Solid Waste Management Hierarchy

Source Reduction and Reuse

Recycling/Composting

Combustion with Energy Recovery

Landfilling and Incineration without Energy Recovery

Most Preferred

Least Preferred

CHANGING HOW WE THINK ABOUT OUR RESOURCES FOR A BETTER TOMORROW
U.S. Wasted Food Profile

Food Waste: 21%
- Wood: 8%
- Plastics: 18%
- Glass: 5%
- Metals: 9%
- Yard Trimmins: 9%
- Paper & Paperboard: 15%
- Rubber, Leather & Textiles: 11%
- Other: 4%

Other: Other materials not specified in the chart.
- Food Waste: Main category.
- Paper & Paperboard: Includes paper and cardboard.
- Yard Trimmins: Includes yard waste and trimmings.
- Metals: Includes metal items.
- Glass: Includes glass materials.
- Plastics: Includes plastic materials.
- Wood: Includes wood materials.
- Rubber, Leather & Textiles: Includes rubber, leather, and textile materials.

www.epa.gov/SMR
Why Target “Wasted” Food?

Americans waste enough food to fill the Rose Bowl every day.

(Jonathan Bloom’s The American Wasteland 2007)

Photo credit: Patriots Website
Significant food waste

- **Businesses** lose $900 million each year (2001 data)
- **Consumers** waste between $275-455 per household on food thrown away because of the date label*

Assumes household loss of $1,365-2,275, as reported in *American Wasteland* by Jonathan Bloom, 2011.

SLIDE from Harvard Food Law and Policy Clinic
Confusion over expiration dates is a leading cause of food waste.
1 in 6 Americans Struggles with Hunger

FEEDING AMERICA

SLIDE from Doug Rauch
Wasted Food Impacts

Our Economy
- Wasted food costs America more than $161 billion annually. A family of 4 could save $1600 each year.

Society
- 31% of all food produced or imported for US consumption annually is wasted, yet 48 million Americans didn’t have access to sufficient, safe and healthy food in 2009.

Our Environment
- Food production accounts for:
  - 50% of land use.
  - 80% of freshwater consumption.
  - 10% of total energy use.
Sustainable Food Management

- Soil Amendment/Composting
- Growing/harvesting crops/meat
- Food Production/Manufacturing
- Distribution/Transportation
- Retail/Sales
- Source Reduction
- Industrial Applications (chemicals/feedstock/byproducts)
- Food Donation (surplus edible food)
- Food User/Waste Generator
  - Consumer
  - Commercial
  - Institutional
- Energy Production

Landfill

CHANGING HOW WE THINK ABOUT OUR RESOURCES FOR A BETTER TOMORROW

www.epa.gov/smm
U.S. 2030 Food Waste Reduction Goal

• On September 16, 2015, US EPA Deputy Administrator Meiburg and USDA Secretary Vilsack announced the United States’ first-ever national food waste reduction goal.
• Reduce wasted food by 50% by 2030.
U.S. Government Activity

• New domestic wasted food reduction goal: 50% by 2030.

• Bill Emerson Good Samaritan Act of 1996.
  o Encourages individuals or businesses to donate food to nonprofits by minimizing liability.

• All Federal Departments are implementing President Obama’s new Executive Order 13693, which includes a goal to “divert at least 50 percent of non-hazardous solid waste, including food and compostable waste.”

• Under existing U.S. Tax Code (Section 170), corporations are able to deduct wholesome food donations from their tax liability.
Food Recovery Challenge

Join FRC & Take a Bite Out of Food Waste!

Cost Savings

Feeding Hungry People

Reducing Environmental Harm

Technical Assistance/Tools

Recognition & Awards

Waste Tracking System

CHANGING HOW WE THINK ABOUT OUR RESOURCES FOR A BETTER TOMORROW

www.epa.gov/smm
EPA Tools and Resources

- Waste Reduction Model (WARM)
- Food Waste Assessment Guidebook
- Toolkit for Reducing Wasted Food and Packaging
- Food Waste Management Cost Calculator
- Waste Tracking Logs
- Food: Too Good to Waste Tool Kit
Food Recovery Hierarchy

1. Source Reduction
2. Feed Hungry People
3. Feed Animals
4. Industrial Uses
5. Composting
6. Incineration or Landfill

Most Preferred → Least Preferred

Sustainable Materials Management

Food Recovery Challenge

Changing how we think about our resources today for our children’s tomorrow
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Source Reduction Success Stories

- **Sodexo** *(More information)*
  - 8 college campuses cut kitchen waste by about one third, simply by tracking and monitoring food waste

- **Clark/Sodexo** *(More information)*
  - 206 tons diverted to composting in 2011

- **UMASS AMHERST** *(More information)*
  - Tracked waste using LeanPath to cut waste by 25% and $70,000 in four months

- **Harvard University** *(More information)*
  - Orders food that students prefer to eat, hosts a “Clean Plate Club,” implemented trayless Tuesday dining, and asks caterers to box up extra food from events so that it can be taken to go.
University of Massachusetts Amherst

• Four dining commons, 15 retail operations
• Serving roughly 40,000 meals every day
• Implemented daily food waste measurement in 2012 initially in two busiest dining commons

