath system for a year for participating kitchens. We also provide the training and technical assistance to get those systems up and running and getting the staff trained on how to use those. The primary focus again for that project has been more non-commercial food operators, and so looking at universities, K-12, institutions, hospitals, healthcare, and social service agencies. And then with one exception, the commercial market sector of hotels with onsite lodging."

"We fund specialists throughout the entire region...they provide an assessment of that business' practices and help them design waste reduction, waste prevention, recycling and recovery programs for their...business and business needs...We have been doing that for many, many years."

"The [program] was originally focused on helping schools set up programs to recycle more and to begin to collect organics for composting...Now we have over thirty schools on the program, and we've over the last couple of years shifted our focus from composting and recycling to prevention."

Food Donation

- **Public agencies also work on a variety of food donation programs. Three agencies provided grant funding to food banks to advance their goals and infrastructure, two developed donor-to-food bank matching programs, and another created a national initiative for businesses to commit to reducing food waste.**

One of the most common ways public agencies support food recovery programs is through grant funding to local food banks. Three agencies have done this for numerous years with funds being used to hire full-time drivers, launch grocery rescue or produce recovery programs, and purchase equipment such as fork lifts, truck, coolers etc. However, one agency noted these grants are best suited for expanding existing initiatives or pilot programs rather than for

ongoing operational funding. Two of these agencies have also funded third party organizations that help transport donations to food banks after large events. Related, one of these agencies also hosts workshops for event directors to educate them about the importance of food donation.

Another public agency completed a waste observation study where they tracked how food moved through 100+ food-generating businesses with a goal of identifying the best points for food waste prevention and recovery interventions. The results of the study were originally used to develop a food donation guide for donors. Over time, the agency expanded this into an electronic program that matches donors with food banks in three different counties and also provides food safety and liability information for donors.

This electronic matching program is very similar to another online platform developed by another public agency. Through county and private funding, the agency developed a county-wide, coordinated food recovery program. This agency has developed an online system and app that donors can use to be matched with local food banks and has developed food safety guidelines/training programs for donors. They also serve as an information sharing platform and offer grants to local food banks for capacity building. One unique component of this program is that after completing a donor certification process, which the agency is offering grants to pay for, the donors receive a recognition certificate they can display in their business window informing the community of their donation practices. Additionally, the food recovery program operates with volunteer drivers who pick up food from donors and bring donations to food banks. This alleviates the food bank's transportation barrier discussed in the anti-hunger agency results section.

Finally, another agency implemented a national food waste reduction initiative in which organizations such as grocers, educational institutions, restaurants, faith organizations, sports and entertainment venues and hospitality businesses are able to join. The agency educates organizations about the environmental costs of wasted food and frames solutions using the EPA's Food Recovery Hierarchy (e.g., prevent food waste, donate food when prevention is not possible and compost food unsuitable for donation.) Organizations that join receive technical assistance through webinars and an online database to plan and track their food waste prevention and recovery activities. Businesses also receive recognition through awards and social media.

Interviewees said:

Grant funding to support food banks:

- *"Historically we have provided primarily grant funding to nonprofits around the donation of surplus food."*

- *“What that program did was it provided grant funds to food rescue agencies to allow them to purchase equipment that would help them safely collect, store, transport and distribute perishable food. Our focus is on perishables with everything from produce to meat to dairy. We funded refrigerated trucks, refrigerators, walk-in coolers and even some things as small as thermal blankets to help some of the small food pantries move materials quickly and keep it temperature-stable.”*
- *“We’ve bought equipment for the [food bank]. We’ve bought forklifts to help them move food around at their facility, and we have purchased vehicles or trucks for them. We do a lot of consulting services with them and so have spent a lot of time over the years working with them to maximize their operations.”*

Development of coordinated food donation programs:

- *“The design of it was to link donors with food rescue agencies in their community to start developing longer-term relationships. It was one of the early examples of community-based social marketing. It is purely a referral service, and so what it tries to do is link up restaurants and cafeterias, and tends to really focus on the prepared perishable foods; the smaller generators with a local food pantry so that they can develop long-term relationships.”*

Challenges to Food Waste Diversion Work

- **Public agencies stated that food donation and composting programs can be seen as easier to understand, implement, and measure than food waste prevention programs.**

Three of the six public agency interviewees commented that food donation and compost programs are more tangible and easier to implement for some food-generating businesses. One public agency interviewee commented that some businesses may not understand the value in food waste prevention if they are already composting. The same interviewee also noted that because the recovery system infrastructure is more established than the prevention infrastructure, organizations tend to apply for grant funding directed at donation rather than prevention. Finally, another interviewee stated that food donation is easier to measure than food waste prevention.

Interviewees said:

“We do also encounter [food-generating businesses] that are already actively recycling food scraps onsite and organics. They feel like we’ve checked that box; we’re composting our organics, and so why do we need to participate in food waste prevention...It’s just easier to divert to composting. It’s much easier to wrap your head around that food waste prevention.”

“The food rescue piece is a bit easier, because one, this is food that they’ve already paid for. It’s food

that they've already invested the resources in to prepare. It's food that they have to pay to dispose of or compost."

"The tension between easy-to-measure diversion and more impactful prevention efforts that are harder to measure is challenging."

"We found that for that particular audience [schools] food waste prevention is much more challenging to implement and surplus food donation is much more tangible."

"We invited...a lot of the food recovery groups and some faith-based organizations to the table just to talk first about what do you need funding for. Really no surprise, but it was the infrastructure to support the recovery of surplus food. There was less discussion around the prevention piece."

- **Public agencies have encountered external barriers when trying to implement donation and food waste prevention programs in food-generating businesses. These include time limitations, liability concerns, and specific challenges related to LeanPath technology.**

Agencies working with food generating businesses described many barriers specific to working in this environment. They state that businesses do not have time to set up a donation system or are concerned about food safety liability because they are either unaware of the Good Samaritan Laws or have their own food safety policies/non-donation policies that limit them from donating food or donating certain types of food. For example, one public agency interviewee said that when working with chain grocery stores or restaurants, their corporate offices had created no-donation policies that prevented these local businesses from donating food.

The public agency working with LeanPath highlighted many other barriers specific to using this technology. First, the public agency interviewee commented that some businesses 1) assume they are not wasting food, so are uninterested in food waste prevention efforts, 2) perceive LeanPath to be too time consuming, 3) have considerable staff turnover that can cause inconsistencies in LeanPath use, 4) have language or technological barriers that prevent staff from being able to use LeanPath software, and finally 5) are concerned that LeanPath does not assist businesses in translating results of their program into operational change.

Interviewees said:

"I can say that I think there is a lot of misinformation out there. I think that there is still a lot of fear around liability and the whole Good Samaritan Act, which relieves people of any liability. People don't know that and so I think that a lot of outreach could be done around informing folks that have food that they don't have to be held liable, as long as they know that the food is good. I think if they had more access to that information, then you'd probably have more people donating."

“The other huge barrier that we have seen is corporate non-donation policies, and we have seen that in some chain restaurants or chain groceries that have a standard no-donation policy. Some of these local managers who want to donate can't. They have no local authority to do it, because the choices are made somewhere else by headquarters. That has been a really big barrier.”

