Food Rescue Bin Pilot Summary: Standardization, Reuse, and Communication

Project Findings and Recommendations

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Seattle Public Utilities

Bin Pilot Project Summary

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Acknowledgments

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Ballard Food Bank, North Helpline Food Bank, and Rainier Valley Food Bank, along with the many volunteers, drivers, and staff that helped understand the efficacy of utilizing reusable bins. Your insights help us better understand the challenges and opportunities for next steps.

HumanEco for prototyping a food donation bin service, gathering data, and sharing insights and lessons learned. Without this test, we wouldn't have on-the-ground knowledge of system requirements.

The collaborative effort to address the intersection of food waste and food security helped pave the way for further innovation that ensures food that is unsold is utilized to its highest purpose which is to feed our community.

Pilot Background

SPU Role in Food Rescue

Seattle Public Utilities (SPU) oversees Seattle's solid waste system, including garbage, recycling, and organics. Food accounts for approximately 25% of garbage from Seattle businesses, translating into nearly 30,000 tons per year. "Food rescue" is one strategy to reduce this waste. Hunger Relief Organizations (HROs) in Seattle collect food from Seattle businesses and redistribute it to communities in need. When businesses donate safe, edible, unsold food, they support hunger relief efforts in the community while preventing edible food from going to compost and garbage. However, despite best intentions, SPU's Food Rescue Innovation work has found that significant food and associated packaging still go to waste within these food donation/rescue operations.

SPU's goals in food rescue are to:

- Reduce food and packaging waste in food rescue operations (from donors and rescue organizations) and avoid waste going to the City's waste stream overall.
- Reduce cross contamination of food and packaging in Seattle's compost, recycling, and garbage streams.
- Increase the quality and volume of edible food that supports community efforts to address food insecurity.
- Develop tools, assistance, incentives, funding, and policies that reduce wasted food and packaging contamination within food rescue operations.

Figure 1. A variety of produce is sorted into durable donation bins and ready for distribution at the Ballard Food Bank.

This project is SPU's latest collaborative effort to align SPU expertise and community interest by connecting food donors (grocery retailers) and HROs participating in grocery rescue to test grocery rescue standards, improve communication, and identify key data points for measurement and on-going tracking.

The focus on a standardized bin and donor training aligned with SPU's expertise in collecting materials and fostering behavior change. The Utility uses the standardization of collection carts for recycling, compost, and garbage to increase recycling and composting rates while decreasing materials going into the wrong cart (contamination). The collection system is continually reinforced through public outreach, large scale education, on-site training, and other methods to foster positive practices. While SPU does not oversee food donation collections, testing these standards could lead to retailer adoption, improvement of the system overall, and reduction of food waste.

In addition, SPU is working to reduce single-use packaging by fostering scalable reuse systems. This Pilot sought to expand current reuse efforts toward a durable/washable food donation bin.

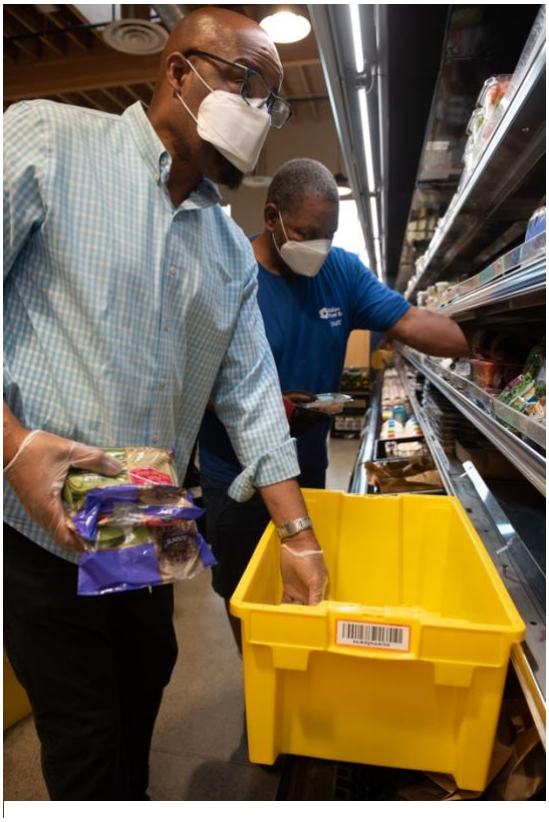

Figure 2. Staff at Ballard Food Bank unpack donations from the durable bin directly onto the shelves.

