PRACTICE Greenhealth

Less Food To Landfill

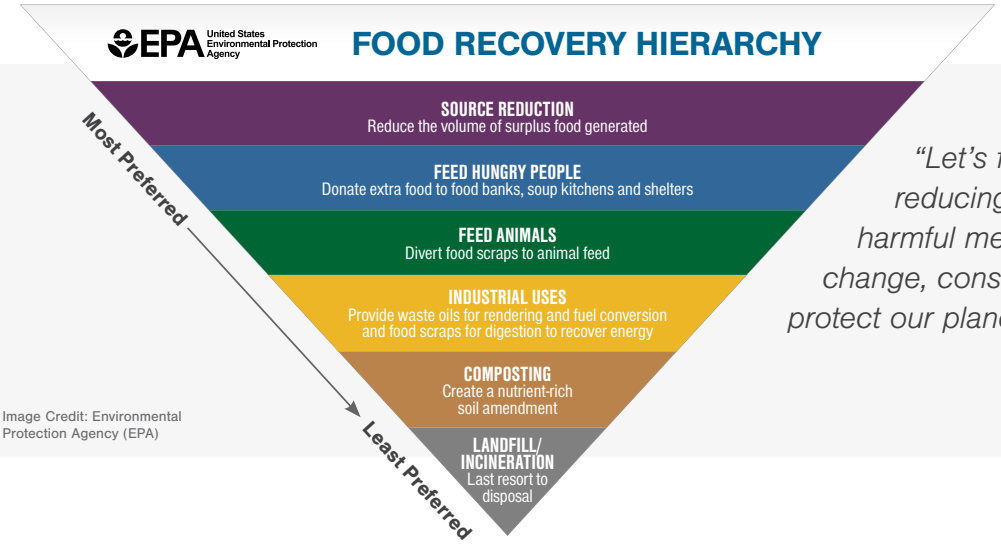


Image Credit: Environmental Protection Agency (EPA)

"Let's feed people, not landfills. By reducing wasted food in landfills, we cut harmful methane emissions that fuel climate change, conserve our natural resources, and protect our planet for future generations."

- EPA Administrator Gina McCarthy

This is a call to action for hospitals and health systems to join together around food recovery, donation and landfill avoidance. This work will help tackle what is a critical waste issue, climate issue and community issue. This guide walks Practice Greenhealth members through the process of baseline assessment, prevention, donation, animal feeding, industrial uses or digestion and composting.

The Issue

According to the multi-stakeholder group "Rethinking Food Waste with Economics and Data" or "ReFED" in their 2016 Report, American consumers, businesses, and farms spend $218 billion a year, or 1.3 percent of the gross domestic product (GDP), growing, processing, transporting, and disposing of food that is never eaten. Annually, $162 billion is lost in economic value (water, fertilizer, cropland acreage) which equates to 31 to 40 percent of the total food supply.

Community Benefit—Helping People—According to the U.S. Department of Agriculture, approximately 14 percent of American households were uncertain of having or unable to acquire enough food to meet the needs of all of their members at some time during 2013. This is one in seven people.

Experts have projected that reducing food losses by just 15 percent would provide enough food for more than 25 million Americans every year.

The Environment—More food reaches landfills and incinerators than any other single material in municipal solid waste (MSW). **Fifty-two million tons of food is sent to landfills annually (equating to 21 percent of landfill volume), plus another 10 million tons is discarded or left unharvested on farms. According to Feeding America, food service operations is responsible for 10.25 million tons of wasted food each year.** Hospitals generate over 29 pounds of waste per staffed bed per day. It is estimated that 10 to 15 percent of an average hospital's waste is comprised of food waste.

Waste is trucked, railed, burned and buried with impact on air, water and soil. Users can multiply the number of staffed beds in the hospital by 3.42 pounds of food waste per day for a quick **estimate** of the facility's food waste contribution, and check out the state of Massachusetts' calculator and NEWMOA site for guidance and calculators based on meals and staffed beds.

Climate Change—According to the Environmental Protection Agency (EPA), landfilled food waste produces methane, a greenhouse gas that is 25 times more potent than carbon dioxide over a 100-year period. In March 2016, Rethink Food Waste Through Economics and Data (ReFED) released a roadmap aiming for a 20 percent reduction in food waste within a decade, resulting in a drop of 18 million tons of greenhouse gas emissions per year, according to ReFED's estimates. According to Refed, that's like switching off four coal-fired power plants every year.