“Food service directors for the most part I've found are a fairly conservative lot. They're fairly risk averse for good reason. They have significant concerns about food safety and liability. They have major issues around their funding and don't want to do anything that jeopardizes the number of meals that they get reimbursed for by the feds.”

LeanPath Challenges: “You have to first get over that perception or misconception that [businesses] don't waste food. That's one of the biggest hurdles....And then I think in some cases there are technology barriers...You have language barriers...And then it's perceived as a big commitment....And then it's just that the industry itself is very volatile. We'll reach out to a kitchen manager, and then a few weeks later we'll find out that they're gone. I guess what's been challenging for us is really understanding how that system leads to operational changes, because we haven't really seen that evidence yet.”

- **Public agencies discussed internal barriers to implementing food waste prevention and recovery programs. These included a lack of funding, staff, and/or resources, in addition to competing priorities within the agency.**

Four public agencies stated a frequent barrier to advancing their food waste prevention and donation efforts was a lack of funding, staff, and/or resources. Four of the public agencies also discussed the barrier of competing priorities within their agency. For example, one agency has been primarily dedicated to compost and recycling policies, so has not had time to work on food recovery efforts. One public agency interviewee commented that different teams within the public agency usually carry out food waste prevention and recovery efforts leading to a lack of coordination and communication about each team's work.

Interviewees said:

“We have limited funding.”

“I think for me a huge barrier right now is just staffing.”

“The hard work is in coordinating that when you're resource-constrained.”

“Even within our staff, I feel like there is sort of a misunderstanding and misconception about what food waste prevention is; that food waste can be prevented. I think and I hear from staff, ‘Well, you're always going to have food waste. How could you possibly prevent all this food waste?’”

“I think that there are more sort of internal organizational things that we can improve. One of the things we have noticed is that we have basically these two boxes...when you're looking through the lens of food: Food-to-people or food-based prevention and then discard is food to composting. Because of

these two boxes, they have separate staff that work on separate projects, separate meetings. There is a little bit of crossover, but really there is not a comprehensive sort of thread that ties those two groups together. I feel like we have this great opportunity to develop a broader working group...and really try to leverage these staff hours and the funding opportunity that we have...and really try to start discussing this concept of a dual message in all of our programs from residential to commercial.”

Overcoming Challenges to Food Waste Diversion Work

- **Public agencies have devised strategies to overcome some barriers in their food waste prevention and recovery efforts, but more are needed.**

To address the agency-level barrier of lacking sufficient staff/resources and coordination amongst, one successful strategy discussed was combining money or resources from different sectors to support food waste prevention and recovery programs. For example, one city combined public health and solid waste dollars to fund a hunger awareness media campaign that resulted in increased public and stakeholder support for food recovery programs. Another state developed a food policy council, which connected state agencies and NGO's from the public health, nutrition and economic sectors. With their varied expertise, they were better able to influence local legislature to support food waste prevention and recovery programs. Finally, an outreach coalition of cities and counties was formed that combined their funding and resources to develop media campaigns geared toward educating their communities on the importance of food waste prevention and recycling.

To address the limited funding issue, one county passed a measure in the 1990's that imposed a six dollar per ton fee on all refuse accepted for landfilling or incineration. Ten percent of the money generated from these fees was put toward funding the county's recycling and compost programs. The fee has increased over the years and now generates about \$8 million per year.

Finally, the public agency that developed the coordinated food recovery program was able to address the challenge of inconsistent metrics. The donors can record their donations using whatever metric they choose, and then the public agency uses a conversion factor to equate those metrics.

Interviewees said:

“I think the combination of public health dollars with solid waste dollars there is a lot of potential there, and I don't think that's been tapped to the extent that it could. I know [one county] was able to get a

budget of about \$400K to do that media campaign. As a result of that they were able to get enough...buy-in at the county level; buy-in with their appointees, and the public is really supportive...Combining those public health dollars enabled that, and then linked in with both goals for both agencies. There is a mutual benefit there.”

“Something that isn't funded but I think is effective in cities and counties that don't have kind of as much political support or precedent for doing this work — are local food policy councils. That's a way to bubble up and connect to the local food movement and kind of push on the legislature and get state agencies involved....I think that's a good way to kind of tie the local food movement and create more of a grassroots impact at a state that might not be that onboard.”

“It's a consortium of cities and counties...that come together and pool funding and resources to do media campaigns around food waste prevention specifically targeting the residential audience. That's another coordinated effort.”

“Through this referendum, they funneled it into the county charter, 10% of all the revenue is required to be spent on source reduction...they imposed a \$6 per ton surcharge. Now the amendment is up to \$8.27/ton and they're able to raise about \$8M a year.”

“Another really great thing about the matching software is that we will through encouraging everybody to sign up and participate in our matching platform, that we will be able to get metrics about how much food is being recovered. The way that is reported is through the food donors. So then when the food donor posts what they have to donate, they have to either weigh or estimate the quantity of food. They can report it in whatever way they want. It could be pounds. It could be trays of food, meals or whatever, and we'll do a conversion factor. That way all of the food runs get recorded... Those kinds of metrics will be extremely important to reporting to our current funders, and then going forward to the community as a whole in supporting our whole program.”

FINDINGS FROM COMMERCIAL SECTOR INTERVIEWS

Twelve food-generating businesses were interviewed for this report:

- Five grocery stores including one organic store and co-op, one large national chain, one small local chain, one discount grocery store, and one wholesale grocer
- Seven institutions/restaurants including one chef-owned fine-dining restaurant, one casual sit-down restaurant chain, one hospital-based cafeteria, one large catering service, two large food service operations designed to serve employees or college students, and one prepared food wholesale distributor.

All food-generating businesses, which have been shorthanded to ‘businesses’ throughout the report, have operations in the Seattle Metropolitan area although some are businesses with a national presence. Due to the very different nature of these businesses, results from grocery store interviews and restaurant/institution interviews have been separated for clarity. These sectors will be tied back together in the end with ways all these businesses feel the food diversion system can be improved. Below are common themes from interviews with supporting, illustrative quotes.

Metrics

- **Businesses use a variety of metrics to measure the food waste they generate. However, measuring the food waste put into the compost and garbage containers can be more challenging.**

Grocery stores and institutions/restaurants use a variety of metrics to track their food waste. Some track food waste in pounds, tons or dollar amounts. Some businesses included both pre-consumer and post-consumer waste whereas others just tracked one of these. The grocery stores that have WISERg machines were easily able to report the amount of food scraps going into the machines, but tracking the food waste put into compost or the garbage was much more challenging. One business stated that Cedar Grove reports the volume of food waste based on the container size regardless of how full it is, and many businesses also noted that their compost includes compostable paper products and containers. Finally, none of the interviewees reported tracking the amount of food waste put into the garbage because, due to

the composting laws, it should not be put there. Businesses said that food waste in the garbage is usually due to employee or consumer error (discussed later).

Interviewees said:

"We average between 300-800 lbs. of food scraps [across all our stores.]"

"We basically use two metrics. One is food waste over the amount that we spend on food. We're also looking at food waste over seated headcount."

