



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 4

Climate Change and Food – an Overview

**Climate Protection Committee
February 20, 2020**

**Geraldina Grünbaum
Senior Environmental Planner**

Climate Change and Food



How climate change affects food production

How the food cycle (production-to-waste) contributes to Greenhouse Gas (GHG) emissions

How food choices influence GHG emissions

Opportunities to reduce GHG emissions from food



Climate Change Affects Food Production



- Heat, drought, severe weather events
- Higher temperatures → more evaporation from soil
- Drought → depletion of aquifers
- Wildfires
- Crop & forage losses
- Ocean warming & greater acidity → impact on fisheries

Supply, cost, and quality of food will all be affected

Food Cycle Affects Climate Change



Land Use



Animal waste and gas



Refrigeration



Equipment and machinery



Transportation



Water and chemical use

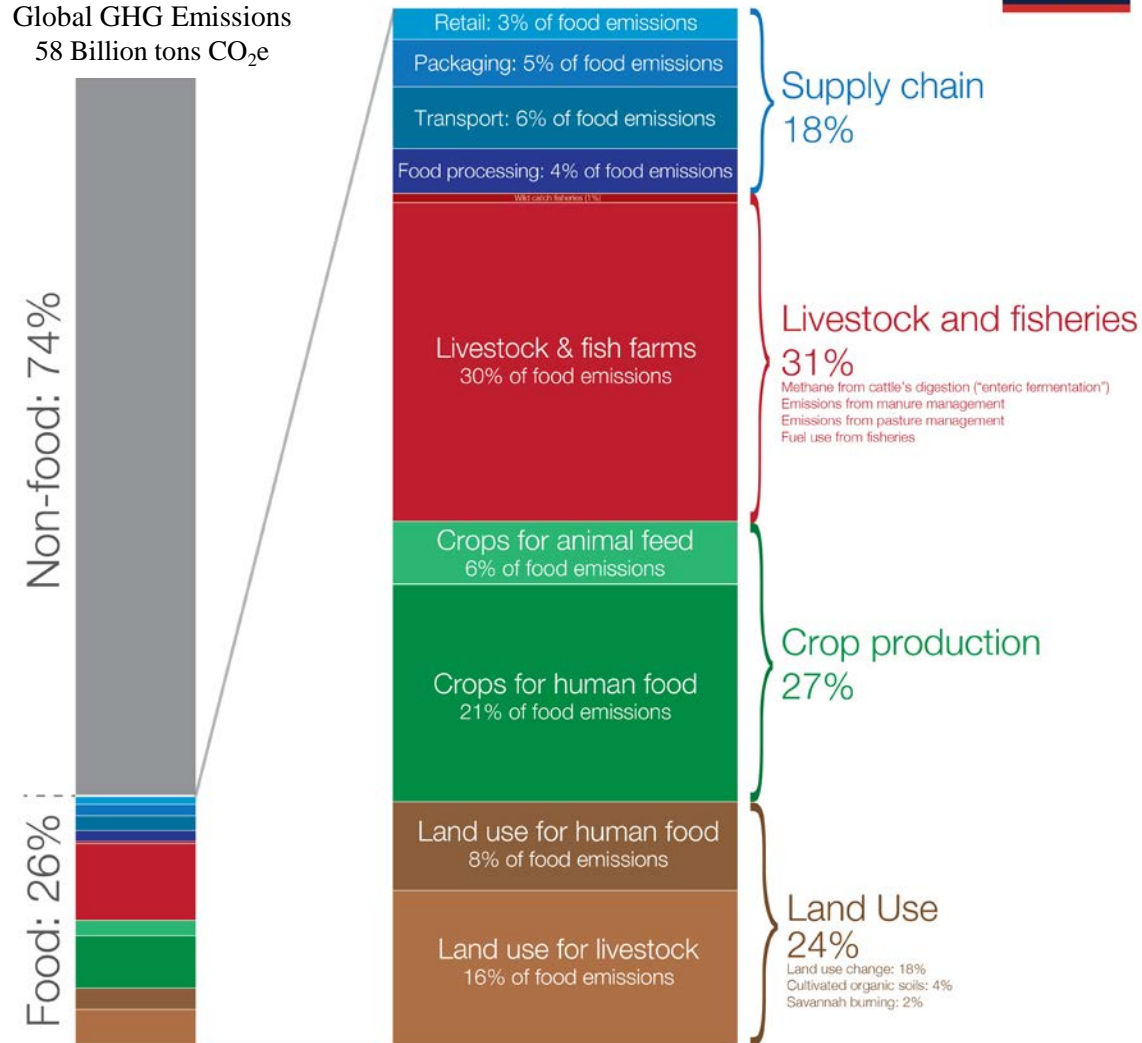


Food waste decomposition

GHG Emissions from Food Production



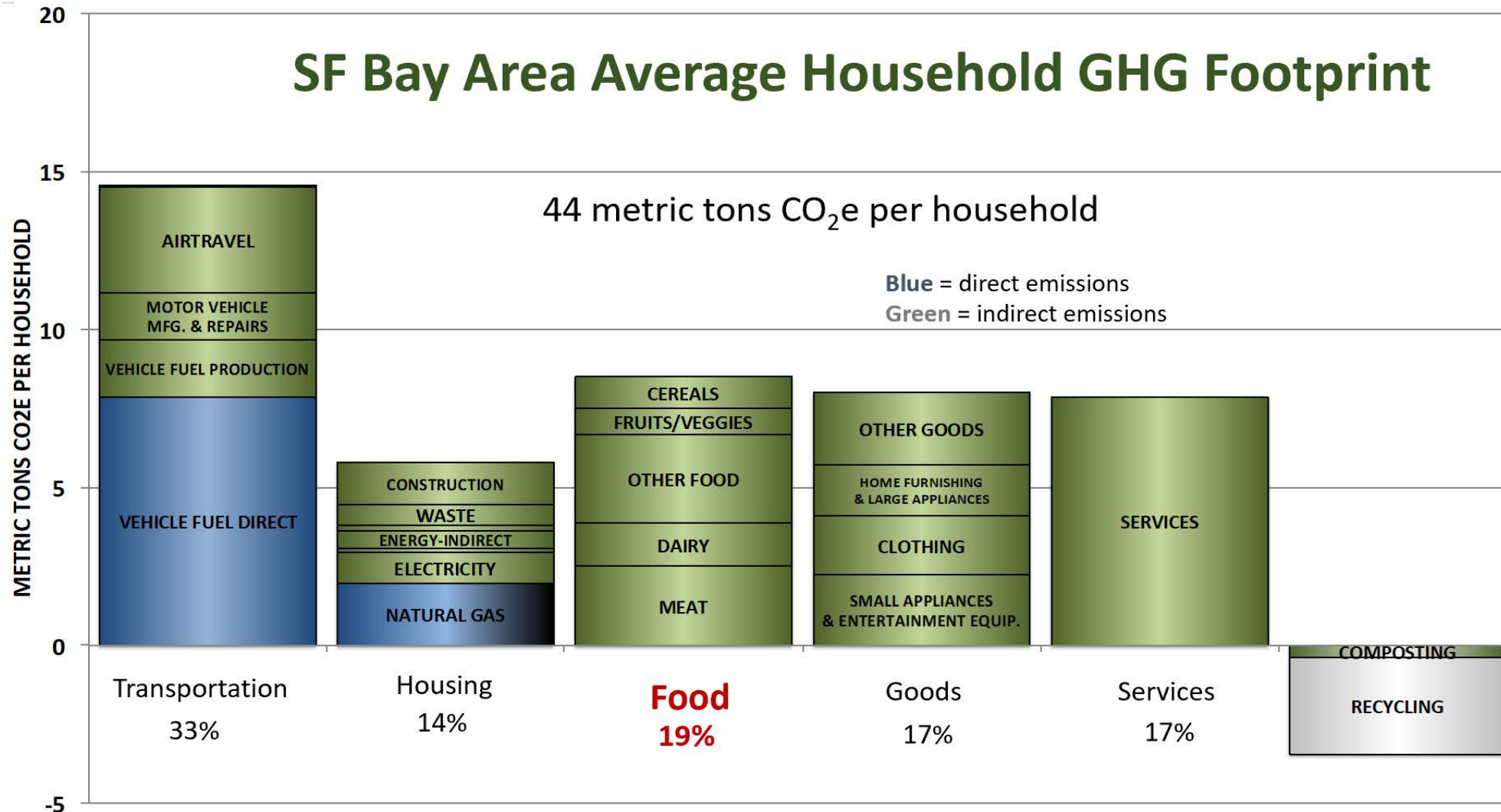
Global greenhouse gas emissions from food production 



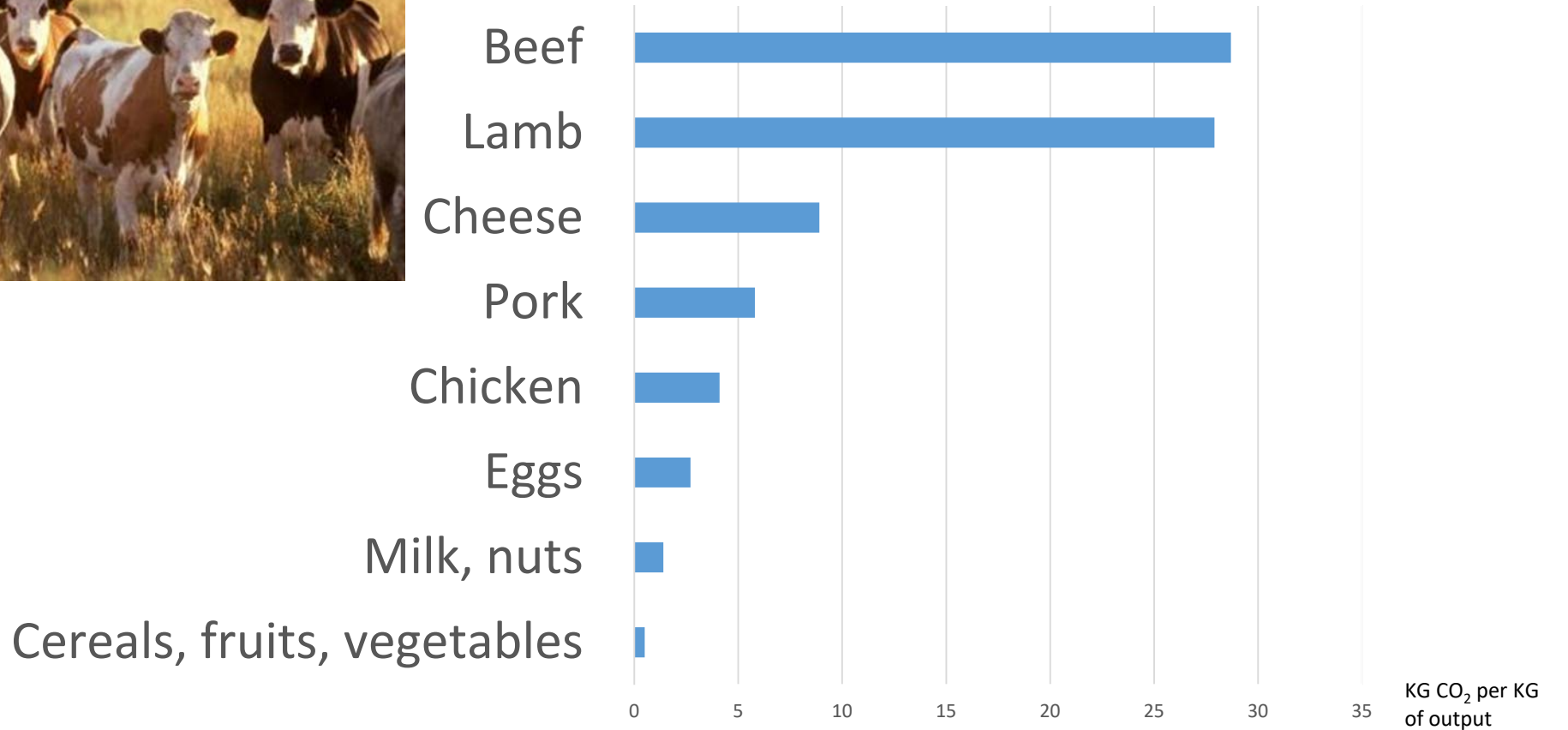
- More than 53% of all global food-related GHG emissions come from the raising of livestock
- 25% of global GHG emissions from the food cycle come from food waste (3.6 billion tons CO₂e)
→ 35% of all GHG emissions in Alameda County are from food waste

Data source: Joseph Poore & Thomas Nemecek (2018). Reducing food's environmental impacts through producers and consumers. Published in Science.
OurWorldinData.org - Research and data to make progress against the world's largest problems. Licensed under CC-BY by the author Hannah Ritchie.