Hospitals working on regional or facility climate goals would benefit from including food waste as a core part of a greenhouse gas mitigation strategy.

Cost—The United States spends about one billion dollars a year just to dispose of food waste. Hospitals, on average, spend $0.06 to $0.10 per pound for waste removal. Based on the Massachusetts calculator, a typical 200-bed community hospital might generate 124.83 tons of food waste annually at a cost of $0.06 per pound for a total disposal cost of $14,977. However, hospitals typically pay by compactor pull, not by the pound so these savings will be seen as a pull is eliminated. Food reduction, combined with recycling can result in a compactor pull reduction.

Regulations—Certain states have banned large food generators from discarding food into landfills. The US Composting Council provides a map identifying states with food waste landfill bans and state-by-state detail for regulations and laws, however, check with the state environmental agency for the latest regulatory updates.

Image Credit: HealthPartner

Soil Enrichment—For facilities that are near a composting facility or are composting onsite, food material breaks down naturally in short periods of time under the proper temperature and pressure conditions. Nourishing the earth with food waste and other compostable materials helps avoid other man made soil enriching materials like fertilizers. And since healthier soil improves water drainage, it can help with water conservation, as well.

Animal Feeding—In rural areas in close proximity to animals, food waste is an excellent source of nutrition and donating food waste to farms as animal feed can be a win-win situation.

Image Credit: Barthold Recycling, Inc.

Disclaimer: While some specific products or methods are discussed, they are examples or illustrative of what can be accomplished - the mention of a specific product or method does not mean that it is endorsed or used by the parties that contributed to this guidance document.

Goal Setting

In September of 2015, the U.S. EPA and the USDA made a joint announcement, setting a goal of 50 percent food waste reduction by 2030. ReFED aims for a 20 percent reduction in food waste as a first step.

The goal takes the user through the EPA food recovery hierarchy and is meant to be addressed in order, however that is up to the facility. Data is submitted through the annual Practice Greenhealth Environmental Excellence Awards. Data collected from the awards results in a benchmark report that allows health care organizations to benchmark against other Practice Greenhealth award-winning facilities and within multi-facility health systems.

Before taking on the goal, read through the guide for clarity on intent and opportunities for intervention all along the food waste hierarchy. Practice Greenhealth is here to support organizations as they tackle this goal.

GOAL	MEASURE	CALCULATION DETAILS
Level One		
Determine food waste to landfill baseline and achieve a 10% reduction in food waste to landfill from baseline year (going back as far as 2013 if baseline is already established). Identify which of the four food waste streams the facility is currently focusing on for food waste reduction and measurement. See definitions for clarity on each stream. **Check all that apply.** ☐ Pre-Consumer Food Waste[1] ☐ Cafeteria Tray Post-Consumer Food Waste[2] ☐ Patient Tray Post-Consumer Food Waste[3] ☐ Catering Waste[4] Check any combination of the above to get started but keep in mind that if the facility decides to tackle an additional food waste category, the baseline will have to be reset.	**Pounds of food waste to landfill per meal served**	**Pounds of food waste to landfill normalized by number of meals served** **Numerator:** Pounds of food waste generated annually[1] **Denominator:** Number of meals served annually Identify pounds of food waste per meal served (baseline). See step-by-step calculation on page 11 of this guide. After implementation of food waste reduction strategies, determine pounds of food waste per meal served (current) and then calculate percent change in pounds of food waste per meal served. **Determine percent change:** 1. Subtract pounds of food waste per meal served (current) from pounds of food waste per meal served (baseline). 2. Divide the difference by the pounds of food waste per meal served (baseline). 3. Multiply by 100 This calculates the percent change in food waste per meal served between baseline and current.[2] A positive number indicates a reduction in food waste per meal served. A negative number indicates an increase in food waste per meal served. **Example:** If baseline is 1.2 lbs of food waste per meal served and current is 0.86 lbs of food waste per meal served, then percent change is: **Step One:** 1.2 – 0.86 = 0.34 **Step Two:** 0.34/1.2 = 0.283 **Step Three:** 0.283*100 = 28.3% Based on this data, the sample facility has decreased its metric for pounds of food waste per meal served by 28.3% since baseline. [1] Use baseline determination protocol described on pages 4 and 5 of this guide. [2] The Practice Greenhealth award application will ask the organization to provide the baseline year and each of the component numbers of the food waste metric above. See the Calculation for Pounds of Food Waste per Meal Served on page 11 of this guide and/or the Practice Greenhealth Food Waste Calculation Spreadsheet for specifics.
Level Two		
Reduce food waste to landfill by 20% (ReFED Goal) from baseline year	**Pounds of food waste to landfill per meal served**	Percent change in pounds of food waste per meal served (per calculation in Level 1)
Level Three		
Reduce food waste to landfill by 50% (EPA and USDA Goal) from baseline year	**Pounds of food waste to landfill per meal served**	Percent change in pounds of food waste per meal served (per calculation in Level 1)

