

Food: Too Good to Waste

Implementation Guide and Toolkit

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Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Table of Contents

Section	Page
1.0 Introduction	2
2.0 Small-Scale Campaign Strategies and Behavior Change Tools	5
3.0 Small-Scale Campaign Implementation Guidance	8
4.0 Scaling Up from Small- to Broad-Scale Campaign	13
5.0 Acknowledgements	14
Appendix A Pilot Implementation Descriptions	16
Appendix B Small-Scale Campaign Planning Guide	19
Appendix C Customizing Get Smart: Take the Challenge	20
Appendix D Toolkit	23

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

1.0 Introduction

1.1 Purpose

The *Food: Too Good to Waste (FTGTW) Implementation Guide and Toolkit* is designed for community organizations, local governments, households and others interested in reducing wasteful household food management practices. The Implementation Guide is designed to teach local governments and community organizations how to implement a *Food: Too Good to Waste* campaign in their community using the Toolkit.

The Toolkit, which is found in Appendix D, provides behavior change and outreach tools designed to assist individuals and households to implement strategies to reduce wasted food in their homes. The FTGTW tools use community-based social marketing principles to reduce wasted food from households. A *Food: Too Good to Waste* campaign provides the tools in the Toolkit to families and individuals to help them keep food out of landfills and more money in their pockets.

1.2 The Issue of Wasted Food

In the United States, approximately 31 percent or 133 billion pounds of the 430 billion pounds of the available food supply at the retail and consumer levels in 2010 went uneaten. The total value of this food loss is estimated at \$161 billion.¹

In 2013, Americans generated more than 37 million tons of food waste, 95 percent of which was thrown away into landfills or incinerators.² Wasted food in landfills rots and becomes a significant source of methane, a powerful greenhouse gas. Landfills account for approximately 18 percent of all methane emissions in the U.S.³ Diverting wasted food from landfills reduces greenhouse gas emissions. A number of other, preferable options are available for this wasted food. Would-be-wasted-food can be donated to feed people, or composted to feed the soil.

A significant portion of this wasted food is wholesome and edible. On a per capita basis, 429 pounds of edible food went uneaten. This is astounding, considering that in 2013, 14.3 percent of U.S. households were food insecure at some time during the year,⁴ meaning that all household members did not have access at all times to enough food for an active, healthy lifestyle.

Food truly is **too good to waste**.

1.3 Get Started!

¹ Buzby, J. Hyman, J. Wells, H. (2014). *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States*.

² EPA, OSWER. (2015). *Advancing Sustainable Materials Management: 2013 Fact Sheet*.

³ US EPA. *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2012*. April 2014

⁴ Coleman-Jenson, A. Gregory, C. Singh, A. (2014). *Household Food Security in the United States in 2013*

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

If your organization is interested in reducing wasted food from households, use this Implementation Guide to help you implement a small-scale *Food: Too Good to Waste* campaign to gain experience and to find out what works best in your community. Then, based on what you learn with the small-scale campaign, adjust as appropriate and scale it up into a broad-based campaign!

This Implementation Guide will help you learn how to create a FTGTW campaign in your community or your organization, and includes information and tools that provide ideas for designing your program and getting it started.

1.4 What's Inside?

This guide provides you with detailed information on:

- Designing a small-scale campaign to help you learn what works in your community.
- Using the tools available to you in the FTGTW toolkit most effectively.
- Engaging, recruiting, and retaining participants.
- Providing great information through effective outreach and education.
- Collecting your results and analyzing them in a meaningful way.
- Scaling up an initial successful small-scale campaign into a broader campaign.
- Examples from early pilots across the nation that will help you design your own campaign.

1.5 FTGTW Design

EPA used Community-Based Social Marketing (CBSM) principles and information gathered through background research and focus groups to design the FTGTW strategies and tools in this Guide and Toolkit. The FTGTW tools use CBSM principles to reduce wasted food from households. CBSM uses the power of social groups to encourage changes in behavior toward a common goal. EPA piloted the FTGTW strategies and tools with a number of communities and then refined them based on feedback from the pilots.

1.6 Community-Based Social Marketing Principles

The community based social marketing framework differs from more well-known behavior change models in its emphasis on the social dimensions of human behavior. Organizations considering a small-scale FTGTW campaign are encouraged to use CBSM principles whenever possible. Additional information on CBSM is available at www.cbsm.com.

1.7 Small-Scale Campaign Objectives

A FTGTW campaign aims to engage households in efforts to reduce wasted food. A small-scale campaign helps organizations interested in wasted food reduction gain knowledge of the wasted food issue and the CBSM approach to behavioral change. This experience is crucial to success in scaling up the small-scale campaign to a broader campaign. This

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Implementation Guide focuses primarily on small-scale campaign design and implementation, but also includes supplemental information on implementing a broader campaign.

The small-scale campaign's measurement objectives are two-fold:

- **Determine Small-Scale Campaign Reach and Effectiveness:** Did the campaign result in the desired behavior changes? This includes assessments of participation rates and strategy and tool effectiveness.
- **Determine Small-Scale Campaign Impact:** Did the campaign result in quantifiable reductions in wasted food?

1.8 FTGTW Campaign Design Principles

A FTGTW campaign aims to address the needs of a community by using CBSM principles and should be designed with the following principles in mind:

- **Remove or minimize barriers to preferred behaviors and emphasize benefits:** Making it easy for people to measure their waste at the individual household level will objectively demonstrate the opportunity to reduce waste and save money, resulting in greater participant retention rates. Providing scales can help quantify the opportunity to reduce waste.
- **Focus on target populations:** Strategies and outreach must be tailored for your intended audience. The strategies and tools in the toolkit have been designed specifically for particular target populations that have the potential to achieve large waste reductions. The choice of other target populations may require message and tool modifications.
- **Engage at the community level:** Behavior change is strongly influenced by membership in communities or social networks. Seek commitments to engage in behavior change in social groups, for example in neighborhood associations, community groups, church groups, and social networks.
- **Emphasize personal contact:** Campaigns that use personal contact to engage participation have greater success in recruiting and retaining participants. As noted by the Australian Environment Protection Authority in New South Wales carrying out the Love Food Hate Waste campaign (www.lovefoodhatewaste.nsw.gov.au), "Media and communications helps to create the 'buzz' around the issue yet direct outreach/education provides householders with the skills and capacity to make the change."
- **Create feedback:** Practice alone doesn't change behavior. Creating feedback is essential. Measuring the amount of food going to waste provides feedback by making wasted food and lost money visible and tangible.
- **Make the social norm visible:** The FTGTW campaign's goal is to create a new social norm that reducing household wasted food is a community value. Giving the new norm visibility, for example, by publicizing participation rates, will give further momentum to a campaign.
- **Contextualize preferred behaviors:** To motivate and sustain behavioral changes, draw the linkages between household practices and environmental and social issues on a broader level through stories and other means.
- **Speak to community values:** Adapt messages and tools to the needs of the community.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Engage the community—even as early as the design phase. Conduct outreach through social networks and webs of relationships important to target audiences.

- **Leverage existing resources:** Call on communities to be resourceful in utilizing existing networks and organizations. This encourages engagement of community-based partners in campaign implementation.
- **Design for depth and breadth:** To achieve significant reductions in wasted food at the community level, target behaviors that have a significant impact at the household level (depth) and engage a significant percentage of the general population (breadth).
- **Collect evidence for campaign design:** Measurement provides a solid evidence base to demonstrate the effectiveness of the FTGTW strategies and tools. This information will help in scaling up the small-scale campaign to a broad-scale campaign.

2.0 FTGTW Small-scale Campaign Strategies and Behavior Change Tools

The FTGTW Toolkit identifies five behavior changes that have significant potential to reduce wasted food in households, identifies strategies to achieve these behavior changes, and provides tools based on the strategies to help people make the behavioral changes. The tools in the FTGTW Toolkit are designed for community organizations to provide to community members as part of their FTGTW small-scale campaign. Community members may include households, consumers, residents, social networks and individuals. In this guide the strategies and associated tools have been refined to reflect findings on tool effectiveness from FTGTW pilot campaigns. Two additional outreach tools are included to support the general strategy of raising awareness and education. The strategies and associated tools are identified in the chart below. The tools are found in the Toolkit in Appendix D.

