

# Food Waste Prevention Pilot



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# Contents

Contents.....	2
Table of figures .....	3
Summary .....	4
Background .....	4
Food Waste Focus Groups .....	5
Ready for the food waste pilot .....	6
Pilot Predictions .....	7
Methods.....	7
Recruitment & Pilot .....	8
Results.....	11
Pre- and Post-Surveys .....	12
Overall Conclusion and Discussion .....	17
Recommendations .....	17
General education.....	17
Partnering opportunities .....	19
Food waste pilot.....	19
Tools to develop, enhance or promote .....	20
Appendix A : Eureka Recycling’s A-Z Storage Tips .....	23
Appendix B : King County's "Keep it Fresh" produce storage guide.....	26
Appendix C : EPA’s Too: Food Too Good to Waste Meal Planner .....	27
Appendix D : Eureka Recycling’s Menu Planner .....	28
Appendix E : “Eat First” Stickers .....	28
Appendix F : Food Waste Pilot Pilot Participant Pre-Survey .....	29
Appendix G : Online Frequently Asked Questions and Weighing Instructions .....	31
Appendix H : Example of E-mail to Pilot Participants .....	33
Appendix I : Weekly Prize List .....	34
Appendix J : Weekly Weights Survey .....	35
Appendix K : Food Waste Pilot Pilot Participant Pre-Survey .....	36

## Table of figures

Figure 1. Mean food waste weights over 6 weeks .....	11
Figure 2 Median food waste weight over 6 weeks .....	12
Figure 3. Which strategy did your household find most and least helpful? .....	14
Figure 4. Amount of participants from "Teach Themselves" Orange and "Intense" Banana Groups that will continue to use a tool or strategy after the pilot.....	14

## Summary

The Dakota County Environmental Resources Department, in partnership with Minnesota GreenCorps, is developing a food waste reduction educational campaign based on the Environmental Protection Agency's "Food: Too Good to Waste" program. This program was created to be used by organizations and interested parties to help reduce the amount of food going to waste in households. The tools created by the "Food: Too Good to Waste" project are founded on behavior change strategies and were first piloted through the West Coast Climate Forum. Numerous counties, cities and neighborhoods have participated in this program, including Palo Alto, California; King County, Washington; St. Paul, Minnesota; and Honolulu, Hawaii.

To gain insight into when, why, and how food gets wasted in households, Dakota County partnered with Wilder Research to conduct three focus groups with residents about food waste. The information gleaned during these focus groups gave Dakota County valuable insight into residents' opinions regarding food and food waste. Based on participant feedback, tools and strategies were selected for use in a residential pilot based on "Food: Too Good to Waste." With the help of Wilder Research, more than 80 Dakota County residents were recruited to weigh their preventable food waste, including liquid waste, over a six-week period. Preventable food waste is defined as any food item that was bought with the intent to be eaten, but wasn't. Examples are moldy bread or vegetables, rotten fruit, stale coffee or soda and plate scrapings. Food that would not have been eaten, such as banana peels, onion peels, chicken bones, and fat trimmed from meat was not collected in the pilot.

The participants were divided into three groups, each receiving a different level of education and support. One group, the control group, did not receive any tools to reduce food waste and were not asked to attend any educational classes. The second group, dubbed "Teach Themselves," was provided educational tools for reducing food waste but had to learn how to use the tools on their own. The third group, "Intense," modeled the "Food: Too Good to Waste" program by receiving the most direction and help with the tools, as well as being required to attend a mandatory class at the three-week mark. The results, measured by the weight of food waste collected, showed that the control group actually had the least food waste on average, despite receiving no food waste reduction tools and being instructed at the beginning not to change their food habits. The "Teach Themselves" group followed closely behind the control group, and the "Intense" group saw little to no reduction in average food waste weight. The feedback provided by participants about the pilot, and the tools they used, will be incorporated into a future educational campaign.

## Background

Food waste is becoming a greater environmental concern as the world's population increases and water scarcity affects how much is used for growing food. Governments are increasingly being tasked with implementing new waste disposal methods to offset greenhouse gas

emissions and reduce waste sent to landfills. Agriculture in the United States is very taxing on natural resources, consuming 10 percent of the total US energy budget, 50 percent of land, and 80 percent of freshwater. Reports from the Natural Resources Defense Council show that 40 percent of all food grown in the US ends up in a landfill. On a personal level, Americans are wasting an average of 25 percent of the food they purchase<sup>1</sup>.

The 2010-2030 Metropolitan Solid Waste Management Policy Plan states that the seven Metro Area counties must reduce waste two to four percent over 2008 total waste generated, and cap waste sent to a landfill at 17 percent by 2020. In order to achieve this goal, local governments are exploring any and all possible options for waste diversion. Reducing food waste in households will help decrease the amount of waste being sent to landfills while putting food to its intended use. A 2013 waste characterization study commissioned by the Minnesota Pollution Control Agency found that food waste represents roughly 18 percent of the solid waste stream<sup>2</sup>. This presents a considerable opportunity to remove food from the waste stream by raising awareness about the importance of food waste as an environmental issue and meet the State mandated goals.

Food trapped in landfills breaks down anaerobically (without oxygen), producing methane, a powerful greenhouse gas more than 20 times as potent as carbon dioxide. Rotting food in landfills represents 23 percent of all methane emissions in the United States<sup>1</sup>. Armed with this knowledge and the goals of waste reduction, Dakota County is embarking on a future educational campaign to raise awareness about this issue and encourage residents to reduce the amount of food they throw in the trash by making small behavioral changes.

## Food Waste Focus Groups

Dakota County wanted to understand why residents put food in the trash, and what would motivate them to use the food they purchase. Wilder Research was contracted to conduct three focus groups in early 2016<sup>3</sup>. The purpose of the focus groups was to gather information from residents regarding their food behaviors, including why, when, and how food gets wasted. Another purpose of the focus groups was to find out what residents would like more information and help on regarding food, as a basis for a future educational campaign. During the focus group, residents were asked to look over a variety of food waste reduction tools and to give their opinion. The tools tested included several produce storage guides, two different menu planners, and a visual prompt to eat the food they purchased. In total, 37 residents

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<sup>1</sup> Gunders, Dana, Natural Resources Defense Council (2012) *Wasted: How America is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill*

<sup>2</sup> Burns & McDonnell Engineering Company, Inc. 2013 *Statewide Waste Characterization* prepared for Minnesota Pollution Control Agency

<sup>3</sup> Hansen, Madeleine and Warren, Cael, Wilder Research (2016) *Dakota County Food Waste Reduction Focus Group Report* prepared for Dakota County, Minnesota

participated in the three focus groups and provided valuable insight into food behaviors. Several common themes emerged:

- People are frustrated with, and feel guilty about, food waste and the associated money wasted.
- A busy lifestyle, poor planning and cooking execution, finicky children, and bulk purchasing are the main barriers to eliminating food waste.
- Expiration dates cause major confusion, and there is a strong need for clarification on what they mean.
- Saving money provides the strongest motivation for people to reduce food waste. Reducing trash and minimizing resource waste are also important motivating factors.

The focus group participants rated two produce storage guides with high marks: Eureka Recycling's "A-Z Storage Tips" (See Appendix A) and King County's "Keep It Fresh" storage guide (See Appendix B). Both produce storage guides provide a reference for proper storage of produce items to help vegetables, fruits, meat and dry goods stay fresh and edible as long as possible. Eureka Recycling's produce storage guide is more comprehensive than King County's, with nine pages of food items including pantry staples and dairy.

The participants liked King County's produce storage guide; although it was shorter than Eureka's, the participants indicated it would be easy to post on their refrigerator for quick reference, whereas Eureka's might be tucked in a drawer until needed. The participants were unable to choose one produce storage guide over the other therefore both were used in the six-week pilot.

The focus group participants did not like the EPA's "Food: Too Good to Waste: Shop with Meals in Mind" planner (See Appendix C) (average score of x out of y), but instead preferred Eureka Recycling's menu planner (Appendix D) (average score of x out of y). Focus group participants were also asked to rate a visual prompt that said "Eat First" (Appendix E) on a piece of paper, with the intent to tape it onto a shoe box or other container to place in their refrigerator. It was explained that food items that would spoil soonest would be placed in the box to remind the household to eat those items first. Participants did not like the idea of a large box labeled "Eat First" in their fridge (average score of x out of y), and instead requested smaller individual stickers that could be placed on items throughout the fridge.

## **Ready for the food waste pilot**

Knowing how food waste pilots work in communities around the nation and reviewing research on similar projects, Dakota County conducted a six-week pilot project with residents to understand how much food households are throwing in the trash and what might motivate them to reduce this amount.

Based on the focus groups findings, Dakota County chose four specific tools to utilize during the six-week food waste pilot:

- “Eat First” stickers
- “A-Z Food Storage Tips” storage guide from Eureka Recycling
- “Keep It Fresh” storage guide from King County, Washington
- “Meal Planner” by Eureka Recycling

## Pilot Predictions

Dakota County hypothesized that residents who received focused and specific tools would reduce their food waste the most. Dakota County conjectured that simply weighing food without educational reinforcement would also result in less food being wasted, based on the assumption that having to collect food waste each week, and being accountable to another person for the weight, would itself encourage reduction.

## Methods

To test these hypotheses, participants were placed into one of three groups. Each group was given the name of a different fruit to avoid suggesting any level of importance from one group to the next.

1. Apple or “Control Group”: This was a control group that only weighed food weekly and reported results.
2. Orange or “Teach Themselves Group”: This group received a packet of tools (meal planner, storage guides, “Eat First” stickers) that they were instructed to open after two weeks of weighing food waste. Participants had to teach themselves how to use the tools based on what they could find online or in their packet. This group most closely resembled the general residential population that would be served by a future educational campaign, in that they only received handouts and information at various events or online and weren’t provided any direct education.
3. Banana or “Intense Group”: This group received the same tools as the Orange group but received more detailed weekly messages via email with instructions on how to use the tools, as well as food waste prevention tips, facts about food waste, and general encouragement. Banana participants also were required to attend an educational presentation about why food waste matters.

For the purpose of this six-week pilot, the participants were asked to collect preventable food waste only, that is, food that was purchased with the intent of being eaten but was not. Examples of food collected include pizza crust, leftover coffee, moldy bread, limp vegetables, and freezer burned foods. Dakota County asked participants to include liquid waste because wasted edible liquids like milk, coffee, and juice are associated with wasted natural resources. Non-preventable food waste was not collected or weighed for this pilot, such as egg shells, apple cores, banana peels, or fat trimmed from meat.

The first two weeks of the pilot were a baseline measure of their family's food waste amount. Therefore, all participants were not to make any changes to their family's normal shopping, cooking and storage behaviors, nor use any of the tools until the beginning of Week 3. Dakota County tried to keep all groups uninformed about food waste issues for the first two weeks.

## Recruitment & Pilot

Wilder Research recruited residents to participate in the six-week food waste reduction pilot. Wilder Research began recruitment by making cold calls to residents. Unfortunately this proved to be an ineffective way to entice and engage with residents about the food waste pilot, especially since there was no monetary incentive to participate. Wilder Research and Dakota County quickly moved on to different recruitment methods that revolved around one-on-one interaction with residents. Booths were set up at libraries and county events including a Fix-It Clinic to reach out to residents about the pilot. Recruiting at Valley Natural Foods Co-op in Burnsville proved a very effective way to reach out to residents and explain the pilot. Dakota County did consider the fact that residents shopping at a co-op were already more environmentally focused than the general population which might have an impact on the results.