NOTE: If the facility has already begun to tackle this challenge but has not measured a baseline, it may be able to create a baseline by determining what food waste would have otherwise gone to landfill by tracking the total pounds of waste currently going to composting, digestion, donation or other strategies. If the organization adds food waste reduction categories over time (e.g., starts with kitchen prep waste only and then expands to include new areas such as patient trays), a new baseline must be established—capturing food waste from all existing and new categories—or metric will be skewed. Contact Practice Greenhealth's Data Coordinator, Christopher Bodkin at cbodkin@practicegreenhealth.org for assistance on calculating this metric.

Defining Food Waste Streams

The EPA defines food waste as uneaten food and food preparation wastes from residences and commercial establishments such as grocery stores, restaurants, and produce stands, institutional cafeterias and kitchens, and industrial sources like employee lunchrooms. Expired foods that are discarded should be included. For this document, the definition refers to food, not disposables or napkins or other items that are potentially mixed in with food.

1 Pre-consumer Food Waste—Food which is discarded prior to being served to a patient or guest; typically driven by trimmings/prep, overproduction, spoilage, and expiration. Other examples include salad bar leftovers from cafeteria, leftover food that was served and not consumed—whether inside the kitchen or outside of the kitchen but pre-consumer.

2 Post-consumer Food Waste from Cafeteria—Food which is remaining on the tray after being returned to the kitchen from the visitor or guest in the cafeteria. Food collected from cafeteria waste (if there is no tray return).

3 Post-consumer Food Waste from Patient Tray—Food which is remaining on the tray after being returned to the kitchen from the patient.

4 Catering Waste—Food which is remaining after a catered event. This could include overproduction, boxed lunches, leftover food that was served, food left on plates from catered events or other catered material.

Getting Started

1. **Get Informed** - This guidance document does not attempt to recreate the myriad resources available on food recovery. This guide compiles great resources to provide one-stop access to tackle the EPA food recovery hierarchy and integrate food waste prevention and management into an existing sustainability program. Each section links to resources and other guidance documents. Check out the Natural Resource Defense Council's "Wasted - How America is losing up to 40% of its Food from Farm to Fork to Landfill." Read the 2016-released ReFED Guidance document, a collaboration among businesses to understand the issue and reduce food waste by 50 percent by 2030. Listen to the five-part sharing call series that takes listeners through the EPA Food Recovery Hierarchy and shares case studies along the way.

2. **Develop a Team** - A food and nutrition department champion is critical for success in taking on food waste management. For maximum leverage, educate other teams like climate teams, the community benefit department and green teams or sustainability teams to engage other key stakeholders and raise awareness around the role food waste prevention and management plays in achieving goals around greenhouse gas reduction, climate action, mission demonstration and community benefit. Other key stakeholders include environmental services, regulators, infection prevention and key business partners like waste/material haulers.

3. **Assess and Establish Food Waste Collection Parameters** - Bring the team together to identify the parameters of the food waste goal and understand the four-identified food streams to monitor and address over time. While some are easier than others, all components are critical to maximize food recovery success.

    a. **Pre-consumer food waste** is the easiest to segregate, measure, prevent and manage. This waste stream focuses exclusively on pre-consumer food waste which is generated in the kitchen from overproduction, expired food, food preparation waste and food that is put out for consumption but not used (i.e., salad bar or buffet.) This stream will be the starting place for many.

    b. **Post-consumer food waste from patient tray:** Patient food waste left on meal trays can be captured and measured from these trays and segregated for composting or animal feeding. If food trays are discarded somewhere other than the kitchen, the segregation and capture may be challenging. Consider a change in work practices to ensure the food waste comes back to the kitchen and is not discarded elsewhere.

    c. **Post-consumer food waste from cafeteria:** When available, a tray return line is a good option for collecting cafeteria post consumer food. Eliminating all trash receptacles in the cafeteria and directing all trays and food back to the kitchen can result in the best segregation and most accurate data. If there is no tray return, and returning materials back to the kitchen is a challenge, the team may decide to either hold off on cafeteria food collection at the start or train users to segregate in the cafeteria. End-user training can be challenging and can lead to contamination from non-food disposables.