"It's 5% at the most in terms of fresh food that could be wasted. It's a very small percentage of our total purchases."

"We track everything in retail dollars and not tonnage, so let's say I do 7,000 dollars-worth"

"A total of 187 tons [of food waste] a month for all the stores."

"We in Seattle compost the kitchen prep scraps, which is about 300 gallons per week per restaurant."

"We have a waste management portal that we put our waste in every day... it's going to be production waste...everything that's leftover from the end of the events, and then any dry storage or storage waste for that day."

"At the Seattle location we have a WISerg harvester and so it captures everything and records it by category of what the product is. It's about 11,000 lbs. a week."

Challenges to measurement:

"We have the recycling department that keeps track of all the compost and garbage. They don't sort the garbage, and so the food waste that goes into there we don't keep track of. Again, that should be very minimal. The compost we do about 225 per month on average. But I think it's notable to say that that also includes paper products, compostable containers, and that kind of stuff. Not just food."

"I do have very solid numbers from the WISerg folks. I do have estimates of compost at Cedar Grove, but none of which I trust. The way utilities work is that they will look at the container that's in the back of your store. Some of them may go to the effort of lifting the bin and saying, 'Oh, that's half full, that's three-fourths full.' Mostly the reported volume is based on the container size...We actually have done a very poor job of fine tuning the estimates we get from the utilities, whether it's for trash that's hauled off, the recyclables or whatever."

- **Some food generating businesses have official targets for limiting food waste and others do not.**

When asked if the food generating businesses had food waste targets, only three restaurants/institutions said they did. These targets were developed by their corporate management and one was so specific as to set targets for individual ingredients. Two grocery

stores and one restaurant/institution said their corporate offices are in the process of coming up with those targets. One grocery store and one restaurant have individually set business targets, but they are not official corporate targets. Two institutions said they do not set targets because they either do not feel they need them if they are adequately preventing food waste or because there is no support from management to set targets.

Interviewees said:

Yes:

- *“Yes, they do and it’s more like 3% for each department.”*
- *“Yes...it revolves around volume; the time it’s going to be on the shelf, and then probably basically volatility in that it’s going to sell. We have this algorithm that basically determines how this is going to be done, and it comes out to roughly X%.”*
- *“It’s a corporate target per ingredient.”*

Coming up with them:

- *“Quite honestly, we are developing those. We don’t have those in place right now.”*
- *“I have targets that I want to reach within that, but they’re not company targets. The company says, ‘No, you’re not going to publish that target. You’re not going to go out and tell everybody that that’s what you’re going to do. You’re just going to do it.’ That’s what we do. We don’t make plans and put out targets. We just do it and then we’ll tell you that we did it.”*

No:

- *“At this time, no. If you’re doing cook to flow, if you’re producing the order, if you’re not doing a lot of waste, then you will make your targets basically. I mean, that’s just a standard business practice as opposed to being specific to waste.”*

FOOD WASTE DIVERSION – GROCERY STORES

Understanding Food Waste Diversion in Grocery Stores

- **Food waste generated in grocery stores is either donated, given to farmers for animal feed, composted, or put in the garbage.**

All five of the grocery stores interviewed said they donate their edible food waste, such as bruised produce or food nearing its expiration date, to local anti-hunger agencies. The food waste that is inedible, such as fruit rinds and meat trimmings, is composted. In order to decrease their compost volume, and compost fees, and to ensure food is being put to its best use, two grocery stores have started using a WISerg machine that turns compost into fertilizer,

and four grocery stores give their food scraps to farmers for animal feed. Finally, Seattle grocery stores said none of their food waste should be going into the garbage, but occasionally it does because employees don't always take the time to separate the food waste properly.

Interviewees said:

"In order of choice, our preference is it goes to the food banks first...There are some farmers that pick up some feed stock of lettuce trimmings and that kind of thing at each of the stores and then feed them to the pigs and chickens. And then after that it goes into compost. None of it should be going into landfill."

"The framework that we've relied upon for several years now is the EPA food waste reduction hierarchy...It's having enough products for the consumers without overproducing that product, but also food to people...Our main objective is being able to divert as much as possible away from the landfill."

"What we don't donate goes to the [WISErg] Harvester."

"If it is food that truly can't be used either by a human or animal population, that goes into our compost."

"I would say in the garbage, almost none of it [is food]. We very religiously stand back there...and separate it out. Even the little yogurt packs we're ripping open each lid and putting it in the compost."

"You've got three or four bags of chicken nuggets that are bad. Are you going to dump it in the garbage, or are you going to find the bin to put it in? Most of the time they just put it in the garbage."

- **Grocery stores cited many reasons for food waste including cosmetic imperfections, expiration dates, recalls, damaged items and food returns.**

Cosmetic imperfections, such as bruises on produce, was the most commonly cited reason for food waste generated at grocery stores. All grocery stores cull their produce daily to remove cosmetically imperfect produce because they believe that customers will not buy these items. Expiration and food spoilage was the second most common reason food waste was generated. One grocery store said they deliberately remove items from their shelves before the sell-by date and donate these items to the food bank to ensure they don't expire before reaching the food bank. Other reasons for food waste mentioned by a few grocery stores were food recalls, buyer pulls, or damaged goods due to dropped items, ripped bags, etc. Less common reasons for food waste included over-ordering mistakes and customer returns, which were cited by one grocery store each.

Interviewees said:

"We cull our produce twice a day. We have a stocker or somebody go around with a cart and pull out all the bad stuff in the produce department."

"It's just a fact of life that some of the stuff you're going to get right off the local farms has not been cleaned and culled and made pretty the way that customers like to see it. We have our guys in the backroom in produce prep making sure that the corn on the cobb has a lot of the stuff taken off of it, or the lettuce leaves that aren't so pretty on the outside taken off."

"The primary push is going to be the expiration or sell-by dates. Take milk as an example. We pull it off the shelf three or four days before its sell-by date so that when it goes to the food banks, it's still got several days of life on it."

"Some of that is because a customer or one of my associates ripped a bag or cracked a case and something isn't saleable...but the rest that has gone to waste just because it's past its code date."

"We get a lot of stuff returned. That's probably...at least 30% of our food waste...We can't do anything with that even if it's unopened."

FOOD WASTE PREVENTION

Challenges to Preventing Food Waste in Grocery Stores

- **Grocery stores described many challenges to food waste prevention. The most frequent challenge cited was dealing with customer expectations and misconceptions about sell-by/use-by dates. Other common challenges were the unpredictability of food quality, weather, and employee behavior.**

All five grocery stores said that dealing with consumer expectations was a challenge; they believe that consumers expect perfect produce stocked in abundance. Almost none of the grocery stores interviewed were willing to sell blemished, bruised, or slightly damaged goods, even at a discount. (The exception was a discount grocery store.) Grocery stores stated that consumers will not buy a product if it is the last one on the shelf, so grocery stores must stock items in large quantities.

Another challenge discussed by two grocers was dealing with consumers' lack of understanding about product dates (e.g., use-by, sell-by, best-by) and as a result, grocery stores must pull products close to their sell-by date even though it is often safe to eat. Market influencers such as the weather and the unpredictable nature of food quality will also influence consumer's purchasing practices. Finally, a common challenge interviewees discussed was ensuring employees direct the food waste, generated from culling produce or pulling expired products, into the compost rather than garbage. Many employees have competing priorities, so grocery managers must find ways to make sorting food waste as easy as possible.