Residents interested in participating in the pilot were asked to register immediately online with an iPad or on a provided form, which asked for their name, email, if they were available to attend the mandatory meeting on April 26, and which intro session they were likely to attend.

Flyers recruiting participants were also placed around the county including in libraries, county service centers, food shelves, churches, public health departments, and the University of Minnesota Extension office.

Over the four weeks of recruitment, 104 residents joined the pilot with 80 ultimately completing the six-week pilot.

These participants were instructed to attend an introductory session and received a kitchen compost bin (Busch Systems, 1.5 gallons) to collect food waste, compostable bags to line their container, a scale to weigh food waste, and a folder with instructions and tools depending on their assigned group. At the introductory sessions, interns and volunteers from the Master Recycler and Composter program assisted with participant check-in and various other tasks.

At the intro sessions each participant filled out a pre-survey (See Appendix F) to gauge their opinions about food waste and their personal behaviors. Participants were taught how to work the scale and bucket they were given, how to use the online form where they would need to input their data each week and how to access the online frequently asked questions (Appendix G) document. Dakota County continued to update the frequently asked questions throughout the pilot based on comments received.

All participants were randomly assigned to a group except for the "Intense" Banana Group who self-selected based on their availability to attend a mandatory presentation on April 26. All



groups had about the same number of participants and were similar in sociodemographic representation.

**Table 1. Demographic information for participants**

	Control/Apple Group	Teach Themselves/ Oranges Group	Intense/ Banana Group	Dakota County Figures*
<b>Number of participants that finished the pilot</b>	26	24	24	n/a
<b>Average Age (years)</b>	49.32	47.33	49.9	37.3
<b>Average Income (dollars)</b>	\$86,500	\$107,608	\$73,500	\$75,000
<b>Average number of people in household</b>	2.88	2.74	2.52	2.58
<b>Average number of children per household</b>	0.68	0.74	0.56	n/a
<b>% of households with children</b>	36%	30.4%	32%	36%

*\*Metropolitan Council Community Profiles Data, 2014*

All participants were given a pocket folder with information pertinent to which group they were assigned to. The “Control” Apple Group received an FAQ document to answer their questions about the pilot and what types of food waste Dakota County wanted them to collect. This document was also available online to every participant.

The “Teach Themselves” Orange Group received all the previously mentioned tools:

- “Eat First” stickers
- “A-Z Food Storage Tips” storage guide from Eureka Recycling
- “Keep It Fresh” storage guide from King County, Washington
- “Meal Planner” by Eureka Recycling

The Orange Group was instructed to open the folder at the start of Week 3, after the baseline assessment was complete, and that they would be in charge of deciding which tools they wanted to use and how to use them.

Participants in the “Intense” Banana Group were given all the tools (see above) plus an article from the Natural Resources Defense Council about the negative effects of food waste on the environment, and an infographic explaining what temperatures to keep their fridge and freezer to keep food fresher longer. This group was instructed to view the material at the start of Week 3.

All the participants were made aware that there were three distinct groups that would be learning different ways, but were assured that the control group would receive the tools at the

end of the pilot. Participants were also told that the first two weeks of the pilot were meant to be a baseline measure of their family’s food waste, and they were not to make any changes to their family’s normal shopping, cooking and storage behaviors, nor learn any of the tools yet. Dakota County tried to keep all groups uninformed about food waste issues for the first two weeks, which is why the Teach Themselves/Orange and Intense Groups/Banana were not allowed to open their folders until Week 3.

Participants received multiple weekly emails from Dakota County depending on which group they were assigned (See Appendix H). Each of the three groups received different emails each week with varying amounts of detail.

The Control group received the same email every week reminding them not to make any changes to their food behaviors and to collect preventable food waste, liquids included. Toward the end of each week, an email was sent out to all groups reminding participants that the week was drawing to a close, and to please remember to input their weight.

The Teach Themselves Group received similar weekly emails as the Control group, but at the Week 3 mark, they were instructed to learn the tools they were provided on their own.

The Intense Group also received detailed emails about the tools and how to use them at the Week 3 mark. These emails contained links to news articles and reports that highlighted the environmental impact of food waste and various other topics including the water footprint of food, how serving sizes have increased over the years, and links to other food waste reduction campaigns.

The Intense Group attended a mandatory one-hour class at the Week 3 mark hosted by Dakota County. The purpose of this class was to go over the tools in person, learn about the environmental impacts of wasted food, including the embedded energy and water that goes into producing food. This was also a chance for the participants in this group to create comradery by meeting each other and swapping ideas. This was modeled after many other “Food: Too Good to Waste” pilots that were reviewed by Dakota County where hands-on learning was shown as a positive way to encourage behavioral changes, in this case, reducing food waste in households.

To keep participants engaged throughout the pilot, Dakota County raffled off prizes to each group (see Appendix I). For example, at the completion of Week 1 Dakota County selected three participants, one from each group, to each receive a set of glass food storage containers.

Subsequent emails went out with the winner’s name and what city they were from.

Data were recorded by the participants at the end of the calendar week on a Google Form developed by Dakota County (See Appendix J). The form was simple to use with very little information required each week. Participants entered the exact weight shown on their scale after placing the bag on the scale. Participants were also instructed on how to tare their weights: remove their bag of food from the bucket, place the bucket on the scale, press the “Tare” button, and place bag in the bucket to get their weight. These data were then organized into a spreadsheet that neatly listed all the food waste weight by each person, each week.

<b>Originally recruited</b>	104
<b>Attended intro sessions</b>	84
<b>Completed Week 1</b>	80
<b>Completed full pilot</b>	73

## Results

Weights from weekly data reports were analyzed only from the households that completed all six weeks of the pilot (73).

Dakota County found that the “Control” Group, who did not learn any food waste reduction tools, actually decreased their preventable food waste weight the greatest amount. The average reduction of weight for the Control Group was 18 percent (0.879 lbs) compared to the baseline. Of the original 28 participants in this group, 26 completed all six weeks. The “Teach Themselves” Group realized an average reduction of 15 percent (0.168 lbs). Of the original 30 participants selected for this group, 24 completed all six weeks. The last group, the “Intense” Group who had the most direction and information, reduced their weight by roughly one percent (0.546 lbs) compared to baseline. Of the original 25 participants selected for this group, 24 completed all six weeks.

Figure 1. Mean food waste weights over 6 weeks

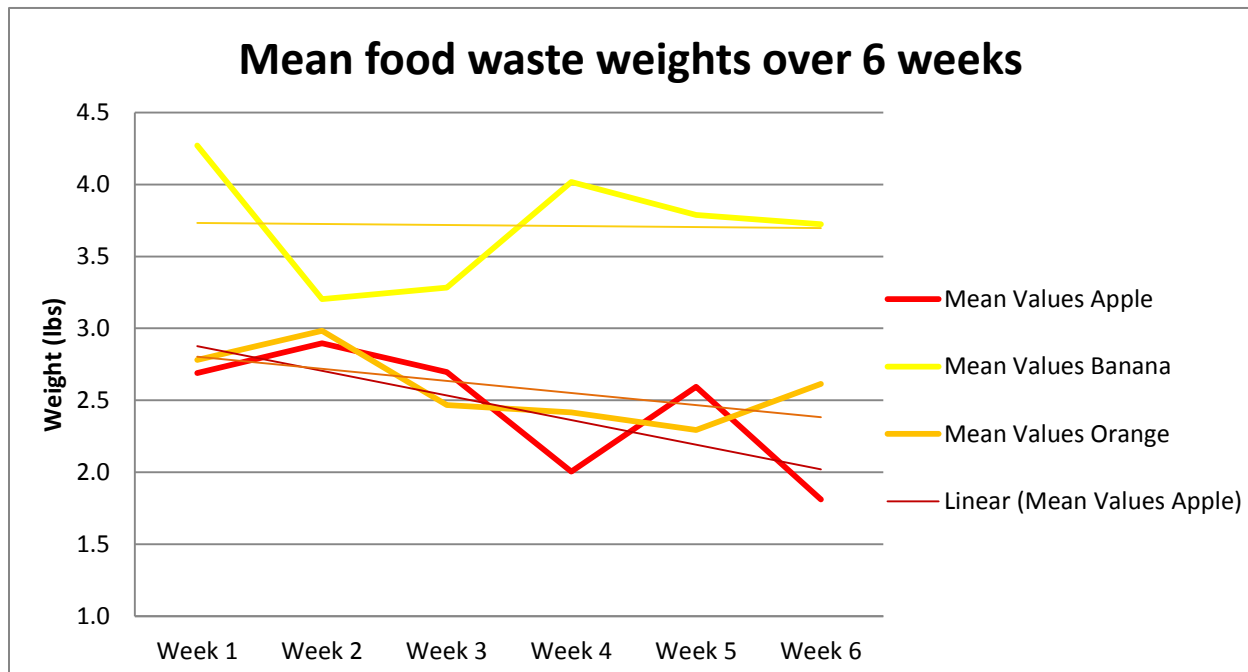
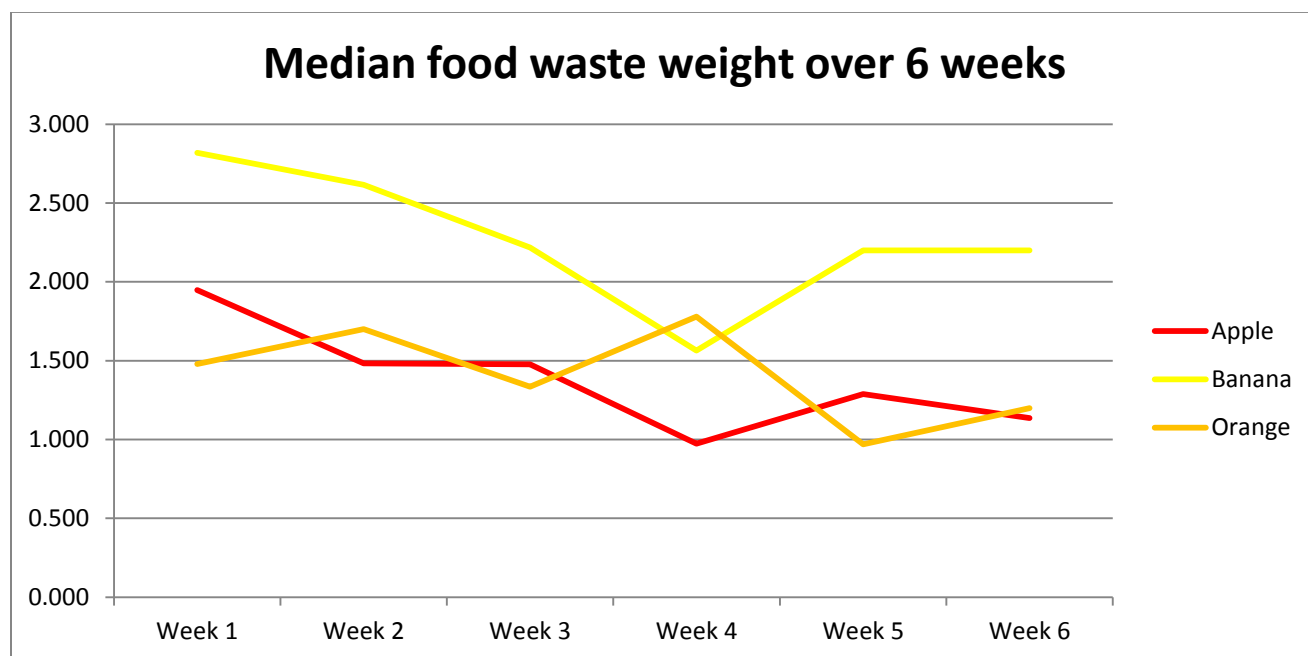


Figure 2 Median food waste weight over 6 weeks



Dakota County asked participants if how many times they ate out each week as they entered their weekly food weights. There was no significant different in weights from participants eating out more than others that cooked or ate at home. Seventy-three percent (73%) of participating households (54 total households) saw an average reduction of 1.48 pounds over the course of the pilot.