The goals of this report are to:

- Share findings with Seattle grocery retailers and HROs who conduct food rescue operations so that we can learn together to improve results.
- Encourage other civic, private, and nonprofit parties along with other public sector jurisdictions to test solutions that address root causes. Testing a standardized bin and bin service is one example.
- Connect the dots across SPU's Food Rescue Innovation work and show how the program is continuing to evolve and improve.

Scope of the Bin Pilot

In 2021, food donations from grocery stores ("grocery rescue") became the primary focus of SPU's ongoing work to identify root causes of systemic gaps in food rescue. The 2021 Grocery Rescue Assessment provided an opportunity to observe existing grocery rescue practices, offer recommendations for improvements, and field test intermediate strategies to improve the quality and quantity of food donations.

A key observation from the 2021 Assessment showed that using assorted boxes, bags, and carts to collect and transport food donations often results in over-handling of products, packaging contamination, inaccurate data collection, and food safety concerns. Implementing a uniform, durable donation bin resulted in noticeable

improvements to the quality and content of donated food, reduced cardboard, and packaging along with associated disposal costs to hunger relief organizations (HROs), and improved associate awareness, which led to more robust staff engagement related to food donations. Each of these results showed the potential for better community outcomes such as increased food donation while reducing food and packaging waste.

Key recommendations to reduce waste and improve donations included:

- Identifying and testing standardized food donation protocols,
- Incorporating messaging and training that strengthens standards across donors and HROs, and
- Expanding data collection and analysis to determine donation potential, savings, and costs.

Figure 4. A volunteer unloads donations from a truck at the Ballard Food Bank. Durable donation bins feature built-in handles making them easier to carry.

Figure 3. Ballard Food Bank staff unpack donations from durable bins directly onto shelves. Durable donation bins stack or nest depending on the direction they are facing.

Pilot Goals

Build on the 2021 Assessment by testing:

- A standardized durable bin to replace the use of non-standardized containers.
- Training and support for grocery store and HRO staff.
- A prototype service for collecting, cleaning, and returning bins to stores for reuse.

Positive interest and constructive feedback from both retailers and HROs showed that this Pilot could benefit both sectors while also meeting SPU goals to reduce food waste. The Pilot sought to leverage retail grocers' practices, equipment, and data while increasing the effectiveness of HROs.

Pilot Approach

The uniform, durable bin served as a tool to test whether bin standardization could reduce food loss, improve food donations, and enhance communications between stores and HROs.

In addition, the Pilot tested a third-party bin-washing and bin transportation service that retrieved used bins from HROs and returned clean, sanitized bins to store locations for reuse. The purpose of prototyping this service was to test and understand the logistical requirements of a bin reuse service and determine whether this service could reduce packaging waste.

Three Seattle Safeway locations in distinctly different neighborhoods (Ballard, Rainier Beach, and Pinehurst) were selected to participate in this Pilot, along with three HRO partners who were in direct proximity to the Safeway locations. The participating HROs included Ballard Food Bank, Rainier Valley Food Bank, and North Helpline.

The project team sought to measure effectiveness of the standardized durable bin through data collection, observations, and interviews. Data collection focused on waste characterization assessments with the goal of quantifying the amount of food going to garbage and compost collection. Weekly communication with HROs sought to gather donation data from participating HROs. Bi-weekly store visits enabled on-site observations of changes over time. The team also interviewed store staff and HRO staff and volunteers to gain insights before, during, and after the Pilot.