GHG Emissions from Food Consumption



GHG Emissions from Food (per kilo)



Clune et al. Journal of Cleaner Production. 2016

Food Choice Affects GHG Emissions



- Individual food choices affect GHG emissions from food cycle
- Climate-friendlier diets rely on lower GHG-intense foods:
 - Lower consumption of ruminant meat - beef, sheep, goat, deer
 - Eat lower on the food chain:
 - e.g., today's breakfast
 - Make some meals plant-based:
 - e.g., Meatless Mondays
 - Eat within the season



Air District Efforts to Reduce Food GHG Emissions



- Incentives for lower-emission farm equipment
- Regulate methane emissions at landfills and composting facilities
- Create a regional message on climate and food through outreach and partnerships:
 - Collaborate with StopWaste and other expert organizations
 - Develop messaging and education/outreach campaigns
 - e.g., to reduce food waste or influence food choices
- Engage with food “influencers”
 - Convene regional climate and food event
 - Food industry professionals and public agencies



STOP WASTE

at home • at work • at school

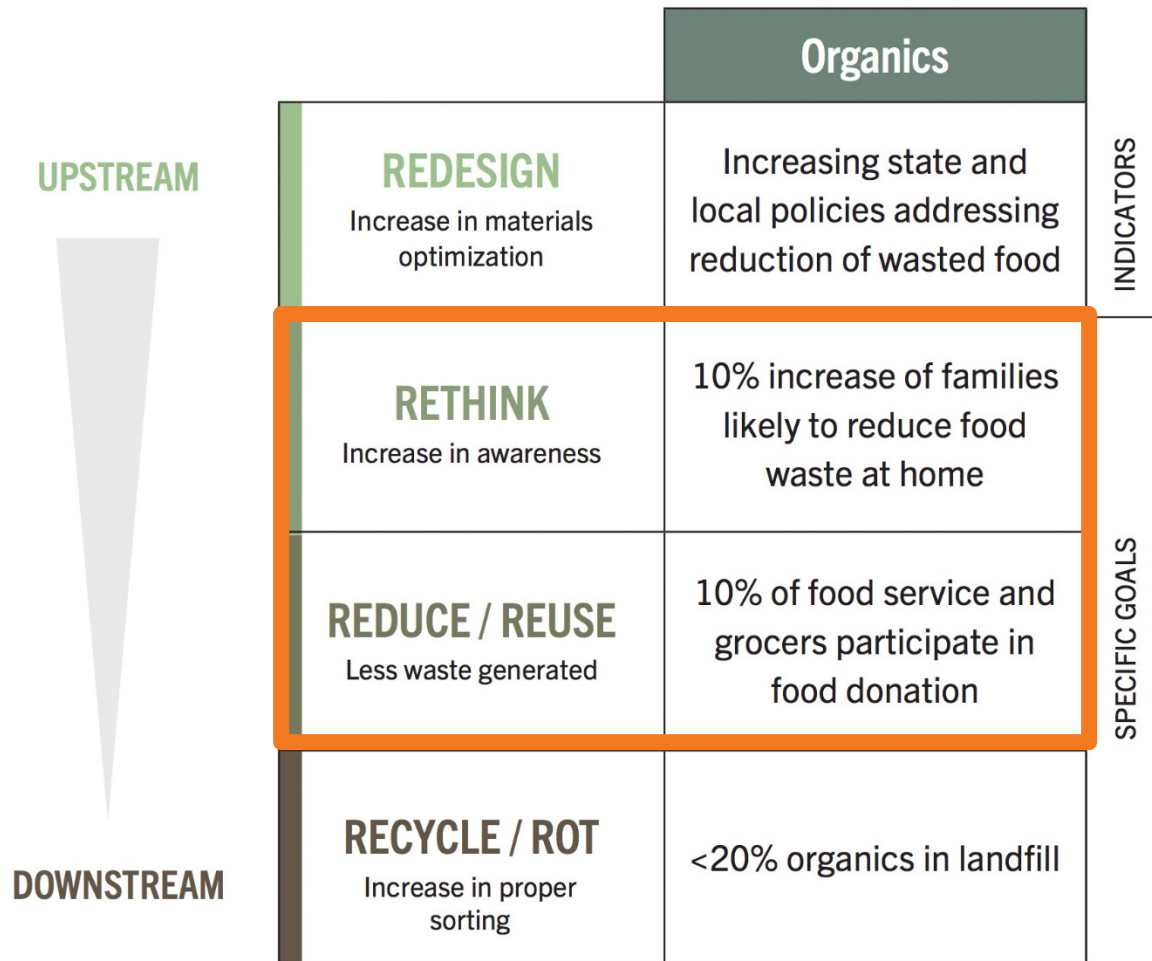


Food Waste Reduction in Alameda County

Cassie Bartholomew, Program Manager



StopWaste Organics Priorities - 2018



The Food Cycle



The Problem and Opportunity

- ReFED Report estimates 43% of food wasted in the US comes from households

FOOD WASTED BY WEIGHT - 63 MILLION TONS

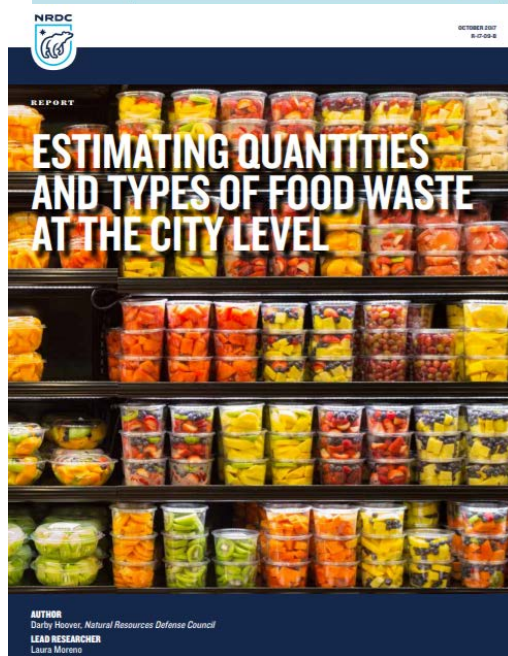
Waste occurs throughout the supply chain, with nearly 85% occurring downstream at consumer-facing businesses and homes.