### Pre- and Post-Surveys

A post-survey (See Appendix K) was sent out to participants a few days after the pilot concluded to glean the participants' opinions about the project. The "Teach Themselves" Orange and "Intense" Banana Groups were also asked which food waste prevention tools they liked the most, found easiest to use, and would be most likely to continue using in the future. Eighty-eight percent of participants (64 participants) filled out the post-survey. Sixty percent of the completed post-surveys were filled out by the "Teach Themselves" Orange and "Intense" Banana Groups (39 total).

Before the six weeks started, all participants were asked what tools or strategies they already used in their households. Ninety-five percent of participants said they eat leftovers as a strategy to eat the food they purchased and cooked. Over eighty percent of households stated they already make a shopping list, check their pantries and refrigerators before going shopping, use leftover ingredients in future meals, and freeze excess food. Over half of the households also store fruits and vegetables in optimal conditions, plan their meals, prepare perishable food soon after shopping, and only buy produce in quantities that will be eaten. Less than a quarter of participants served smaller portions or had a designated area in their fridge for food needing

to be eaten soon. Only one percent of participants stated they keep track of how much food they are wasting.

**Table 2. Amount of participants using a tool or strategy before pilot started**

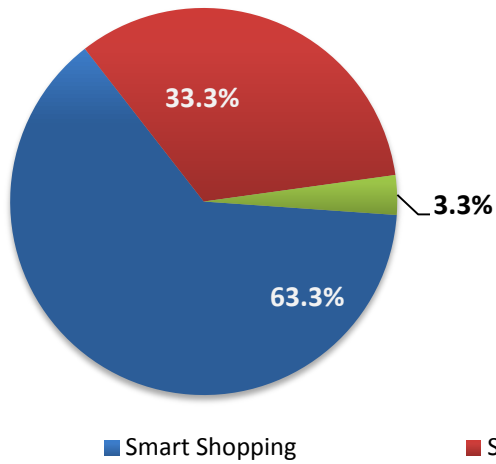
<b>Tool or strategy already used in households before the pilot (includes “Apple” Control Group)</b>	<b>Percent of participants (n=76)</b>
<b>Eat leftovers</b>	95%
<b>Make a shopping list</b>	86%
<b>Check to see what is in my fridge and pantry before going shopping</b>	84%
<b>Use leftovers and food scraps as ingredients in future meals</b>	83%
<b>Freeze excess food for use at a later time</b>	82%
<b>Store fruits and vegetables in optimal conditions so they last longer</b>	74%
<b>Plan meals</b>	71%
<b>Prepare perishable foods soon after shopping</b>	54%
<b>Buy only as much produce as I will eat until the next shopping trip</b>	53%
<b>Serve smaller portions</b>	22%
<b>Have a designated area in fridge for food that needs to be eaten up soon</b>	13%
<b>Track how much food is going to waste</b>	1%

Overall, participants said they wasted less food than they thought they did at compared to the start of the pilot. Forty-four percent (28) of households said they wasted “less” or “much less” food than they thought after completing the six-week program. Thirty-one percent (20) said they felt they wasted about the “same” amount of food they thought they would, and 25 percent (16) participants thought they wasted “more” than they originally thought at Week 1.

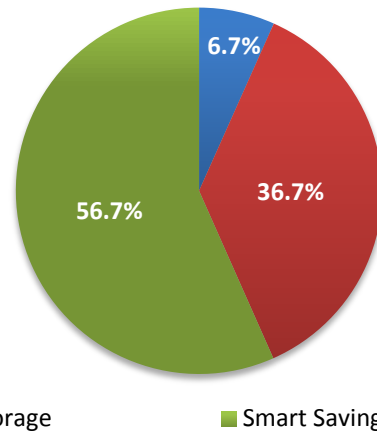
The post-survey found that the tool deemed most helpful was the menu planner which also asked participants to look through their pantry while making their menu for the week, to use up ingredients they already had on hand. All of the 30 participants reported being very likely or somewhat likely to continue using this tool and strategy even after the pilot ended.

The tool deemed least helpful (56.7 percent) was the “Eat First” stickers to place on individual items in the fridge that need to be eaten soon. Participants reported they would not be likely to continue using this tool after the pilot ended.

**Which strategy did your household find MOST helpful?**



**Which strategy did your family find LEAST helpful?**



**Figure 3. Which strategy did your household find most and least helpful?**

The “Teach Themselves” Orange and “Intense” Banana Groups were asked how likely they would be to continue using each tools or strategies. Nearly all of participants said they were likely to continue to take stock of their kitchen inventory before going grocery shopping (97% “very likely” or “somewhat likely”); make a shopping list with meals in mind (95%); and, use leftover ingredients in new meals (92%). Eighty-five percent of participants said they were likely to continue preparing fresh produce in advance right after shopping compared to only have (54%) before the pilot. Participants said they would reference the produce storage guides but said they were likely to use the guide from Eureka Recycling more (85%) compared to the abbreviated guide from King County, Washington (75% “likely”/“somewhat likely”). A majority (87%) of households were “likely” or “somewhat likely” to understand date labels before deciding to throw food away. The only tool or strategy that participants were not likely to use in the future was the Eat First stickers.

**Figure 4. Amount of participants from “Teach Themselves” Orange and “Intense” Banana Groups that will continue to use a tool or strategy after the pilot.**

Tool or strategy	Very likely	Somewhat likely	Somewhat unlikely	Very unlikely
<b>Taking stock of your pantry and fridge before going to the grocery store</b>	87%	10%	0%	3%
<b>Making a shopping list with meals in mind</b>	85%	10%	3%	3%
<b>Reinventing leftover ingredients into new meals</b>	62%	31%	3%	5%
<b>Better understanding of “Use By” and “Sell By” dates</b>	56%	31%	10%	3%

<b>Preparing fresh produce in advance</b>	46%	38%	8%	8%
<b>Eureka Recycling's produce storage guide</b>	46%	38%	8%	8%
<b>King County's produce storage guide</b>	38%	41%	13%	8%
<b>"Eat First" stickers</b>	5%	15%	26%	54%

Tool or strategy	“Very likely” or “Somewhat likely”	“Very unlikely” or “Somewhat unlikely”
<b>Taking stock of your pantry/fridge before going to the grocery store</b>	97%	3%
<b>Making a shopping list with meals in mind</b>	95%	5%
<b>Reinventing leftover ingredients into new meals</b>	92%	8%
<b>Better understanding of "Use By" and "Sell By" dates</b>	87%	13%
<b>Preparing fresh produce in advance</b>	85%	15%
<b>Eureka Recycling's produce storage guide</b>	85%	15%
<b>King County's produce storage guide</b>	79%	21%
<b>"Eat First" stickers</b>	21%	79%

Dakota County wanted to understand the attitudes towards wasted food and to see if opinions differed after the six week pilot. Comparing the pre- and post-surveys filled out by participants, Dakota County could assess the reasons and positions on food waste. The following data only represent the “Teach Themselves” Orange and “Intense” Banana Groups since they were given information that might sway their attitudes.

Participants were asked to rank given reasons for reducing food waste. Before the six weeks, they ranked “it saves households money” as the number one reason to reduce food waste. After the pilot, the same reason dropped to second place with it “saves resources used to produce, distribute, and prepare food”. Reducing the amount of greenhouse gases that contribute to climate change jumped from the last reason

Reasons to prevent food waste	PRE-Pilot	POST-Pilot
<b>It saves resources used to produce, distribute, and prepare food.</b>	2	<b>1</b>
<b>It saves households money.</b>	<b>1</b>	2
<b>It reduces the amount of gasses that contribute to climate change.</b>	5	3
<b>It is morally wrong to waste good food</b>	4	3
<b>It reduces the amount of garbage generated</b>	3	5

Table 3. Ranking of reasons to prevent food waste before and after the pilot (not including the “Control” Apple Group)

to third place. The reason “it is morally wrong to waste good food” increased from the fourth place to be tied with the third reason after the pilot.

Participants were also asked how strongly they agree or disagree with the given statements. Dakota County wanted residents to agree that food waste negatively impacts the environment, produces greenhouse gases when disposed of in a landfill, and that there are hungry people in their community that might need the food that would otherwise be wasted. On the other hand, Dakota County wanted residents to disagree with the statements that food waste is not a problem because it biodegrades and is plentiful enough. As the following table demonstrates, participants were swayed in the way Dakota County would like to see for each statement. The largest shift in attitude was the movement of those who disagreed with food waste not being a problem because it is biodegradable.

**Table 4. Comparison of pre- and post-survey results related to how residents felt about certain statements**

How strongly do you agree or disagree with the following statements:	Study wanted to see:	Pre-pilot Agreement (“Strongly agree” or “agree”)	Post-pilot Agreement (“Strongly agree” or “agree”)
<b>Wasted food is not a problem because it is biodegradable</b>	0% agreement	12%	3%
<b>Food purchased but never eaten negatively impacts the environment</b>	100% Agreement	90%	97%
<b>There's enough food in this country so wasting some at home is not a concern</b>	0% agreement	0%	3%
<b>Food decomposing in a landfill produces greenhouse gases that contribute to climate change</b>	100% Agreement	88%	92%
<b>I am concerned with how many people are struggling with hunger in my community</b>	100% Agreement	90%	95%



## Overall Conclusion and Discussion

Using the calculation derived from this pilot, if every household changed their behavior based on the same methods of the “Teach Themselves” Orange Group, Dakota County would reduce food waste by an estimated 112 tons each year (0.168 lbs per household over 6 weeks x 159,189 Households [2015 Metropolitan Council estimates] x 8.66667 6-week periods in one year).

This pilot demonstrates that by just collecting and weighing preventable food waste, participants are encouraged to reduce the amount of food going to waste in their household. The assumption that residents who receive focused and specific tools would reduce their food waste the most was not correct in this instance. Dakota County can only theorize as to why the Intense Group did not achieve the same reduction numbers as the groups who received less detailed training. A possible explanation for this could be that this group paid more attention to what they were measuring, and were exact with every food item that went into their bucket. It is possible that they had more average weight per week as they were being very careful and saving every liquid and solid preventable food item for measurement.

There were common themes that emerged throughout the pilot:

- Participants were interested to see how much food their household wasted, saying before the pilot, they didn’t even think about it
- They buy too much fresh produce up front
- Becoming more aware of food waste as an environmental issue

### Participant responses

#### ***What was the most insightful part about the pilot challenge?***

“Realizing my coffee was so wasteful every day and trying to decrease the amount of coffee I made each day.”

“I buy too much fresh fruit. It’s better to buy one fruit and eat it, then buy another container of fruit.”