<i>Food: Too Good To Waste Strategies and Tools</i>			
Strategy	Tool	Action	Purpose
Get Smart: See How Much Food (and Money) You Are Throwing Away	Get Smart: Take the Challenge	Behavior Change	Actively engage participants in learning about how they manage food in their household; measuring progress
Smart Shopping: Buy What You Need	Smart Shopping: Shop with Meals in Mind	Behavior Change	Encourage participants to plan their food needs ahead of time and only purchase what they will use
Smart Storage: Keep Fruits and Vegetables Fresh	Smart Storage: Fruit and Vegetable Storage Tips	Behavior Change	Provide information for participants to safely store their food so it is good for the meals they planned
Smart Prep: Prep Now, Eat Later	Smart Prep: Prep Now, Eat Later	Behavior Change	Provide tips on saving time in the kitchen by preparing foods ahead of time
Smart Saving: Eat What You Buy	Smart Saving: “Eat First” Sign	Behavior Change	Visually remind participants to eat foods while they are fresh

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Awareness and Education	Fact Sheet: “Consider the Tomato”	Outreach	Educate participants and potential participants
	Workshop Presentation	Outreach	Educate participants and potential participants

2.1 Get Smart: Take the Challenge

The FTGTW Challenge asks participants to track their wasted food generation for a period of two weeks or more before adopting new FTWGW strategies. By tracking the food they discard in their homes, participants become aware of the often surprisingly large quantities of food they are wasting. The Challenge actively engages participants in learning about how they manage food in their household. Early campaigns showed that awareness plays an integral role in motivating participants to adopt new strategies to reduce waste. Waste aversion is a strong psychological motivator, but most households are not aware of how much they waste and may even question if they waste food.

In addition to raising awareness about wasted food behaviors in participating households, this tool presents an opportunity for organizations to evaluate the small-scale campaign’s effectiveness and impact.

The **Get Smart: Take the Challenge** tool consists of instructions and worksheets for households to collect and measure how much food they waste over the course of a two to six week challenge. The worksheets are used to track wasted food.

In the FTGTW Challenge, households are asked to measure the amount of food they waste. Depending on the goals of the Challenge, wasted food may be defined to include both preventable and non-edible wasted food, or only preventable wasted food.

- **Preventable** wasted food is food grown or purchased (and prepared or not) but not eaten because it is spoiled or not needed, and then thrown away.
- **Non-edible** wasted food includes items such as egg shells, bones, fruit pits, and non-edible peels - food parts that are typically discarded during food preparation or consumption.

Wasted food can be measured on either a volume or weight basis or both. In general, the volume method is more easily accomplished in most households. However, the weight method is more accurate. Campaigns may choose to provide scales as an incentive for weight measurement.

The length of time of the Challenge, the choice between measuring waste by volume or by weight, and the choice between tracking and collecting data on preventable and/or non-

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

edible waste will depend on the implementing organization's objectives. There is a trade-off between keeping measurement simple and how much data you wish to collect (see data collection in Section 3.4).

Most challenges have averaged four to six weeks in length. The suggested length is six weeks – two weeks to establish a measuring routine and four weeks to test different strategies and create new habits. The length, however, can be varied based on campaign objectives. If the purpose of the Challenge is to raise household awareness of wasted food in their homes, two weeks may be a sufficient length of time.

Keep participation convenient. Recruitment and retention may be greater if scales are offered for weighing wasted food.

2.2 Smart Shopping: Shop with Meals in Mind

The **Smart Shopping: Shop With Meals in Mind** tool provides an easy-to-use template for making shopping lists that prevent food from being wasted. It is designed to encourage meal planning and create awareness around how much food will be needed for upcoming meals. This tool is an example of priming, where people are more likely to do something when they are asked — in this case, buying only what they reasonably expect to use until their next shopping trip. The tool also focuses on the cost-saving benefits of using already purchased food, communicated by the phrase, “Shop your kitchen first.” This tool helps simplify food management through meal planning.

2.3 Smart Storage: Fruit and Vegetable Storage Tips

The **Smart Storage: Fruit and Vegetable Storage Tips** tool is a visual prompt to remind participants how to keep produce fresh. Prompts are particularly useful when designed to engage people in positive behaviors and presented in close proximity to where the action takes place. The prompt provides useful information on keeping produce fresh. It is printed in bright colors on a half sheet suitable for posting on the refrigerator. The prompt can also be distributed at tabling and community workshop events. In FTGTW pilots many households found this guide to be very effective.

2.4 Smart Prep: Prep Now, Eat Later

The **Smart Prep: Prep Now, Eat Later** tool provides consumers helpful tips on preparing perishable foods soon after shopping. Prepared perishables are easier to use, making them more likely to be used later on, thus reducing waste and saving time and money.

2.5 Smart Saving: “Eat First”

The **Smart Saving: "Eat First"** tool is designed as a visual prompt. Households are encouraged to designate an area in the refrigerator for food that should be eaten relatively soon to prevent spoiling, and posting the prompt as a visual reminder.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

2.6 Awareness and Education Fact Sheet: “Consider the Tomato”

The “**Consider the Tomato**” tool is designed to attract attention to and raise awareness of the issue of wasted food. It tells a story about why wasted food matters and provides context for wasted food as an environmental and economic issue. The fact sheet can be handed out at community events and venues, such as farmers markets and local grocery stores. It can also be used as part of tabling at community events, which provides an opportunity for one-on-one interaction with the public and potential FTGTW small-scale campaign participants. Displayed in larger size, the fact sheet can be used to attract people to the table to learn more.

2.7 Awareness and Education: Workshop Presentation

The **Workshop Presentation** tool is designed for FTGTW campaign organizers to use to make presentations at workshops or community meetings. The presentation can be used to introduce the FTGTW campaign and the FTGTW tools to community members and to recruit participants.

3.0 Small-Scale Campaign Implementation Guidance

In general, implementing a FTGTW small-scale campaign involves several overlapping steps: design, materials preparation, outreach and recruitment, monitoring and support, data collection, and analyzing and sharing results. To have a successful campaign, it is important to consider the design elements discussed below.

Insight and ideas for FTGTW small-scale campaign design and implementation can be found in Appendix A.

3.1 Small-Scale Campaign Design

Small-scale campaign design involves addressing the following design elements:

- Objectives (Section 3.1.1)
- Target Population and Size (Section 3.1.2)
- Targeted Strategies and Tools (Section 3.1.3)
- Resources (Section 3.1.4)
- Time Frame and Small-Scale campaign Duration (Section 3.1.5)
- Outreach and Community Partners (Section 3.3)
- Information Collection and Analysis (Section 3.4)

Appendix B provides a checklist of questions to inform the design of your small-scale campaign.

3.1.1 Identifying Implementing Organization’s Objectives

In order to gather internal support for a FTGTW campaign, organizations should consider how

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

the campaign aligns with their organization's long-term objectives. Examples of well-aligned longer-term objectives include reducing solid waste management costs, reducing carbon footprint or building a sustainable food system. Clear objectives will also help to allocate small-scale campaign resources effectively.

Depending on the organization, it may take up to several months to obtain leadership buy-in and allocate the necessary resources for a FTGTW campaign.

3.1.2 Selecting Target Population and Sample Size

The target population refers to the broader demographic that the implementing organization hopes to impact with the FTGTW campaign. The sample size refers to the number of households that actively participate in the small-scale campaign. Generally, the target population size is larger than the sample size.

A number of considerations go into selecting a target population and sample size, including:

- the demographics of the population the campaign is designed to reach,
- the type and amount of resources the implementing organization has available,
- the time frame planned for the campaign, and
- the implementing organization's objectives for the campaign.

The sample size for the small-scale campaign should be large enough to draw conclusions relative to the implementing organization's objectives for a broad-based campaign.

In selecting your target population, be aware that the FTGTW messaging and strategies were crafted for two principal target populations: families with young children, and young adults (ages approximately from 18 to 30). If your organization chooses to focus on an alternative demographic you should consider whether the existing tools and messaging are appropriate for your selected demographic.

As noted in Section 1.7 on design principles, to achieve significant reductions in wasted food at the community level, it is necessary to engage and sustain behaviors that have a substantial impact at the household level (depth) as well as engage a significant percentage of the general population in adopting the behaviors (breadth).

3.1.3 Choosing Targeted Behaviors and Tools

The FTGTW toolkit identifies five behavior changes with significant potential to reduce wasted food in households and provides tools that can be used to achieve these behavioral changes, as well as to raise awareness of the issue of wasted food. Organizations designing a FTGTW small-scale campaign may choose to focus on one or more of the behavior change strategies, or may use them all.

It is recommended that careful consideration be given to choosing the strategies to include in

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

the small-scale campaign based on budget, intended reach and objectives.

3.1.4 Allocating Resources

The FTGTW toolkit provides the essential materials for a FTGTW small-scale campaign. Implementing organizations should carefully consider what supporting resources, including staff and volunteer time, are available or could be provided by partners and other organizations. Planners should develop a budget of funds and other resources.

