The 2018 Challenge to Waste Less Food Final Report

NO FOOD LEFT BEHIND - CORVALLIS -

Author

Amanda Rhodes, MPP, RDN Assistant Project Manager

Editor

Jeanette Hardison,

Project Manager

No Food Left Behind – Corvallis is a project of the Corvallis Sustainability Coalition



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Introduction

The Oregon Department of Environmental Quality (DEQ) has been quantifying the amount and type of food going to waste in their Oregon Solid Waste Characterization and Composition Study.¹ The most recent data from 2016 in Table 6 (Appendix A), show that statewide, nearly a quarter of solid waste is food (all waste streams). Moreover, about 15% or just over 290,000 tons of food was edible. Edibility is defined as what most people would find edible and not things like thick peels, bones, or egg shells. Edible food was also counted if it was spoiled. The purpose of the Characterization and Composition Study was to ascertain what food is being thrown away that was originally produced with the intention of being consumed.

The figures above do not capture how much food was composted, vermicomposted, fed to animals, or used for energy production in Oregon. It is estimated that worldwide a full third of all the food produced is not eaten. In terms of climate change, solving the issue of wasted food is the third highest ranking solution after refrigerant management and onshore wind turbines, largely because of all the upstream activity and resources that are used to produce food.² Furthermore, food is wasted further downstream in its lifecycle in industrialized nations which results in a bigger impact. The Rockefeller Foundation looked at three major U.S. cities and found that the residential sector produces the most wasted food when compared to other sectors like restaurants, grocery stores and schools.³



Estimated Food Waste Generated by Sector

Figure 1 Estimated Food Waste Generated by Sector

Therefore, the project goal for No Food Left Behind – Corvallis is to encourage Corvallis' residential sector to prevent wasting food that should be eaten. The goal is being accomplished by raising awareness about the environmental, social, and economic impacts of wasting food, and providing a wide variety of practical tools to enable residents to make changes that reflect this new awareness. To

¹ Oregon DEQ Solid Waste Characterization and Composition Study

https://www.oregon.gov/deq/mm/Pages/Waste-Composition-Study.aspx

² Project Drawdown <u>https://www.drawdown.org/solutions-summary-by-rank</u>

³ Image and Data Source: <u>https://www.rockefellerfoundation.org/blog/fighting-food-waste-americas-cities/</u>

understand Corvallis residents, and gain valuable feedback about tools that are effective in preventing food from going to waste, a Challenge to Waste Less Food was conducted.

The purpose of this report is to summarize the Challenge and the lessons learned for use in project grant reports to DEQ, to aid in No Food Left Behind – Corvallis' program expansion, as useful information for other waste prevention projects, and for general public knowledge. The findings for this report come from four timepoints; 1) Intake Survey prior to the Challenge, 2) Baseline Recording weeks one and two, 3) Change Weeks—three to six, 4) Follow Up Survey following the conclusion of the Challenge.

The most important findings from the Challenge to Waste Less Food are:

- Largely, participants reported hearing about environmental issues of wasted food (versus social or economic) before the No Food Left Behind campaign was created, which caused them to be more concerned about food going to waste during the Challenge.
- Money, time, and "feeling bad" were all issues that were motivating to some degree upon Intake, whereas only the issue of "feeling bad" stayed motivating at some level in 100% of households.
- Most often spoiled food is the reason food was wasted.
- The highest percentage of households in the Challenge reported that they believe "a lot" of their waste could be avoided.
- Preventing wasted food was perceived as easy by most households in the Challenge.
- Most households agreed that the Smart Strategies and Tools in their Challenge Toolbox were useful, and they would likely keep using them.
- Nearly all households agreed that the Challenge led to more awareness about and a reduction in the food going to waste in their homes.
- Overall, participating households reduced their wasted food by an average of 21% and reduced their money spent on wasted food by 44%, even with already being resource conservation minded.

Recruitment and Challenge Structure

Households Signed Up 129

A total of 129 households signed up for the Challenge to Waste Less Food; 102 of those subsequently committed by email response to moving forward, with 87 picking up their Challenge supplies. A total of 31 households completed all six weeks of the Challenge, including the Intake and Follow Up Surveys.

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		Pickeo Too 87
Figure 2 Challenge Recruitme	ent by the Numbe	ers

IFLB Team planned for six structured events to conduct itment for the Challenge, between December 2017 and h 2018.

household expressing initial interest received an email

asking for commitment to move forward with the Challenge. In response, 102 committed, but only about 50 selected a particular day to come pick up their materials.

Enough materials were prepared for

Households Finalized 31

100 households to participate, so the distribution days originally set aside for picking up Challenge supplies also became recruitment events. An additional 39 households were recruited

on those four days, and a total of 87 packages of Challenge supplies were distributed.