Interviewees said:

Business' perception of consumer expectations:

- *"If it doesn't pass the beauty standard, it doesn't matter if it's edible. It matters that it's edible and it looks amazing. You can't have it be substandard and so we have to pull it."*
- *"The reality exists that if I had the last bushel of these greens and it was sitting in that tote box – it could be a perfect bunch of greens and the freshest available – the likelihood of me being able to sell that is pretty slim. People see that as the last one and in most cases they don't want that last one, even though it's just as good. I could have that same bunch with five, six, seven other bunches and it would go....How do you get past that? I think that's a huge nut to crack."*

Expiration dates:

- *"The biggest, biggest issue that we have with consumers is that they don't understand the dates that are put on products – whether it's the sell-by date, the use-by date, the best-by date."*
- *"The perception among grocery store owners is that code dates on products were created by manufacturers and not by the government...If I'm a company and put a date on something, am I going to put a long date at the end where it's safe, or do I want a shorter date so that I can turn more of it and force grocery stores to get rid of it?"*

Logistics:

- *"If we're expecting a beautiful, sunny day and there are going to be a lot of barbecues and the weather changes and people are not barbecuing so much – that could lead to food excess."*
- *"Sometimes you don't know exactly how much you're going to sell. You don't know how good that grape is going to be this time. Last time that grape was phenomenal and you sold everything that you could. This time you put that grape out there and you only sell half the pallets...There are a lot of unfortunate and unintended consequences when you do pallet quantities of goods."*

Employees:

- *"Human behavior is the biggest one...People tend to take the path of least resistance...If you set the waste and the compost containers so that the compost containers is the closest one to the back door, they will be more likely to use it than if the compost container is the farthest from the back door."*
- *"You have 40-50 stockers...they don't want to stand there and wait until it's their turn. They go to the trash compacter and they dump it all in."*

Strategies Grocery Stores use to Prevent Food Waste

- **Grocery stores have developed strategies to reduce the amount of food waste entering the waste stream including inventory tracking, communication across departments, waste tracking and actions that prevent food from expiring in store.**

The most common strategy used by all grocery stores is tight inventory management. Each store has systems in place that helps them track what they buy and sell in addition to communicating across departments in order to re-purpose food items to prevent food waste.

Three of the grocery stores also track their food waste in order to identify the places where the most waste is coming from via waste audits or “unintended waste” reports. Finally, one grocery store (a discount store) is testing out a program to sell bruised/blemished produce or food nearing its expiration.

Interviewees said:

Inventory tracking:

- *“We have internal what we call “movement reports” so that we know right down to the product level how many brown beans we moved today so that we’re not ordering when we don’t need the brown beans.”*
- *“Our buyers and our staff and the buying groups — they track the sales at every location for every day. There isn’t a day or location that’s missed, and so they know exactly what that building is going to do. It’s not just because it’s Monday we’re going to do this. It’s Monday and it’s the 5th of May and the weather is doing this, and so we know exactly how much we’re going to sell. We reorder based on that data that we have so that we know exactly what they’re going to sell on a day.”*

Communication across departments:

- *“We have internal procedures that keep departments talking to each other; for example, if we have an excess of boneless chicken breast in the meat department and we’re not going to sell through, we pull the chicken well before the sell-by date and transfer it to the deli and use it in the deli. It’s that kind of monitoring internally that really keeps food waste at a low, low, level.”*
- *“The other thing that we’ll do is move them sometimes from one department to another...If you’re grinding hamburger for the meat department, you might as well be grinding hamburger for the deli department to make lasagna or something. You’re ordering one product and using it efficiently, as opposed to everybody ordering their own product.”*

Waste tracking:

- *I do my own waste audits. I go out and dig through our garbage. I do that a lot. I was just doing that Monday, Tuesday and Wednesday. I’ll go to a building that has a food waste recycling program and I’ll find a ton of food waste in the garbage.”*
- *“We have a system that we refer to as preventable waste management...What happens in the departments is that they have to fill out reports when they’re going to throw something out that should have/could have been sold. There is a difference between throwing out a steak that they over-ordered and there were too many steaks, and they’re starting to turn brown vs. throwing out trim — you know, the fat and the bones — before you start cutting into steaks. They have this system for tracking what should have been sold, and so that percentage is supposed to fall within a certain percentage.”*

Programs that prevent food from expiring in store:

- *“We’ve come up with a bonus program for our crew. It’s really based on increasing sales but limiting throwaways...We explain to them that the higher the number of throwaways, the lower the bonus pot is going to be.”*
- *“Actually, we’re going to be testing out a marked-down produce program to help limit the produce throwaways... My worry is to sell subpar produce to customers. The compromise we’ve come up with is to clearly mark things as produce that needs to be sold quickly. We’re wrapping*

them in plastic bags. We're clearly labeling it as a reduced produce item, marked down produce, in clear packaging so that customers can see what they're getting."

- "What we might do is if the macaroni and cheese is running low, we'll replace it by chicken and rice. We'll do it such that we can save that chicken and rice, because it's only been out for an hour for the next day...I do know that we try to keep a full presentation because that's what sells, but then we also try to make sure that it's recycled and replenished such that we're not throwing anything out at the end of the day."

- **When asked directly, most grocery stores were unwilling to try additional food waste prevention strategies such as selling discounted blemished/bruised produce or stocking less, food citing economic and quality concerns.**

When asked about these specific strategies, most grocery stores were unwilling to sell bruised or blemished produce at a discounted price, have buy-one-get-one-later programs, or stock less food. Most cited economic and quality concerns. Grocery stores already operate with a very low profit margin, so discounting items does not make sense from a business perspective. Additionally, these grocery stores have standards for the quality of items they sell which their customers expect, so they are hesitant to offer items that don't meet these standards.

Interviewees said:

"We will likely never [discount bruised or blemished produce]. It's much better to give that stuff away and know that it will be used that way, than making us known as the place that sells dented or bruised food. That's not the image that we want to project."

"We have a price for a product and we're selling it. If it doesn't sell and it goes bad, well, it becomes waste. We're not going to take those steps to make it down to not create the waste."

"A buy one, get one later program – if you understand retail grocery, our profit margin is maybe between 1-2%. That means that all of the stuff that we sell, that's what we make at the end of the year. You don't want to be giving stuff away."

"Well, I think that everybody probably does that trick where they put stuff underneath the apples so that it looks bigger than it is. But then there is a problem with only putting a few of an item out there - people won't buy it if there are only a few left. We tend to go for the abundance and we find that we move more product by actually putting out an abundant display."