“This challenge definitely made us more aware of waste and food scale has been put to great use for food prep”

“Making ourselves aware of food waste that can be eaten or just managed in better ways”

## Recommendations

### General education

Residents were reached in a variety of ways while Dakota County hosted a Minnesota GreenCorps member. Farmers markets were the most effective general public outreach. Over the course of six weeks from June through July, more than 550 residents were directly educated at a farmers market. This initiative should continue and build for summer 2017. An intern could be hired to focus on education at established like farmers markets. Master Recycler/Composters enjoyed working at these events and would more than likely be available to help in the future. Opportunities to enhance the booth include more displays and props;

handouts on non-food related topics as needed; interactive photo opps with face cut-outs or large backgrounds; and food preservation information towards the end of the summer.

The Ad Council launched a campaign in April 2016 called SavetheFood.com that revolves completely around food waste prevention. Dakota County has a great opportunity to use information and statistics already compiled by a reputable organization to spread the word about the issue of food waste. SavetheFood.com has resources such as videos, posters, bench ads, Facebook posts and images, as well as Tweets and Instagram posts. The target audience for SavetheFood.com are young professionals and mothers with children; these were chosen as the target audience because prior Ad Council research showed that young professionals with dynamic lifestyles tend to waste more food. Mothers were also chosen because they are normally the shoppers and cooks for the family, and have the opportunity to help shape their children's eating habits and behaviors. Dakota County should follow the Ad Council's research and logic and pursue social media as a main platform to reach young people and families. Staff working on the campaign stated they focused on social media because that is where younger audiences get their news.

The Master Recycler/Composter program can be used to expand education. Since food waste prevention requires changing behaviors one individual at a time, it is recommended that the next Dakota County Master Recycler/Composter class encourage current participants to invite one guest to the food waste prevention segment of the class. By bringing a friend it not only helps spread awareness to the issue of food waste, but it is a great way to get loved ones involved and showcase what Dakota County is doing in the community. Also, interested Master Recycler/Composter volunteers could be trained in-depth on food waste prevention to give presentations, host an event booth, or other outreach method.

Dakota County could also offer classes through community education such as school districts. Independent School District 196 is one example of a school system open to classes and education of all sorts. The presenter of the workshop or class can choose how many classes, when to present, and if money should be charged to participants. There are numerous cities in Dakota County, and many different school districts, that would be interested in offering food waste prevention classes to residents. Classes could include basic food waste prevention tips, cooking classes with local chefs, or food preservation classes.

Dakota County owns the viewing rights to the documentary "Just Eat It", a documentary about food waste and food rescue<sup>4</sup>. General screenings of the film at Dakota County libraries were not well attended in the past. Bringing the film to organizations worked much better to have a captive audience. This also allows Dakota County to reach residents who would not have gone out of their way to show up to a screening. Dakota County Environmental Resources and Libraries should consider making a film kit with the movie and questions. The film company

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<sup>4</sup> *Just Eat It*. Directed by Grant Baldwin, Peg Leg Films, 2014.

already has a curriculum guide and coloring book to complicate the movie to be used for schools (grades 7-12).

## Partnering opportunities

Based on education and outreach conducted during 2016, Dakota County should focus on partnering with organizations that already have a vested interest in food and food waste prevention rather than having a public gathering at a library and hoping residents show up. Several organizations expressed interest in coordinating educational efforts around food waste prevention including Valley Natural Foods and The Open Door. The University of Minnesota Extension Office, Master Gardeners, gleaning operations such as Fruits of the City, Family and Consumer Science classes, environmentally-focused school clubs, and even some grocery stores and restaurants are all examples of possible partner opportunities. Churches are an untapped resource in spreading the word about food waste. Minimal outreach was done to churches during the first year of education. One education tactic that did not work as well was presenting to the English as a Second Language (ESL) classes. Students in these classes are focused on learning the basics of English without adding on a more complicated level of behavior change.

Municipal partners play a crucial role in food waste prevention awareness. Dakota County should work with city recycling coordinators and communications staff to promote tips and education opportunities. In the 2017 Community Funding Program guidelines, municipalities must educate residents on food waste prevention with at least a newsletter article and a presentation to receive funding. Other city outreach methods include:

- Articles or ads in city e-newsletters
- Articles or ads in printed newsletters
- Blurbs on electronic marquees
- Videos on cable access channels and Town Square Television
- Billboards on I-35W (City of Burnsville)
- Ads in Parks and Recreation Guides, art center playbills, sports programs
- Banners or backer boards in stadiums or arenas
- Community Calendars (City of Farmington)
- Ad or printed statement on utility bill inserts

## Food waste pilot

Dakota County should take the lessons learned from the pilot and develop a food waste pilot program. The goal of the pilot would be to raise awareness of food waste on a household level and help residents develop their own personalized solutions based on current resources. The following are recommendations to include in a future food waste pilot:

- A less-intensive pilot based on the methods for the “Control” and “Teach Themselves” groups would be useful. Additional detailed information such as examples of what they should be collecting and resources available to them would be beneficial but not entirely necessary.

Having residents weigh their waste that was meant to be eaten even without education has an effect on those doing the weighing. An example of this would be having an excerpt in each email that has a new “Did you know” fact or tip such as “Please remember to collect and weigh all liquid waste including coffee, flat soda, and undrunk milk.”

- Have residents clean out their fridge and pantry of expired or spoiled food before beginning the pilot. This would take out any influence from large amounts of food waste that might alter their total data.
- Hold a pilot in the off-season months in winter and after the holiday. There will be fewer after school activities which will help busy families.
- Have buckets and scales available for groups to “check out” from the County and do their own pilot at home, even if they do not relay the final information, such as food waste weights, to the County. This would be appropriate for high school clubs as well as groups like Girl/Boy Scouts, 4-H, and church groups for hands-on experience.
- Reduce the length of the pilot to four weeks. If the pilot program decided to educate residents during the pilot, a one week baseline followed by three weeks of tools would be sufficient. This would limit the time commitment, perceived or real, on families choosing to participate.
- Excluding liquids from measurement. Not many comments were received about the inconvenience of having to collect liquids; however, it might be a barrier to families who are considering participation. Liquids might also skew data if the household drink a lot of coffee or other beverages.
- Follow-up with the pilot participants at certain intervals to see if they continue to use the resources.
- Continue to offer prizes as a recruitment mechanism but ask the winners of weekly prizes to provide feedback after using the prizes. Also, ask if those winners are willing to send in a photo of them using the prize as a testimonial for future education.

## Tools to develop, enhance or promote

Although over 4 out of 5 stated they already make a shopping list, check the fridge and pantries before shopping, and use leftovers in future meals before they started the pilot, 63 percent of participants said the smart shopping resources were the most helpful during. Dakota County should focus on the resources for Smart Shopping. Based on feedback during the focus groups and the pilot, the existing tools from the EPA’s Food: Too Good to Waste could be modified to be more useful:

- **The meal planner**, online or in paper form to download. Over half of participants in the focus groups said they wanted help with meal planning, and poor meal planning was a frequently cited barrier to using up food. Use Eureka Recycling Meal Planner tool or similar list tool that has meal planning. This tool was far preferred to the “Food: Too Good to Waste” shopping list. Consider laminating or turning it into something that could be reused and put on the fridge, such as a magnet. Also consider adding a schedule component such as weekly obligations, place for school lunches, and reminder about using leftovers. If someone sees they are unavailable to

cook four nights out of seven, they will instantly know they do not have to buy seven nights worth of meals at the grocery store.

- **Promoting online meal planning tools.** The internet is full of helpful meal planners such as AllRecipes, Evernote and Food.com. While some have a small fee for use, many are free. One component of these apps is to add ingredients to a shopping list. This way you only shop for what you need for those meals.
- **Tools to inventory the kitchen.** Often residents forget what they have in their refrigerators and pantries or heads of household end up shopping separately and buy duplicate items. More tools are coming online to increase communication between people living in the same household to avoid duplicate purchases (OurGroceries, Out of Milk). Dakota County should promote this technology for audiences that are comfortable with phone apps. For the non-technical audiences, an inventory sheet such as Eureka Recycling's pantry, fridge, and freezer inventories. Laminated versions of these sheets would be helpful so they can be used again with dry-erase markers.

Only 1 in 10 participants stated they serve smaller portions before the pilot. Knowing how much food to prepare for a meal based on who is eating that meal was a barrier according to participants in the food waste pilot as well as in the focus groups. Recipes are given in certain serving sizes that don't always allow for simple conversion based on a large family or a single person living alone. Also, a common pilot for households is using prepared food as leftovers or ingredients in new meals. Although 83 percent of pilot participants said they use leftovers and food scraps in future meals, focus group participants admitted their families hated leftovers. Here are tools that could help residents understand portion adjustments and using leftovers:

- **Meal portion tool.** Using a website or phone app to better prepare portions for large gatherings or a small household would cut down on wasted food that might not be eaten as leftovers. Instead of creating this tool, Dakota County could research and promote existing online portioning tools. For parties, residents could generate how many portions or what size dish to make based on how many guests, how many different types of appetizers, main dishes, beverages they are planning to serve, and how many hours their party will last. The website could also be used to scale down recipes for people who have smaller families where making a dish that serves four or six people is not the best option. The website could have a way to upload a recipe from another website, possibly popular food websites such as Food.com, Allrecipes.com, or Bigoven.com, and then be able to scale it to how many people you are actually cooking for. This will allow people to only buy what they need and not end up with a plentiful amount of leftovers that may or may not get eaten in subsequent days.
- **Reinvent the term "leftovers".** The word "leftovers" put off many focus group participants. Dakota County should research what other campaigns are using and what resonates with residents. If the term must be still used, then market it as something fun and exciting to households such as "eat it up" night or "free meal" night.
- **Promote cooking with leftovers.** Dakota County should promote existing online and phone apps like BigOven.com allow you to search by unused ingredients.

- Local cookbook using leftovers.** The City and County of Honolulu, Hawaii partnered with local chefs and restaurants to create the *Food: Too Good to Waste Cookbook and Smart Food Tips*. In addition to menu planning, shopping, and food storage tips, the book has recipes that focus on using leftover meats, vegetables, and grains written by local chefs. It was a great way for the chefs to get involved in a worth-while program, and a way for them to advertise their restaurant. Dakota County could survey local residents to find out which food items go to waste in their household the most, then take the top five or ten food items and make those into a “Reinvent Your Leftovers” cookbook with local chefs. The book would be an item to hand out at fairs, farmers markets, or the future pilot participants that is strictly unique to Dakota County and Mid-western flavors.

Improperly storing perishable foods can lead to spoilage and a waste of money and resources. Eighty-four percent of focus group members stated they would like help with storing food properly to make it last longer. Additionally, 3 out of 4 pilot participants said they store fruits and vegetables in optimal conditions so they last longer. Dakota County has many options available for food storage promotion:

- Use exiting storage guides.** Both the Eureka Recycling and King County produce storage guides were liked in focus groups and the food waste pilot. Dakota County should continue to use both but explain to residents how they can be used (e.g. the Eureka Recycling guide is robust and could be stored with recipe books in the kitchen while the shorter King County guide could be stuck on the fridge).
- Spinning wheel education.** Farmers markets are excellent ways to reach residents using and storing perishable ingredients. A spinning prize wheel was used during these events with each “pie” wedge of the wheel highlighting a different fruit or vegetable. Residents spin the wheel and try to guess how to store that produce item. Prizes could be produce storage guide or cookbook mentioned earlier.
- Create a storage display.** The Common Table, a network of local food promoters in Minnesota, created an interactive display for the Minnesota State Fair that highlights how to store items in cupboards, pantries, refrigerators, and freezers. Dakota County should borrow this display if possible and rotate to the different county libraries throughout the year and use at the Dakota County Fair in August. If the display cannot be borrowed, then Dakota County should create a modified version with the same elements.