Those who picked up their materials received a verbal walk-through of all items and a quick summary of instructions. They were provided with the following:

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- Username and password to access the website's online data gathering system
- Challenge instructions
- **Recording worksheets**
- **Receipts envelope** •
- Smart Strategies Toolbox for Weeks 3-6:
 - Facts and Impacts Flyer
 - Smart Planning: Meal Planner
 - Smart Shopping: Meals in Mind Shopping List
 - Smart Storage:
 - A-Z Fruit & Vegetable Storage Guide
 - Freezer Inventory
 - FDA Refrigerator & Freezer Storage Chart
 - Smart Prep: Prep Now, Eat Later Tips
 - Smart Saving: Eat First Sign

- 1 countertop compost collection pail
 - Manufacturer's insert
 - Compost information sticker (what's locally-acceptable in compost)
 - Compost pail instructions
- 1 digital scale, battery included
 - o Manufacturer's manual
 - Scale Quick Use Guide

A WordPress website platform was used to host project content and to manage data entry online. All households were set up with a username and password and were instructed how to gain access to the Challenge area of the website. Other parts of the website during the Challenge were:

- About Us
 - Summary of project
 - o Team member biographies
 - Corvallis Sustainability Coalition donation icon
- Why It Matters
 - Facts and Impacts sheet for local area and the nation
 - What is Wasted: Info about carbon footprint of food
 - What About Composting: Food recovery hierarchy and emphasis on preventing waste
 - DEQ Food Fact Sheets
 - Videos-Why It Matters focused on awareness
- What to Do
 - Smart Strategies
 - Recipes: One page for leftovers and one for making trimmings and peels edible
 - o Apps
 - Food Keeper <u>https://www.foodsafety.gov/keep/foodkeeperapp/index.html</u>
 - Big Oven https://www.bigoven.com/mobile/getbyos
 - Olio <u>https://olioex.com/</u>
 - 222 Million Tons <u>https://222milliontons.com/app/</u>
 - Preservation Series Workshops: A series of four classes by OSU Extension Service Master Preserver Program and hosted by the Corvallis-Benton County Public Library.
 - Videos What to Do: Kitchen tips and tricks
- Contact: general submission form

On the Challenge page of the website, participants had access to digital versions of all the printed materials provided. Once they successfully logged in, they could start the data entry process. It began with an informed consent statement about the use of their collected information, the sharing of data being voluntary, and the program goal of maintaining their anonymity. Next, they were asked a series of questions on the Intake Survey (See Appendix B, p. 22). Once that was submitted, they could enter their weekly data for six weeks (See Appendix C, p. 26), and finally close out with a Follow Up Survey (See Appendix D, p. 28).

In addition to the Challenge Instructions, participants had online access to a Frequently Asked Questions (FAQ) page that provided information that either reinforced the instructions or provided a more thorough guide to proper completion of the Challenge. As participants asked questions regarding website use or specifics about Challenge participation, the Challenge FAQs were subsequently updated after responding individually through email contact. For multiple questions asked about the same subject, mass emails were sent with the answers to the whole participant list.

Issues and resolutions were tracked from Week 1, starting on April 30th to the close of the data collection period on June 25th. The issues were tracked in two ways. Each weekly data entry page had a link that said, "Need technical support or help with entering data?" which would bring them to a submission form with open fields to enter questions or comments. Those forms were set up to link to the email established for the Challenge, as well as saved to WordPress. Participants also emailed directly with questions and concerns.

From the time of first emails before the start of the Challenge until final communications a few weeks after Challenge completion, 64% of issues that participants had were with the website platform, either logging in or using the data entry forms (47% and 17% respectively). The other two largest issues were about specifics on what to weigh and about having missed their planned pick up dates to receive Challenge materials. Questions about what to weigh included the following: weighing a visitor's waste, whether to weigh food fed to the dog, beverages, scraps, and food sourced from their own garden. All of the issues encountered and alerted to the NFLB-C team are listed below in Table 1.

Issue	Frequency	Percent
Login Trouble	28	47%
Form Entry	10	17%
Weighing	10	17%
Missed Materials Pick-Up	6	10%
No Compost Drop	2	3%
Scale Problems	1	2%
Other: meal program sign-up	1	2%
Disability	1	2%
Lost Hardcopy of Toolkit	1	2%
Total Issues	60	100%

Table 1 Count of Reported Issues

A few days prior to the beginning of the Challenge, group emails were sent about the launch of the website, letting participants know they should have received login information. Participants received emails every Monday to remind them to engage with the website weekly, and to provide other pertinent information. One additional email had to be sent about doing weekly, not daily, entry of their recorded waste into the online system, since it would only save the data a week at a time, not daily. Multiple people had entered incomplete information prematurely because they tried to enter data daily. One email was sent after the Challenge was complete as a reminder to finish all the input, including the Follow Up Survey. One participant reported in the Follow Up Survey that the weekly emails were an important part of the Challenge:



"I especially appreciated the emails of encouragement and guidance from Amanda. It felt like she was there with me personally through this whole adventure and made me feel more committed to finishing the project when my days got real busy. Thanks Amanda!"