FOOD WASTE DIVERSION – RESTAURANTS/INSTITUTIONS

Understanding Food Waste Diversion in Restaurants/Institutions

- **Pre-consumer food waste generated in restaurants/institutions is either donated, composted, or put in the garbage by patrons. Post-consumer food waste is often sorted by the consumers themselves into recycling, compost or garbage streams.**

All seven restaurants/institutions interviewed said they donate their pre-consumer edible food waste, such as excess meals prepared, and compost their inedible food waste. One restaurant/institution that sells prepared foods to retail outlets buys back their prepared, unsold food and either donates those meals or sells them to outlet stores at a discounted price. Post-consumer waste presents a challenge to restaurants/institutions because patrons are responsible for sorting their waste into recycling, compost or garbage. Ideally, patrons separate their food waste and dispose of it in the compost bin, but many restaurants interviewed said consumers incorrectly put their food waste into the garbage.

Interviewees said:

“Most ends up in the compost. They’re things that we wouldn’t use anyway...skins of melons and fruits...trim from the meat and so on.”

“What we do...is called the guaranteed sale...anything we stock on the shelf that doesn’t sell we’ll buy back...We donate [those meals] to food banks and food shelters...or we sell our food to communities that don’t necessarily have the means to purchase our food at full price.”

“The front of the house is basically people not sorting, people just tossing into garbage’s. Maybe they get more than they can eat, or maybe it’s for whatever reason that’s generally how much of it is generated...And then the same with the post-consumer when people buy things at the markets, because they may not be in compostable containers and not taking the time to sort the food, and then recycled containers – everything just kind of goes in the garbage.”

“What happens in a retail public area is that folks come in and buy the food and stay there to eat. We do have units that are segregated by trash, recycle and compost. It is virtually impossible to monitor the public and make certain that they’ve truly separating their waste as they should.”

“Retailers get blamed a lot for food waste, but really when you look at the entire spectrum from produce, grocer to consumer, the most significant waste is with consumers. Only about 5% for at least the studies that I’ve looked at say that retail is responsible for food waste. Only 5% of all food waste is attributable to what happens at the retail level.”

- **Restaurant/institution interviewees also cited many reasons for food waste generation with food trimmings and over-production being the most common, followed by spoilage and consumer behavior.**

Trimmings from food preparation and deliberate over-stocking/over-production were the two most common reasons for food waste generation at restaurants and institutions. Many

restaurants/institutions train their staff on proper trimming techniques to waste as little food as possible, but trim waste is inevitable. Four of the seven restaurants/institutions also discussed the culture of preparing and serving more than enough food to ensure the customer is satisfied. Three other interviewees said there is a concern in food-generating businesses of running out of food, so food service workers generally produce and serve more than what the consumer will eat. Because unsold food is a profit loss, one interviewee deliberately prepares more food than will be sold to ensure the company generates a profit.

Additionally, many of the interviewees have a catering component to their business and stated this was where the majority of food waste came from. Lower-than-expected turnout for events is a common occurrence and results in extra meals that are either composted or donated. Food spoilage due to poor inventory management, while rare, was cited as another reason for food waste. Finally, even if restaurants/institutions produce the correct amount of food, interviewees report some of this food is still wasted because consumers will either take more food than they can eat some, or in the instance of a catered meal, consumers may not care for the food that is served to them.

Interviewees said:

"I feel like it's a constant battle with somebody running too heavy with a peeler over the carrot to somebody taking the top end of the pepper off rather than trimming it out. You lose a tenth of a pepper when they just whack it, rather than trimming the stem out. Things like that are constant teaching moments."

"We're always going to slightly overstock. It's part of the strategy because the minute your shelf runs out of food, that's lost opportunity in sales."

"We would be very concerned if [food waste] was zero because then you'd feel like you're not feeding people enough."

"Sometimes what people think is that they don't want to ever run out of food. They'll say, 'Okay, I need to cook for 150, but maybe we should put in 10 extra in case someone grabs two or what not. It's getting people out of that mindset and saying that you really need to produce what our customers are asking for."

"I mean, when you're creating buffets for 1,500 people, you need to create the food for the 1,500 people, but you don't know exactly what their eating habits might be. One group might be an all-male group and heavy into protein and starches. Another group might be a women's group and they tend to eat lighter."

FOOD WASTE PREVENTION

Challenges to Preventing Food Waste in Restaurants/Institutions:

- **Restaurants and institutions face many challenges with food waste prevention. On the pre-consumer side, challenges include employee training/turnover, competing priorities and unpredictability of consumer purchases.**

The most frequently cited barrier by five restaurants/institutions was the need for ongoing employee training in food waste prevention due to staff turnover or low motivation. Additionally, the kitchen staff has multiple tasks they must complete each day so managing food waste prevention is not always a priority for them. This was the second most common barrier mentioned by three restaurants/institutions. Finally, two restaurants/institutions discussed the challenge of dealing with market forces: they are unable to anticipate how much or what type of food consumers will eat. One of the institutions interviewed has an added challenge in that they do not have a point of sale (employees and visitors eat for free,) and thus estimating demand for particular items is difficult.

Two of the restaurants/institutions interviewed also use LeanPath technology to help prevent food waste, and similar to what was discussed in the public agency section, there are many challenges with using LeanPath. These include competing priorities, training time, cost, language barriers, and staff turnover.

Interviewees said:

Pre-consumer

Employee Challenges:

“When you have employee turnover that’s a challenge because then you have to ensure that they’re being trained properly. When you have management turnover that’s a risk as well because they don’t know what your practices are.”

“We have a very diverse workforce and so for a lot of our employees English is a second language. Bridging that language gap is always a challenge in trying to communicate with the team, and so there is a lot of hands-on showing instead of verbally communicating.”

“You’ve got to teach people about the end result for the people they’re serving...It’s more about getting people to understand that you wouldn’t want to have all of this food left over at home.”

Competing priorities:

“On any given day we ask our restaurant teams to do a thousand different things. This is one of those things. I think just this food waste message getting lost in the 10-20 other things that we’re asking them to focus on every minute of every day – it can definitely be a challenge.”

Unpredictability:

"It just depends on who walks in the door on Wednesday to buy food. At the end of the day it's a challenge...It's a guessing game for retail in general. It's a capitalist system; [people want] choices in retail."

"We don't have a specific headcount at each café because we don't have a point of sale. All of the food is free and so it's an interesting dilemma as far as tracking. The chef doesn't know exactly how many people he's going to serve on a five day with all the guests that we have."

Strategies Restaurants/Institutions use to Prevent Food Waste

- **Restaurants/Institutions have also developed strategies to reduce post-consumer waste including inventory management, employee trainings, small-batch cooking, and waste audits.**

The most common strategy used to prevent food waste was tight inventory management. Three restaurants/institutions have teams or programs that help forecast the items needed to ensure they are ordering only what they need. Two also discussed employee training programs that teach food prepping techniques. Another interviewee has created an employee bonus system to help keep their food waste in check. Three institutions/restaurants mentioned smaller, more frequent orders and/or small batch cooking as a way to reduce food waste. Finally, three restaurants/institutions used LeanPath or created their own programs to monitor and raise awareness about food waste.