Durable Bin Pilot Stages

PILOT SET UP	DISCOVERY	CONDUCTING THE PILOT	DATA COLLECTION
• Selected bins • Identified bin servicing company • Recruited participants • Created shared agreements • Established a communication cadence • Prepared and distributed bins	• Worked to understand food rescue opportunity • Resolved communication challenges • Identified bin servicing partner needs	• Guided store staff on donation protocols • Assisted stores and HROs in communicating clearly • Supported bin servicing company in communication and logistics planning • Identified training, communication, and policies that improve donations	• Gathered limited pre-pilot waste information by conducting Divert[1] bin sorts,[2] learning about additional food diversion methods, and identifying reasons for retail food waste • Documented pilot results • Pursued data to create a cost-benefit calculator

[1] Divert provides a service to Safeway stores which is designed to collect inedible food waste and associated packaging. Once collected, Divert separates the packaging from food and sends the food to anaerobic digestion.
[2] The Divert bins were a focus in this Pilot since 2021 observations showed that these bins became an unintended catch-all for both donatable and non-donatable food. When unsold food exceeded the capacity of available Divert bins, food and associated packaging could go to garbage.

Pilot Findings:
Early Successes and Outcomes

Standardized bins achieved the following:

Increased awareness by being easily identifiable. The durable bins used in this Pilot were identifiable because they had the same color, size, and function across all stores and HROs. An identifiable donation bin increased awareness of food donation barriers and opportunities for grocers. During the Pilot, store managers became more aware of staff confusion surrounding donation policies, lack of standards and protocols, and the need for additional training and clear guidelines.

Figure 5. Durable donation bins are sturdy and weather resistant, which is helpful during loading and unloading periods.

Greater visibility of grocery donations. Donation bins make both the operations and accompanying challenges of grocery donation more visible and provide training opportunities for both grocer and HRO staff. Improvements included:

- A clear understanding of what is or is not donatable and why (including dated products).
- Reduced confusion between donations and other distressed products destined for alternate streams at stores.
- Improved communication among store staff about food donation.
- Proper handling and safe storage of donatable foods.
- Understanding of transportation and logistics management.
- Communications between stores and HROs.

Improved food donations. Reports from HROs indicated that identifiable donation bins resulted in:

- Improved quality of food donations
- Increased quantity of food donations
- Greater variety of donations, including produce
- Increased food safety
- Reduced time HROs spent at stores due to greater dockside efficiencies and decreased time spent searching for donated food at stores

Reduced solid waste arriving at HROs and increased efficiencies.

A durable bin that can be reused multiple times offers advantages such as:

- Reduced cost to HROs of disposing of non-reusable containers that food donations are typically delivered in, such as boxes, bags, and other containers.
- Increased ease of transport, enhanced storage during transportation and at food banks.
- Reduced time spent re-sorting food at the food bank.

Successes Beyond the Bin:

- Enhanced relationships and progress in resolving communication issues between HROs and stores through facilitation by NWFA.
- Improved pickup consistency from HROs during the Pilot period.
- Improved staging of food donations at the store.
- Resumed protein donations by one store that were previously suspended due to inconsistent HRO pickups.
- Revised store donation policy that encourages new categories of fresh food for donation by Safeway with input from UW Department of Environmental & Occupational Health.
- Increased buy-in and continuous improvement during the Pilot period noted by HROs as a result of coaching and communication.

Making the case for broader implementation: The Pilot project succeeded in testing bin service for four weeks and helped generate renewed energy among HRO partners, store staff, and corporate stakeholders. On average, stores cycled through roughly 50 bins per store each week. The number of bins used at the stores increased during the Pilot as staff became more familiar with using them, suggesting that average usage would likely be higher than 50 bins per store per week.

Figure 7. Top Right: Standardized donation bins are easily identifiable, which reduces time during donation pick ups at stores.

Figure 6. Bottom Right: Donated food pre-sorted by Safeway staff and collected by Rainier Valley Food Bank.