Participant Characteristics and Demographics

Most of the households (65%) involved in the Challenge to Waste Less Food lived in the northwest region of Corvallis, followed by the southwest (19%), southeast (10%), and 6% in the northeast. Over three quarters (77%) of the participants reported their residence as a single family detached house. Ten percent live in apartments, another 10% reported "other", followed by 3% of households in attached single family houses (i.e. duplexes, triplexes, etc.). Those that defined "other" for their housing type listed an apartment in the basement of a single family detached house, a "granny flat" and a community townhouse. Sixty eight percent of household participants own their home, while 32% rent.

Interestingly, all who listed throwing wasted food into their trash cart also identified themselves as renters. While the surveys did not ask for the reason each disposal method was chosen, this reflected a trend that was noted during recruitment and material distribution events. Those who rented, and, more importantly, those who lived in apartment complexes stated that they did not have access to yard debris carts, and subsequently did not need to receive a compost pail. Access to yard debris carts at apartments is not limited by Republic Services, the local refuse hauler. It is a service they offer to all commercial customers (apartment buildings are included in this distinction). It's possible that many apartment building owners do not opt for this service due to the additional cost and the likelihood of contamination (which would incur additional hauling charges). If a cart is offered, tenants may not know it is there or were not instructed on its use.

Those filling out the Intake Survey were asked other characteristics such as age, gender, race, political disposition, highest level of formal education attained in the household, and household income. When asked about age, the person taking the survey was asked the ages of everyone in their household participating in the Challenge. Out of 63 ages that were reported, the average age was 47. Nine people were under the age of 18 within six households. There were 63 reported gender identities as either male or female with a slight majority of participants being female (54%). Eighty six percent of these households were white only, 80% are Liberal, and 71% have Postgraduate degrees as the highest level of education in the household (100% having had at least some college). The average income was \$80,344. These various demographics are reflected in Table 2.

Table 2 Summary Demographics

Variable	Values
# of Households	31
# of People	69
Average Age	47
Female	54%
White Race Only	86%
Live in NW Corvallis	65%
Own their House	68%
Single Family House	77%
Post-Graduate Degree	71%
Liberal	80%
Average Income	\$80,344

Participant Thoughts and Behaviors

All participating households in the Challenge (100%) reported that they have taken steps to reduce energy use in the last five years, and 94% reported that the primary reason for doing so was out of a desire to be more eco-friendly (Figure 3). Of the 65% that said they have taken steps to reduce water use in the last five years, 75% reported that it was for concern about water quantity in Oregon (See Figure 4).

Comparatively, households who responded to an Oregon Lifestyle Survey (OLS)⁴ administered through Oregon State University in 2017 also answered that they have taken steps to reduce energy use in the last five years, but less so (77%) than those that took the Challenge (100%). More households in the OLS that conserved energy in the past chose financial reasons over being eco-friendly, 36% and 14% respectively. Fifty-six percent of OLS respondents reported cutting down on water use, primarily to save money (50%). This comparison can be interpreted that the Challenge participants are likely to be more resource conservation-minded when compared to a randomized selection of Oregonians. Furthermore, when Challenge households were asked if they also take steps to avoid wasting food, 100% agreed or somewhat agreed they did so (See Figure 5).

⁴ The Oregon Lifestyle Survey, administered through Oregon State University, is a biennial survey of Oregon households to determine their attitudes, opinions, and knowledge about household sustainability of water, energy, and food. The purpose of the study is to establish a benchmarking survey that can longitudinally ascertain any change in attitudes, opinions, and knowledge regarding specific household resource use and conservation. The latest iteration was a mail survey of Oregon households conducted between November 2016 and March 2017. The mail survey was sent to 1,636 randomly selected Oregon households during the Fall of 2016. Two waves of surveys were sent, with 730 returned for a response rate of 45%. Survey participants were selected using a random sample provided by a national sampling company. Random Address-Based Sampling (ABS) using the U.S. Postal Service's Computerized Delivery Sequence File (CDS) was used to generate 3,000 residential addresses.



Figure 3 Participant Reason for Reducing Energy Use in the Past Five Years

Figure 4 Percent of Households that Reduced Water Use in Past Five Years and Primary Reason







In 2015, a study conducted in Corvallis found that about 49% of residents disposed of food in their trash.⁵ However, those results do not reflect the behaviors of the Challenge participants (See Figure 6). All participants in the Challenge composted in some way, either at home or through their trash service. One household answering "other" wrote that they have an on-site vermicomposting (using a worm bin), as well. Another participant said that they do not have a yard debris cart, so they put meat and rice in the sink disposal along with composting other materials at home.