Table 5. The Common Table food storage display at the Minnesota State Fair, 2016.

# Appendix A: Eureka Recycling's A-Z Storage Tips

## A-Z Food Storage Tips

Tips for storing food so that it lasts longer and gets wasted less.

Why worry about preventing wasted food? Although composting is a great way to deal with inevitable food scraps like banana peels, it is much better to eat the food we can than to compost it. Prevention helps the environment as well as our budgets. After all, it takes a lot of resources to get food from the fields to our homes.

While no one buys food with the intention of throwing it away, based on recent estimates, the average household in Saint Paul wastes up to \$96 worth of once edible food every month!

Storing your food properly can make it last much longer to help you save money and reduce waste. Eureka Recycling has assembled tips and tools to help on [www.makeditnotwaste.org](http://www.makeditnotwaste.org). Try out a tip. Love it? Hate it? Have a better idea? Log in so you can rate it and leave a comment, or add one of your own.

**General storage tips to keep in mind:**

Keep apples, bananas, citrus, and tomatoes away from other produce—they give off ethylene gas that makes other produce ripen/deteriorate faster.

Unlike all bunches (herbs, greens, etc.) to allow the produce to breathe.

The length of time that the food will last depends on how fresh it was when you bought it. Local, in-season produce will last much longer than something that has been shipped a long way. For all perishable food, use your nose and eyes to determine if it has gone bad. Sometimes, it may just be past its prime for raw eating but can be cooked—pears, apples, berries, or other fruit can be made into sauces, crisps, or cobblers. Stale bread can be kept for breadcrumbs, French toast, or bread pudding.

All frozen things should be in an airtight container with as much air removed as possible. Air contains moisture that creates ice crystals that “burn” the food or make it deteriorate faster. Freezing in a flat, rectangular, clear, glass container works so you can see your food and stack containers. Don't forget to label when it went in the freezer!


Many of these foods can be dried in a food dehydrator or canned with a hot water bath canner or a pressure canner. Check out a dehydrating or canning guide to find the best recipes for preserving large quantities of produce.

For best results, keep your fridge between 37° F and 40° F, and your freezer between 0° F and 2° F.

Use your fridge's crisper drawer. The higher humidity environment benefits many vegetables by helping them last longer. If you can adjust the humidity settings on your crisper drawer, set it on high humidity for leafy greens or on low for non-leafy vegetables like carrots and cucumbers.

**FOOD STORAGE WITHOUT PLASTIC**

We are learning more and more about the toxicity of plastic and the dangers of storing or heating food in it. There are alternatives that are safer for you and the environment! To learn more, visit [www.eureka-recycling.org/plastics.cfm](http://www.eureka-recycling.org/plastics.cfm).

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### Apples

Store apples in the **fridge** to extend shelf life.

One bad apple can ruin the whole bunch, so eat up the bruised ones first!

For longer storage, store in a cardboard box covered with a damp towel.

### Artichokes

Place in an **airtight container** with a damp towel for moisture and store in the **fridge**.

### Asparagus

Store asparagus in the **fridge**:

- Trim the base of the stalks and place upright in a jar filled with an inch of water.
- Or, wrap the cut ends of the stalks in a moist paper towel or rag.

### Avocados

To speed up ripening, place in a paper bag and place an apple in the bag with them.

Once ripe, store avocados in the **fridge**.

Mix avocados or guacamole with a little lemon or lime juice or leave the pit in to slow browning.

### Bananas

Store bananas on the **counter away from other fruit**. They give off ethylene gas, which speeds ripening in other produce.

Bananas can be **frozen** with or without their peel and used later in baked goods or smoothies.

### Basil

Basil is a warm weather crop and turns black quickly in the **fridge**. Store on the **counter** in a glass of water like a cut flower with the stem in the water, or wrapped in a dry paper towel in an **airtight container**.

### Beans, cooked/canned

Store unused cooked beans in the **fridge** in their liquid or water.

You can **freeze** cooked beans in liquid. Put cooked beans in a can/freezer jar and fill with cooking liquid or water.

### Beans, dry

Store dry, uncooked beans in an **airtight container** in a cool, dry place.

### Beans, green

Store unwashed green beans in the **fridge** in an **airtight container**. Wet beans will develop black spots and decay quickly.

Green beans can be **frozen**, either raw or blanched. Freeze on a cookie sheet in a single layer and transfer to an **airtight container**.

### Beets

Store beets in the **fridge** (greens removed) in an **airtight container** with a paper towel inside to absorb moisture.

You can **freeze** beets by blanching them and storing in an **airtight container**.


Don't forget to eat the beet greens! Check out “Greens, cooking” for more information on how to store them.

### Berries

Before storing berries, remove any spoiled or crushed fruits, and store unwashed in an **airtight container**. Try not to put them into too many layers because berries are fragile.

Don't wash until ready to eat—any added moisture encourages mold. If you must wash them, we have heard that adding a little white vinegar to the water helps keep them from deteriorating as quickly.

Store excess berries in the freezer in an **airtight container**. Freeze them on a cookie sheet first before transferring to a container to avoid sticking.

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### Bitter melon

Store in an **airtight container** in the crisper drawer of the **fridge**.

Can be frozen if sautéed first. Store in an **airtight container** in the freezer.

### Bread & Breadcrumbs

Store fresh bread wrapped in a cotton bag or wax paper in a bread box or metal tin on the **counter**.

To freshen up a day-old loaf, hold it very briefly under a running cold tap. Give it a good shake and pop in a hot oven for about 10 minutes; it will be as soft and crusty as freshly baked bread.

Store sliced bread in an **airtight container** in the freezer. Thaw in the microwave or toaster.

Store stale bread, crusts, and crumbs in the freezer to use for making breadcrumbs. Store breadcrumbs in an **airtight container** in the freezer.

### Broccoli

Store broccoli loosely in the **fridge**. You can wrap in a damp towel or cotton bag.

The stalks can be eaten, too! Store the stalks in an **airtight container** with a paper towel. Peel and shred them to make a broccoli slaw or cut them and put them into soups.

Broccoli can be blanched and put in the freezer in an **airtight container**.

### Brown sugar

Store brown sugar in an **airtight container**.

Try keeping a few marshmallows or a slice of bread on top of the sugar to keep it from drying out and getting hard. Or, a brown sugar “tidy bear” clay disc might be a good option to help keep your sugar from getting hard. Soak the disc in water for 15 minutes once or twice a year.

### Brussels sprouts

If Brussels sprouts are on the stalk leave them on that stalk. Put it in the **fridge** or leave it in a cold place.

If they are loose, store them in an open container in the **fridge** with a damp towel on top.

### Butter

When storing butter in the **fridge**, don't keep it in the door (often where the “Butter” compartment is) because that is often warmer than other parts of the fridge, and could make it spoil more quickly.

Butter can be stored in the **freezer**. Cut it into tablespoon-sized chunks and store in an **airtight container**.

### Cabbage

Store cabbage in the crisper drawer of the **fridge**.

Peel off outer leaves if they start to wilt. Eat cabbage first as it goes bad more quickly than other produce.

### Carrots

Cut the tops off carrots to keep them fresher longer.

Store carrots in the **fridge** either in a container of water or unwashed in an **airtight container** in the crisper drawer with plenty of moisture.

If you have a lot of carrots at the end of the season, store them in buckets of damp sand in a cool, **dry place**.


### Cauliflower

Store cauliflower in an **airtight container** in the **fridge**, but eat cauliflower first as it goes bad more quickly than other produce.

### Celery

Store celery in the **fridge** either in a container of water or in an **airtight container**.

Celery leaves can be washed, dried, and frozen, then crumbled into soups and stews for extra flavor.

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### Cereal

Store cereal in a dry place in an **airtight container**.

If cereals have gone a little soft or stale, lay them out on a cookie sheet and pop them in the oven for a bit to remove some of the excess moisture.

If you have several boxes of cereal but not enough in any one box to be worthwhile, mix them all together, blend them in a food processor, and use like breadcrumbs, as toppings for muffins or baked goods, or on ice cream!

### Cheese

Store cheese in wax paper, butcher paper, or parchment paper to allow it to breathe and not get moldy. Store it in a cold part of your **fridge**.

Hard and semi-hard cheeses like Parmesan, cheddar, and Swiss can be grated or cubed and kept in the freezer. After being in the freezer, cheese is best used in cooking.

Soft and semi-soft cheeses do not freeze well.

### Cherries

Store cherries in the **fridge**.

Don't wash until ready to eat—any added moisture encourages mold. If you must wash them before storing, try using a mixture of one part white vinegar and ten parts water to help keep them from deteriorating as quickly.

Pitted and washed cherries can be stored in the **freezer** by laying them in a single layer on a cookie sheet, freezing them, and then transferring to an **airtight container**.

### Citrus

(Includes grapefruit, lemons, limes, oranges, etc.)

Keep citrus loose or in an open container in the **fridge**. Never store citrus in an airtight container.

If you have a cut lemon or lime, wrap the cut end in a damp paper towel.

Juice and peels can be stored in the **freezer**. Freeze juice in ice cube trays and store peels in an **airtight container** in the freezer.

Juice from citrus can be used to keep apples, pears, and avocados from going brown.

### Coconut milk

Coconut milk can be kept in the **freezer**. Freeze it in ice cube trays then transfer cubes to an **airtight container**.

### Corn

Leave husks on fresh corn and store open in the **fridge**. Eat as soon as you can, as it loses flavor and texture quickly.

Buy corn when it's in season and store it in the freezer by blanching, cutting from the cob, and transferring to an **airtight container**.

### Cream

When storing cream in the **fridge**, don't put it in the door, because that is often warmer than other parts of the fridge, and could make it spoil more quickly.

Cream can be **frozen**.

- Lightly whip the cream before freezing to prevent it from getting grainy.
- Freeze in ice cube trays then transfer cubes to an **airtight container**.

### Cucumbers

Store cucumbers in the **fridge** by standing them upright in a container of water with the stalk down.

Wrap in a moist towel in the **fridge**.

### Dates

The drier varieties of dates (like Deglet Noor) can be stored out on the **counter** in a bowl or paper bag.

The more moist variety of dates (like Medjool) need to be kept in the **fridge** either in cloth or in a paper bag, keeping the moisture away from the skin of the dates.

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**Eggs**

When storing eggs in the fridge, write the date you bought them on the shells or cartons to make sure to use the older ones first.

To test if an egg is still good, try dropping one in a glass of water.

If the egg...

- stays at the bottom, flat or at an angle, it is fresh.
- stands on its pointed end at the bottom, it is still safe to eat but best used for baking and making hard-boiled eggs.
- floats, it's stale and best discarded.

You can freeze eggs, just not in the shell. They are best if frozen in portions you will use, like in ice cube trays. If freezing whole eggs or yolks, whip up the yolk with a fork and put in tray. If freezing just yolks, to keep them from clumping, add a ½ tsp. of salt per cup of yolks or 1 tsp. of sugar per cup of yolks. You can freeze whites as they are. Store portions in an airtight container.

**Eggplant**

Store eggplant unwashed in the crisper drawer of the fridge.

Eggplant doesn't like any extra moisture.

Eggplant can be peeled, blanched, cut, and frozen in an airtight container.

**Fennel**

Place in the fridge in a closed container with a little water or upright in a cup of water (like celery).

**Figs**

Keep figs in a paper bag or on a plate in the fridge and away from moisture. Store in a single layer as they are very fragile.