    Practice Greenhealth posters can help address this challenge.

    d. **Catering waste:** This captures waste from meetings and events and as long as waste from catering is returned to the kitchen, there is no reason it can't be included in the program. If the waste is discarded where it is served, then this process would have to be changed to be able to include catering in the collection and data collection process.

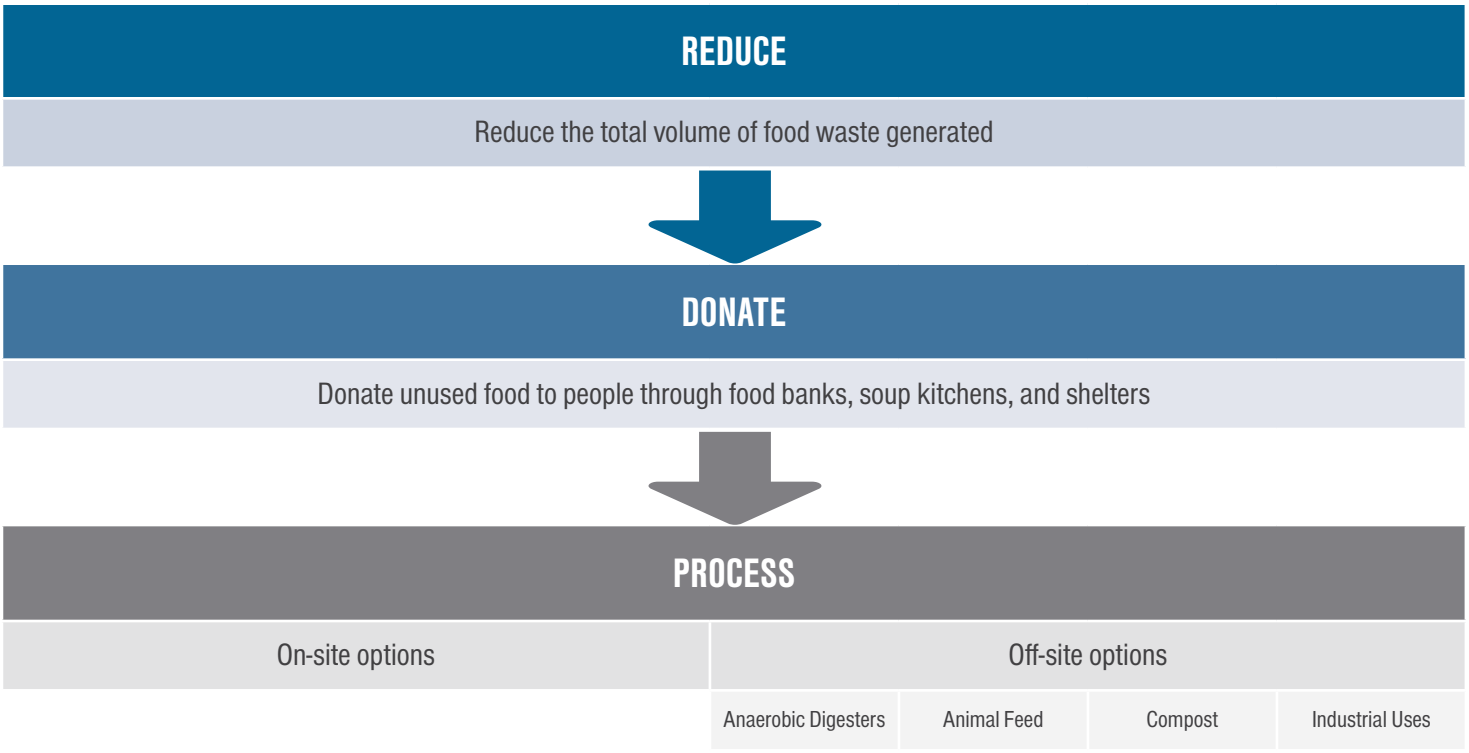
The team can review the process for each: pre-consumer, post-consumer patient trays, post-consumer cafeteria and catering and decide what makes sense for getting started from easiest and most impactful to most challenging. There is no harm in starting small in a manageable area (pre-consumer only) and then expanding at a later date — it's up to the team. Establishing what is to be measured and addressed and where, is the first step.