The results above regarding water, energy and waste disposal habits demonstrate the conservationmindedness of the Challenge participants. This was anticipated, due to the recruitment events being hosted by the Corvallis Sustainability Coalition. Also, it is likely that someone who would commit to six weeks of wasting less food would also be motivated to reduce resource use in other areas of their life.

⁵ Boudet, (2015). The "Dirt" on Composting in Corvallis: Moving Toward a Zero-Waste Future





Note: Totals add up to more than 100% due to more than one answer allowed

Ninety seven percent (97%) of households reported hearing something in the past year about the problem of wasted food. Of the 97% that did hear something about wasted food, 83% said that this made them more concerned about the issue ("I feel the same amount of concern as before", 17%; No, 0%; N/A, 0%). To qualitatively analyze what participants had heard about wasted food, all comments reported in the open-ended answer field were divided into categories of issues: social, environmental, volume, and economic. There were 24 comments from 22 households. The majority of comments were about environmental issues (See Figure 7).

Figure 7 Problems Reported with Wasted Food



Motivations for wasting less food can vary widely. One survey question asked before and after the Challenge was about how motivating certain issues are for these participating households (See Figure 8). Across all types of issues, very few households selected that these issues were "Not Motivating at All". Money, time, and "feeling bad" were all motivating to some degree upon Intake, whereas only the issue of feeling bad stayed motivating at some level in 100% of households. In fact, the issue of feeling bad was the only issue in which a higher percentage of households selected this as "Very Motivating" upon Follow Up, compared to their Intake percentage, and feeling bad had the highest percentage of households rating it as "Very Motivating" (58%).



Figure 8 Issues Motivating Households to Waste Less Food: Intake vs. Follow Up

A rating scale was used to compare the overall score that each issue received before and after the Challenge. The scale was: Not Motivating at All = 0 and Very Motivating = 3. All other issues besides "Feeling bad about throwing away food" trended towards being less motivating when assessed again in the Follow Up Survey, indicated by their average motivation score (See Table 3).

Issue	Intake	Follow Up
Landfill	2.17	1.87 ↓
Climate Change	2.42	2.13 ↓
Feeling Bad	2.19	<mark>2.42</mark> ↑
Energy and Water	2.48	2.19 ↓
Hunger	2.29	2.07 ↓
Time	2.03	1.77 ↓
Money	2.29	1.97 ↓
Labor	2.00	1.52 ↓

Table 3 Average	Ratina	of Issues	Intake vs.	Follow Up
		0, 1000.00		

There were four participants who wrote in their own motivating issues to waste less food. Those were:

- 1. "Food is sacred, once alive, it is a sin to kill it and then not eat it. Gratitude for the abundance of Gaia does not allow waste. Very Motivating."
- 2. "Being good stewards of what has been given to us."
- 3. "So much could be composted! Very motivating."
- 4. "I don't like a stinky garbage can. Wasted food makes for a stinky garbage can."

In Figure 9 below, the bar on the left in each category represents the most common reasons households selected for why food goes to waste when asked on the Intake Survey. For the baseline data gathering, weeks one and two of the Challenge, households reported the reasons their food went to waste, and could select one reason each day. The bar on the right in each category reflects this baseline measurement. There was only one instance of wastage that did not have an associated reason selected for it, and only one household that did not have any reported waste.

Figure 9 Most Common Reasons for Wasting Food: Intake vs. Baseline



In the "Other" category there were reasons given such as: burnt food; the person was served too much by others; kids left the food out; they did not want to use the whole fruit; food was uneaten by a guest in their home; it was bad upon purchase/damaged; and one person reported that the food was past date. Food left by a guest, and food that was bad when they bought it were not reasons to include these foods (because the participant themselves didn't cause the waste), so there is likely an overestimation of preventable wasted food in their cases.

When comparing these results to the OLS, the top reason also selected by their respondents was that food had spoiled. The 2017 Oregon Wasted Food Statewide Phone Survey (OWFSPS) could provide some insight to these findings. Survey results found that most respondents felt "less guilty about throwing out food that has been in the refrigerator for a long time".⁶ Again, "Feeling bad about throwing away food" was the only issue in which the average motivation score increased on Follow Up and had the highest percentage of households rating this "Very Motivating".

Three things can be ascertained from these findings: 1) Participants in the Challenge were already aware of why their food goes to waste since their intake answers align closely with their subsequent baseline answers; 2) Future efforts should increase focus on changing behaviors that lead to spoiled food; and 3) Messaging should equate delayed waste actions with immediate waste actions (e.g. throwing out leftovers a few weeks down the road is the same as tossing it out immediately).