Stopping Food Waste at Home

5 Key Behaviors

- **Get Smart:** See how much food (& money) you're throwing away
- **Smart Shopping:** Buy what you need
- **Smart Storage:** Keep fruits and vegetables fresh
- **Smart Prep:** Prep now, eat later
- **Smart Saving:** Eat what you buy



Can save a family of four about \$1600 per year!



State of Oregon
Department of
Environmental
Quality



 NRDC ISSUE PAPER
AUGUST 2012 IP:12-06-B

Wasted: How America Is Losing Up to 40 Percent of Its Food from Farm to Fork to Landfill

AUTHOR
Dana Gunders
Natural Resources Defense Council



Getting food from the farm to our fork eats up 10 percent of the total U.S. energy budget, uses 50 percent of U.S. land, and swallows 80 percent of all freshwater consumed in the United States. Yet, 40 percent of food in the United States today goes uneaten. This not only means that Americans are throwing out the equivalent of \$165 billion each year, but also that the uneaten food ends up rotting in landfills as the single largest component of U.S. municipal solid waste where it accounts for a large portion of U.S. methane emissions. Reducing food losses by just 15 percent would be enough food to feed more than 25 million Americans every year at a time when one in six Americans lack a secure supply of food to their tables. Increasing the efficiency of our food system is a triple-bottom-line solution that requires collaborative efforts by businesses, governments and consumers. The U.S. government should conduct a comprehensive study of losses in our food system and set national goals for waste reduction; businesses should seize opportunities to streamline their own operations, reduce food losses and save money; and consumers can waste less food by shopping wisely, knowing when food goes bad, buying produce that is perfectly edible even if it's less cosmetically attractive, cooking only the amount of food they need, and eating their leftovers.

Stop Food Waste Campaign

- **Goal:**
 - 10% increase in families reducing wasted food at home
 - Reduction in wasted food going to landfill
- **Target audience:**
 - Women 35-54 with kids under 18
 - Families with kids under 18
- **Call to action:**
 - Learn how to reduce food waste at **StopFoodWaste.org** :
 - Plan
 - Store
 - Eat
 - Compost

For the Love of Food



Keep that tasty bread fresher, longer.



Storage tips at [StopFoodWaste.org](https://www.stopfoodwaste.org)

Baseline Research: September 2016

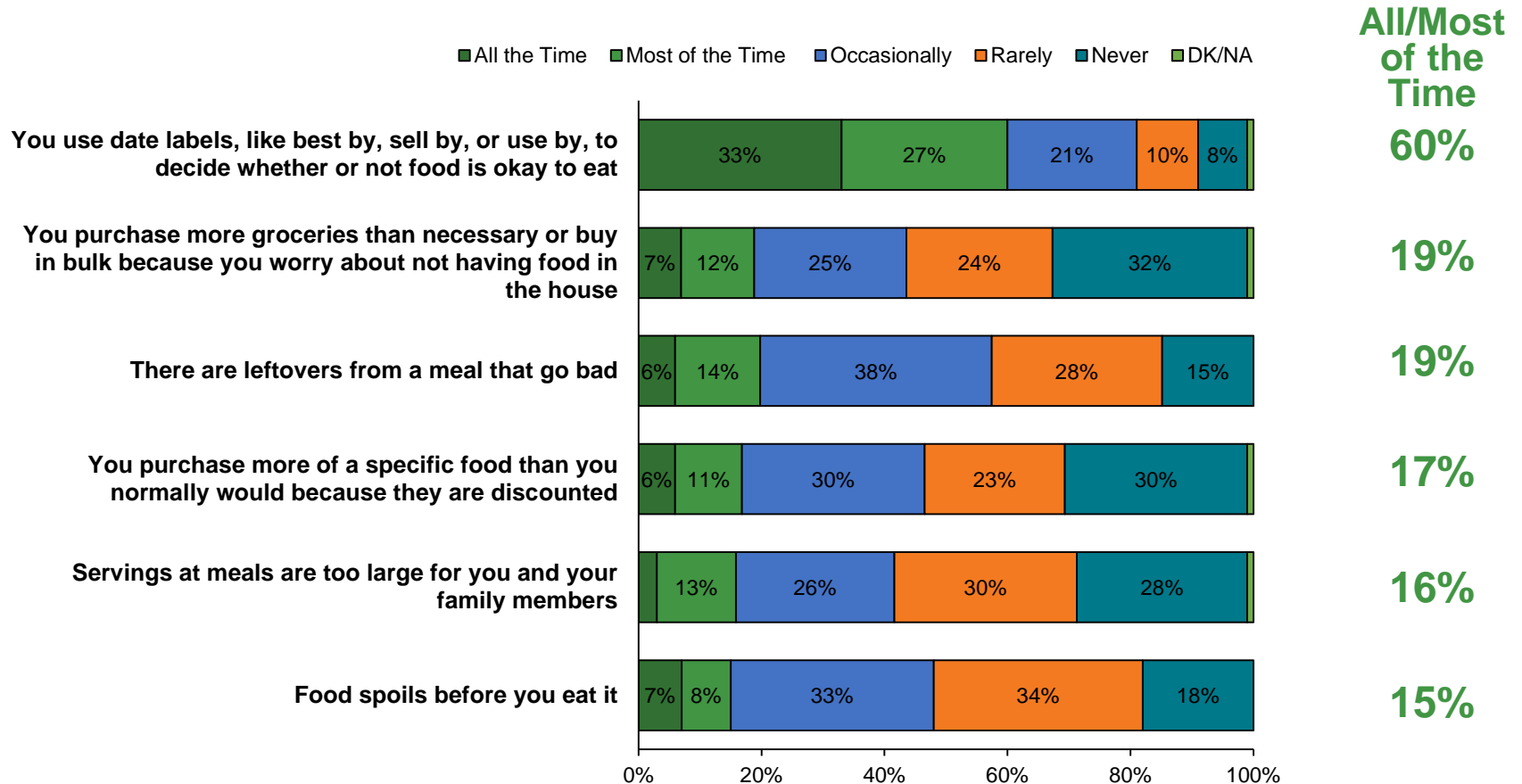
- **Quantitative Survey:**
 - 400 phone interviews with parents of kids under 18
 - Person primarily responsible for either grocery shopping or cooking at home
- **Qualitative Survey:**
 - Two 2 hour focus groups with moms of kids under 18



