Background: Sustainable Materials Management
  o Sustainable materials management refers to resource conservation and recovery
    ▪ Represents a change in how we think about environmental impact
    ▪ Could materials and products be made in a different way without environment impact and used or reused for other purposes?
    ▪ Challenges organization to think fully about the life cycle of materials they use and dispose of
      • Life cycle materials management casts a far broader net than chemical waste and management approaches have
  o Sustainable management of food is a strategic area of sustainable materials management
    ▪ Concentrating on 3 critical areas:
      • Convene and support partnerships for development of infrastructure that can serve as alternatives to landfill disposal of wasted food. Work with stakeholders to promote opportunities to reduce wasted food and develop/expand organic residual collection and processing technology
      • Promote opportunities across food life cycle to reduce wasted food from landfills. Deliver tools and education and convene networks across the food sector to implement more sustainable food management practices
      • Improve and standardize measurement of wasted food. Advise high quality scientific data and improve tools to quantify the environmental and economic benefits to implementing sustainable food policies, practices, and incentives
    o US Wasted Food Profile (Advancing Sustainable Materials Management report produced by the EPA every year which includes the Wasted Food Profile)
      ▪ Food single largest waste stream going to disposal each year → over 70 billion pounds of food wasted/year
      ▪ Results in economic social and environmental cost
        • 50% of land use, 80% of fresh water consumption, 10% of energy use goes into food production each year

Food recovery hierarchy
  o Ranking waste management options
  o Inverted triangle signifies that the most preferred activities are prevention of wasted food (or source reduction) and the least desirable activity is food disposal
  o Composting always been an area of focus → avoid greenhouse gas emission and improve soil health
  o Top of the Food Recovery Hierarchy (most preferred): Source reduction
    ▪ Every organization should inventory what is being purchased, used, and going out as waste
    ▪ Source reduction usually facilitated by a change in purchasing process; organizations save money on the front end by spending less on purchases and the back end by reducing waste disposal costs
- Clark University’s Dining Services in Worcester, MA implemented “from scratch” meal preparation starting with un-processed foods prepared fresh daily; use trimmings for stocks, soups, and sauces to reduce waste
  - Source reduction of 12,019 pounds in one year
- 2nd block of the Food Recovery Hierarchy: Donation to Feed People
  - Social benefits and food waste intersect
  - Serendipity Catering in Denver, Colorado began composting event food waste and donating to non-profits
    - Diverted 95% of all their food waste from land fills
    - Eliminated greenhouse gas emissions equivalent to the emissions from burning approximately 2,000 gallons of gasoline
- 3rd block of the Food Recovery Hierarchy: Donation to Feed Animals
  - Sometimes food is just past its prime or the local food pantry/kitchen does not need excess food that is available
  - Prevents need for growing, processing, and transport of other animal feed
  - Feeding Animals’ Melissa’s Feeders operate livestock feeder facilities in TX and NM. Receive many types of food waste from expired dairy products to ice cream → grind food waste and mix with appropriate minerals and hay to create feed stock
- Industrial use
  - Rendering wasted fats, oils, and greases to produce fuel
  - Anaerobic digestion of wasted food creates energy/fuel and compost
  - Crystal Creamery in Modesto, CA operates an innovative industrial waste water pretreatment system that removes organic contaminants from dairy product manufacturing processes
    - Organic by-products are moved to a local dairy farm and used with other food waste to produce electricity and a product that is used for cow bedding
- Composting
  - Our inedible food should not be wasted
  - Composting prevents wasted food from reaching our landfills, helps prevent GHG emissions from food decomposition in landfills, and enriches nutrient depleted soils
  - Pearl City High School in HI composted 34,635 pounds of cafeteria scraps over the school year
- EPA Programs
  - EPA Food Recovery Challenge
    - Launched in 2011 as a key component of the Sustainable Materials Management Program with an emphasis on waste prevention/source reduction
    - Working with organizations to identify their main sources of food waste
    - 2014-Over 800 participants diverted nearly 606,000 tons of wasted food from landfills or incinerators, 300,000 tons of food donated, and 250,000 tons composted
    - Strategy based on integrated partnership of key public and private organizations including industry leaders, local governments, food charity programs (i.e. Feeding America), and NGOs (i.e. Food Waste Reduction Alliance)
  - US Food Recovery Challenge
    - Started in 2013 as a collaboration between USDA and EPA with the goal of disseminating information about the best practices to reduce, recover, and recycle food waste
By end of 2014, had over 4,000 participants surpassing goal of 1,000 participants by 2020

- USDA also implemented programs and policies to reduce food waste in school meals programs, educate consumers, streamline procedures for donating wholesome misbranded foods, and research new technologies for reducing food waste