Whether just focusing on the pre-consumer waste or including the cafeteria, patient trays and catering, all food waste has to be collected and weighed for either 24, 48 hours or a full week (Practice Greenhealth is leaving it up to the facility to decide) to capture the baseline generation of pounds of food waste per day per meal. Practice Greenhealth recognizes the staffing associated with ongoing weighing of food waste and it is for this reason that the weight is estimated based on 24, 48 hours or a week's weighing. It is up to the facility to choose how many days of weighing to come up with a way to **estimate food waste generation in pounds per day.** Estimate calculators are available for those that are unable to conduct their own assessment. Weighing waste for a full week will provide the most accurate baseline because it takes into account any daily fluctuation and captures employee waste generating differences as part of work habits. Use of "meal" as the normalizer will allow hospitals to compare to one another

4. **Conduct Baseline** - Identify bins for **"FOOD WASTE ONLY"** in the kitchen and cafeteria (if appropriate). Food waste bins will get heavy quickly so consider small buckets or otherwise manageable receptacles. First, weigh the bin empty, so that after bins are weighed, the weight of the bin can be subtracted to come up with the baseline pounds per 24-hour day. Use the Practice Greenhealth Food Calculation Sheet to track for a minimum of a 24-hour period. Some may create estimates based on weighing several bins to determine a very good "per bin" estimate. Weights can be tracked regularly but will only be reported once a year through the awards program.

Hospital practices fluctuate and the weighing of a sampling is best. Even if using an estimate tool to create a baseline for the quantity of waste, the first two steps of the EPA Food Waste Assessment will help understand what types of food waste the facility is generating and where there might be opportunities to reduce that waste.

5. **REDUCE — Prevent Food Waste** - Source reduction or food waste prevention is at the top of the EPA food recovery hierarchy due to its triple bottom line impact: it has the greatest financial, environmental, and social impact. In order to prevent food waste, it's imperative to first understand what foods are being wasted and why. Once the waste is collected, a visual inspection can help identify key



Organics Flow Chart from RecyclingWorks in Massachusetts

opportunities around prevention and a better understanding of how the waste is generated. This is the "aha!" moment and opportunity to change ordering or preparation practices and review aspects like expired foods to get a better understanding of which purchased items are never used.

LeanPath, a business that helps customers reduce food waste and improve efficiency, found that its customers have typically reduced their pre-consumer food waste by 50 percent or more, which results in a **two to six percent savings on annual food purchases.**

6. **DONATE — Develop a food donation plan** - Surplus non-perishable and unspoiled perishable food can be donated to a food rescue organization. Practice Greenhealth is partnering with Feeding America, with a network of member food banks, for a coordinated food donation offering. The Feeding America network rescues more than 2 billion pounds of food each year.

   Feeding America is the nation's largest domestic hunger-relief organization—a powerful nationwide network of 200 food banks and 60,000 food pantries and meal programs that provides food and services to people each year. The network serves virtually every community in all 50 states, Washington D.C., and Puerto Rico. As food insecurity rates hold steady at the highest levels ever, the Feeding America network of food banks has risen to meet the need. They feed 46 million people at risk of hunger, including 12 million children and 7 million seniors. In 2015, their network distributed more than 3.5 billion meals to people.

   The process of getting food to hungry Americans requires a dynamic infrastructure and sophisticated management. Feeding America secures donations from national food and grocery manufacturers, retailers, foodservice operations, packers and growers and from government agencies and other organizations. Feeding America then moves donated food and grocery product to member food banks. The food banks and/or associated food pantries and meal program partners distribute food and grocery items to serve families, children, seniors and others at risk of hunger. Feeding America's nationwide network of food banks also supports programs that improve food security among the people they serve; educates the public about the problem of hunger; and advocates for legislation that protects people from going hungry. Individuals, charities, businesses and government all have a role in ending hunger. You can learn more on their website and follow them on twitter @FeedingAmerica.