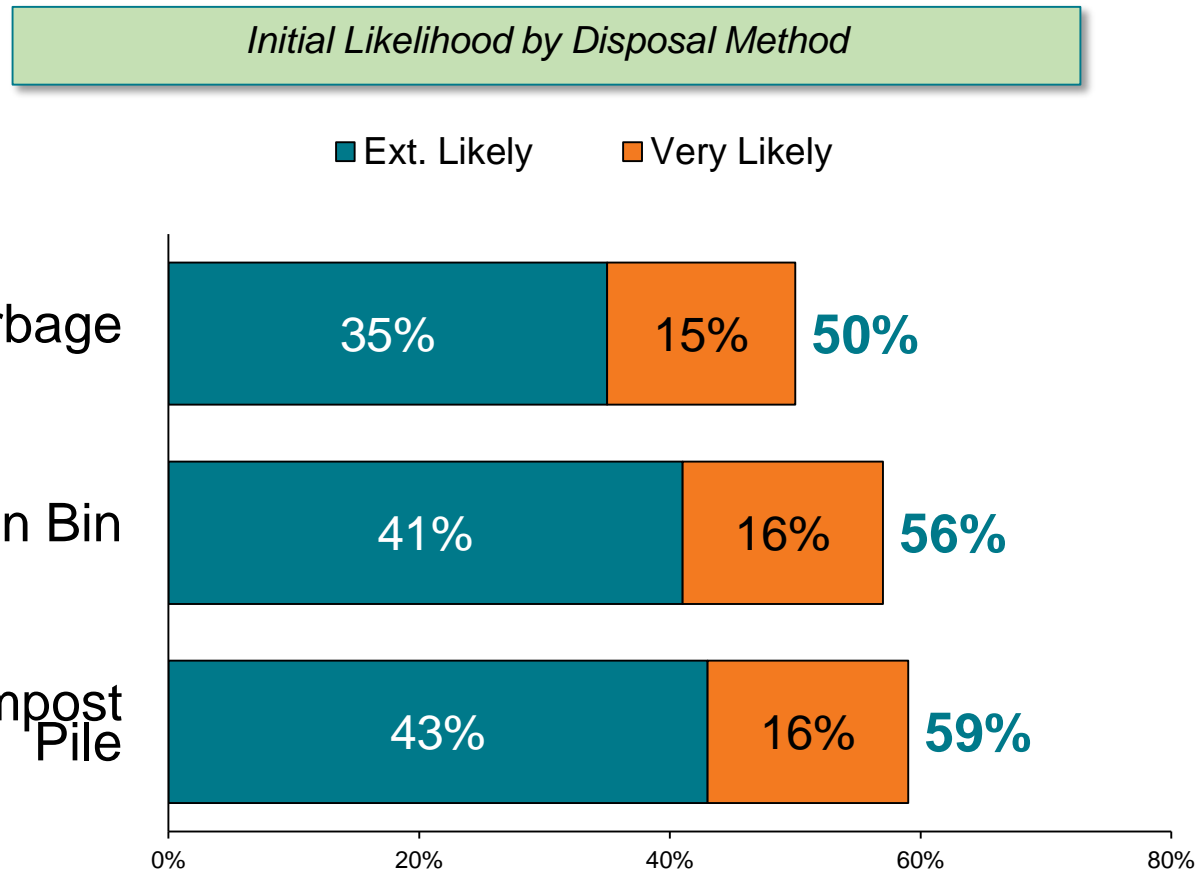
Along with milk and dairy, vegetables and fruit were the most likely to be thrown out due to spoiling.

Items	Spoiled	Partially Uneaten	Leftovers	Excess Food	DK/NA
Fresh vegetables and fruit	66%	11%	9%	2%	12%
Beverages	19%	12%	8%	5%	57%
Milk and dairy products	56%	3%	5%	4%	32%
Meat and seafood	29%	16%	28%	3%	23%
Prepared foods	23%	23%	26%	2%	26%
Eggs	22%	10%	8%	10%	51%