US 2030 Food Waste Reduction Goal

- USDA and EPA in September of 2015 announced first ever 2030 food loss and waste reduction goal for the US in alignment with UN Sustainable Development Goals: Reduce wasted food by 50% by 2030
- Baseline for US domestic goal is based on per capita wasted food in 2010 which is at 218.9 lbs per person (reduce to 109.4 lbs per person)
- Held a 2015 Food Recovery Summit
  - Gathered stakeholders from business, government, academia, and local communities to discuss food loss and waste issues as well as steps forward

- Also working with other federal agencies to drive federal food recovery (i.e. US Military and USDOJ Prison System)
- 7 important Sustainable Food Service Best Practices
  - Adopt systems to monitor the relationship between waste and food procurement, create or revise guidelines and goals to reduce spoilage and waste, and institute more accurate forecasting and just-in-time purchasing systems where appropriate
  - Store food to maximize shelf-life and adopt systems to effectively monitor and utilize inventories of perishable items.
  - Design menus and portion sizes to maximize flexibility in the use of perishable foods and minimize pre- and post-consumer waste
  - Re-purpose excess food for use in future meal preparation and donate edible surplus food for human consumption where possible, while using proper food safety and handling practices.
  - Educate food procurement and foodservice staff on sustainable environmental, social and economic food recovery practices and practical strategies for prevention and diverting wasted food in food service operations
  - Plan, implement, and operate waste reduction practices, recycle all allowable items, and implement an organic waste collection (compostable waste) where available.
  - Measure, record, track and report waste reduction and waste diversion progress, including food recovery and composting, to continuously improve sustainability goals.

Presentation Title: Together We Can solve Hunger

Presenter: Liz Baldridge (Feeding America)

- Over 48 million are food insecure in the United States
  - Over 15 million children and 5.7 billion seniors are food insecure in the United States
- Feeding America vision: To feed America’s hungry through a nationwide network of member food banks and engage our country in the fight to end hunger
  - We depend on our network’s ability to rescue safe food from going to waste through partnerships across the food industry
- Feeding American has 200 member food banks and serve through 60,000 food pantries and meal programs→reaching 46 million Americans per year
- Impact of Food Waste on Greenhouse Gas Emissions
o Food waste in US landfills accounts for 20 M metric tons of greenhouse gas emissions→3rd largest emitter of greenhouse gases (if global food waste were a country) behind US and China

• Saving safe food from landfills can alleviate hunger and bring significant awards
  o Has a triple effect: financial impact (i.e. cost to transport, produce the food, etc.), environmental impact (i.e. greenhouse gases), community impact (i.e. more food for community members)

• Feeding hungry people (food rescue) needs to be one of the most important parts of the Food Recovery Hierarchy!
  o Big task but there are incremental recovery opportunities (confirmed by ReFED study)
    ▪ Opportunities in the home and food service
    ▪ Monetary benefits should be emphasized from a business perspective
    ▪ ReFED quantified impact of top rescue solutions→donation tax incentives, standardized donation regulation, and donation matching software were top 3
  • Feeding America well-positioned as a leader for all solutions

• Feed America captures 2.6 billion of the 70 billion lbs of food waste→2.1 billion meals
  o Substantiates that there are many opportunities and have those opportunities across the food systems spectrum

• Positioning ourselves to have more access for those they serve
  o Working to give food rescues a louder voice→awareness of food being wasted, increases linkage of food rescue to feeding hungry individuals, and, therefore, increases donations/resources, nutritous foods, and food rescue leadership

Presentation Title: Food Sourcing (Food Rescue in New York)
Presenter: Eric Himmelfarb (City Harvest)

• Rescue food from all segments of the food industry that would otherwise go to waste
  o Will collect over 55 million pounds of food collected, 53% of which is produce→key goal to bring in fresh, nutritous foods
  o Delivered to ~500 community food programs citywide free of charge because most of the food has been rescued
    ▪ Always keep in mind the relationship between food rescue and food insecurity
  o Costs $0.26 to rescue and deliver one pound of food

• Started in 1982 with a small group of volunteers who rescued 3,300 lbs of food daily from soup kitchens
  o Now comprised of 500 community food programs and 10,000 volunteers that rescue over 150,000 lbs daily

• Where does our food come from?
  o Expanded outside of New York City→1/3 comes from local food retailers and the rest comes from national and local farms

• City Harvest mostly deals with retail level of food donations; some farm and manufacture level as well
  o Serving in an educator role in ugly produce, code date misperceptions, etc.