Taking Action
• Enabled the dining team to spot variances in food waste between each dining common with comparison reports, prompting them to adjust production based on waste trends
• Assisted with more accurate forecasting and menu planning
• Engaged staff members by making food waste reduction part of everyone’s daily routine, showing them the positive results they are generating

Seeing Results
• Four months into implementation, UMass had cut food waste by nearly 25% and experienced $70,000 in initial cost savings
Food: Too Good to Waste

- Community-based social marketing campaign aimed at reducing wasted food from households
  - Designed by the EPA with input from the West Coast Climate & Materials Management Forum
- Toolkit linked to a 25% reduction in household wasted food
- Made up of simple strategies and tips to help individuals/families reduce waste at home
- Government or community groups interested in hosting a campaign, can find resources on our “Get Your Community Started” page at www.westcoastclimateforum.com/food.
Food Recovery Hierarchy

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Sustainable Materials Management

Food Recovery Challenge

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Food for People

“Direct donations of surplus food has increased 24% compared to last year”

“Winooski doughnut maker cooks up a food revolution” – Burlington Free Press

Bill Emerson Good Samaritan Food Donation Act (1996) – helps protect food donors from liability associated with donated food.
THE DAILY TABLE CONCEPT

**Non-Profit Retail**

- Offering affordable nutrition to food insecure communities
- A unique model – retail delivery & focus on community, health, & nutrition education

**Proprietary Supply Chain**

- Ingredients sourced from wide network of partners
- Affordable for the community – priced to compete with fast food alternatives

**Self-Sustaining Model**

- Designed to be financially self-sustaining – with store revenues covering our operating costs
- Minimize reliance on outside funders
Best Practices for Diverting Food for Donation

Legal Fact Sheets:
- Date Labels
- Tax Incentives
- Liability Protections

MassDEP
Commonwealth of Massachusetts Department of Environmental Protection
Donation Success Stories

- Rock and Wrap It Up (More information)
  - Collaborated with 150 bands, 200 schools, and universities, and 30 sports franchises
  - Collected more than 100 million pounds of food
- University of Southern Maine-Portland
  - Donated food in 2011 and 2012
SAVE KITCHEN WASTE TO FEED THE PIGS!

THANKS

KEEP IT DRY. FREE FROM GLASS, METAL, BONES, PAPER, ETC.
IT ALSO FEEDS POULTRY... YOUR COUNCIL WILL COLLECT.

SAVE KITCHEN SCRAPS TO FEED THE HENS!

KITCHEN WASTE

KEEP IT DRY. FREE FROM GLASS, METAL, BONES, PAPER, ETC.
IT ALSO FEEDS PIGS...... YOUR COUNCIL WILL COLLECT.
Food for Animals

Black Dirt Farm

Photos from VTANR
Feeding Animals Success Story

- MA Supermarkets
- Lenox Hotel
  http://youtu.be/FopwT8S8Fes
  - 8 animal feed operations in MA take food scraps
Food Recovery Hierarchy

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Industrial Uses

Sustainable Materials Management

Food Recovery Challenge

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Anaerobic Digestion Success Story

- **Purdue University** ([More Information](#))
  - Partnered with City of West Lafayette to send food waste from dining hall to wastewater treatment plant
  - **Diverts 1-2 tons per day of food waste**

- **University of Wisconsin Oshkosh**
  - Processing campus food and yard waste in a dry fermentation anaerobic digester
  - **Producing enough energy to power up to 10% of the 13,500-student institution.**
Whole Foods Market
Andover, MA

Photos Courtesy of Wholefoods
We’re turning food scraps into energy

Food scraps are ground and stored as liquid.

Liquid waste is hauled to digester, zero trips to a landfill.

Digester transforms waste into renewable energy.

Compressed Natural Gas

Heat

Electricity
Anaerobic Digestion

- Energy
- Digestate products
- Offset carbon need for composters
Developing Tools to Drive Innovation

ANR’s Materials Management Map (Mat. Map)

http://www.anr.state.vt.us/dec/wastediv/solid/URmap_launch.html
Roche Bros. Supermarkets, Massachusetts (More Information)

- 3 Roche Bros. supermarkets began composting, reducing their waste costs by 40% ($10,000-$20,000 annually)
Composting Success Story

- **Middlebury College** ([More information](#))
  - Composts 90% of the food waste generated (370 tons in 2011) in a site on campus.
  - Saved over $100,000 in landfill fees by recycling and composting.

- **The University of Texas Arlington** ([More information](#))
  - Composts food scraps onsite and uses the soil amendment at their organic community garden
  - Diverts 60,000 pounds of food and landscape materials
Engaging Key Sectors and Stakeholders

• We have set ourselves a challenging domestic goal. Now what?

• To figure out where you are going -- you first have to know where you are.

• We are kicking off engagement with key sectors and stakeholders.
  • November 2015 Food Recovery Summit in Charleston, South Carolina.
    • Dialog with senior government leadership.
    • Identify opportunities and challenges.
Food

1. buy it with thought
2. cook it with care
3. serve just enough
4. save what will keep
5. eat what would spoil
6. home-grown is best

don’t waste it