Pilot Findings: Challenges

Several key challenges emerged throughout the planning, launch, and review of the Bin Pilot Project. These challenges confirmed the initial findings from the 2021 Assessment, which showed that the greatest opportunities still rely on collecting and analyzing data, improving communication, and fostering standard practices, which improve food donation outcomes while reducing waste.

Data

- Grocers and HROs use different data collection and reporting platforms, and these systems don't connect to allow complete analysis of food donations.
- Data from grocers and HROs often conflict and don't reflect all unsold, diverted, or wasted food.
- Identifying opportunities and tracking progress relies on analyzing sensitive, proprietary information from the private sector. The Pilot needed additional time and solutions to protect this data while allowing it to be used.
- Without data, it's difficult for all parties to understand potential impact of an improved food donation program, cost savings, and progress over time.

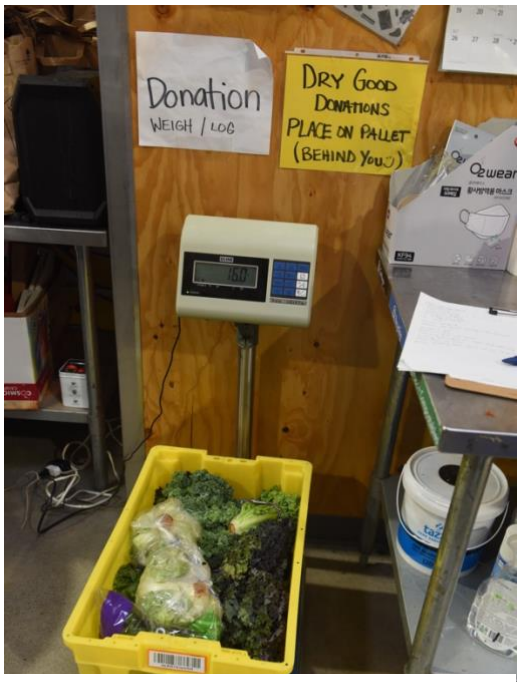

Figure 8. A durable bin full of produce is weighed and recorded at the Ballard Food Bank.

Communication

- Effective grocery rescue is a sequence of actions and decisions that rely on direct feedback and a clear understanding of practices and protocols.
- These practices and protocols must be continually communicated and reinforced across a broad spectrum of participants, including store managers and staff, HRO volunteers, drivers, and others.
- Historically, the responsibility for this communication has been fulfilled by a third party.
- Communication between grocery retailers and HROs may be limited due to frequent staff and volunteer turnover.
- Limited communication between grocery staff and HROs can result in conflicting information and confusion around donation standards.

Standardization

- Inconsistent food donation training and high staff turnover lead to missed opportunities to rescue food, compromised food safety, and operational inefficiencies.
- Conflicting donation protocols (such as which foods can be donated and how) leads to misunderstandings by retail staff.

Bin Service

- Lack of dedicated bin storage space at stores led to additional time spent by the bin servicing company during weekly drop-offs.
- The need to track and set aside bins for pickup and cleaning created an extra step for HRO staff.
- Style of the bins chosen for the Pilot required additional washing time.

Figure 9. Durable bins are weather resistant and easily stored outside of grocery stores and HROs for bin servicing companies to retrieve them.

Figure 10. Stable and stackable durable bins stage donations in cold storage.

Recommendations

Recommendations Summary Table

Each of the following recommendations relies on collaborative action across grocers, HROs, and public agencies.