**Flours**

Keep in airtight containers in a cool, dark place.

Flours, especially flours with more oils and higher protein levels (like whole wheat) last longer in the fridge or freezer.

**Garlic**

Store in a cool, dark place away from produce that gives off ethylene gas.

Try storing garlic in an old nylon stocking: place one head of garlic in the stocking, tie a knot, and add another, etc. When the stocking is filled, hang it in a cool, dark place.

**Grapes**

Remove spoiled or soft grapes and do not wash them before storing in the fridge in an airtight container.

Grapes can be frozen to use in smoothies or as a frozen treat. Freeze in a single layer on a cookie sheet, and then store the frozen grapes in an airtight container.

**Greens, cooking**

(Includes all greens generally eaten cooked: beet greens, bok choy, broccoli raab, collards, dandelion greens, kale, mustard greens, spinach, Swiss chard, tat soi, and turnip greens)

Remove any bands, twist ties, etc.

Greens must be kept in an airtight container with a damp cloth to keep them from drying out.

Hardier greens like kale, collards, and chard even do well with their stems in a cup of water on the counter or fridge.

**Greens, salad**

(Includes all greens eaten fresh: arugula, corn mache, endive, lettuce, mizuna, radicchio, sorrel, and spinach)

Store salad greens in the fridge in an airtight container with a damp paper towel.

Soak leaves that have gone limp for 30 minutes in cold water to revive crispness.

**Green onions (or Scallions)**

Store in the fridge wrapped in a damp towel or upright in a glass of water just to cover the white parts.

Make sure to remove any bands on the bunch.

Green onions can be frozen to be used cooked later. Chop and freeze on a cookie sheet and store in an airtight container.

**Herbs**

Store herbs (other than basil) in the fridge upright in jars (stems down) filled with 1-2 inches of water.

Herbs can be frozen by chopping and freezing in ice cube trays full of olive oil.

**Leeks**

Store leeks in an open container in the crisper drawer of the fridge wrapped in a damp cloth or in a shallow cup of water (just so the very bottom of the leek is covered with water).

**Meat, Poultry, and Fish**

(Includes: bacon, beef, chicken, ham, pork, turkey)

Keep all meat in the coldest part of the fridge: the bottom shelf.

Fresh meat will only keep for 1-2 days in the fridge. If not using within 1-2 days, freeze in an airtight container.

Freeze individual portions or strips of bacon between wax paper and in an airtight container.

Keep raw meat, poultry, or fish in the freezer and thaw it out in the fridge a day or two before you will cook it.

Cooked meat can keep up to 4-5 days in the fridge.

Keep bones and carcasses to make soup or stock. Keep them in the freezer to use later.

**Melons**

Store in a cool, dry place out of the sun.

Once ripe, store melons in the fridge.

Cubed melon can be frozen on trays before transferring to an airtight container, and then used in drinks and smoothies.

**Milk**

When storing milk in the fridge, don't put it in the door, because that is often warmer than other parts of the fridge, and could make it spoil more quickly.

Skim or low fat milk can be frozen in glass jars. It may be better used in baking than for drinking because it often separates. Be sure to leave room in the jar for the milk to expand.

**Mushrooms**

Keep mushrooms in a paper bag in the fridge to avoid getting "slimy."

Mushrooms can be sautéed and then frozen.

**Nuts**

Nuts can be stored in the freezer, fridge, or a cool, dry place. They will last longer in a cooler place.

Nuts take on other flavors easily, so store away from high-odor foods.

Nut butters should be stored in the fridge to extend shelf life.

**Oils**

Store oils in a cool, dark place in a glass, ceramic or non-reactive metal container (like stainless steel). Keep away from your stove or any warm place.

If you keep oil in a dark basement, you may want to keep a small, opaque container of oil in your kitchen for easy access.

**Okra**

Okra doesn't like humidity. Store with a dry towel in an airtight container. Eat as soon as you can after purchasing, as it doesn't last as long as other produce.

**Onions**

Store whole onions in a cool, dark place somewhere slightly warmer than the fridge. Good air circulation is best, so don't stack them.

Try storing onions in an old nylon stocking: place one in the stocking, tie a knot, and add another, etc. When the stocking is filled, hang it in a cool dark place.

Store partially used onions in the fridge in an airtight container, leaving the papery outer layer on.

Onions cause potatoes to sprout, so keep them separate.

**Pasta**

Store dry pasta in an airtight container.

Cooked pasta can be frozen in individual- or meal-sized portions.

**Pears**

Store pears in the fridge to extend shelf life.

Fruits that are overripe or damaged can still be used in sauces or baked goods if you do not want to freeze them. Look up recipes in your cookbooks or online.

**Peas**

Keep peas in the fridge in an airtight container.

Fresh peas (snap or shell) can be blanched and frozen in an airtight container. Freeze them on a cookie sheet first before transferring to a container to avoid sticking.

**Peppers: red, green, or hot**

Only wash peppers right before eating them.

Partially-eaten peppers can be stored in the fridge with the seeds and stems attached to extend shelf life.

Peppers can be frozen, either raw or blanched, to be used later for cooking.

**Persimmon**

Store at room temperature until ripe (Fuyu will still be firm, Hachiya will be mushy) and then store in the fridge.

To hasten the ripening process, place in a paper bag with a few apples. Don't stack them, as they get very fragile when ripe.

**Pomegranates**

You can store pomegranates on a cool counter, but they will keep longer in an open container in the fridge.

**Potatoes**

Store potatoes in a cool, dark place somewhere slightly warmer than the fridge. A box in a dark corner of the pantry or a paper bag work well.

Moisture and exposure to light causes spoilage.

Onions cause potatoes to sprout. They're still good to eat—just cut off the sprouts and eyes.

While apples cause most produce to spoil, apples can help keep potatoes from sprouting, so you may want to store them together in a cool place for long-term storage.

Cooked and mashed potatoes can be frozen to eat later.

**Rhubarb**

Wrap in a damp towel and place in an open container in the fridge.

**Rice**

Store dry rice in an airtight container.

Cooked rice can be frozen in an airtight container.

**Root vegetables**

(Includes: celery root/celeriac, parsnips, radishes, rutabagas, turnips)

Remove any greens and store separately (see Greens, cooking).

Greens from some root vegetables such as turnips and radishes are edible and delicious when cooked.

Store in a cool, dark, humid root cellar or in an airtight container with a damp towel in the fridge.

**Squash**

(Includes: acorn, butternut, pumpkins, and all thick-skinned squash that are often categorized as "winter squash")

Store in a cool, dark, well ventilated place. Many growers say winter squashes get sweeter if they're stored for a week or so before eaten.

**Stone fruit**

(Includes: peaches, plums, nectarines, and apricots. Cherries are exception: see "Cherries")

Store in a cool place out of the sun until ripe.

Once ripe, store open in the fridge.

Stone fruit can be frozen—peeled or unpeeled. Cut and freeze on a cookie sheet then put in an airtight container.

**Sweet potatoes**

Store in a cool, dark, well ventilated place. Never refrigerate—sweet potatoes don't like the cold.

**Tomatoes**

Tomatoes can be frozen either raw or cooked.

Tomatoes should be stored on the counter unless very ripe, at which point transfer them to the fridge.

Tomatoes give off ethylene gas that causes other produce to deteriorate, so store them separately.

To hasten ripeness, place them in a paper bag with an apple.

**Zucchini**

(Includes: patty-pan, yellow squash, and all thin skinned squash varieties often categorized as "summer squash")

Wrap whole or cut ends in a damp cloth and keep in the fridge.

Zucchini can be frozen either blanched or raw. Store in an airtight container.



## Index:

Acorn squash.....8	Carrots.....3	Greens, cooking.....5	Plums.....8
Apples.....2	Cauliflower.....3	Greens, salad.....5	Pomegranates.....7
Apricots.....8	Celery.....3	Ham.....6	Pork.....6
Artichokes.....2	Celery root.....8	Herbs.....6	Potatoes.....7
Arugula.....5	Celeriac.....8	Kale.....5	Poultry.....6
Asparagus.....2	Cereal.....4	Leeks.....6	Pumpkins.....8
Avocados.....2	Cheese.....4	Lemons.....4	Radishes.....8
Bacon.....6	Cherries.....4	Lettuce.....5	Radicchio.....5
Bananas.....2	Chicken.....6	Limes.....4	Rhubarb.....7
Basil.....2	Citrus.....4	Meat.....6	Rice.....8
Beans, cooked/canned.....2	Collards.....5	Melons.....6	Root vegetables.....8
Beans, dry.....2	Coconut milk.....4	Milk.....6	Rutabagas.....8
Beans, green.....2	Corn.....4	Mizuna.....5	Scallions.....6
Beef.....6	Corn mâche.....5	Mushrooms.....6	Sorrel.....5
Beets.....2	Cream.....4	Mustard greens.....5	Spinach.....5
Beet greens.....5	Cucumbers.....4	Nectarines.....8	Squash, summer.....8
Berries.....2	Dandelion greens.....5	Nuts.....6	Squash, winter.....8
Bitter melon.....3	Dates.....4	Oils.....6	Stone fruit.....8
Blueberries.....2	Eggs.....5	Okra.....7	Strawberries.....2
Bok choy.....5	Eggplant.....5	Onions.....7	Sweet potatoes.....8
Bread & Breadcrumbs.....3	Endive.....5	Oranges.....4	Swiss chard.....5
Broccoli.....3	Fennel.....5	Patty-pan squash.....8	Tat soi.....5
Broccoli raab.....5	Figs.....5	Parsnips.....8	Tomatoes.....8
Brown sugar.....3	Fish.....6	Pasta.....7	Turkey.....6
Brussels sprouts.....3	Flours.....5	Peaches.....8	Turnips.....8
Butter.....3	Garlic.....5	Pears.....7	Turnip greens.....5
Butternut squash.....8	Grapefruit.....4	Peas.....7	Watermelon.....6
Cabbage.....3	Grapes.....5	Peppers: hot, sweet, bell.....7	Yellow squash.....8
Cantaloupe.....6	Green onions.....6	Persimmon.....7	Zucchini.....8



www.MakeCirclesWork.org  
Eureka Recycling, 2828 Kennedy Street NE, Minneapolis, MN 55413

# Appendix B: King County's "Keep it Fresh" produce storage guide

### Sell-by, best-by, use-by: What do food date labels really mean? With one exception, it's not about food safety.

Date labels are confusing and can lead to needlessly throwing away good food. With the exception of infant formula, product dating is set by manufacturers to indicate the latest date for peak quality, not safety. Even if the date expires, a product should be safe, wholesome and of good quality if stored and handled properly.

See the USDA's Food Product Dating fact sheet at [fsis.usda.gov](http://fsis.usda.gov) for more information.

**Food product dating de-mystified:**

**Use by:** Last date recommended by manufacturer for peak quality.

**Sell by:** Manufacturer's date to tell store how long to display item for sale.

**Best before/best by:** Manufacturer's recommended date for optimal flavor/quality.

**Closed or coded dates:** Packing numbers used by manufacturers.

### Wasted food = wasted resources

The average American household wastes about 25% of the food they buy – especially produce. When we throw away food, we also waste significant amounts of water, energy, fuel, fertilizer, time and money used to produce, package and transport it.

**Small changes make a BIG difference!**

### What about composting?

Composting is great for food that cannot be eaten (banana peels, egg shells) or has spoiled (moldy leftovers, rotten fruits or vegetables). What's even better is to not waste food in the first place.