Another question the OWFSPS asked respondents was about how much wasted food they think they could avoid. The results were: None, 10%; A little, 60%; About half, 13%; A lot, 6%; All, 4%; N/A Don't compost or throw away food, 6%; Don't know, 1%. Figure 10 below compares belief on Challenge Intake and Follow Up, where the former is represented in the left bars, and the right bars represent the latter.

⁶ Elliott, D., Johnson, A., & Conklin, T. (2017). 2017 Oregon Wasted Food Statewide Phone Survey: Summary of Methodology and Findings. <u>https://www.oregon.gov/deq/mm/food/Pages/Wasted-Food-Study.aspx</u>

Similar to the findings from the OWFSPS, 90% of Challenge participants believed that at least a little of their wasted food could be avoided. The highest percentage of households in the Challenge reported that they believe "A lot" of their waste could be avoided (32%), whereas most OWFSPS respondent households believed that they could avoid "a little" waste (60%).

In this Challenge, each household was analyzed to see whether their Intake answer remained the same, moved upward, or moved downward compared to their Follow Up answer. A move was assigned a point value. For example, a move from "A lot" to "A little" was assigned: down, 2 points. Most participants were either unaffected (45%) or were more hopeful before the Challenge about the volume of food that was able to be avoided in their household. This means that beliefs that were changed after the Challenge trended downward. Overall, upward choices had a movement magnitude of 11 points and downward choices had a magnitude of 16 points. A positive aspect that can be noted is that while the percentage of households who selected "None" increased from 3% to 10%, this option remained fairly low.





Preventing wasted food was perceived by most households in the Challenge as either "Very Easy" (16%) or "Somewhat Easy" (52%) on Follow Up (See Figure 11). Again, comparing the results to the OWFSPS, the slight majority of those respondents felt preventing wasted food was "Very Easy" (16%) or "Somewhat Easy" (30%) versus "Very Difficult" (11%) or "Somewhat Difficult" (24%). For both studies, the answer of "Neither Difficult nor Easy" received almost the same percentage of households selecting that answer: 16% for the Challenge, and 15% for the OWFSPS.



Figure 11 Perception of Difficulty in Reduction of Wasted Food: Follow up

Participants were not required to use the Smart Strategies and Tools (SSTs), nor were they required to record which they used. These optional answers led to eight households not using or not reporting that they used the SSTs. For those that did use the SSTs, there was an average of two used per household.

The top three most popular SSTs reported during the Challenge that also had no complaints about them were:

- 1. Smart Saving: Eat First Sign (48% of households)
- 2. Smart Prep: Prep Now, Eat Later (26%)
- 3. Smart Planning: Meal Planner (23%)

The Follow Up Survey assessed whether the SSTs were useful, whether participants would likely use them in the future, and which ones would likely be the most popular beyond the Challenge. Most households agreed that SSTs were useful (See Figure 12), and they would likely keep using them (Agree, 69%; Somewhat Agree 19%). The ranking for the SSTs can be seen in Table 4 below.

Figure 12 Agreement that Smart Strategies and Tools Were Useful



Table 4 Smart Strategies and Tools Future Use

Smart Stratogy or Tool	% of
Sindit Strategy of Tool	Households
Compost Pail	84%
Refrigerator Magnet Clip	65%
Digital Scale	61%
A-Z Fruit and Vegetable Storage Guide	55%
Freezing Fruits and Vegetables Methods	52%
"Eat First" Sign	45%
Freezer Inventory List	42%
FDA Refrigerator and Freezer Storage Guide	35%
Prep Now, Eat Later Tips	35%
Meals in Mind Shopping List	32%
Meal Planner	19%

Nearly all households agreed that the Challenge Instructions were easy to follow (Agree 81%; Somewhat Agree 13%), and that the Challenge led to more awareness about, and a reduction in the food going to waste in their homes (See Figure 13, and 14). Only a slim majority of households agreed to some level that they think they were previously throwing out or composting more food than they realized (Agree 13%; Somewhat Agree 39%; Somewhat Disagree 19%; Disagree 29%).



Figure 13 Agreement that Participants are More Aware of Food Going to Waste

Figure 14 Agreement that Measurement Led to Reduction in Wasted Food



Overall Challenge Impact

Gauging the impact of the 2018 Challenge to Waste Less Food, the results in Table 5 show that it had a positive effect on the wasted food generated in the Corvallis community. The estimates given by participants during the Intake Survey show that they believed they wasted more than they do, both by weight and by cost. Participating households reduced their wasted food by an average of 21% and reduced their money spent on wasted food by 44%. If these behavior patterns during the change weeks were sustained, then the average savings would be 25 pounds (11kg) of food at about \$116.00 in value per household each year.