	GROCERY RETAILERS	HUNGER RELIEF ORGANIZATIONS	BIN SERVICING COMPANIES	SEATTLE PUBLIC UTILITIES
DATA	• Develop more robust strategies for data collection, analysis, and sharing. • Conduct waste sorts to establish baseline data. • Share real-time data at the associate level to communicate employee impact on donation and other programs.	• Monitor donation trends to offer constructive feedback to donors. • Share real-time data with donors to demonstrate impact of the donation program.	• Affix bin tracking labels (i.e., barcodes) to assist in data tracking, bin tracking, and clarity in bin ownership. • Collect data to monitor results and identify efficiencies over time.	• Provide technical assistance to measure food and packaging waste. • Work with retailers to identify other food waste data that shows opportunities and impacts.
COMMUNICATION	• Encourage food donation visibility and story sharing to generate store associate participation and customer awareness about stores' actions. • Increase capacity or invest in a third-party facilitator to strengthen information sharing with HROs.	• Increase capacity or invest in a third-party facilitator to improve communication between HROs and stores. • Encourage food donation visibility and story sharing among volunteers, donors, and the broader community.	• Maintain consistent communication with stores and HROs. • Add messaging on the bin to build public awareness.	• Provide technical assistance which strengthens on-going communication between retailers and HROs. • Host annual roundtables to encourage collaboration, share lessons and best practices, and identify next step strategies. • Help tell the story of food rescue and the intersection of waste.Share successes and opportunities with partners and the media.
STANDARDS	• Select an identifiable, uniform donation bin to test across multiple stores and monitor results. • Evaluate and update existing staff training programs for grocery donation program to foster consistent, successful food donation practices.	• Conduct food safety and storage training for HRO staff and volunteers to reduce food loss due to spoilage and contamination. • Utilize identifiable donation bins and share bin insights with retailers.	• Collaborate with retailers and HROs to select a uniform bin that suits the bin servicing company's capacity to wash, store, and transport. • Identify practices for collection, cleaning, returning, communicating, and tracking bins.	• Continue pilots that expand use of a standardized bin and standardized practices. • Provide technical assistance such as training and waste sorts to support follow through. • Share results with partners to inform best forms of standardization across bins.

Recommendations for Grocery retailers

Retailers have a pivotal role since their policies and daily operations directly impact the success of food donation programs and the reduction of edible food waste. Many of the challenges around using data to inform decisions and motivate actions, communicating across employees, and standardizing in-store protocols can only come from the retailers themselves. These pilot recommendations are likely applicable for retailers beyond Safeway/Albertsons.

Data

- Develop data collection strategies that show *all* pathways for food diversion and waste; enable granular analysis to offer opportunities and impacts when changes occur, and contribute to shared understanding across stores and HRO partners.
- Conduct waste sorts that reflect all food pathways (donation, Divert bins or compost collection, garbage, meat rendering, and more) to optimize prevention, donation, composting/anaerobic digestion, and other strategies.
- Share real-time data at the associate level to communicate employee impact on the donation and other programs. Engage staff through various mechanisms such as incentives, goal creation, data transparency, and progress toward goals.

Communication

- Encourage food donation visibility and story sharing to generate store associate participation and customer awareness about stores' community actions.
- Increase capacity or invest in a third-party facilitator to improve communication between stores and HROs.
- Build in consistent, timely communications with Divert and potential food donation bin servicing partner to ensure stores have sufficient bins for both inedible and edible food diversion.

Standardization

- Select one identifiable, durable bin that meets functional requirements for the store and its HRO partners. This may or may not include bin servicing. Test across multiple stores and monitor results.
- Foster consistent, successful food donation practices by embedding food donation protocols into associate onboarding, providing ongoing training to remain current with protocols, recognizing outstanding staff at the store level, and sharing food waste reduction outcomes on a regular basis with staff.

Recommendations for Hunger Relief Organizations

Hunger relief organizations play a crucial part in ensuring the success of food rescue programs by safely delivering surplus food to their communities and having unique insights into the efficiency of operations and factors that result in donated food ultimately going to trash or compost. Ongoing staff/volunteer training and transparent feedback between HROs and grocery retailers are essential elements of an efficient food rescue program.

Data

- Monitor donation trends to offer constructive feedback to donors.
- Share real-time data with donors to demonstrate the impact of the donation program.

Communication

- Increase capacity or invest in a third-party facilitator to improve communication between HROs and stores.
- Encourage food donation visibility and story sharing among volunteers, donors, and the broader community.

Standardization

- Reinforce standard protocols with ongoing training. This can lead to clear communication and efficient operations despite high staff turnover and staff shortages.
- Conduct food safety and storage training for HRO staff and volunteers to reduce food loss due to spoilage and contamination.
- Share bin insights with retailers interested in using a standardized bin.
- If a bin servicing company becomes part of the system, collaborate with the company to develop training materials and/or signage that ensure effective communication and bin coordination.