Implementation costs include printing costs, costs of measurement bags used in the Challenge (if provided), and staff time. In addition, providing incentive items to engage individual households may be considered and would require resources. For example, food scales may be used as incentives. Scales also provide accurate data on the impact of the behavior changes.

Staff time for a small-scale campaign may include time spent:

- gaining organizational approval,
- modifying the tools for local use,
- preparing materials,
- conducting outreach and follow-up, and
- evaluating and disseminating small-scale campaign results.

For more information on how much time might be required for various tasks refer to the FTGTW pilot descriptions in Appendix A.

In many cases local government will take the lead in implementing the FTGTW campaign. Other community organizations may also take the lead, may participate as partners, and may provide additional resources.

Potential partners include:

- Interested government programs may include waste management, climate change response, and food programs.
- Civic or community groups and non-profits may have constituencies who are in the target audience or who have an interest in related issues. These organizations are able to do outreach through their social networks.
- Food purveyors (restaurants, groceries) and other businesses may assist with outreach and also provide incentive goods.
- Farmers markets, community supported agriculture (CSA) businesses and municipal waste management companies are also likely partners.
- Schools may wish to integrate information on wasted food prevention into their curriculum and colleges and universities often support sustainability programs aimed at the young adult demographic.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

3.1.5 Timing and Length of Small-Scale Campaign

The overall length of a small-scale campaign may range from four to eight months. This includes time for planning, adapting and preparing materials, outreach and recruiting households, engaging households during the FTGTW Challenge, follow-up and analysis, and results dissemination. The pilot descriptions in Appendix A include information on how long it took organizations to perform various tasks.

It is recommended that FTGTW campaigns not be scheduled to coincide with major holiday periods as this is likely to reduce consistent participation.

3.2 Tools Preparation

Time should be allotted for adapting the FTGTW behavior change and outreach tools to the organization's specific needs. It is important to begin sufficiently in advance of your outreach start date. Tool modifications should be carefully vetted to ensure that they are consistent with the organization's objectives and provide meaningful feedback.

The choice of measurement tools for the Get Smart: Take the Challenge is an important consideration. The waste collection container should preferably be transparent with markings on the outside of the container. Appendix C discusses potential modifications to the **Get Smart: Take the Challenge** measurement bag tool, instructions and worksheet.

Particular attention should be given to modifying the instructions to households for taking the challenge. Even small changes can have unintended consequences. For example, discarding the instruction to measure cumulative waste at the end of each week could prevent comparing or averaging the amounts from different households.

3.3 Outreach, Recruitment and Retention

A major task of FTGTW campaign implementation is outreach and recruitment. Outreach plans should address appropriate communication channels, venues and community partners for reaching the intended target audience. Two CBSM principles that govern successful outreach and challenge recruitment plans are delivering at the community level and emphasizing personal contact. A good rule of thumb in household recruitment and retention is to engage early and often.

The value of personal contact in influencing people to attempt new behaviors is well established in the CBSM literature. The likelihood of a commitment to adopt new behaviors is much greater in the case of personal contact. This is even more strongly reinforced when the person making the contact has influence in the person's social network. Personal recruitment can be reinforced through additional forms of communication, such as mail and email.

Implementing organizations are encouraged to think about outreach to target audiences through social networks (or webs of relationships) in addition to through traditional media.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Engaging households through participant gatherings/workshops that include food and/or beverages may be a successful strategy. In addition to providing an excellent opportunity to present wasted food strategies and distribute tools, these gatherings reinforce the social nature of the FTGTW campaign by encouraging behavior change through membership and network commitment. Workshop participants can be encouraged to share personal experiences with wasted food, which is a form of social learning. Suggested settings and key engagement steps for recruiting participants are outlined in Figure 1.

Figure 1: *Key engagement steps for recruiting challenge participants.*



Tabling at community events presents an opportunity to recruit challenge participants. Clear objectives for tabling efforts will help in preparation, including likely numbers of public interactions. You may want to contact the event organizers to learn about expected event traffic. You may wish to share materials such as the storage guide, shopping list template and/or the Challenge awareness/measurement tool, as well as a more general informational piece on your program or on the wasted food issue.

A key way to increase household retention is to reduce barriers to participation. How the implementing organization decides to do this depends on available resources. Besides providing printed behavior change tools, organizations may consider distributing scales to measure wasted food, and/or bins in which to place the measurement bags. Incentives may also play a role in increased retention rates. For example, offering grocery coupons or prizes may encourage participation.

3.4 Follow-up Information and Analysis

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Information that may guide and improve campaigns are described below.

- **Outreach:** Record your observations about the effectiveness of outreach methods used.
- **Tabling:** Record how many people attended the event and the number of table engagements by type. Examples include: how many people took a handout; how many had a conversation with table staff/volunteers; how many signed up for the Challenge.
- **Workshop:** Record how many people were invited to the workshop, what you know about their demographics, and how many actually attended the workshop.

Additional information used by implementing organizations may include:

- Observational and demographic information from household participants for calculating effectiveness.
- Household measurements of wasted food amounts for calculating impact.

By conducting a FTGTW Challenge, organizations can determine the campaign's impact at the household level. The goal is to determine whether the campaign resulted in a quantifiable reduction in wasted food for the participating households relative to their baseline amounts. Organizations can calculate impact by comparing the average amount wasted in the initial weeks to the average for the final week.

Participant observations are a rich source of qualitative data that can be used to convey the significance of wasted food awareness to a wider audience and thereby create a new social standard around behaviors that reduce wasted food.

For clear results, organizations should carefully plan their household data collection prior to launching the challenge. It is recommended that the organization develop a spreadsheet for recording data linked to the reporting mechanism, for example, a web-based survey service. Challenge participants will find it easier to report results if data collection instructions are reviewed with them at the start of the Challenge. Higher retention rates may be associated with frequent data collection.

4.0 Moving from Small- to Broad-Scale Campaign

When designing a broad-scale campaign, consider how the small-scale campaign results inform the direction and specific content of the campaign. In a broad-scale campaign, the organization's long-term objectives also come into play. How wasted food prevention complements and integrates with existing programs and helps to meet the organization's goals should be considered.

Good messaging is an important element in the successful integration of FTGTW messages with existing programs. For example, in integrating wasted food prevention with compost collection

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

programs, wasted food prevention should be discussed first, before composting, to give waste prevention the proper emphasis.

Scaling small-scale campaigns up to broad-scale campaigns involves moving from a depth approach to one that emphasizes both breadth and depth. This involves raising the visibility of the wasted food issue at the community level, usually with some type of broad-based media and outreach activities.

To gauge the overall effectiveness of a broad-scale campaign the organization should assess the community's awareness of wasted food as an issue and identify appropriate measures of behavior change and reduced waste.

5.0 Acknowledgements

The original 2012 *Food: Too Good To Waste Toolkit*, on which this document is based, was developed for the United States Environmental Protection Agency under contract with EcoPraxis, Colehour+Cohen and Tetra Tech EMI; Contract #EP-W-13-002.

The EPA acknowledges the outstanding support and collaboration of the West Coast Climate Forum in sharing their experiences, which informed the development of the original document. Special thanks go to members of the West Coast Climate Forum from state and local governments who supported and shared their experience.

The following are acknowledged for their invaluable contributions:

- Dr. Viki Sonntag, EcoPraxis
- Julie Colehour and Amanda Godwin, Colehour+ Cohen
- Joanna Canepa and Tommie Jean, Tetra Tech EMI
- Project and Planning Team Lead: Ashley Zanolli, EPA Region 10
- EPA Project Planning Team:
 - o EPA Region 10: Theresa Blaine, Christina Colt, Bill Dunbar, Lisa McArthur, Sandra Poulson, Vicky Salazar, and Melissa Winters, Daniel Brody (NNEMS fellow), Megan Curtis-Murphy, McKenna Morrigan, and Veronica Pardo and Doré Mangan (intern)
 - o EPA Region 9: Shannon Davis and Andre Villasenor
 - o EPA Headquarters (OSWER): Linda Barr, John Cross, and Jean Schwab
- State and Government Partners:
 - o Minnesota Pollution Control Agency, Madalyn Cioci and Colleen Hetzel
 - o Oregon Dept. of Environmental Quality, David Allaway and Leslie Kochan
 - o Washington Department of Agriculture, Chery Sullivan
 - o Washington Department of Ecology, Michelle Andrews and Mary Harrington
- Local Government Partners
 - o Boulder County (CO), Lisa Friend
 - o City of Chula Vista (CA), David Didonato and Lynn France
 - o City of Gresham (OR), Karen Guillen-Chapman and Tristen Whitehead
 - o City of Oakland (CA), Mark Gigliardi and Wanda Redic