Interviewees said:

Inventory management:

- *"I have an inventory analyst that helps do all the purchasing and receiving. They work with the chef to bring in the food that we need for that week, or that group. Like I said, we have limited storage and so we can't hold a lot of food here, which makes FIFO really easy and managing the waste part of that very easy."*
- *"Something that we're working on is also our menu management system...part of it will be helping operators determine the amount of product that's needed from the last service of that same item."*

Employee training and motivation:

- *"We also train heavily on mindfulness with prep and we retrain that quite often...There is a poster that hangs in each and every [restaurant] talking about the mindfulness of prep in cooking. There is a message from [the CEO] at the top. It indicates, it shows pictures of all of our ingredients and what the difference between mindful and non-mindful preparation is."*

Cooking Methods:

- *"Another thing to note that's been done is just the cook to flow method...Cooking in smaller batches. Instead of 30 hamburgers, they're making just three or four at a time to put them out*

there. It creates less waste and a better quality product as well.”

- *“We cook small batches all throughout the day, there is not prepared food sitting or waiting. We carry over a lot of our ingredients.”*

Tracking waste:

- *“In our kitchen we have waste buckets...so if there is extra fat on the chicken that gets cut off it’s put into the waste buckets. If they’re cutting off the bottoms of the broccoli, that gets put into our waste buckets. At the end when they’re done with production they weigh those buckets... So then by having the chef look at the waste buckets at the end of the day and saying, ‘You know, there is still a lot of food on this rind that we could have captured, and so let’s look at your technique and see if we can do a better job.’...They’re consistently coaching every day.”*

- **Restaurants/Institutions have also developed strategies to reduce post-consumer waste including reducing plate/portion size, education initiatives, and hiring employees to sort food waste.**

The most common strategy used by three different restaurants/institutions was educational programs to help consumers either sort their food waste properly or be more cognizant about the amount of food they are serving themselves. This was done through either visual or verbal cues. Two restaurants/institutions also decreased the size of their plates or portion sizes to decrease food waste and another hired employees to specifically sort food waste correctly.

Interviewees said:

Education:

- *“We’re actually in the process right now of developing a little bit of an educational program for our retail areas, because this breakfast that we serve it’s thousands of calories. Yes, it’s a simple pie chart. Here is your average person’s 2,200 calories that they should eat in a day. If you eat this breakfast the way that you’ve been eating it, you know, that’s more than half of your calories.”*
- *“We’ve actually had...folks come out and stand at the waste stations and talk to people.”*
- *“We built actual visual signs that show...every single compostable product that we have; every single recyclable and the garbage...So then when people are trying to figure out where to sort they can say, “Oh, I’ve got this cup and there it is. It goes there.”*
- *“When the [employees] are dumping their food — anything on the tray into the compost — it actually has a little scale there. They can get kind of like a live stat on what they’ve wasted.”*

Reduce plate sizes:

- *“Last year we were using 10-inch plates, and this year we actually reduced the plate size down to 9-inch plates. It’s actually cut about one-third of the post-consumer waste that we experienced.”*

Hiring employees to sort food waste:

- *“Also, the building hires a couple of people and their job is to check the garbage as it goes to the different stations, whether that’s the landfill, recycling or compost.”*

- **When asked directly, restaurants/institutions were unwilling to verbally cue customers for to-go boxes for consumers, citing food safety concerns. Others are unwilling to decrease portion sizes due to customer expectations.**

Three of the restaurants/institutions interviewed were unwilling to decrease portion sizes because these portions are what their customers expect. Another interviewee stated that reducing portion sizes would have a minimal effect in the overall waste stream. When asked if they would verbally cue customers to take their leftovers home in a to-go box, three restaurants/institutions said they would not. Notably, all three interviewees said they provide to-go containers although one said he would rather not due to food safety and the cost of providing containers.

Interviewees said:

Reduce portion sizes:

- *“We don’t feel like we have unreasonable portions...part of the impression of the burger is this mound of fries. Well, that’s not technically a very good thing to be doing for our environment, but it is a physical impression.”*
- *“From the providing less food standpoint, no. Our serving has been consistent from day one. Now we’re over 20 years, and so it’s not something that I think we would change. I can’t say never, but that’s what we’re known for. Everyone has kind of gotten accustomed to a certain portion or size.”*

To-go boxes:

- *“I don’t believe in [to-go boxes] in that it’s just as much waste. If you look at a paper bag and a waxed liner and a piece of foil and whatever that is that you’re wrapping all of that little bite into – it’s tons and tons of waste and expensive from our perspective. You’re adding 50 cents right there onto the customers cost...Is it good the next day? Is there a chance that you’re going to get sick on it the next day? It’s fraught with possibilities with that extra food going home.”*
- *“As far as marketing to encourage people to take their food home, I don’t know that that’s a massive issue. If you look at our numbers in terms of food waste from of the house, I think that a lot of people do take their food home.”*

FOOD DONATION – ALL FOOD GENERATING BUSINESSES

Understanding the Donation System in Food Generating Businesses

- **All food generating businesses interviewed donate to anti-hunger agencies.**

All twelve of the grocery stores, restaurants and institutions interviewed donate food to at least one anti-hunger agency (food banks, meal programs, churches, etc.) on a regular basis. Four businesses said they donate money in addition to their regular food donations and one grocery store runs a bulk food donation program that is supported by customer monetary contributions. Notably, three of the restaurants/institutions said their donations are minimal due to their food waste prevention methods. Two restaurants/institutions said their catering department is what generates the largest volume of food donations.

Interviewees said:

"In order of choice our preference is it goes to the food banks first. We have about 20 different food banks for our six stores."

"If its food that is still consumable by humans, we donate that to food banks. We have currently about 30 partners that we work with who come to our stores on a daily basis, and some actually come twice a day."

"We have a couple of ways that money comes in — direct donations...and a program where we give shoppers five cents of credit every time they bring in a reusable bag to the store, and so 92% of our customers say, "Oh, keep the five cents. I don't want it." That five cents is divided between our food bank program and [another program]."

"The edible food waste that we do donate is minimal...that's because of the nature of [restaurant name] where we're not pre-creating food that would be servable or wasted."

"The only extra food that we have is in our catering department where somebody doesn't show up for the 50 that they were supposed to have and they have 25. That happens quite a bit and we [donate] that."

"Catering is probably the one area where you prepare food based on what was ordered, and then the turnout is always a fraction of what people anticipate, or people just don't eat the way that the customer thought that they would. That's really where the majority of our food waste comes from and so whatever is left over from that is generally what makes its way [to the food bank]."

- **Few of the businesses interviewed track their food donations. Some businesses said tracking was challenging or not worthwhile, while others said they should be tracking these donations.**

Three grocery stores and two restaurants/ businesses track the food they donate. However, one of the businesses working with an anti-hunger agency said the donation numbers provided by the anti-hunger agency are different from those tracked by the business itself, although the reason for this is unclear and may be a result of using different metrics. One grocery store noted they themselves should be tracking these numbers because the donations are part of the

waste stream while another grocery store said that tracking these donations was too challenging.

Interviewees said:

"We are tracking the number of pounds of food that is being donated from the stores, as well as in getting help from the food bank to be able to identify how many families that helps based on that need."

"For the food bank, 30% of our food is donated."

"I get receipts for donations every time I donate. They should be sending them. I have kind of a thing of what they're tracking, because their tracking seems to be different from what we're tracking."

"No, that's hard to capture food waste, I mean, every item you pull off the shelf for whatever reason is what we call salvaged or shrink. You take it out of the inventory. We know what's been taken out of the inventory, but we don't necessarily know what's been given away."