Recommendations for Bin Servicing Companies

Seattle doesn't have a reuse system for food donation operations. However, reuse companies have expressed interest in this area. Beyond developing washing, storage, and transportation capacities, future companies should consider the following:

Data

- Affix bin tracking labels (i.e., barcodes, QR codes) to assist in data tracking, bin tracking, and clarity in bin ownership.
- Collect data to monitor results and identify efficiencies over time that are unique to food rescue.

Communication

- Label bins to clarify bin ownership at grocers and HROs.
- Increase public awareness about food donation by adding outward-facing messaging opportunities on the bin.
- Develop a communication system to ensure stores always have enough bins.

Standardization

- Collaborate with retailers and HROs to establish a uniform bin that would function well for all parties including the bin servicing company's capacity to wash, store, and transport.
- Create agreements so that all participants understand their roles in a bin service system. Identify practices for collection, cleaning, returning, communicating, and tracking bins.

Recommendations for SPU

In the short term, SPU could expand collaboration with retailers and HROs while leveraging expertise in creating solid waste standards, fostering sustained behavior change, and providing technical assistance. For longer term planning, SPU could continue to explore and share best practices while engaging retailers and HROs to explore donation recognition, incentives, and policies that bolster and sustain these improvements.

Data

- Provide technical assistance to measure food and packaging waste and work with retailers to identify other food waste data that shows opportunities and impacts. This could include collaborating on baseline and post-project data analysis.

Communication

- Provide technical assistance which strengthens on-going communication between retailers and HROs.
- Host annual roundtables to encourage collaboration, share lessons and best practices, and identify next-step strategies.
- Help tell the story of food rescue and the intersection of waste and share successes and opportunities with partners and the media

Standardization

- Continue pilots that expand use of a standardized bin.
- Provide technical assistance such as training and waste sorts to support follow through.
- Share results with partners to inform best forms of standardization across bins.

Other Potential Focus Areas & Approaches

- Develop and track indicators of improvement that measure more than pounds, such as:
    - Time savings
    - Streamlined operations
    - Improved communications and partnerships between donors and HROs
    - Store associate understanding and buy-in
    - Clear and improved donation protocols
    - Increase in quality and quantity of food donations
    - Reduced garbage, composting, and recycling
- Build partnerships grounded in trust and transparency.
- Provide grants to help donors and HROs improve communication, data, and standardization within existing food donation programs.

Next Steps

Safeway

Safeway's Reflections & Next Steps

The SPU Bin Pilot provided many learnings Safeway will be using as it recreates the company's grocery rescue program. While the use of the durable bin proved beneficial, it was the human aspects of the program where we have the most opportunity. The company's plans include:

- Focusing more resources on training so that Safeway associates understand the human impact they are making by carefully sorting, storing, and donating the food.
- Recreating Safeway's program based on ongoing feedback and input from partnering HROs to reflect the type of food preferred, storage capacity, days of distribution, labor capacities, and transportation capabilities for pick-up.
- Standardizing Safeway's donation bins (which will include exploring recyclable bins that do not require cleaning/sanitizing).
- Exploring transportation solutions in areas where HRO partners don't have transportation resources.
- Measuring progress of this new program by using software that provides the company with data about the type, quantity and poundage of food donated, as well as poundage and cost of our compost and garbage produced by each store, so we can more easily measure progress as the new program is implemented.

SPU

Building on this year's pilot, SPU will:

- Share results and request insights from Seattle HROs and additional retailers.
- Develop partnerships to scale out standardization, improve retailer and HRO communications, and share data that shows progress, identifies gaps, and points to opportunities.
- Incorporate lessons learned to refine SPU technical assistance for retailers and HROs.
- Collaborate with retailers, HROs, and other organizations to identify incentives that would reduce food waste and improve food rescue outcomes in the long term.

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