Food safety and quality protocol

Feeding America's network of food banks serves more than 46 million people each year. They have a responsibility to ensure that every person who comes to them for help is provided with food that is safe to feed their families. Food safety is a foundational aspect of the work to end hunger, and Feeding America is committed to it because they are committed to improving the lives of the people they serve.

The network of food banks adheres to the same stringent requirements that grocery retailers, food manufacturers and restaurants in the U.S. must follow. In addition to following these food safety laws, the food banks are all required to pass a third-party food safety audit. The third-party audit follows a food safety standard that is based off of food safety laws and also food industry best practices.

At Feeding America, they require that staff at member food banks are properly trained in food safety. To help them adhere to the strict food safety standards, they created an innovative food safety training for food banks to follow. The stringent processes and procedures help ensure that families facing hunger receive only good, safe food from the entire Feeding America network.

Get started with donation with Feeding America

- Practice Greenhealth members can reach out to Feeding America's Tony Pupillo tpupillo@feedingamerica.org and provide a list of hospitals with zip codes, and Feeding America can identify the associated Food Bank. All Practice Greenhealth members have the same donor number **54092** which is input into the donor report anywhere throughout the Feeding America network. The report helps track donation data by hospital, system and impact of all participating Practice Greenhealth members. It is not for tax purposes.
- The Feeding America national office works alongside interested Practice Greenhealth member facilities and their foodservice teams to establish specific donation program goals. Together the team will:
  - Define a rollout schedule by location, prioritizing locations where infrastructure is in place to ensure a smooth process.

THE 1996 BILL EMERSON GOOD SAMARITAN FOOD DONATION ACT; P.L. 104-210

Many hospitals are worried about risk and liability, but the Bill Emerson Good Samaritan Food Donation Act was put into place to protect the donor. On October 1, 1996, President Clinton signed into law the Bill Emerson Good Samaritan Food Donation Act, a federal law to encourage the donation of food and grocery products to nonprofit charitable organizations for distribution to needy people. The legislation passed both chambers of Congress, unanimously.

The federal Good Samaritan law protects businesses, volunteers and nonprofit organizations from civil or criminal liability in the course of donating apparently fit and wholesome food or grocery products for distribution to needy people. The federal Good Samaritan Act is designed to encourage donations of food and grocery products by providing a uniform, national standard of liability for donations. Learn more about the Act here.

- Pair the donation program location with a local food bank.
- Review foodservice operations and opportunities to capture maximum donations which includes ready-to-eat products and eligible food from catering.
- Review food safety guidelines, discuss in-demand products including produce, dairy and protein. Logistics will be coordinated through a site visit to assess, review and establish types of product, quantity, pick up frequency, pick up location and an identified site champion to oversee the logistics on an ongoing basis.
- Feeding America coordinates a conference call for all parties to connect the food bank, Feeding America and the hospital.
- Other resources include customized food donation rollout guidelines and a food bank and/or agency site visit.

Reporting

Feeding America's network of food banks and agencies have a national reporting platform and provide reports on amount and types of food donated. Product categories such as meat, produce, dairy, prepared food and bakery help donors track the types of food being donated. This kind of data can play an important role in future inventory controls. A monthly donation report is sent to donor facility. Practice Greenhealth will be able to report out on the aggregate amount of food donated by its membership.

Understanding the benefits of establishing a donation program with Feeding America.

Tax Deductions

- Enhanced tax deductions are available for donations of fit and wholesome food inventory to qualified 501(c) nonprofit organizations serving the poor and needy (Internal Revenue Code 170e3).
- Qualified business taxpayers can deduct costs to produce the food and half the difference between the cost and full fair market value of food donated.
- Deductions apply to C corporations and non-C corporations (like sole proprietors, S corps & LLCs) Harvard Food Law and Policy Clinic offers guidance on tax deductions.

Goodwill and positive PR

Leveraging the food donation program and partnership with Feeding America and the local food bank to staff, customers and the local community is an opportunity to engage the community around the issue of hunger. Check out Practice Greenhealth's Sustainability Marketing Plan Toolkit for more templates on communication strategies.