➤ **The primary reason businesses interviewed donate food is to ensure it is being put to its best use by giving it to those in need.**

All of the businesses interviewed said they donate because they want to ensure their food is being put to its best use. Many mentioned the desire to support their local community by giving food to those who need it most. Interestingly, one national restaurant mentioned that they received tax write-offs from donating, while two other businesses (one grocery store and one local restaurant) said they do not receive tax-write offs. However, it was unclear from the interview whether the local restaurant receives a write-off but it's so negligible that it doesn't even count or that they don't receive a tax write-off at all.

Interviewees said:

Putting food to its best use:

- *"Well community support [is] number one. A secondary reason would be that it's a much better use of the food that can't be sold than to compost it or throw it away."*
- *"Yes, I think that on a pure capitalistic level, you know, we'd be paying more money in trash if we threw away our food. Really, it's like part of our mission...I think that it's part of a sustainable model to serve good food to the entire community...I'm really glad that we do it and I love taking credit for it, but at the end of the day it just makes sense. I like to think that I'm a good guy, but really it's just because it makes sense."*
- *"If it's not feeding people here, then it should absolutely feed people who need it. Why wouldn't you do that? I still don't want to be producing food, though, just to donate it."*

Taxes:

- *“There is also a tax kickback that would be foolish to ignore — financially it makes sense. I mean, it’s not a ton but it helps.”*
- *“I guess another challenge is even with donating, whether I throw it away or I donate it, it does not change my tax return. There is really no financial incentive for me to donate. Of course we’re going to donate, because it’s the right thing to do, but I don’t know if every business views it that way.”*

- **Relationships with anti-hunger agencies are dependent on adequate donations, and when food waste is prevented, donations decrease.**

Four of the restaurant/institution interviewees discussed the fact that when they started tightening their food waste prevention strategies, their quantity of donations decreased. One interviewee noted that this decrease in donations may become a challenge years down the road.

Interviewees said:

“Again, we end up wasting less and the food quality goes up, because now we’re not sitting on all of this food all day. I mean, donations are actually a great tool for improving your food waste reduction program and improving food quality, because you’re making less at a time.”

“With people becoming more aware of overproducing and food waste, what is that next step going to be 3, 4 or 5 years from now? When there isn’t a lot of donated product? How are these food banks going to get this? I think it’s wonderful that we’re all talking about it and that it’s the right thing to do, but then we also need to think about okay, what is that going to look like five years from now?”

“I’m a bigger advocate of the EPA waste hierarchy and just following forced reduction first, before we donate food or before we compost or donate to other avenues. For me the whole issue of food donation, it’s kind of an interesting metric. To me I’m not really jazzed if our food donations go up.”

Grocery Stores

Donation Infrastructure and Challenges

- **The majority of grocery stores interviewed set up their donation programs independently.**

Four out of the five grocery store interviewees said they set up their donation program independently by calling up local food banks or visiting them in person. One national business set up a donation process through a Feeding America partnership. Many said they prefer to work with nearby food banks to support their local community.

Interviewees said:

"We started the food bank program in 1989 by picking up the phone and saying, "Hey, we're looking for a partner for each of our stores. Here's how it works, and what we needed."

"I went over and asked to talk to the director. We made introductions and did a follow-up meeting to brainstorm."

"There isn't a corporate-run program for donations. It's individualized and every building has got to find their local reliable source and to have somebody who wants to come and pick up stuff."

"It is in partnership with Feeding America, and Feeding America food bank partners."

"This is the most local one, and I really wanted to support local first."

- **Grocery stores cited many challenges to the donation system including food safety concerns, unreliable donation pick-ups, and difficulties with establishing the donation process.**

The two most frequently cited challenges to donating food for grocery stores were food safety issues and unreliable donation pick-up schedules. Three grocery stores discussed the desire to donate perishable items that are safe to eat, but doing this comes with the additional challenges of finding a place to store the items while awaiting pick-up or dealing with internal/corporate business policies that regulate what can be donated. Three grocery stores also discussed the challenge of scheduling the donation pick-ups. Because many anti-hunger agencies are operated by volunteers, there will be times the volunteers are unable to pick up donations. If this happens, these food donations have to be composted. This is why one grocery store pointed out the need for store champions who are invested in the donation process. If problems arise, such as a missed pick up, employees at the stores must be able to work around this problem. Finally, another grocery store discussed the challenge of setting up the donation process in the first place. The interviewee expressed the need for resources that described what to donate and how to set up the donation schedule.

Interviewees said:

"It's difficult with anything perishable, because when it comes to perishable if it's not good enough to sell, why would we want to give it away? Unfortunately, we have an executive over food safety and there's a hardcore [standard of practice] on what you can and can't give away."

"The challenges would be refrigerated product. You start to worry about health and safety when it comes to refrigerated product. You then have another spot where product is going to be stored for food banks. That would be one challenge. Another challenge would be that sometimes because food banks often run with volunteers, sometimes they don't show up. And so then the product ends up being picked

up at the end of the day and put into the compost.”

“You still have to have champions within the operation. Questions will come up and issues will come up, you know? A driver doesn't show up, and so you've got to have those individuals that can remove those obstacles pretty quickly in that process. The moment that the system gets bogged down or you're not getting responses or are not able to move that obstacle like the driver not showing up out of the way — stores start to get out of the practice of doing it.”

“I think that's the problem for most business owners and especially new ones like me where you're getting everything off the ground. It's like the last thing that you want to do is come up with another program that you've got to deal with and put thought into... It's just kind of a 'how does this work' type of thing. No one really has the answer of here's what you do and this is how many days out the product needs to be, and this is where you should set it aside. You will get a phone call at this time confirming the appointment to pick it up and the pickup will happen, and this is how they will come and check in with you. And then this is how they will exit the building, and this is how we will repeat the process the next day. We have to dream all that stuff up. As a business owner you worry about the security. It's like who's coming into the building? They're claiming to be, but how do I know that they're from this group? It's all of those things.”

Restaurants/Institutions

Donation Infrastructure and Challenges

- **The majority of restaurants/institutions used Food Lifeline or another larger organization to help set up their donation system.**

Six out of the seven restaurants/institutions interviewed said they use Food Lifeline or another large anti-hunger organization to help connect their business to local food banks. In addition to serving as the connector, Food Lifeline also provides some of the businesses with pans, bags and tags to use for their donated food. The seventh restaurant/institution does not use Food Lifeline because they already have a long standing relationship with another anti-hunger organization. Finally, another restaurant/institution with headquarters outside of Seattle utilizes their distributor to pick up and deliver food donations through a program called “Chefs to End Hunger.”

Interviewees said:

“Well, we do work with Food Lifeline, but they just connect us to all of these other places... A rep from Food Lifeline came and she was just kind of like this is how you set it up.”

“Yes, we work through a national company called the Food Donation Connection. They connect us with

local [anti-hunger organizations]. Yes, and then those partners come to our restaurants one to three times a week — ideally, three times a week — and pick up any excess food.”

“We don’t donate directly to Food Lifeline. Food Lifeline puts us in touch with organizations that can use it, and we donate directly to those organizations.”