Wasted Food Measurement Projections and Results				
	Intake Survey Estimates	Baseline Weeks (Weeks 1-2)	Change Weeks (Weeks 3-6)	Percent Change
Average Weekly Weight	1.86 lb. (857 g)	1.19 lb. (541 g)	0.72 lb. (328 g)	-21%
Average Weekly Cost	\$5.69	\$4.19	\$1.96	-44%
Annual Total Weight	97 lb. (45 kg)	62 lb. (28 kg)	37 lb. (17 kg)	n/a
Annual Total Cost	\$296	\$218	\$102	n/a

Table 5 Wasted Food Measurement Projections and Results

Appendices

Appendix A. Department of Environmental Quality Waste Composition Study 2016 Data Table 6 Department of Environmental Quality Waste Composition Study 2016 Data

Material	Contamination	Contamination Corrected
	Corrected	90% Conf. Interval
All food	24.56%	(22.73 - 26.63%)
Non-packaged bakery goods	0.80%	(0.67 - 0.94%)
Packaged bakery goods	1.59%	(1.39 - 1.79%)
Non-packaged other veget. food	12.42%	(11.21 - 14.00%)
Unpackaged veg edible	3.29%	(2.56 - 4.19%)
Unpackaged veg nonedible	9.14%	(8.27 - 10.18%)
Packaged other vegetative food	4.32%	(3.88 - 4.75%)
Non-packaged non-vegetative food	2.83%	(2.41 - 3.27%)
Unpkg edible meat, eggs, dairy	1.05%	(0.87 - 1.25%)
Unpkg nonedible animal food-related	0.92%	(0.75 - 1.11%)
Mixed unpackaged foods	0.87%	(0.65 - 1.11%)
Packaged non-vegetative food	2.59%	(2.25 - 2.94%)
Packaged meat, eggs	1.41%	(1.13 - 1.70%)
Packaged dairy	0.66%	(0.53 - 0.81%)
Mixed packaged foods	0.52%	(0.38 - 0.71%)
All edible food	14.51%	(13.16 - 15.90%)
All non-edible food	10.05%	(9.16 - 11.09%)

Non-packaged bakery goods. Includes bread, rolls, cake, crackers, donuts, unpackaged dough. "Non-packaged" includes open bags and boxes (easily dumped) but does not include any sealed packaged items. **Packaged bakery goods.** "Packaged" includes sealed containers but not open bags or boxes that are easily

Packaged bakery goods. "Packaged" includes sealed containers but not open bags or boxes that are easily dumped.

Non-packaged "edible" other vegetative food. "Vegetative" contain no animal products other than traces. "Edible" includes any food, even if spoiled, that was originally produced to be eaten.

Non-packaged "non-edible" other vegetative food. "Non-edible" is limited to items associated with food that are fairly universally accepted as not being edible, such a fruit pits, corn husks, carrot tops, thick peels from fruit, and coffee grounds. For fruits and vegetables that are eaten by many with their peels (such as apples, carrots, and potatoes), peels are considered "edible" even when purposefully removed and discarded.

Packaged other vegetative food.

Non-packaged "edible" meat, eggs, and dairy. Non-packaged "edible" food that is mainly meat, eggs, or dairy. Excludes bones, shells, and other animal products that are fairly universally accepted as not being edible. **Non-packaged "non-edible" animal food-related products**. Includes only bones, shells, gristle, and other animal products that are fairly universally accepted as not being edible.

Packaged meat or eggs.

Packaged dairy.

Mixed unpackaged foods. Unpackaged foods that were originally prepared as mixtures, that are mainly vegetative by weight, but that contain more than a trace of animal products. Examples include pizzas, pasta with meat sauce, stir-fries with pieces of egg or meat.

Mixed packaged foods. Packaged foods that are mainly vegetative by weight but that contain more than a trace of animal products.

Appendix B. Intake Survey Questions

Please answer to the best of your ability based on what you know about the opinions and behaviors of those in your household that will be participating in the Challenge to Waste Less Food.

- 1. Has your household taken steps to reduce energy use in the last five years?
 - a. Yes
 - b. No
 - c. Don't know
- 2. If yes, what is your primary reason for conserving energy? (Select one)
 - a. To be more eco-friendly
 - b. To save money
 - c. My neighbors/friends recommended it
 - d. Other: fill in _____
- 3. Has your household cut down on water use over the last five years?
 - a. Yes
 - b. No
 - c. Don't know
- 4. If yes, what is your primary reason for conserving water? (Select one)
 - a. To save money
 - b. I am concerned about water quantity (having enough water) in Oregon
 - c. My neighbors/friends recommended it
 - d. Other: fill in _____
- 5. In the past year, have you seen or heard anything about the problem of wasted food?
 - a. Yes
 - b. No
 - c. Don't know
- 6. If yes, what have you seen or heard? Fill in
- 7. Did this make you more concerned about wasted food?
 - a. Yes
 - b. No
 - c. I feel the same amount of concern as before
 - d. N/A
- 8. Choose your level of agreement with this statement:

My household takes steps to avoid wasting food that could have been eaten.