• What types of food do we rescue?
  o 53% produce
  o 24% package/canned
  o 10% bakery
  o 5% prepared
  o 4% meat
  o 4% dairy
• Local food sources
  o A little over ¼ come from supermarkets
  o Farms and markets are close behind

• Top NYC food donors
  o Work with ~2300 food donors
  o FreshDirect is top retail donor
  o 350 scheduled stops/day at various food donors; food goes straight to food pantries and soup kitchens (can rescue perishable foods)
  o Can have 25-30 additional calls/day from restaurants etc. that have extra food to donate

• Life Cycle of a Local City Harvest Pound
  o Scheduling pick-ups and donor relationships
  o Routing/transportation/allocation
  o Rescuing the food
  o Driver allocation of retail product and FRF product
  o Distributing

• Food safety is an important focus for City Harvest! Checks at every level

• Challenges
  o When working with businesses, need to have corporate on board with the food rescue
  o Turn-over of contacts at different agencies
  o Donors may not always give enough food at pick-ups (50 lbs minimum)

• National Food Sources
  o 68% of food outsourcing from NYC
    ▪ 26% comes from Feeding American food banks

• Life Cycle of a National City Harvest Pound
  o Sourcing the right product (mostly produce)
  o Warehousing/repacking by volunteers
  o Routing and transportation
  o AR Allocation of Retail Product
  o Distributing product

• Have doubled the pounds of food rescued over 5 years; in 2017, going to see if the current infrastructure can handle more growth

• Expanded programming based on the realization that food rescue alone won’t solve hunger
  o Started to address root causes by focusing resources in 5 neighborhoods where obesity, poverty, and food insecurity are high
  o Programming includes shopping tours, mobile markets, nutrition education, community organizing, etc. in each of these communities

• Policy Opportunities
  o **Local level**: NYC will send zero waste to landfills by 2030; requiring food service establishments to source-separate food waste
    ▪ City Harvest named as a trusted organization to donate to!
  o **State level**: NYC Office of Food Policy working on issues of Procurement, Food Security, Food Access and Sustainability
  o **National Level**: USDA/EPA food waste reduction goal; Food Recovery Act; Food Date Labeling Act
Questions

- What job opportunities arise for community members in the effort to reduce food waste? Will reduction of food waste also help reduce food insecurity through employment opportunities?

  Marlene: Yes. As with any mainstreaming of an ideas into national awareness, awareness of food “able to be recovered” necessarily must build an infrastructure, and reach an economy of scale to become replicable and sustainable. In building that infrastructure you can look at each level of the EPA Food Hierarchy to ascertain what kind of jobs can and will be created. To recover, transport, store, process, and distribute the food recovered or transformed, you can look at the various networks and organizations that have been created (from technical and engineering, new technologies, non and for profit companies, two of which we heard from today). Here are just a few examples of organizations, networks, and technologies that provide people opportunities for jobs from recovered food: Feeding America, City Harvest, and Veteran’s Compost, Tri-State Biodiesel, Food Recovery Network, Kroger Anaerobic Digestion operation, Food Cowboy, DC Central Kitchen trains unemployed adults for culinary careers. There are many more, but, I wanted to give you a few examples. ReFED report analyzes jobs created: http://refed.com/?sort=economic-value-per-ton.

- At the consumer level, what are the key messages we should be delivering to reduce food waste at home? We do supermarket tours and courses that discuss food labels, unit pricing, ways of making food last (ex. Using scraps for broth and sauce). Are there other recommended messages and already developed materials we can incorporate in our nutrition education programs?

  Marlene:

  From EPA Sustainable Food Management pages (Each bullet point links to the page):

  - At Home
  - Food too good to waste toolkit
  - More at the EPA pages

  From the USDA pages (Each bullet point links to the page):

  - Know your farmer, know your food – promoting local food producers
  - Food Waste Blog
  - Food and Nutrition
  - Peoples Gardens
  - Food and Pollinators

  Eric: One thing to note is that “best by” does not equal “expires on.” Most products do not have to be discarded on the best by date. Products that spoil are an exception, of course. Those dates are typically suggestions as to optimal quality and taste for the consumer, and to inventory management for retailers. It ultimately helps producers sell more product. Congress is debating a bill right now (The Food Date Labeling Act of 2016) to standardize that sort of labeling language, which would make it easier to understand and ideally would lead to less consumer waste.

- If we are increasing our efforts to direct food from landfill to feed hungry people, have there been efforts to stop using the term ‘food waste’ since it may make some recipients feel as if they are being given trash product?
**Marlene:** Yes, we are trying to get away from the term waste in all aspects of our programs and promote life cycle assessment and awareness to reduce, reuse and recover. Our program is sustainable food management. Terms like excess, recovered, “donatable,” “ready to eat”, second harvest, pre-prepared, unconsumed, ready to donate, food loss – and many more words that can portray the non-waste notion of food recovery can be used. Food waste is only in landfills, otherwise it is recovered in some way.

**Eric:** That’s a great question; I agree that “food waste” doesn’t sound great. At City Harvest, we like to use the phrase “food that would otherwise go to waste” since we are rescuing perfectly good food that only becomes waste once someone decides to discard it. Calling it “excess food” also works well and takes away any sort of negative connotation.