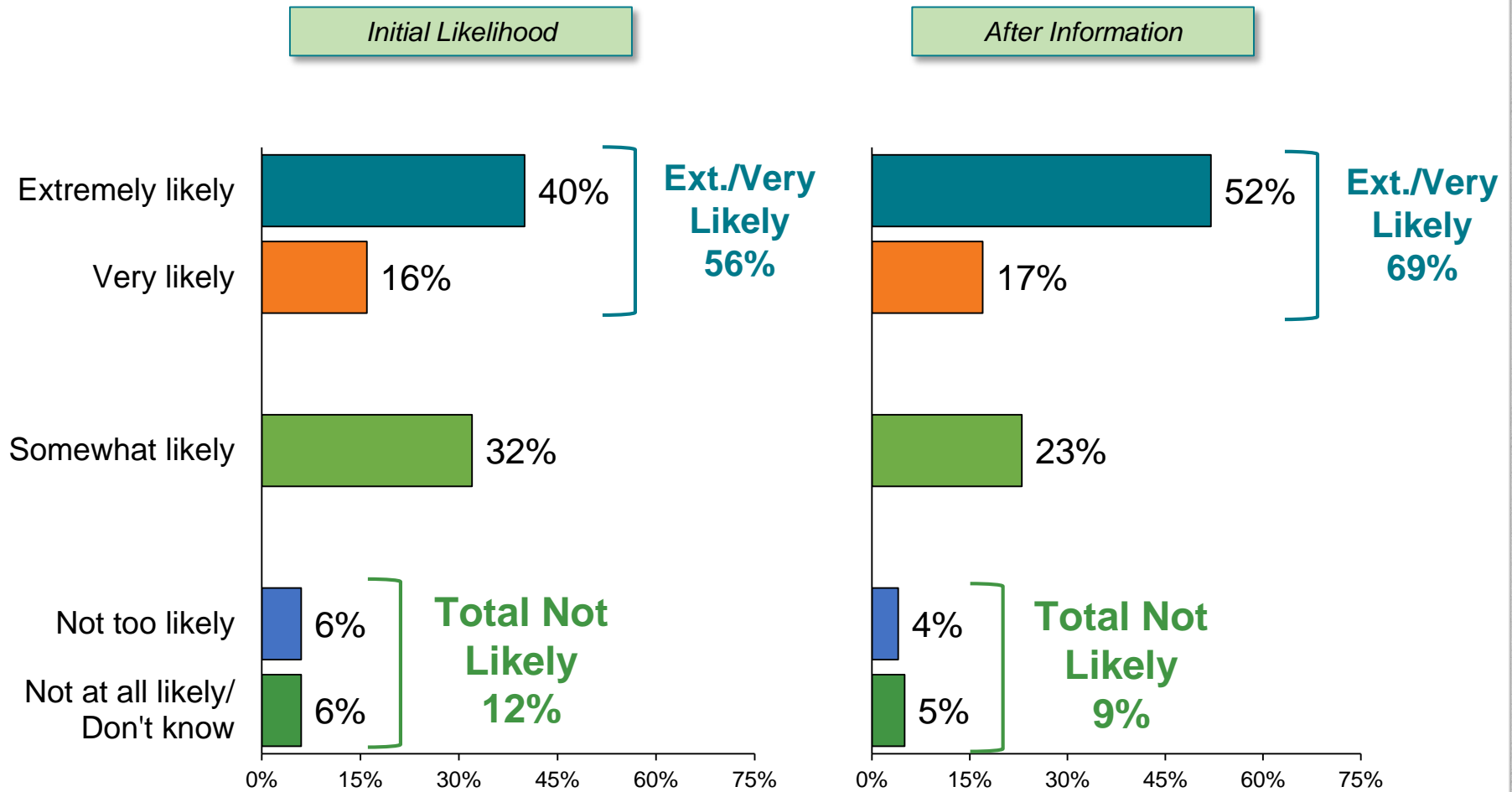
Date labels are by far the most common reason parents throw out food.



Parents who compost or use a green bin are more likely to prevent food waste than are those who use the garbage bin for food scraps.



When parents learned more about the issue their likelihood of preventing waste grew.



Stop Food Waste Campaign & Tactics



CRUNNNCH!

It's Back to School time.
Get tips to keep lunch favorites tasty.

Plan Well


Store Well

Eat Well

- Five creative phases
- Food saving tools
 - Website, Tools, Videos
- Paid advertising
- Social media
- Consumer-facing materials
- Community outreach & grants

Creative (March - October 2017)

- Phase 1 - Food Storage
 - Back to School refresh





FRESSSSH!
Keep your food fresher, longer.

Plan Well Store Well Eat Well

Do you know the best way to store berries?

STORE Berries: Remove any crushed or spoiled berries, then loosely store dry berries in a sealed container lined with paper towel on the bottom in the refrigerator.

Help prevent wasted food. Every year, 63 million tons of food is wasted in the United States with 43% coming from households. If we plan our meals a little better, store our food properly, and eat what we have, we can save food and hundreds of dollars every year.

 <p>LETTUCE Roll in a dry paper towel, then store in a sealed bag in the refrigerator.</p>	 <p>APPLES Store up to seven days on the counter, then refrigerate. Keep apples away from bananas and avocados because they speed ripening.</p>	 <p>ORANGES Refrigerate in a sealed bag for up to two weeks.</p>
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More tips at StopFoodWaste.org

Printed on recycled paper 20703281

Holiday Campaign (November - January 2018)

- Phase 2- Using Leftovers

STOP WASTE
START SAVORING



No crumb wasted.
StopFoodWaste.org



CUBED

STOP WASTE
START SAVORING



ted.
e.org



SANDWICHED SOUPED ROLLED

STOP WASTE
START SAVORING



No slice wasted.
StopFoodWaste.org



BAKED DRIED SAUCED

Stop Food Waste Campaign (April 2018- June 2018)

- Phase 3- Revisiting Food Storage with Compost Tips



For the Love of Food

Keep those leafy greens
fresher, longer.



Do you know the best ways to save food?


Connecting Climate and Food (Fall 2019 – Spring 2020)



Because
every
carrot
counts,
when it comes to
fighting climate change.


Learn how at [StopFoodWaste.org](https://www.stopfoodwaste.org)

HOME VIDEOS TOOLS & RESOURCES MAILING LIST TAKE THE CHALLENGE



For the Love of Food

Keep those beautiful berries fresher, longer.



43% of wasted food in the United States comes from households.

Together we can all waste less food.

FILTER BY: ALL PLAN STORE EAT COMPOST SORT BY: MOST RECENT MOST POPULAR

TUB IT
Keep a small tub near your cutting board to collect vegetable trimmings, then easily dump into the curbside green bin.

21 COMPOST

APPLES
Store apples up to 7 days on the counter, then move them to the refrigerator. Keep them away from bananas and avocados as they speed ripening.

35 STORE

PREP NOW, EAT LATER
Prepare perishable foods soon after shopping. That makes it easier to whip up meals later in the week, saving time, effort and money.

51 PLAN

AVOCADOS
Allow green, unripe avocados to ripen on the counter, then transfer to the refrigerator.


FRESH HERBS
To keep herbs like parsley and cilantro fresh for up to two weeks, place them in a jar with water.

HELPFUL HOST
Tired of telling guests where to put their dirty napkins and paper plates? Make a sign to show

HOME VIDEOS TOOLS & RESOURCES MAILING LIST TAKE THE CHALLENGE

PEEL IT

← BACK



Don't forget to remove the produce sticker before composting your peels! These tiny pieces of plastic are a major problem for composting facilities.

It's great that fresh produce doesn't often come with packaging, but the little stickers, twist ties, and rubber bands used to label and keep them together are a growing problem for composting facilities. These small pieces of plastic, wire, and rubber are not compostable, and are often too small and pliable to be screened out of finished compost.