- a. Agree
- b. Somewhat agree
- c. Somewhat disagree
- d. Disagree
- e. Don't know/unsure

9.	Rat	e how each issue below motivates your household to minimize wasting food that co	uld have		
	bee	en eaten. (Rate as follows: 0 = Not at all motivating; 1 = A little bit motivating; 2 =			
Motivating; or 3 = Very motivating)					
	a.	Wasted labor that went into producing my food			
	b.	Wasted money I spent buying the food			
	c.	Wasted time I spent shopping, storing, and/or preparing food			
	d.	That there are people who don't have enough to eat			
	e.	Wasted energy and water resources it took to get the food to my plate			
	f.	Feeling bad about throwing away food that could have been eaten			
	g.	The contribution of wasted food to global climate change			

- h. The amount of food that ends up in landfills
- i. Other: fill in and rate ______
- 10. If people in your household dispose of food that could have been eaten, what is currently the <u>most common</u> reason? *(Select one)*
 - a. We don't ever dispose of food that could have been eaten
 - b. Bought more than needed
 - c. Spoiled, or has an "off" appearance, smell, or texture
 - d. Someone didn't like it
 - e. Prepared too much food
 - f. Other: fill in _____
- 11. Of food that could have been eaten, estimate the average weight of what your household disposes of each week.

Fill in weight and unit (lbs. and oz or kg and grams)_____

- Of food that could have been eaten, estimate the average cost of what your household disposes of each week.
 Fill in cost
- 13. Considering the food your household disposes of in the average week, how much of that do you think could be avoided?
 - a. None
 - b. A Little
 - c. About half
 - d. A Lot
 - e. All of it
 - f. We don't dispose of food
- 14. How do you dispose of your wasted food? (Select one)
 - a. Compost at home
 - b. Compost through my Yard Debris/Organics cart from Republic Services
 - c. Put into my trash cart
 - d. Sink garbage disposal
 - e. Animal feed
 - f. Other: fill in______

Demographics Please remember that all responses are confidential.

- 15. How many people in your household are participating in the Challenge?
 - a. One
 - b. Two
 - c. Three
 - d. Other: Fill in_____
- 16. What are the ages of those participating in the Challenge? (Include all children who will be participating. Write age in years and separate with a comma between ages if more than one; EX: 34, 5.)

Fill in _____

17. Please indicate the gender identities of each person participating. (*Write gender and number of people of that gender then separate with a comma between genders if more than one; EX: males 3, females 1*)

Fill in _____

- Select all races/ethnicities of those participating in the Challenge, including yourself. (Select all that apply)
 - a. American Indian or Alaskan Native
 - b. Asian
 - c. Black or African-American
 - d. Hispanic or Latino
 - e. Native Hawaiian or other Pacific Islander
 - f. White
 - g. Other: Fill in_____

19. What is the approximate area of Corvallis where you live?

- a. Northwest
- b. Northeast
- c. Southwest
- d. Southeast

20. What is your tenancy status at your current residence?

- a. Own
- b. Rent
- c. Other: Fill in_____
- 21. In which type of residence do you live?
 - a. Mobile home or trailer
 - b. A family house attached to one or more houses
 - c. A building with apartments
 - d. Single family house detached from other houses
 - e. Other: Fill in _____

- 22. What is the highest level of formal education for any of the Challenge participants in your household?
 - a. Less than high school (grades 1-8)
 - b. Some high school (no diploma)
 - c. High school graduate
 - d. Some college, no degree
 - e. Two-year associate college degree (e.g., AA)
 - f. College degree (e.g., BA, BS, AB)
 - g. Some postgraduate schooling (no degree)
 - h. Postgraduate/Professional degree (e.g., MA, MS)
- 23. In general, for domestic policy issues, how do the Challenge participants in your household lean?
 - a. Liberal
 - b. Moderate
 - c. Conservative
 - d. A mix of both liberal and conservative
- 24. If your household is one family sharing food, please indicate your combined household income, before taxes, in 2017.

Fill in ______

25. If your household is individuals NOT sharing food, please indicate your individual incomes, before taxes, in 2017. (Separate each participant income with a comma; EX: 20,000, 15,000)

Fill in _____

Thank you for taking our survey! Again, please remember that all your answers will remain confidential and protected from association with any identity.