**As much as possible, buy what you need – eat what you buy.**

Visit [recyclefood.com](http://recyclefood.com) for more tips and tools about how to prevent food waste at home.

## Fruit and Vegetable Storage Guide

# KEEP IT FRESH!

Waste Less, Save More.

**COFFER SUGAR FLOUR**

**COUNTER**  
Store stone fruit on counter until ripe, then place in fridge.

**FRIDGE**  
Store leafy herbs (except for basil) in a glass of water with a plastic bag over the top.  
Store apples loose and away from other produce.  
Store cabbage loose in crisper drawer.

**PANTRY**  
Store onions and garlic in a cool, dark place separate from potatoes.

**FREEZER**  
Freeze fruits and veggies that you won't eat in time. Brown bananas work great in smoothies or banana bread.

Partial content for this brochure provided courtesy of Seattle Public Utilities.

Alternate Formats Available 206-477-4466 • TTY Relay 711

Fruits/Veggies	How to Store	Fruits/Veggies	How to Store	Fruits/Veggies	How to Store	Fruits/Veggies	How to Store
Apples	Fridge. Separate from other produce.	Brussel Sprouts	Fridge – crisper drawer. Store in a sealed container.	Grapes	Fridge. Store in a sealed container. Wash just before eating to avoid mold.	Peppers	Fridge – crisper drawer. Store loose.
Artichokes	Fridge. Store in plastic bag or sealed container.	Cabbage	Fridge – crisper drawer. Store loose.	Green onions/scallions	Fridge. Wrap in a damp towel or store upright in a glass of water.	Potatoes	Cupboard/Pantry. Store loose or in a paper bag separate from onions.
Asparagus	Fridge. Remove bands and ties. Store upright in a glass of water with a plastic bag over the top.	Cauliflower	Fridge – crisper drawer. Store in a plastic bag or sealed container.	Herbs, leafy (cilantro, parsley)	Fridge. Trim stems and store upright in a glass of water with a plastic bag over the top.	Root veggies	Fridge. Store in a sealed container with a dry towel.
Avocados	Ripen on counter, then store in fridge. Store loose.	Celery	Fridge. Store in a plastic bag or sealed container.	Herbs, woody (rosemary, sage)	Fridge. Wrap in a damp towel and store in a sealed container.	Squash - summer	Fridge. Wrap whole or sliced pieces in a damp towel.
Bananas	Counter. Store away from other fruits and vegetables.	Cherries	Fridge. Store in a plastic bag or sealed container. Wash just before eating to avoid mold.	Leafy greens (lettuce, kale)	Fridge. Remove bands and ties. Store in a sealed container lined with a damp towel.	Squash - winter	Cupboard/Pantry. Store loose.
Basil	Counter. Remove bands and ties. Trim stems and store in water with plastic bag over the top.	Citrus fruits	Fridge – crisper drawer. Store loose.	Melons	Ripen on counter, then store in fridge. Store loose.	Stone fruits (peaches, plums)	Ripen on counter, then store in fridge. Store loose.
Beans (green, wax)	Fridge. Store in a plastic bag or sealed container.	Corn	Fridge. Store loose, keep in husks.	Mushrooms	Fridge. Store in a paper bag.	Tomatillos	Fridge. Store in a paper bag.
Berries	Fridge. Store in a container, lid ajar and lined with a dry towel. Wash just before eating to avoid mold.	Cucumbers	Fridge – crisper drawer. Store loose.	Okra	Fridge. Store in a paper bag.	Tomatoes	Ripen on counter, then store in fridge. Store out of direct sunlight.
Bok Choy	Fridge. Remove bands and ties. Store in a sealed container lined with a damp towel.	Eggplant	Fridge – crisper drawer. Store loose.	Onions	Cupboard/Pantry. Store loose or in a mesh bag separate from potatoes.	Tropical fruit (kiwi, pineapple, mangoes)	Ripen on counter, then store in fridge. Store loose.
Broccoli, Broccolini	Fridge – crisper drawer. Wrap in a damp paper towel.	Garlic	Cupboard/Pantry. Store loose.	Pears	Ripen on counter, then store in fridge. Store loose.	Zucchini	Fridge. Wrap whole or sliced pieces in a damp towel.

**For a complete database of food storage tips and their shelf lives, check out [StillTasty.com](http://StillTasty.com) or [EatByDate.com](http://EatByDate.com).**

**Apart is better than together**  
Many fruits give off natural gases that cause nearby produce to ripen and spoil faster. Store fruits such as ripe bananas, avocados, apples and tomatoes away from other produce. Store veggies and fruit in separate fridge drawers.

**Spruce up limp greens**  
Immerse in ice water for 30 minutes or place upright in a glass of water for a few hours.

**Keep ready-to-eat snacks cool**  
Always refrigerate cut or peeled produce. Store in clear containers so you can see what's inside.





## Appendix F: Food Waste Pilot Participant Pre-Survey

### Food Waste Challenge Pre-Survey

**\* 1. Full Name**

**2. What is your age?**

- 18 to 24  
 25 to 34  
 35 to 44  
 45 to 54  
 55 to 64  
 65 to 74  
 75 or older

**\* 3. What is your gender?**

**\* 4. Full address (street, city, zipcode)**

**\* 5. Main contact's email address**

**\* 6. Which of the following best represents your race or ethnic group?**

- Asian-American/Pacific Islander  
 Black/African-American  
 Hispanic/Latino  
 White, non-Hispanic  
 Other (please specify)

**\* 7. What is your current employment status?**

- Employed full-time  
 Employed part-time  
 Full-time student  
 Full-time homemaker  
 Retired  
 Not employed  
 Other

**\* 8. Which of the following describes your highest level of education?**

- Less than high school degree  
 High school degree/GED  
 2-year Associate degree  
 4-year Bachelor degree  
 Graduate degree  
 Other

**\* 9. What is your total household's income before taxes?**

- Less than \$25,000  
 \$25,000-\$49,000  
 \$50,000-\$74,999  
 \$75,000-\$99,999  
 \$100,000-\$149,000  
 \$150,000 or more

**\* 10. How many people will be living in your household at least 50% of the time during this 6-week challenge?**

**\* 11. Of those people, how many are children under 18?**

**\* 12. How many in your family are vegetarian or vegan?**

\* 13. Who does the majority of the grocery shopping in your household?

- Myself
- Partner/spouse
- Family member (not partner/spouse)
- Other (please specify)

\* 14. Who does the majority of the cooking in your household?

- Myself
- Partner/spouse
- Family member (not partner/spouse)
- Other (please specify)

\* 15. In your household, how much food do you throw away because it has spoiled or you no longer want to eat it? (Do not count inedible foods like bones, egg shells, apple cores, etc)

- None
- Very little
- More than I would like
- Much more than I would like

\* 16. Do you think food waste is an environmental or social issue?

If yes, please explain why you consider food waste to be an issue

If no, please explain why you do not consider food waste to be an issue

\* 17. How strongly do you agree or disagree with the following statements:

	Strongly agree	Agree	Disagree	Strongly disagree
Wasted food is not a problem because it is biodegradable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food purchased but never eaten negatively impacts the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There's enough food in this country so wasting some at home is not a concern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food decomposing in a landfill produces greenhouse gases that contribute to climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned with how many people are struggling with hunger in my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

18. Of the following actions, which do you routinely do (that is, more often than not)? (Check all that apply)

- Plan meals
- Use leftovers and food scraps as ingredients in future meals
- Make a shopping list
- Store fruits and vegetables in optimal conditions so they last longer
- Check to see what is in my fridge and pantry before going shopping
- Buy only as much produce as I will eat until the next shopping trip
- Freeze excess food for use at a later time
- Eat leftovers
- Have a designated area in fridge for food that needs to be eaten up soon
- Track how much food is going to waste
- Serve smaller portions
- Prepare perishable foods soon after shopping
- Other (please specify)

\* 19. Please rank the following reasons for preventing wasted food with 1 being most important and 5 being least important

⋮	<input type="text" value="1"/>	It saves households money
⋮	<input type="text" value="2"/>	It reduces the amount of garbage generated
⋮	<input type="text" value="3"/>	It saves resources used to produce, distribute, and prepare the food
⋮	<input type="text" value="4"/>	It reduces the amount of gasses that contribute to climate change
⋮	<input type="text" value="5"/>	It is morally wrong to waste good food

Done

## Appendix G: Online Frequently Asked Questions and Weighing Instructions

**Welcome to**



Thank you for participating in the challenge! The purpose of this 6-week challenge is for Dakota County to learn which education styles and methods, as well as tools, work best in reducing household food waste. Participants have been divided into **three** separate groups: **it is very important that you follow the guidelines and weekly emails closely to have accurate data for Dakota County to use in the future.** The results of the challenge will be used by Dakota County for county-wide education purposes in the future. We value your participation!

All three groups will be collecting their preventable food waste for the full 6-weeks, and reporting their weekly weight online. Some groups will be asked to learn tools and strategies to reduce their waste.

For the purpose of this challenge, **preventable food waste** is something that you meant to eat but did not-- food that was not eaten and thrown away. You may have had every intention of eating it but for some reason or another you did not. For example: moldy leftovers, rotten fruit or vegetables, stale bread, moldy cheese, sour milk, along with plate scrapings from family members. All of these food items would have been edible had they not gone bad.

Edible (Collect in bucket if not eaten)	Inedible (Do not collect)
Potato/carrot/apple peels	Onion peels
Bread/pizza crusts	Coffee grounds/tea bags
Broccoli stalks	Artichoke leaves
Cucumber butts	Bones/seafood shells
Sour milk/leftover tea	Fat trimmings from meat
Freezer burned foods	Nut hulls
Stale cereal	Potato "eyes"
Flat soda/stale coffee	Skimmed fat from gravy
Limp celery	Fruit pits
Moldy cheese	Orange/banana peels

### How this works

- 1) Line bucket with provided bag.
- 2) Place all uneaten food in the container for the entire week--such as stale bread, moldy fruit, or plate scrapings. Also collect the liquid waste with uneaten or spoiled food such as spoiled milk, soup, or juice.
- 3) Do not collect inedible food scraps such as apple cores, banana peels, or bones. Do not collect food soiled paper such as paper towels, paper napkins, or paper plates.
- 4) To weigh your food at the end of the week, tie your bag off and remove from bucket. Make sure scale is in "pounds" (lb) mode, not ounces (oz). If it is not, push the "Unit" button until it shows "lb" only. Place empty bucket on scale, then press the "tare" button. The scale should now read "o." Once the scale reads "o" you can place your bag inside the bucket to get your weight for the week. If you compost at home, these items (including the bag) can be put in your compost pile after they are weighed and submitted on the [Google form](#) at the end of the week. If you do not compost, place bag in trash.
- 5) If the provided bucket fills up before the end of the week, tie off the bag, and replace with a new one, and at the end of the week weigh both bags to get your food waste weight.

### Weighing liquids

#### **Pour into bucket lined with bag:**

Pour your liquid food waste into the bucket lined with a bag and weigh at the end of the week along with any other food in the bag.

#### **Weigh separately:**

Place container (eg: milk carton, juice jug or marinara sauce jar) on scale and weigh; record weight on piece of paper. Dispose of liquid how you normally would, and weigh empty container. Subtract the empty container weight from the first weight: the resulting number is how much the liquid weighs. Add this number to your weekly food waste weight.