Help keep these contaminants out of our valuable compost by making sure to remove any non-compostable material from your produce, no matter how small!

16 COMPOST

Next News Line It Helpful Host Tub It

Plan Store Eat Compost

BROUGHT TO YOU BY STOPWASTE

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Food Saving Tools

10-MINUTE FRIDGE REALITY CHECK

Plan Well Store Well Eat Well



Food going to waste in your fridge?

Our 10-minute fridge check will help you see how much food is going to waste and how to reduce it.

SHOPPING LIST with Meals in Mind

- 1 Before you shop, plan the meals you'll eat at home and list items needed.
- 2 "Shop" your fridge, freezer and cupboards for ingredients first.
- 3 Note quantity of fruit and veggies needed from the store.





MEAL	ALREADY HAVE	NEED TO BUY
Example: Veggie Quiche	Example: Mushrooms - 1 cup	Example: Eggs - 1 dozen
Mon		
Tue		
Wed		
Thu		
Fri		
Sat		
Sun		

Visit StopFoodWaste.org

Plan Well Store Well Eat Well

Fruit & Veggie STORAGE GUIDE

Keep your food fresher, longer.

WHERE	WHAT	HOW
REFRIGERATOR		<ul style="list-style-type: none"> • Set your fridge to 40 degrees or below. • Store veggies separately from fruit. • Use plastic bags and containers to prevent drying out. • Wash berries and grapes when ready to eat.
COUNTER AND REFRIGERATOR		<ul style="list-style-type: none"> • Ripen on the counter. • When ripe, store in refrigerator. • Separate ripe from unripe fruit.
COUNTER		<ul style="list-style-type: none"> • Store herbs like basil upright, with cut stems in a cup of water, like flowers. • Separate bananas from the bunch and store.
PANTRY		<ul style="list-style-type: none"> • Store in a cold, dark place like a cupboard or pantry. • Store potatoes separately from onions to prevent sprouting. • Store an apple with potatoes to prevent sprouting.

Want to learn more? Visit StopFoodWaste.org

Plan Well Store Well Eat Well

EAT THIS FIRST



StopFoodWaste.org

Plan Well Store Well Eat Well

Prevention + Food Scrap Composting Tips

For the Love of Food



Together, we can waste less

PLAN

Planning weekly meals prevents waste.

STORE

Storing food properly helps your food last longer.

EAT

Turn your leftovers into tasty meals.

COMPOST

Place remaining food scraps in your curbside green bin.

Compost from food scraps helps:

- Create healthy soil
- Save water
- Reduce pesticide use
- Reduce waste sent to the landfill
- Reduce greenhouse gas emissions



Learn more at StopFoodWaste.org

COMPOSTING TIPS

Make collecting food scraps a part of your daily routine.



Tub It

Keep a small tub on the counter. Collect trimmings then dump into the curbside green bin.



Line It

Line your pail with a bag to keep things tidy. Just make sure the bag is compostable.*

* BPI-certified



Bag It

Use a paper bag to collect food scraps. Then toss it all into the green bin.



Peel It

Keep your compost clean. Remove all stickers before placing food scraps in your bin.



Videos



Stop Food Waste: Reviving Wilted Greens

30,084 views

👍 1 🗨️ 0 ➦ SHARE ⚙️ ⌵ ⌵

I watched the StopFoodWaste video about reviving wilted lettuce with my kids. A day or two later, my 6 year old brought me a sprig of wilted mint and asked if we could try reviving it. We put the mint in a bowl of ice water and my son was so excited to see that it actually worked! The mint leaves looked fresh and tasted good as new.

Advertising & Social

- **Print**

- BART ads
- Publications

- **Digital**

- Google/Gmail
- Social media
- Comcast
- Movie Theaters
- E-news
- Website



edible EAST BAY

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RECIPES • FARMERS' MARKETS • GUIDE TO GOOD EATS • GARDENING • VIDEOS

STOPWASTE

by Edible East Bay on February 15, 2018 in Spring 2018

The 10-Minute Fridge Reality Check
Food Waste Revelations and New Habits to Try

As January fades, I can see that my New Year's resolutions haven't made it past the initial enthusiasm stage. Take my plan, for example, to incorporate more healthy greens into my diet. At the store, I eagerly pick up several bunches of crunchy, dark green kale that seem to explode with flavor and nutritional goodness. A week later, little of the headful promise is left, as the greens sit idly, yellowing in my fridge. At 1 hour there in my compost bucket I am left wondering... what else might be hiding in my refrigerator that's past its prime?

Time for a 10-minute reality check. Using Stop Food Waste's guide, this shouldn't take more than 10 minutes, and it's best done the day before your green bin gets picked up, since you'll likely find a few things to add to the compost. Start by removing all spoiled items, and don't forget to go through the large assembly of condiments like the cruddy jar of mustard and exotic chutney you haven't touched in a year. Now check off the types of food you collected on the list in the guide.

The next step is key: Look at each item and think about why it went unseen. Is it past the date shown on the package? Did you buy too much or shop without a cooking plan, as I did with my kale? Are there restaurant leftovers you proudly took home but then forgot about? Be honest - sometimes the foods we have just don't appeal, even if they're still edible.

Now scrape the no-larger-edible food items out of their packaging (unless the packaging is compostable) into a paper bag. Soups and other liquids can be drained first. How full is the bag? Check the right box in the guide for the amount, then place the bag and its contents into the green bin for composting.

Food going to waste in your fridge?

Take the 10-minute Fridge Reality Check Challenge!

Download the guide at: StopFoodWaste.org/challenge

For the Love of Food
Keep those leafy greens fresh.

Tips at StopFoodWaste.org

It's Summer Salad Season
Keep Your Lettuce Crisp and Delicious

What's better on a warm summer day than a big bowl of crunchy, fresh salad? This time of year, Bay Area farmers' markets are brimming with many varieties of lettuce, much of it grown in nearby Salinas Valley, dubbed "America's Salad Bowl" for obvious reasons. With such abundance to choose from, it's easy to buy more than you can use right away. Lettuce will stay fresh and crisp in the fridge if you remove excess moisture by wrapping the head of lettuce in a dry paper or cloth towel, then storing it in a sealed larger container in the refrigerator. For loose lettuce like baby greens, line the plastic bag or container with a towel, then add the lettuce leaves and seal.