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

- City of Portland (OR), Lauren Norris, Alicia Polacok, and Arianne Sperry
 - City of Redmond (WA), Stacy Auer
 - City of Santa Monica (CA), Shannon Parry
 - City of Seattle (WA), Jeanie Boawn and Sharon Lerman
 - City of Tacoma (WA), Jetta Antonakos
 - City of Vancouver (WA), Tanya Gray
 - King County (WA), Josh Marx and Karen May
 - Oregon Metro (OR), Jennifer Erikson and Meg Lynch
 - Palo Alto (CA), Wendy Hediger and Matt Krupp
 - San Benito County (CA), Lisa Jensema and Mandy Rose
 - Seattle Public Utilities (WA), Veronica Fincher and Carl Woestwin
 - Snohomish County (WA), Segoo Jackson
 - Thurston County (WA), Brian Stafki
- **Other acknowledgements**
- Eureka Recycling (MN Grantee), Lynn Hoffman
 - FoodShift, Dana Frasz
 - Göteborgs Universitet, Gothenburg, Sweden, Alexandra Lavers
 - GRACE Communications Foundation, Chris Hunt
 - Green Cities CA, Carol Misseldine
 - International Council for Local Environmental Initiatives (ICLEI), Monica Gilchrist
 - Jonathan Bloom, author
 - Kupu, HI, Nichole Chatterson
 - Naropa University, Santiago Giraldo Anduaga
 - Natural Resources Defense Council (NRDC), Dana Gunders
 - UK WRAP (United Kingdom Waste and Resources Action Programme), Andrew Parry

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Appendix A: Pilot Implementation Descriptions

The following community and local government pilot descriptions share insight and ideas for FTGTW small-scale campaign design and implementation. The experiences of these, and other pilots contributed to the design of FTGTW and the descriptions include observations about successes and barriers the communities encountered. Note that all of the FTGTW pilots chose to introduce all the strategies in connection with the FTGTW Challenge.

King County, Washington

Objectives: Reducing wasted food is a priority for King County in its effort to achieve Zero Waste and climate action goals, since food accounts for 14 percent of the County's consumption-based Greenhouse Gas emissions. The specific aim of the King County pilot was to test the effectiveness of the pilot messaging and tools in reducing wasted food and to gauge the impact of a CBSM campaign based on these results.

Target Population and Sample Size: The target audience for the King County implementation was families with small children. The pilot was introduced to 110 families with a child enrolled in the 4th grade at the public elementary school in Fall City, a town between rural and urban zones with a population of approximately 2,000.

Targeted Behaviors: During the pilot, all five waste prevention behaviors were introduced to the families.

Tools Used in Pilot: This pilot used both the Shopping List Template and the Fruit and Storage Guide tools. They also structured the pilot around a modified Challenge as described under the subheading "Implementation Choices." In addition, King County developed several other tools including: a Top Five Ways to Waste Less Food information sheet; Packing a Waste Free Lunch tip sheet; a blog to keep families informed and motivated; a Food: Too Good to Waste daily tip PowerPoint presentation by the teacher; and a Learn More resource list.

Community Partners: King County partnered with a local elementary school through their Green Schools Program. The marketing firm of Colehour and Cohen who have special expertise in CBSM campaigns in developing and implementing their pilot assisted them.

Length of Pilot: The participant engagement period lasted approximately two months, including time to recruit and assess and acknowledge the families' participation. The length of the Challenge was five weeks.

Implementation Choices: The invitation to participate in the Get Smart: Take the Challenge was sent via email to the families of the 4th grade children. A King County representative then visited the classroom to explain to the students why wasted food is bad for the environment and household economics and distributed the measurement tools (bag and weekly worksheets). The teachers incorporated new messages into curricula each week with daily

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

tips/facts. The first week waste collection served to establish a baseline for the volume of food going to waste. Both preventable and non-edible wasted food items were collected in the same measurement bag to simplify the process. At the start of the second week of the pilot, all five pilot strategies were introduced. Thereafter, tools were introduced one at a time at one-week intervals. Students were also presented a daily wasted food reduction tip. All families who completed the challenge were given recognition certificates and entered in a drawing for grocery store gift cards.

Observations: The tools were well received and gave King County confidence in the overall messaging. Students and parents were especially influenced and surprised by how much food (and money) could be saved as a result of simple strategies. As a result of this finding, the county will emphasize potential savings in their broad-scale campaign. On average, families that participated all five weeks reduced their wasted food by 28 percent. However, a “challenge” where people are required to measure waste and report is great for raising awareness but is onerous. Incentives may help to reduce this barrier to participation. In King County teachers assigned homework and the county offered a prize for participation, but still many families did not follow through. During the pilot, King County didn’t have a lot of local resources to give people, so in the full-scale campaign they are putting emphasis on improving the website for King County and including more info about why it’s important.

Honolulu, Hawaii

Objectives: The City and County of Honolulu (CCH) are interested in wasted food management solutions that would both lower the costs of landfilling as well as offset the cost of importing food to the island. The Honolulu pilot sought to test CBSM wasted food reduction strategies and tools including a cookbook with local chef-contributed recipes and wasted food prevention tips. It also aimed to see if there was a connection between preventable wasted food and the number of meals outside the home. The cookbook is available at [http://www.opala.org/solid_waste/pdfs/Food Too Good to Waste.pdf](http://www.opala.org/solid_waste/pdfs/Food_Too_Good_to_Waste.pdf)

Target Population and Sample Size: Out of approximately 210 emails sent, 17 households were recruited to participate in a four-week challenge. The principal audience was young adults although two households had individuals in their fifties and two households had children. The average age of participants was 34.

Targeted Behaviors: All five behaviors were tested but the “Buy What You Need” strategy was combined with the “Make a Shopping List with Meals in Mind” strategy and relabeled “Smart Shopping.” In addition, households were encouraged to test recipes for using up leftover ingredients.

Tools Used in Pilot: The Workshop Presentation was used to introduce the Get Smart: Take the Challenge to the household participants. Behavior support tools included: a food storage guide developed by Eureka Recycling; a menu planner used in the Australian campaign; an “Eat First” prompt; and a cookbook containing recipes for using up leftover ingredients developed by local chefs.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Community Partners: Alexander Lavers researched, directed and managed the pilot in fulfillment of a Master degree in Environmental Sciences from the University of Gothenburg, Sweden.

Length of Pilot: The total elapsed time of the pilot was four months. Recruitment took approximately three weeks, while the length of the Challenge was four weeks. Adapting, preparing and purchasing materials for the challenge took three weeks as did the data analysis. In addition, the project organizer spent several months coordinating the cookbook's development with the contributing restaurants, the graphic designer, and the county.

Implementation Choices: Recruitment was made by email using personal contacts in two social networks, the Recycling Branch of the Refuse Division of CCH and a Honolulu running club. Challenge participants were asked to measure preventable and non-edible wasted food for two weeks after which they measured both types of waste for an additional two weeks while trying wasted food reduction strategies. Non-pilot study cookbook recipients will receive an option to fill out a survey on their experience with the cookbook/toolkit; in return for their responses they will receive a coupon to a restaurant featured in the cookbook.

Observations: Participation and retention was facilitated by early and frequent engagement. Pilot participants saw a 19.6 percent reduction in preventable wasted food in weeks using wasted food prevention strategies compared to baseline weeks. Households that did not see a reduction in wasted food had irregular events that affected their success. There was significant variability in the wasted food collection data possibly related to age. Older participants started with less wasted food. Households with members aged 28 to 34 achieved the largest reduction but started with more waste.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Appendix B: *Food: Too Good to Waste* Small-Scale Campaign Planning Guide

You can use the following questions as a checklist for small-scale campaign planning.

Objectives (Section 3.1.1)

1. How is this small-scale campaign relevant to your community/government organization's goals and objectives?
2. What are your small-scale campaign goals and objectives?
3. What is your experience with CBSM?
4. Who within your organization needs to give approval to the small-scale campaign?

Target Population and Sample Size (Section 3.1.2)

1. Who is your target audience and why?
2. How large is your sample size?
3. Does the sample size reflect an acceptable trade-off between depth and breadth relative to your organization's objectives?
4. Do the sample demographics reflect your target audience in the larger population?

Targeted Strategies and Tools (Section 3.1.3):

1. What strategies and tools are you choosing to target?

Resources (Section 3.1.4):

1. What is the proposed budget for the small-scale campaign?
2. How much staff time is allocated for the small-scale campaign?
3. What additional tools and resources do you have to support implementation?
4. Who are your community partners, if any?

Time Frame and Small-Scale campaign Implementation Length (Section 3.1.5):

1. What is your timeline/timeframe for implementing this small-scale campaign?
2. How long is your small-scale campaign implementation (period in which you engage households)?