If you have any questions about whether a food item is edible or inedible, please send an email to: [Cassandra.Schueller@co.dakota.mn.us](mailto:Cassandra.Schueller@co.dakota.mn.us) and I will post questions and answers in the section titled "Participant Questions."

### Tips

- 1) If you take your lunch to work and cannot finish it all, please bring it back home to weigh the food you did not finish before disposing.
- 2) If you normally feed scraps to pets, please weigh them first and record on a notepad each night before feeding them to pets. Then at the end of the week, add up all those weights to include in your weekly weight.
- 3) If you eat at a restaurant and do not finish your whole plate, it is fine to NOT take home those few leftovers fries to weigh at home. However, if you do take leftovers home from a restaurant, and end up not eating them, please place those into your bucket to be weighed at the end of the week.
- 4) Please enter the full number the scale shows, even if it is 4 digits long.
- 5) The color of your folder will remind you which group you are part of:

Apple - red folder  
Orange - orange folder  
Banana - yellow folder

### You can use this grid to make notes of your food waste weight

Date	Weight	Date	Weight	Date	Weight	Date	Weight
Example: April 16	2.481						

### Participant Questions:

#### Q. What if I have expired food/canned goods that are unopened?

A. We still want to count those canned goods since they were bought with the intent of being eaten. Please open them up, dump into bucket, and recycle the container if possible.

#### Q. How should we handle leftover meat?

A. Leftover meat that will not be eaten must go in your bucket. Remember, for the purpose of this study any food that was bought with the intent of being eaten but was not, should be collected. If you compost at home, the meat cannot go into your home compost pile (since home piles don't get hot enough to break it down), but we still want it weighed as part of this challenge.

#### Q. Do we count coffee?

A. Yes, please count all liquids (other than water) that you purchased to consume but did not. Please reference the "weighing liquid" portion of this document for different ways to weigh liquids.

#### Q. What about un-popped popcorn kernels?

A. It is fine to not count these since normally you would not eat those anyway.

#### Q. What if I can't get my weight in until Monday morning because I use my work email?

A. That is just fine as long as you get it in early Monday morning.

#### Q. I couldn't find your email right away.

A. I have been told by a few participants that my emails are going into the "spam" or "promotions" email folder. Please look for my emails in those folders, or email me directly if you still can't find it.

#### Q. Can I reuse the bag if there's a negligible amount of food in it?

A. Please do not reuse the bag from week to week. I don't want any possible contamination or residue to affect your weights for other weeks. If you run out of bags and need more, produce bags from grocery stores are thin like the ones originally given out; produce bags cannot be composted though.

#### Q. What if my scale won't "tare"?

A. The first thing I would have you do is power the scale off, turn it back on, and try again. If it really won't "tare" the best thing to do is put that in the comments for me at the end of the week, and I will deduct the standard weight of the container from your food waste weight. As long as you make a note of it, I'll take care of it.

#### Q. What about the food that gets stuck in the sink trap in the kitchen sink?

A. Add those to the green bucket as well.

#### Q. Do I have to write "lbs" when I enter my weight at the end of the week, like "3.518 lbs"?

A. No, all you need to type in the form is exactly what the scale shows, just the numbers. Example: 3.518


#### Q. You ask how many times did we go out to eat in the past week--are you asking about fast food purchases that we brought back home to eat as well?

A. Yes, basically the questions is how many meals did you eat away from home that you didn't cook yourself. Dakota County wants to see if eating out effects food waste totals in the household.



## Appendix H: Example of E-mail to Pilot Participants

### Week 2: "Teach Themselves"/Orange Group e-mail




**Welcome to week 2 of the challenge!**

[This week will be exactly the same as last week.](#)

Please do NOT make any effort to reduce food waste yet. Follow your usual routine. Do not open the packet.

Here's what will be happening this week:

1. Sunday, April 17: start collecting your preventable food waste for the week, and place into your bucket lined with a bag.
2. At the end of the week, either Saturday evening or Sunday morning, weigh your bag with the provided scale. Next, click the blue box below to record your food waste weight for week 2 and input any suggestions, thoughts, or comments..




**To input your data, Click Here!**

**Week #2 Prize Drawing!**

Share a suggestion, thought, or comment about week 2 and you will be entered into a drawing for a set of silicone food covers! These reusable stretchy covers come in a variety of sizes and fit around produce to protect cut ends.


Good luck, and keep an eye out for week 3 instructions!

### Week 4: "Teach Themselves"/Orange Group e-mail announcing prize winner



The winner of our Week 4 prize, a pack of Fresh Paper sheets is...

**Catherine A.** from Lilydale!  
Congratulations!



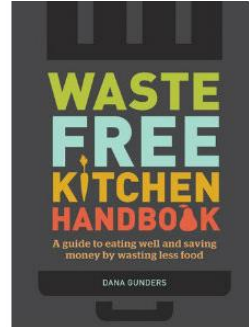
Take a look at the cool prize Catherine won!

We are rapidly approaching the end! Keep up the great work and thank you for participating!

*Appendix I: Weekly Prize List*



Anchor Glass food storage set



Waste Free Kitchen Handbook



Spice 'n Spoon silicone lids



Fenugreen FreshPaper  
Produce Save Sheets



Artland Glass Herb Keeper

## Appendix J: Weekly Weights Survey

**Food Waste Weight**

\* Required

**Full Name: \***

Your answer

**Which group are you in? \***

Choose

**Which week are you entering weight for? \***

Choose

**What is your food waste weight? \***

What does the scale show in pounds (lb) ?

Your answer

**How many times did you go out to eat this past week? \***

none

1-2

3-4

5 or more

**Do you have any comments, thoughts, or suggestions to share?**

Your answer

**SUBMIT**

Never submit passwords through Google Forms.

# Appendix K: Food Waste Pilot Participant Pre-Survey

## “Control”/Apple Group Survey

### Food Waste Challenge Post-Survey Apple

\* 1. Full name

\* 2. Full address (street, city, zip)

\* 3. Who does the majority of the grocery shopping in your household?

Myself  
 Partner/spouse  
 Family member (not partner/spouse)  
 Other

\* 4. Who does the majority of cooking in your household?

Myself  
 Partner/spouse  
 Family member (not partner/spouse)  
 Other

\* 5. After seeing the amount of wasted food in your household over 6 weeks, which of following best describes your experience?

I waste much less food than I thought  
 I waste less food than I thought  
 I waste about the same amount of food as I thought  
 I waste more food than I thought  
 I waste much more food than I thought

If yes, please explain why you consider food waste to be an issue

If no, please explain why you do not consider food waste to be an issue

\* 7. How strongly do you agree or disagree with the following statements:

	Strongly agree	Agree	Disagree	Strongly disagree
Wasted food is not a problem because it is biodegradable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food purchased but never eaten negatively impacts the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There's enough food in this country so wasting some at home is not a concern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food decomposing in a landfill produces greenhouse gases that contribute to climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned with how many people are struggling with hunger in my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 8. Please rank the following reasons for preventing wasted food with 1 being most important and 5 being least important

⋮  It saves households money

⋮  It reduces the amount of garbage generated

⋮  It saves resources used to produce, distribute, and prepare the food

⋮  It reduces the amount of gasses that contribute to climate change

⋮  It is morally wrong to waste good food

Next

### Food Waste Challenge Overall

\* 15. What was the most difficult part about the challenge?

\* 16. What was the most insightful part about the challenge?

17. Do you have any suggestions about how Dakota County can improve this program?

18. Any other comments to share?

Prev Done



# “Teach Themselves”/Orange and “Intense”/Banana Groups Survey

## Food Waste Challenge Post-Survey

\* 1. Full name

\* 2. Full address (street, city, zip)

\* 3. Who does the majority of the grocery shopping in your household?

- Myself
- Partner/spouse
- Family member (not partner/spouse)
- Other

\* 4. Who does the majority of cooking in your household?

- Myself
- Partner/spouse
- Family member (not partner/spouse)
- Other

\* 5. After seeing the amount of wasted food in your household over 6 weeks, which of following best describes your experience?

- I waste much less food than I thought
- I waste less food than I thought
- I waste about the same amount of food as I thought
- I waste more food than I thought
- I waste much more food than I thought

\* 6. Do you think food waste is an environmental or social issue?

If yes, please explain why you consider food waste to be an issue

If no, please explain why you do not consider food waste to be an issue

\* 7. How strongly do you agree or disagree with the following statements:

	Strongly agree	Agree	Disagree	Strongly disagree
Wasted food is not a problem because it is biodegradable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food purchased but never eaten negatively impacts the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There's enough food in this country so wasting some at home is not a concern	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food decomposing in a landfill produces greenhouse gases that contribute to climate change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am concerned with how many people are struggling with hunger in my community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

\* 8. Please rank the following reasons for preventing wasted food with 1 being most important and 5 being least important

::	<input type="text"/>	It saves households money
::	<input type="text"/>	It reduces the amount of garbage generated
::	<input type="text"/>	It saves resources used to produce, distribute, and prepare the food
::	<input type="text"/>	It reduces the amount of gasses that contribute to climate change
::	<input type="text"/>	It is morally wrong to waste good food

Next

**\* 9. Please rate the strategies and tools used during the challenge in terms of how helpful it was:**

	Very helpful	Somewhat helpful	Not very helpful	Not helpful at all	I chose not to use this tool
Taking stock of your pantry and fridge before going to the grocery store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a shopping list with meals in mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing fresh produce in advance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eureka Recycling's white 9 page produce storage guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
King County's blue 1 page produce storage guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Eat First" stickers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reinventing leftover ingredients into new meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better understanding of "Use By" and "Sell By" dates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 10. Which strategy did your household find MOST helpful?**

- Smart Shopping** (take stock of your pantry and fridge first, make a shopping list with meals in mind)
- Smart Prep and Storage** (chop fresh produce in advance, store produce correctly to extend shelf-life)
- Smart Saving** ("Eat First" prompt, reinventing leftover ingredients)

**\* 11. Which strategy did your family find LEAST helpful?**

- Smart Shopping** (take stock of your pantry and fridge first, make a shopping list with meals in mind)
- Smart Prep and Storage** (chop fresh produce in advance, store produce correctly to extend shelf-life)
- Smart Saving** ("Eat First" prompt, reinventing leftover ingredients)

**\* 12. Please rate the strategies and tools used during the challenge in terms of ease to understand and implement:**

	Very easy	Somewhat easy	Not very easy	Not easy at all	I chose not to use this tool
Taking stock of your pantry and fridge before going to the grocery store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a shopping list with meals in mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing fresh produce in advance store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eureka Recycling's white 9 page produce storage guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
King County's blue 1 page produce storage guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Eat First" stickers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reinventing leftover ingredients into new meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better understanding of "Use By" and "Sell By" dates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**\* 13. How likely is your household to continue to use the following tools and strategies in the future:**

	Very likely	Somewhat likely	Somewhat unlikely	Very unlikely
Taking stock of your pantry and fridge before going to the grocery store	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making a shopping list with meals in mind	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing fresh produce in advance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Eureka Recycling's white 9 page produce storage guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
King County's blue 1 page produce storage guide	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Eat First" stickers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reinventing leftover ingredients into new meals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Better understanding of "Use By" and "Sell By" dates	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**14. Were there any tools you wish we would've used? Or any tools you found yourself that you'd like to share with Dakota County?**

Prev Next

**\* 15. What was the most difficult part about the challenge?**

**\* 16. What was the most insightful part about the challenge?**

**17. Do you have any suggestions about how Dakota County can improve this program?**

**18. Any other comments to share?**

Prev Done