	RE	CORDI	NG WORKSHE	ETS - 2018 Challe	nge to Waste Less Fo	po
WEEK 1 N	OTES: WHAT WEN	T TO WA	STE AND WHY (Spoi	iled, Prepared too much,	, Overbought, Didn't like it, or	Another reason)
Monday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: 5
4/30/2018	Types of food wasted:					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Tuesday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: 5
5/1/2018	Types of food wasted					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Wednesday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: \$
5/2/2018	Types of food wasted:					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Thursday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: 5
5/3/2018	Types of food wasted:					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Friday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: \$
5/4/2018	Types of food wasted:					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Saturday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: 5
5/5/2018	Types of food wasted.					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Sunday	Weights:	+	+	"	lb:oz OR gram (circle one)	Est. cost: \$
5/6/2018	Types of food wasted.					
	Why wasted (circle):	Spoiled	Prepared too much	Overbought Didn't like it	Other:	
Total Weig	ght: Week 1		lb or g	Estimated Cost of Foo	d Wasted: Week 1	\$

Appendix C. Recording Worksheet Examples

Baseline Weeks 1 - 2

WEEK 3 N	OTES: WHICH TOOLS HELPED, WHICH DID NOT (Smart Shopping, Planni	g, Storage, Prep, Saving, etc se	e instructions for tools)
Monday 5/14/2018	Weights:+++=====	lb:oz OR gram (circle one) E	st. cost: 5
Tuesday 5/15/2018	Weights:++=== Main tools used, which worked well, which didn't, and why?	lb:oz OR gram (circle one) E	st. cost: 5
Wednesday 5/16/2018	Weights: + + + + + + + + + + + + + + + + + + +	lb:oz OR gram (circle one) E	st. cost: 5
Thursday 5/17/2018	Weights:+++====	lb:oz OR gram (circle one) E	st. cost: 5
Friday 5/18/2018	Weights: + + + + + + = = + + + + + + + + + + +	lb:oz OR gram (circle one) E	st. cost: 5
Saturday 5/19/2018	Weights: + + + + + + = = + + + + + + + + + + +	lb:oz OR gram (circle one) E	st. cost: 5
S/20/2018	Weights:+++=====	lb:oz OR gram (circle one) E	st. cost: 5
Total Weig	ht: Week 3 Ib or g Estimated Cost of Foor	Wasted: Week 3	

Change Weeks 3 - 6

Appendix D. Follow Up Survey Questions

Please answer to the best of your ability based on what you know about the opinions and behaviors of those in your household that have participated in the Challenge to Waste Less Food.

26. Place an x in the box corresponding to your level of agreement with the following 6 statements:

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	Don't know/ Unsure
After measuring the food that was discarded in our household, I now believe that our household throws out or composts more food than we realized.					
The Challenge participants in my household are now more aware of food going to waste.					
Measuring the food that was discarded in our household has led us to reduce the amount of food we dispose of.					
The Challenge Instructions were easy to follow.					
In general, my household found the Smart Strategies and tools useful.					
My household is likely to continue to use the Smart Strategies and tools.					

- 27. Which of the following items will your household likely keep using? (Select all that apply)
 - a. Compost pail
 - b. Digital scale
 - c. "Eat First" sign
 - d. A-Z Fruit and Vegetable Storage Guide
 - e. Freezer Inventory List
 - f. FDA Refrigerator and Freezer Storage Guide
 - g. Freezing Fruits and Vegetables Methods
 - h. Meals in Mind Shopping List
 - i. Meal Planner
 - j. Prep Now, Eat Later Tips
 - k. Refrigerator Magnet Clip
 - I. Other: Fill in _____

28. Rate how each issue below motivates your household to minimize wasting food that could have been eaten. (Rate as follows: 0 = Not at all motivating; 1 = A little bit motivating; 2 = Motivating; or 3 = Very motivating)

j.	Wasted labor that went into producing my food	
k.	Wasted money I spent buying the food	
I.	Wasted time I spent shopping, storing, and/or preparing food	
m.	That there are people who don't have enough to eat	
n.	Wasted energy and water resources it took to get the food to my plate	
о.	Feeling bad about throwing away food that could have been eaten	
p.	The contribution of wasted food to global climate change	
q.	The amount of food that ends up in landfills	
r.	Other: fill in and rate	

29. How did you dispose of your wasted food during the Challenge? (Select all that apply)

- g. Compost through my Yard Debris/Organics cart from Republic Services
- h. Compost at home
- i. Put into my trash cart
- j. Sink garbage disposal
- k. Animal Feed
- I. Other: fill in____
- 30. Considering the food your household disposes of in the average week, how much of that do you think could be avoided?
 - a. None
 - b. A Little
 - c. About half
 - d. A Lot
 - e. All
 - f. We don't dispose of food
- 31. How easy or difficult do you think it would be for you personally to reduce the amount of food that goes to waste in your household?
 - a. Very difficult
 - b. Somewhat difficult
 - c. Neither difficult nor easy
 - d. Somewhat easy
 - e. Very easy
 - f. Not applicable
- 32. Thinking about the printed and online Smart Strategies and tools we provided, what could make these materials more effective?

- 33. What (if anything) would have made it easier to participate in this Challenge?
- 34. Please use this space to share anything else you think would make our program better.

Thank you so much for all your time and effort these past 6 weeks!!