Outreach and Community Partners (Section 3.3):

1. What is your outreach and recruitment strategy?
2. How will you keep participants engaged in the small-scale campaign?
3. How often do you plan to engage directly with participants?
4. Will the small-scale campaign be implemented as part of an existing program(s)? How will this affect outreach?
5. Have you identified community partners to help with this effort? How will they help?
6. Are you offering incentives as part of your outreach or engagement strategy?

Data Collection (Section 3.4):

1. How much data will you collect?
2. What types of data will you collect?
3. How does this data serve your small-scale campaign objectives?
4. What systems do you need to put in place to collect this data?

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Appendix C: Customizing Get Smart: Take the Challenge

This appendix discusses potential modifications to the **Get Smart: Take the Challenge** measurement bag tool, instructions and worksheet. Any changes in wording of the instructions should be carefully vetted to ensure that they are consistent with the desired outcomes. The default instructions for taking the FTGTW Challenge are:

- Households measure their waste for six weeks with a two week baseline period.
- Households collect and measure preventable waste.
- Households measure both the volume and weight of wasted food.
- The community partner provides households a kitchen scale.
- Households can try any strategy or set of strategies.
- The community partner is the contact for assistance and to return results.

Length of Challenge: The tool, instructions and worksheet will all need to be modified if you select a different time length for the challenge or for the baseline data collection period. A minimum of six weeks is recommended to establish patterns but four-week challenges have been successful. A longer period will help to solidify patterns but may affect your retention rate.

Type of Wasted Food Collected: The instructions will need to be modified if you choose to have households collect something other than the preventable fraction. Collecting the preventable fraction focuses the household on that portion of wasted food they can prevent. Collecting all wasted food may present an opportunity to compare the results to per capita averages.

Types of Measurements Taken: The instructions and worksheet will need to be modified if you elect not to take weight measurements.

Number and Types of Strategies Tested: The instructions will need to be modified if you choose to focus on select strategies or change the set of strategies. Also, if you are introducing new tools you will want to change the list at the bottom of the first page of the instructions.

Kitchen Scale Provided: The instructions and the worksheet will need to be modified if scales are not provided. However, if you plan to have the household measure weights with their own scales, then you will just need to remove the scales from the list of materials provided at the bottom of the first page of the instructions.

Contact for Assistance: There is a space in the instructions for the community partner to put in their contact information.

Implementation Guide and Toolkit -- *Food: Too Good to Waste*

Appendix D: Toolkit

- Get Smart: Take the Challenge
- Smart Shopping: Shop with Meals in Mind
- Smart Storage: Fruit and Vegetable Storage Tips
- Smart Prep: Prep Now, Eat Later
- Smart Saving: “Eat First” Sign
- Fact Sheet: “Consider the Tomato”
- Workshop Presentation

GET SMART: TAKE THE CHALLENGE

KEEP GOOD FOOD FROM GOING TO WASTE

WHAT IS THE CHALLENGE?

Did you know that in 2013 Americans threw 35 million tons of food into landfills and incinerators? Research shows that nearly everyone wastes more than they think they do. The **Food: Too Good to Waste** Challenge will help you figure out how much food is really going to waste in your home and what you can do to waste less. By making small shifts in how you shop for, prepare, and store food, you can save time and money, and keep the valuable resources used to produce and distribute food from going to waste!

WHAT DO YOU NEED?

You only need a few basic tools to get started, which include 1) a pen/pencil, 2) paper or printed worksheets, 3) small garbage bags, and 4) a small scale (optional).

GET SMART: SEE HOW MUCH FOOD (AND MONEY) YOU ARE REALLY THROWING AWAY

WEEKS 1 & 2: Measure how much food your family wastes in a week and record the volume and/or weight.

WEEKS 3 through 5: Try out one or more of the smart strategies listed below while continuing to measure how much goes to waste each week. Keep notes on what works to reduce food waste and what doesn't.

- **Smart Shopping: Buy What You Need** – Make a shopping list with the Meals-In-Mind Shopping List template based on how many meals you expect to eat at home before your next shopping trip. By buying no more than what you expect to use, you will be more likely to use it up and keep it fresh.
- **Smart Storage: Keep Fruits and Vegetables Fresh** – Store produce so it stays fresh longer with the help of the Fruits and Vegetable Storage Guide.
- **Smart Prep: Prep Now, Eat Later** – By preparing perishable foods as soon as possible, preferably post shopping, you'll make it easier to serve snacks and meals later in the week, saving time, effort and money.
- **Smart Saving: Eat What You Buy** – This involves being mindful of leftovers and old ingredients that need using up. The "Eat First" prompt can be used to designate an area in your refrigerator for leftovers and food that won't keep long.

Week 6: Measure and record your final weekly food waste amount. See how much food (and money) you saved compared to weeks one and two.

GET READY

You can find all the printed materials you need to take the FTGTW Challenge available for download at <http://www2.epa.gov/sustainable-management-food>

They include:

- This instruction sheet which includes the recording worksheet.
- Meals in Mind Shopping List Template
- Fruit and Vegetable Storage Guide
- Eat Me First Prompt

GET SMART: TAKE THE CHALLENGE

KEEP GOOD FOOD FROM GOING TO WASTE

TIPS FOR TAKING THE CHALLENGE

1. Explain the challenge to members of your household/community and ask for their participation.
2. At the start of each week, line one paper bag with a green compostable bag. Over the course of the week, place all your PREVENTABLE food waste into the bag. Discard NON-EDIBLE food in the usual manner. (PREVENTABLE food waste is both food you bought to eat but has since spoiled and food that was prepared but not eaten and was then thrown away. NON-EDIBLE food waste is everything you wouldn't normally eat, such as banana peels, egg shells, apple cores and chicken bones.)
3. At the end of each week, measure both the weight and the volume of food waste in the bag. Record both the volume and the weight for the week on the attached worksheet. Once you get started, it should take no more than 15 minutes a week to measure and record your food waste.
4. If the bag fills before the end of seven days, weigh or record the volume of the full bag and record how many days you collected food in that bag. Then begin collection in a new bag. At the end of the week, total your weight and/or volume of food waste for the entire week.
5. After you record the weight and volume of food wasted for the week, dispose of the collection bag, including food, appropriately and as acceptable for your collection service, by composting, through organics collection or in the garbage.
6. Except for the new strategies you try starting in week 3, keep to your usual routine as much as possible during the challenge. For example, unless you regularly clean out your freezer, do not clean it throughout the challenge.
7. At the end of week 6, compare your totals for weeks 1 and 2 to weeks 3 through 6 and see how much food you saved from going to waste! Many families have reduced their food waste by 25% or more.

ADDITIONAL WASTE COLLECTION TIPS:

- If you are concerned about leakage, then you might use a plastic bag as a second liner.
- If concerned about odor, you can clip the top of the bag shut; or you can start using a new bag mid-week, as long as you track the total volume of waste for the whole week.
- Do not collect liquid waste such as soup or food-soiled paper products.

AFTER THE CHALLENGE

Once you've completed the challenge, share your successes and lessons learned with other individuals or organizations who may be interested in reducing wasted food.

For more information on sustainable management of food, please visit <http://www.epa.gov/sustainable-management-food>

GET SMART: TAKE THE CHALLENGE

KEEP GOOD FOOD FROM GOING TO WASTE

RECORDING WORKSHEET

WEEK 1

Start Date: _____ Day of Week: _____
_____ Bag Volume _____ Weight
_____ # of days collected

NOTES (WHAT GOES TO WASTE AND WHY)

WEEK 2

Start Date: _____ Day of Week: _____
_____ Bag Volume _____ Weight
_____ # of days collected

NOTES (WHAT GOES TO WASTE AND WHY)

Totals – Weeks 1 and 2

_____ Bag Volume _____ Weight

Averages – Weeks 1 and 2

Total Volume \div 2 = _____ Total Weight \div 2 = _____

WEEK 3

Start Date: _____ Day of Week: _____
_____ Bag Volume _____ Weight
_____ # of days collected

NOTES (WHAT WORKS, WHAT DOESN'T)

WEEK 4

Start Date: _____ Day of Week: _____
_____ Bag Volume _____ Weight
_____ # of days collected

NOTES (WHAT WORKS, WHAT DOESN'T)

WEEK 5

Start Date: _____ Day of Week: _____
_____ Bag Volume _____ Weight
_____ # of days collected

NOTES (WHAT WORKS, WHAT DOESN'T)

WEEK 6

Start Date: _____ Day of Week: _____
_____ Bag Volume _____ Weight
_____ # of days collected

NOTES (WHAT WORKS, WHAT DOESN'T)

Totals – Weeks 3 through 6

_____ Bag Volume _____ Weight

Averages – Weeks 3 through 6

Total Volume \div 4 = _____ Total Weight \div 4 = _____

SMART SHOPPING: Shop with Meals in Mind

- Think about how many meals you'll eat at home this week and how long before your next shopping trip.
- Next to fresh items on the list, note the quantity you need or number of meals you're buying for.
- Shop your kitchen first and note items you already have.