If your lettuce has wilted, refresh it with a cold bath! Fill a bowl with water and ice cubes, then soak the limp lettuce leaves for up to 30 minutes. Drain and shake off water or use a lettuce spinner. Prepare and serve the revived lettuce as soon as possible. For more tips visit StopFoodWaste.org.

Compost Your Food Scraps to Feed the Soil

Proper storage and using up what's in your fridge goes a long way towards preventing wasted food. But sometimes, even with the best efforts, food goes bad. The good news is that most East Bay cities have food scrap collection as part of their curbside composting and recycling programs. Food scraps, yard trimmings and food-soiled paper are turned into nutrient-rich compost at commercial facilities. The finished compost is valued by home gardeners, community gardens and farms who use compost to nourish the soil and grow more of the food we love.

Keep Food Fresher Longer! Throughout the summer season, *Edible East Bay's* e-newsletter will feature a series of Stop Food Waste advice tips to help you prevent wasted food. Sign up for the newsletter at edibleeastbay.com or search the website blog for the series.

8 SEPTEMBER 2018 EDIBLE EAST BAY

Community Outreach

- Farmers Markets
- Food Festivals
- Event Tabling
- Scout Nights
- Lunch & Learns
- Grants



SB 1383 IN ACTION

EDIBLE FOOD RECOVERY PROGRAM



Establish Edible Food Recovery Program

JURISDICTION REQUIREMENTS

Identify Existing Food Recovery Capacity

Monitor Commercial Edible Food Generators for Compliance



Expand Existing Food Recovery Capacity (if needed)

Ensure Commercial Edible Food Generators Have Access to Food Recovery Services

Creating Solutions: Donation Guide for Alameda County Businesses

- A one-stop guide for food service operators
- Details how CA state laws AB 1219 and SB 1383 support donation of surplus food
- Provides information on:
 - Federal & state legislation protecting donors from liability
 - Information on enhanced tax deductions
 - A checklist on how to get started with a donation program
 - How to find a donation partner
 - Reminders on safe food handling procedures

Surplus Food Donation

A GUIDE FOR FOOD SERVICE PROVIDERS IN ALAMEDA COUNTY



Why Donate?

Even with careful planning, food facilities can generate surplus edible food. In Alameda County, it's estimated that nearly 50,000 tons of edible food is discarded by businesses and institutions each year. Meanwhile, one in five county residents don't have reliable access to affordable, nutritious food. Donating surplus food to feed people can help close this hunger gap, while also preventing waste and reducing greenhouse gases.

Federal and state laws protect and encourage food donation. California recently passed two laws: AB 1219, the Good Samaritan Donation Act, protects donors of surplus food from liability while SB 1383 establishes a state-wide goal to recover and donate 20% of edible food currently going to landfill by the year 2025. Municipalities, industry and institutions will play a role in meeting this goal.

Besides making a positive impact in our communities, businesses that donate surplus food may also realize cost savings from reduced garbage bills and may be eligible for enhanced tax deductions.

This guide helps businesses understand the legal protections, safe food handling requirements, and steps to setting up a surplus food donation program.



STOPWASTE
at home • at work • at school





STOP WASTE

at home • at work • at school



Thank you!



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BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

AGENDA: 6

Regional Food & Climate Event

**Climate Protection Committee
February 20, 2020**

**Lisa Fasano
Communications Officer**

Regional Food & Climate Event



ENERGY/CLIMATE BUSINESS PARTNERSHIPS EDUCATION TAKE ACTION ABOUT EVENTS DONATE Q



Climate Friendly Cuisine: Food Service Guidance and Best Practices for a Healthy Planet

Acterra Events

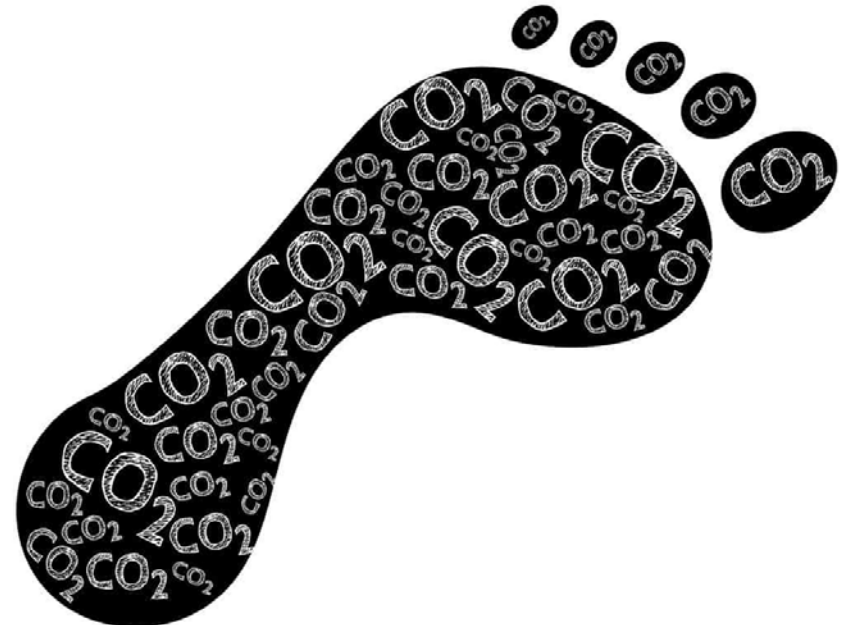
Check back regularly for new event listings! [See more.](#)

- Build on success of 2018 Climate Friendly Cuisine
- Food and Diet – the low hanging fruit of greenhouse gas (GHG) reduction
- Get the message out – enable public to make informed choices

Regional Food & Climate Event (cont.)



- Why focus on food?
- What is known?
- How to initiate this concept with the public?



Regional Food & Climate Event (cont.)



Regional Food & Climate Event (cont.)



- Event in Fall 2020
- Focus on food waste, sustainability, and diet
- Cooking demonstrations
- Introduce induction cooking



Regional Food & Climate Event (cont.)



Goals of food event:

- Initiate a dialogue on food, sourcing, diet, AND waste
- Take a new look at cooking – induction vs. gas
- Teach/Learn by example