“In our headquarters we use basically the company that distributes our produce...They leave with trays of donations from us, and so it’s kind of nice because the truck is full in both directions. It’s part of a program called Chefs to End Hunger.”

- **Restaurants/Institutions discussed many different challenges to food donation such as where to store items awaiting pick-up, the inability of food banks to accept large quantities, and unreliable or inconvenient pick-up schedules. Other less mentioned challenges included the complexities of preparing food for donation, the time burden of training staff in how to donate food, and a lack of resources on how to donate food.**

The most frequent challenge mentioned by three of the restaurants/institutions was storage space. One comment referred to storage at the institution (their pick-ups are scheduled once a week so they have to have space to store a week’s worth of donations) and the other two comments were in reference to storage space at food banks (the limited storage space at food banks limits the amount of donations the restaurants/institutions can donate.) Two interviewees stressed the need to work with food banks that were flexible and could pick-up donations in a specific time window that was favorable to the business. Another business discussed a challenge of working with a food bank that required their donations be put in specific pans or bags; if the donations were not packaged the correct way the food bank would not take them.

The time and training involved in the donation process was another challenge brought up by one restaurant/institution, and finally a lack of resources about food donation for businesses was brought up by one restaurant/institution. Notably, food safety did not come up as a challenge for restaurants/institutions with all interviewees stating they were protected under the Good Samaritan Law or had established internal business policies that protected them.

Interviewees said:

Storage Space:

“They only want it if it’s a certain number of pounds. They won’t take certain items, or they have challenges with refrigerated storage and all that.”

Logistics:

“Because our model is such that we just don’t know if tomorrow we’re going to have food or not, and so [our anti-hunger organization partners] need to have the flexibility to come and pick it up at any time.

We literally just call in the morning and say, 'We have X to have you pick up. Can you do it today?'"

"Yes, I mean, the logistics is the tough part because we have to have someone who can pick up. We don't have facilities or the ability to load it all up, and to get it and transport it to them. It has to be food that's usable for that organization, and it has to be the right time window for them to be able to pick up and recover the food. I mean, we are operating a business and so we have business needs that supersede a lot of this stuff."

"Right now we're in a 'doesn't work well' situation. Because [the food bank] needs things to be in these specific pans and specific bags and such, the bags we generally have a good supply, but not the pans. So when we have stuff in other things they won't accept it, and we don't have the pan to put it into in the first place. They don't even bring us the pans to transfer it into."

Making it worthwhile:

"And it's a learning curve for our staff to be able to identify what's feasible and what's not, and what's a quantity that's two portions. It's not worth it, but if it's more than that it's worth it. And they will tell you that one portion is worth it, but it has to be something — the time that we take on it, we're still paying out that time. It's got to be worth the while that we take to do it other than just humanitarian and waste reduction. We're still operating a business and it still has to follow those parameters, yes."

"People really do want to do the right thing — especially in our industry and I'm talking restaurants and just hospitality as a whole — people want to do the right thing. There are just not a lot of resources out there to make that happen."

Compost

Composting Challenges in Food Generating Businesses

- **Businesses also talked about the time and cost associated with composting in addition to communication challenges with understanding what can and cannot be composted. Two of the national business interviewees also stated the lack of composting infrastructure in other cities as a challenge.**

The biggest challenges to composting were the cost and time associated with it. This is one of the reasons why two of the grocery stores have started using WISerg technology; it is cheaper than composting and they can sell the fertilizer produced back to consumers. Two of the national businesses also said that lack of composting infrastructure in other areas of the United States was the biggest challenge to composting.

Restaurants/institutions that have post-consumer food waste report that consumers often sort their food waste incorrectly, with food waste and compostable packaging often ending up in the garbage bin. Interviewees perceive that this is due to a variety of factors: it is time consuming for customers to sort their food waste and packaging, and customers from diverse backgrounds/cultures may not be familiar with Seattle's requirements for sorting waste

Interviewees said:

Time and cost:

"[Donating inedible food scraps for animal feed] would be better for us because we get charged a lot for the composting bins."

"Oh the time involved in composting. I mean, honestly there are days where you say, 'I wish that I could just throw it all in the dumpster and walk away'. I've got a million other things to do and the other things that I do actually could increase sales which benefit my staff and myself."

"We try to stay away from composting because it's just so darn expensive. [. . .] it costs more than garbage...and so we look for less expensive ways to handle it. Like with WISERg, which in my opinion is a way much better product than compost and it's cheaper. It's a win-win."

Post-consumer food waste:

"Education is big and having people understand why we sort it and not tossing from across the room to whichever bin is open. We do get a lot of people from other cultures that it's not a strong focus for them."

"Because of the diversity of our groups that come in-house, whether it's international or from the Midwest, it is just constantly trying to educate people on where to throw the proper waste streams in the front of the house."

"Confusing packaging. Some of our outside vendors are not using compostable packaging and so any food left over in the package usually ends up in the waste instead of compost."

Improving the Food Waste Diversion System

- **Food generating businesses have many different ideas for how the food waste prevention and food recovery system can be improved.**

All the businesses interviewed had their own ideas for ways the food waste prevention and food donation systems could be improved. There were two common responses; one was the creation of a donation resource that explained to businesses 'how' and 'what' to donate and the other was helping businesses measure their food waste, through waste audits or LeanPath technology. Other unique ideas ranged from financially incentivizing businesses to donate food to establishing a food diversion roundtable where Seattle businesses could come together and share best practices.

Interviewees said:

Donation guides:

- *“I think if there was a resource that was readily available that said, “Here’s how you do it and this is the pickup date,” and just something that answered commonly asked questions like “can I donate frozen products?” We don’t know. Do they have a freezer? Is a freezer big enough for what we want to give them? I don’t know.”*
- *“The refrigeration one, what would help that is if we had guidelines of what refrigerated product can be donated.”*

Waste audits/inventory management:

- *“The other thing that would help us get things quicker is waste audits. It’s always difficult doing waste audits, because you’ve got to find a place to do it. Not every hauler has a facility where you can do that, and I certainly don’t want to do it in my parking lot. [It would be nice to have] a place like a transfer station or a MRF [Material Recovery Facility], because you’ve got a cement floor. You can really separate stuff out and get a lot of really great pictures and do a really good job.”*
- *“Maybe helping people do assessments, you know? Getting in there and saying, “Hey, did you know that you threw away \$4,000 worth of whatever today?” I mean, that’s motivating.”*

Central location for food donation:

- *“I’d love to just have one place where you can just drop everything off, and you don’t have to like check in and you don’t have to like wait with a buzzer or something. You just drop off all the food there and it just goes from there to wherever.”*

Financial incentives to donate food:

- *“Now, I think that there was talk of a tax code where you got like 150% of what you donated, the value of what you donated for food to alleviate hunger in these types of programs. If that were the case, I would imagine that rather than doing it sporadically and incidentally, more grocery stores would do it as a focus, because now they’ve got a huge incentive to do it.”*

Business collaborative for reducing food waste:

- *“Even if there was a platform in the city for business partners to get together like once a quarter and talk about opportunities as well as what we can do to make things better together as a group would be extremely beneficial, and to my knowledge there is not anything right now.”*

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