.....

FOOD ITEM	AMOUNT NEEDED	ALREADY HAVE
Salad greens	Lunch for a week	Enough for one lunch
2% milk	Gallon	NONE
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SMART STORAGE:

Know which fruits and vegetables stay fresh longer inside or outside the fridge.

By storing them for maximum freshness, they will taste better and last longer.



FRUIT AND VEGETABLE STORAGE GUIDE

INSIDE THE FRIDGE

- Apples, berries, and cherries
- Grapes, kiwi, lemons, and oranges
- Melons, nectarines, apricots, peaches, and plums (after ripening at room temperature)
- Avocados, pears, tomatoes (after ripening at room temperature)
- Almost all vegetables and herbs

OUTSIDE THE FRIDGE

- Bananas, mangos, papayas, and pineapples: store in a cool place
- Potatoes / onions: store in a cool, dark place
- Basil and winter squashes: store at room temperature—once cut, store squashes in fridge

MORE STORAGE TIPS

- If you like your fruit at room temperature, take what you will eat for the day out of the fridge in the morning.
 - Many fruits give off natural gases that hasten the spoilage of other nearby produce. Store bananas, apples, and tomatoes by themselves and store fruits and vegetables in different bins.
 - Consider storage bags and containers designed to help extend the life of your produce.
 - To prevent mold, wash berries just before eating.
-

SMART PREP: PREP NOW, EAT LATER

Prepare perishable foods soon after shopping.
It will be easier to whip up meals later in the
week, saving time, effort, and money.

HELPFUL TIPS

- When you get home from the store, take the time to wash, dry, chop, dice, slice, and place your fresh food items in clear storage containers for snacks and easy cooking.
- Befriend your freezer and visit it often. Freeze food such as bread, sliced fruit, or meat that you know you won't be able to eat in time.
- Cut your time in the kitchen by preparing and freezing meals ahead of time.
- Prepare and cook perishable items, then freeze them for use throughout the month. For example, bake and freeze chicken breasts or fry and freeze taco meat.



Smart Saving:

**EAT
FIRST!**

Smart Saving:

**EAT
FIRST!**

WHAT'S UP WITH ALL THE WASTED FOOD?

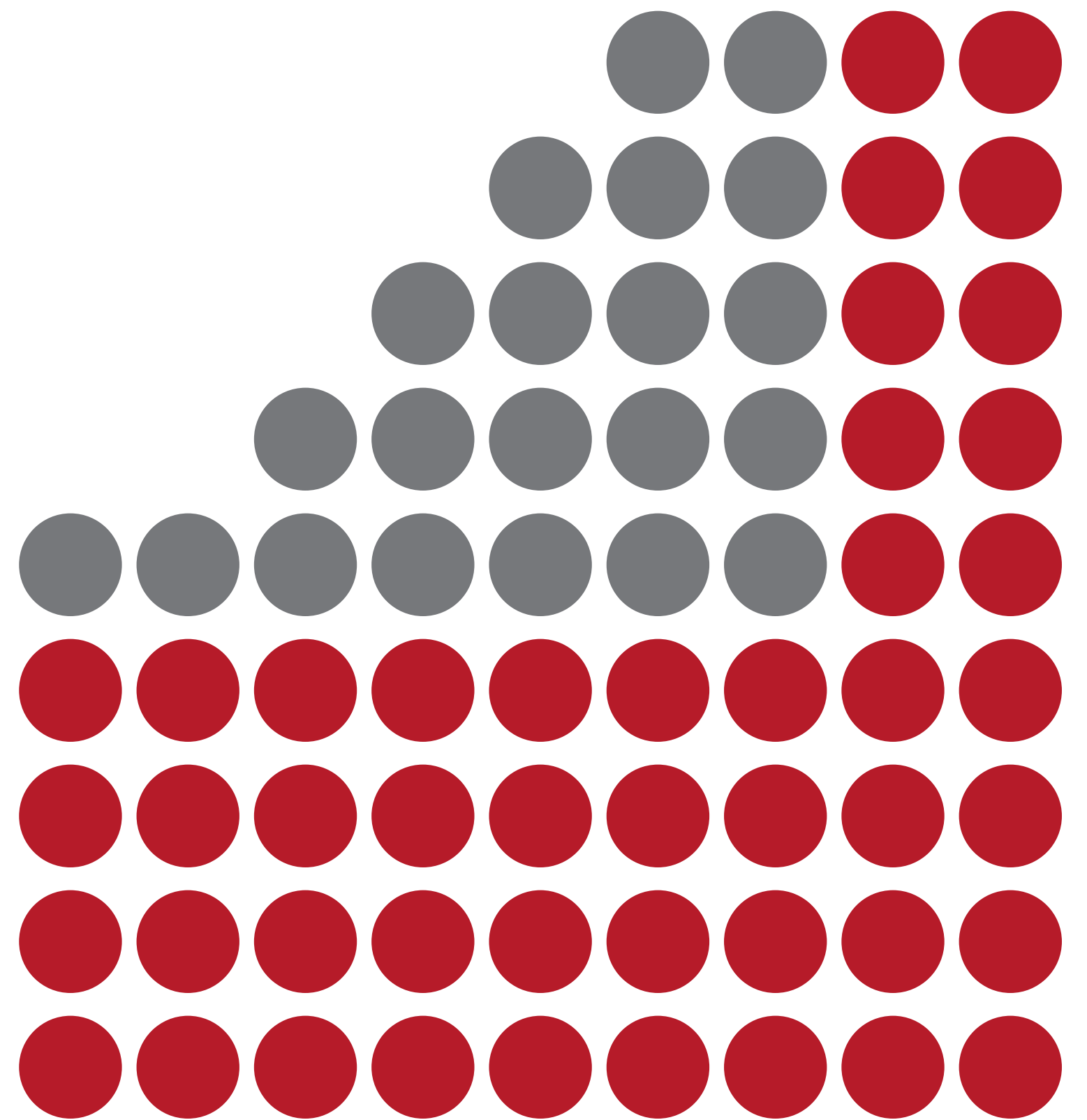
CONSIDER THE TOMATO...

31% of fresh tomatoes bought by U.S. households are thrown out—that's 21 tomatoes a year per person!

\$2.3
BILLION

Throwing out that many tomatoes costs us a bundle—**over \$2.3 billion a year.**

If only it was just tomatoes... the cost of all U.S. household food waste = \$166 BILLION!



WASTED FOOD = WASTED RESOURCES

U.S. FOOD WASTE ACCOUNTS FOR:

25%
of all
our fresh
water use.

Enough
energy to
power the
country for
more than
a week.

Enough
land to feed
the world's
hungry.

By making small shifts in how we shop, store, and prepare food, we can keep the valuable resources used to produce and distribute food from going to waste.

Sources: USDA Economic Research Service,(ERS) Total and Per Capita Value of Food Loss in the United State (2012); USDA ERS , The Value of Retail- and Consumer-Level Fruit and Vegetable Losses in the United States (2011); Venkat, The Climate Change and Economic Impacts of Food Waste in the United States (2012); Hall et al, The Progressive Increase of Food Waste in America and Its Environmental Impacts (2009)




Before the Workshop:

- Add presenter's name and affiliation; date of workshop; and logos of pilot partners to slide 1.
- Print handouts for attendees (Suggest three slides to a page in black/white for taking notes and printing double sided.)

Opening the Workshop and Overview of the Pilot: 2 minutes

Welcome people and thank them for coming.

The Food Too Good to Waste Campaign is a collaborative effort of [your organization], [the EPA], and [other organizations] concerned about the impacts of wasted food. Our role is to engage households in efforts to reduce wasted food through workshops such as this one. We do this in part by utilizing the tools available to us in the Food: Too Good To Waste Toolkit.



The information contained in this *FTGTW Implementation Guide and Toolkit* is intended to inform the public and does not establish or affect legal rights or obligations. Links to non-EPA sites do not imply any official EPA endorsement of, or responsibility for, the opinions, ideas, data or products presented at those sites, or guarantee the validity of the information provided.

Disclaimer language

Workshop Purpose

Examine the problem of wasted food including:

- **How much goes to waste**
- **Why waste happens**
- **Why waste matters**
- **Strategies to reduce waste**

3

Less than 1 minute

Today we will be discussing the issue of wasted food including ...

Purpose

By making small shifts in how we shop, store and prepare food, we can toss less, eat well, simplify our lives, save money and keep the valuable resources used to produce and distribute food from going to waste.

4

1 minute

The premise behind the FTGTW campaign is that by making small changes in our food management behaviors, we can have a large impact, both for ourselves and for the environment and our communities.

Introductions

Introduce yourself by:

- **Giving your name**
- **Telling a short story that illustrates why you care about wasted food**

5

15 to 20 minutes

Depending on whether you have a small or larger number of people attending the workshop, there are two options for introductions.

8 people or less:

Let everyone introduce themselves to the group as a whole. Keep introductions to 2 minutes or less.

8 or more:

Have people pair off to introduce themselves to each other. Give each person 2 to 3 minutes each. After they finish, have a few people share their stories with the group as a whole.

HOW MUCH FOOD IS WASTED?

6

Less than 1 minute

Let's start by looking at how much food is wasted.

In the United States, 31 percent—or 133 billion pounds—of the 430 billion pounds of the available food supply at the retail and consumer levels in 2010 went uneaten.

The estimated total value of food loss at the retail and consumer levels in the United States was \$161.6 billion in 2010. The top three food groups in terms of share of total value of food loss were meat, poultry, and fish (30 percent, \$48 billion); vegetables (19 percent, \$30 billion); and dairy products (17 percent, \$27 billion).

Food accounts for 21% of the American waste stream



7

3 minutes

Currently, in the United States it is estimated that more than 30% of edible food goes to waste.

In 2013, 37 million tons of food waste were generated, of which only 1.84 million tons (5%) was recovered, resulting in 35 million tons going into the nation's landfills and incinerators. Food is the largest stream of municipal solid waste (MSW) materials going to discard, accounting for 21% of the American waste stream.

Wasted Food occurs all along the food value chain - from farm to fork.

- For example, food is sometimes left in the fields because it costs more to harvest than what it could be sold for.
- Food that travels long distances is more likely to perish in route.
- At the retail level, food is wasted when grocery stores or restaurants buy more of a perishable food item than they can sell.

In this workshop, we will focus on wasted food in the household.

Sources:

Buzby, Jean, Wells, Hodan and Jeffrey Hyman. "The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States." USDA, Economic Research Service. Economic Information Bulletin Number 121. February 2014

U.S. EPA. Advancing Sustainable Materials Management: 2013 Fact Sheet. Assessing Trends in Material Generation, Recycling and Disposal in the United States. June 2015

Gustavsson, Jenny, Christel Cederberg, and Ulf Sonesson. 2011. *Global Food Losses and Food Waste: Extent, Causes and Prevention*. Report for Swedish Institute for Food and Biotechnology. http://www.fao.org/fileadmin/user_upload/ags/publications/GFL_web.pdf.

Economic Research Service. 2010. Loss-Adjusted Food Availability: Spreadsheets. <http://ers.usda.gov/Data/FoodConsumption/FoodGuideSpreadsheets.htm>.

WHY WASTE HAPPENS

8

Less than 1 min

Next we look at ...

In one month, a family of 4 wastes ...



Bill Marsh and Kari Haskell/The New York Times; Photograph by Tony Cenicola/The New York Times

9

2 minutes

Looking at the amount of wasted food by household:

The photo shows a depiction of a family of 4's monthly share of wasted food in eight food groups.

Estimates for the various food types from a 1997 USDA article are shown in this picture. This includes both retail- and consumer-level losses and is equivalent to about a # per person per day.

Fresh fruit and vegetables account for the largest percentage of household waste by weight. Meat is the most expensive portion.

Some experts estimate that this wasted food costs a family of four \$1600 a year.

Sources:

Martin, Andrew. *One Country's Table Scraps, Another Country's Meal*. New York Times, May 18, 2008. (http://www.nytimes.com/2008/05/18/weekinreview/18martin.html?_r=0)
PHOTO: <http://www.nytimes.com/imagepages/2008/05/18/weekinreview/18martin-popup.html>

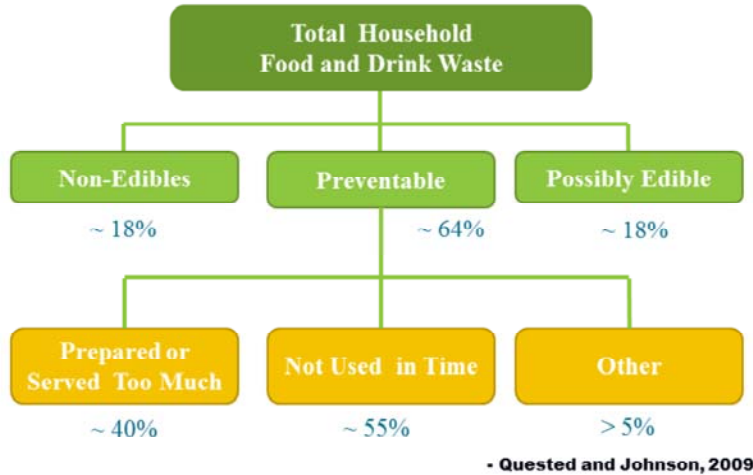
Hall et al, 2009, The Progressive Increase of Food Waste in America and Its Environmental Impact, Plos ONE

Kantor, Linda Scott., Lipton, Kathryn., Manchester, Aiden, Oliveira. *Estimating and Addressing America's Food Losses*. USDA 1997. <http://webarchives.cdlib.org/sw1tx36512/http://www.ers.usda.gov/publications/foodreview/jan1997/jan97a.pdf>

Buzby, Jean C., Hodan F. Wells, and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States, EIB-121*, U.S. Department of Agriculture, Economic Research Service, February 2014.

Venkat,Kumar. *The Climate Change and Economic Impacts of Food Waste in the United States. Int. J. Food System Dynamics 2 (4), 2011, 431-446, April 2012.*

Research shows that...



10

3 minutes

Previous research done in the U.K. shows that:

- preventable food waste (that portion of waste that could have eaten at one time) is about 64% of all consumer-level waste
- And the rest was split between non-edibles such as bones, egg shells, carrot tops and possible edibles (food that is sometimes not eaten but could be with the right preparation, for example, beet greens).

Of the 64% that is preventable food waste:

- Just over 40% was attributed to having cooked or served too much (think of the waste left on kids' plates). This also includes food that was burnt or otherwise spoilt during preparation.
- But most of it was food that was not used in time. Of this, the largest percentage was vegetables and salad.

Of the food not use in time, the UK researchers also found that much of the food not used in time had never been opened.

Additional Notes

- Other category constitutes things like fruit that won't ripen or losses during cooking.
- What people think of as edible can vary a great deal

Source: Quested and Johnson, 2009, Household Food and Drink Waste in the U.K., WRAP Report

Yet ... we all hate waste



11

1 minute

The mystery is why we waste so much especially since recent brain research shows that we really dislike waste, especially when it is something that we consider ours. There is even a term for it: loss aversion. Essentially, we are wired to hate losing the resources we have in hand.

The good news here is that we have an in-built motivation to waste less.

Explanation of loss aversion: Losses are more powerful behavioral motivators than gains. Owning something increases its value. Losing \$100 worth of food has a greater impact on how satisfied you are than saving \$100 on food.

Source: Thaler and Sunstein, 2008, Nudge: Improving Decisions about Health, Wealth and Happiness; Kahneman, 2011, Thinking, Fast and Slow

Brain on automatic



12

2 minutes

Still, there must be other things at play. One is we often act automatically instead of reflecting on what we are doing.

For example, you are likely to serve yourself more if your plate is bigger or if the color contrast between the plate and the food is low. In this picture, the green plate has more beans than the orange plate. Serving more food can lead to not finishing what's on our plates and plate waste.

Our brains are often on automatic when we do routine tasks such as shopping and clean-up after meals, so we might forget what leftovers we have in the refrigerator or that we still have tomatoes in the refrigerator from the last time we went to the store.

Source: Cornell University Food and Brand Lab

Dynamic lifestyles



Artist: Beverly Naidus

13

2 minute

Another big culprit in wasted food is our dynamic lifestyles.

Planning is one thing and following through on plans is another. We want to eat nearby or have work commitments. Both of these may take precedence over going home to cook that meal you planned on.

A study by the [Cornell University](#) Food and Brand Lab found that [93 percent of respondents](#) acknowledged buying foods they never used.

Artist: Beverly Naidus

Complexity of Change

Additional Barriers:

- **Not enough information**
- **Time needed to learn new skills**
- **Time needed to prepare fresh food**
- **Preference for one food type versus another**

14

2 minutes

While researchers can point to some general behaviors leading to wasting food, for different families there will be different barriers to reducing food waste. Feeding a household is a complex series of activities. There's meal planning, shopping, storing, preparing and cooking food as well as choosing what to eat at any given moment. Some of the barriers to making changes in how we carry out these activities are: not having enough information to make a change, a lack of time, and food preferences. Children especially can favor one type of food over another and though you try to get them to eat food that is good for them, it seems that just as often it's still on the plate at the end of the meal.

WHY WASTING FOOD MATTERS

15

Less than 1 min

Notwithstanding these barriers to reducing wasted food, there are significant benefits to be gained.

By Keeping Good Food from Going to Waste ...

We can:

- Toss less
- Eat well
- Simplify our lives
- Save money



JBloom, Fight Food Waste in the Home, January 17, 2008, Via Flickr, Creative Commons

16

3 min

As this WWII poster suggests, the benefits of keeping good food from going to waste include saving money. As mentioned earlier in the presentation, some experts estimate the cost of wasted food for a family of 4 to be \$1600/year.

Buzby, Jean C., Hodan F. Wells, and Jeffrey Hyman. *The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States*, EIB-121, U.S. Department of Agriculture, Economic Research Service, February 2014.

Venkat, Kumar. *The Climate Change and Economic Impacts of Food Waste in the United States*. *Int. J. Food System Dynamics* 2 (4), 2011, 431-446, April 2012.

Other benefits include:

Keeping fruit and vegetables fresh for longer periods of time may help to increase their consumption.

By trying different ways to buy and prep food, we can simplify our lives.

And there is the basic satisfaction that comes from wasting less.

What it costs us in \$

The estimated total value of food loss at the retail and consumer levels in United States:

- **\$161.6 BILLION in 2010**

- Buzby, Hyman and Wells

17

1 min

Sources:

Buzby, Hyman and Wells; **The Estimated Amount, Value, and Calories of Postharvest Food Losses at the Retail and Consumer Levels in the United States**, (2014)

Wasted Food = Wasted Resources

U.S. food production accounts for:

- 50% of land use
- 80% of water use
- 10% of total energy use

18

2 minutes

But that's not all it costs us! U.S. food production accounts for ...

Source:

M. Webber, "How to Make the Food System More Energy Efficient," *Scientific American*, December 29, 2011

USDA Economic Research Service, "Major Uses of Land in the United States," Pub. 2002/EIB-14, 2002, <http://www.ers.usda.gov/publications/EIB14/eib14a.pdf>.

United States Department of Agriculture (USDA), Economic Research Service, Economic Bulletin No. (EIB-16), "Agricultural Resources and Environmental Indicators," Chapter 2.1, July 2006, <http://www.ers.usda.gov/publications/arei/eib16/>.

Climate Consequences

- **Food is the largest stream of materials in our landfills, accounting for 21% of the American waste stream.**
- **This large volume of disposed food is a main contributor to the roughly 18% of total U.S. methane emissions that come from landfills**

19

2 minutes

It should also be noted that when food is landfilled, it generates methane, a gas 25 times more powerful than carbon dioxide. By contrast, properly managed composting is not a major source of methane.

Sources:

U.S. EPA. Overview of Greenhouse Gases: Methane Emissions.

<http://epa.gov/climatechange/ghgemissions/gases/ch4.html> August 2015

Discussion

What would keeping food from going to waste:

- **Do for you?**
- **Do for the environment?**
- **Do for your community?**

20

12 minutes

Have workshop participants group in pairs and give each 4 minutes to share the discussion questions.

After everyone has had a chance to discuss, reconvene the group and ask for a few people to share their insights from the discussion.

STRATEGIES TO REDUCE WASTED FOOD

21

1 minute

In developing the pilot, a workgroup of researchers and practitioners evaluated different strategies to prevent wasted food. The next slides present the top strategies in terms of the workgroup's evaluation criteria.

The strategies cover the range of activities we undertake as households to feed ourselves from planning meals, to buying, storing, prepping and making choices about what to eat when.

Choosing all the presented strategies to focus on is not to say that there are not other great strategies. One of the efforts in the [small or large-scale campaign] is to test how effective these strategies are.

SMART SHOPPING: BUY WHAT YOU NEED

SMART STRATEGY: Make a Shopping List with Meals in Mind

- Think about how many meals you'll eat at home this week and how long before your next shopping trip.
- Next to fresh items on the list, note the quantity you need or number of meals you're buying for.
- Shop your kitchen first and note items you already have.

FOOD ITEM	AMOUNT NEEDED	ALREADY HAVE
Salad greens	Lunch for a week	Enough for one lunch
2% milk	Gallon	None
.....
.....
.....

22

2 minutes

The first of the four strategies is making a food shopping list with meals in mind. This strategy is a little simpler than all-out meal planning and it leaves flexibility for buying what is local and seasonal, say if you go to the farmers market and find an abundance of summer squash.

The object in making a shopping list with meals in mind is both to check what you already have on hand, what we call “shopping your kitchen first” but also to consider how many meals you will be likely to eat at home before you next go shopping and buy accordingly.

By making a list with meals in mind, you will waste less, eat better, and save time and money.

This strategy also focuses on buying only the quantities you need until your next shopping trip. The effort here is to be aware when you are shopping how much you are putting in your cart rather than being on autopilot when shopping. By buying no more than what you expect to use, you will be more likely to use it up and keep it fresh.

SMART STORAGE: KEEP FRUITS AND VEGETABLES FRESH

FRUIT AND VEGETABLE STORAGE GUIDE

INSIDE THE FRIDGE

- Apples, berries, and cherries
- Grapes, kiwi, lemons, and oranges
- Melons, nectarines, apricots, peaches, and plums (after ripening at room temperature)
- Avocados, pears, tomatoes (after ripening at room temperature)
- Almost all vegetables and herbs

OUTSIDE THE FRIDGE

- Bananas, mango, papayas, and pineapples: store in a cool place
- Potatoes / onions: store in a cool, dark place
- Graft and winter squashes: store at room temperature—once cut, store squashes in fridge

MORE STORAGE TIPS

- If you like your fruit at room temperature, take what you will eat for the day out of the fridge in the morning.
- Many fruits give off natural gases that hasten the spoilage of other nearby produce. Store bananas, apples, and tomatoes by themselves and store fruits and vegetables in different bins.
- Consider storage bags and containers designed to help extend the life of your produce.
- To prevent mold, wash berries just before eating.

23

2 minutes

The second strategy is perhaps the easiest of all – storing fruits and vegetables for maximum freshness, especially knowing which fruits and vegetables last longer inside or outside the fridge. We've developed a storage guide to help out with this strategy.

By storing fruits and vegetables for maximum freshness, they will taste better and last longer, helping you eat more of them.

SMART PREP: PREP NOW, EAT LATER



Image courtesy of Grant Cochrane/FreeDigitalPhotos.net

24

2 minutes

The third strategy is to prep your perishables as soon as possible and, if possible, when you return from your grocery shopping trip. This strategy helps with busy lifestyles, those times when you get home and only have a half hour or so to fix that dinner with fresh vegetables. By preparing perishable foods post-shopping, you'll make it easier to whip up meals later in the week, saving time, effort and money. Many people also prepare meals in batch up front.

SMART SAVING: EAT WHAT YOU BUY



25

1 minute

The final strategy is to eat what needs eating first. By being mindful of old ingredients and leftovers you need to use up, you'll waste less and may even find a new favorite dish in the process.

One way to do this is to move food that's likely to spoil soon to the front of the shelf or a designated "eat now" area. Another is to learn flexible recipes. Casseroles, frittatas, soups and smoothies are great ways to use leftovers, and odds and ends.

Discussion

What other strategies can you recommend?

26

10 minutes

Solicit other strategies from group as a whole.

FOOD: TOO GOOD TO WASTE CHALLENGE

27

Less than 1 minute

One way to succeed in making these shifts is to make a record of what you are doing. The workgroup developed a challenge to engage households in reducing wasted food by raising awareness on how much food is going to waste.

A second purpose of the challenge collect data that will help in the design of future programs to reduce wasted food.

Take the Challenge

Record the amount of household wasted food before and after adopting one (or more) of the four strategies



28

3 minutes

Record the amount of household food going to waste before and after trying one of the suggested strategies. This strategy takes place over four weeks. In Week 1, you will be measuring how much food currently goes to waste in your household. Weeks 2 and 3 are for trying out a strategy to prevent waste. In Week 4, you will measure the impact of the strategies.



Take the Food: Too Good to Waste Challenge

I would like to take the Challenge!

Name: _____

Email: _____

Today's date: _____

Distribute challenge cards and thank people for coming.