7. **PROCESS — Animal feeding, industrial use methane capture, composting and digestion** - Even when prevention and donation are a success, there will be some food waste leftover and this is where the facility can research options for animal feeding, industrial uses (capturing methane from process), biodigestion or composting. Food that cannot be donated (and not in packaging) may be accepted by animal feed operations, anaerobic digestion facilities, or composting facilities. Some parts of the country have depackaging facilities that can separate packaged food from packaging to send the wasted food to an anaerobic digester.

   Research regional opportunities
   The EPA hierarchy points to regional (versus onsite) anaerobic digestion for its potential to recover methane for energy use. Animal feeding is identified as the second option, and finally, composting. All of these are preferable to landfill or incineration. Food in landfills degrades and creates methane (CH4); a greenhouse gas that contributes to global climate change. Methane is 10 percent of total man-made greenhouse gases. The impact of methane on climate change is more than 25 times greater than CO^2 over a 100-year period.

   Research local opportunities for food waste management to identify options in area. Speak with the waste haulers, food services, environmental services and supply chain contact at the facility to identify potential partners. Increasingly integrated waste solutions include composting services and may be promoted by local municipalities and forward-thinking business providers.

   For waste material contracting guidance, refer to the Practice Greenhealth Waste RFP Language, which includes composting services. Ensure that food waste is part of any waste material contracting. Identify the closest, easiest method of management to cut down on vehicle transport and associated environmental and financial impact.

Implementation Phase - Once the solution is identified, follow these steps for maximum success.

1. **Pilot phase** - Start small and test the process. Walk through the process from start to finish and identify key team members, equipment needs (bins, educational posters) logistics, training, storage, quality assurance protocol (audits, check-lists, policies, ongoing training) and education for new and existing staff — as with any sustainability initiative. Take the time to work out any kinks before a formal roll-out. If composting disposables, start with items that have a known performance such as hot cups. Launching with items like hot to-go containers may be challenging as compostable containers often require a perception adjustment on the part of the user due to heat transfer or softening of the material. While Practice Greenhealth advocates for reusable dishware and service ware, the next best is compostable ware. Work with supply chain to move away from disposable dish and service ware that cannot be composted and consider compostable products. Learn more about certified compostable products on the Practice Greenhealth Environmentally Preferable Purchasing pages. Compostable bags can also be specified here.

2. **Segregate material** - Facilities where food can be segregated after tray return have the greatest success, with reduced contamination. Streamline the process to improve waste segregation. Where there are tray lines, for example, facilities may eliminate public receptacles, have food come back on trays and have trained staff segregate in the kitchen. If there is no tray return in the cafeteria, consider signage with visuals to support segregation, staff training and regular auditing for maximum benefit.

3. **Develop a plan** - Whichever options are identified for the facility, ensure that a written guidance document is developed and integrated into the overall hazardous material and waste management plan, as required by Joint Commission and as desired by Practice Greenhealth. Recognize and communicate the role that food waste management plays in climate strategy and community benefit.

4. **Education and maintenance** - Develop both new and existing staff training materials for key individuals in environmental services and food and nutrition. Use the Practice Greenhealth Less Food to Landfill PowerPoint and presentation script to facilitate training. Download the Practice Greenhealth template to feature workers and the

steps they are taking to prevent and manage food waste. Institute a routine that includes inspecting and monitoring segregation processes. Include on-the-spot training to ensure quality product. Contaminants may happen from time-to-time, but demonstration of ongoing training, a written protocol and clear communication with business partners can help maintain long-term successful relationships. Ask the hauler if they offer tours of the facilities. If yes, select key staff to attend. Make sure to speak to all key staff and make adjustments as needed. And share best practices with the staff (For all shifts - am/pm/weekends).

5. **Marketing and communications** - Use the Practice Greenhealth posters and sample press releases to let staff, patients, visitors and broader community know of the organization's commitment to achieving the EPA and USDA goals to reduce food waste by 50 percent by 2030 with the Practice Greenhealth goal and toolkit. Check out Practice Greenhealth's Sustainability Marketing Plan Toolkit for more templates on communication strategies.

6. **Track data** - Continue to track food waste and weigh food that is diverted from landfill (whether for animal feed, compost or other strategy) to be able to report to Practice Greenhealth through the Environmental Excellence Awards.

For Sodexo sites, please refer to their Waste Toolkit for support implementing any waste-reduction initiatives. The Waste Toolkit is a free resource available to all Sodexo managers via SodexoNet. The toolkit will allow facilities to create a unique waste management program specific to the site by assessing the practices that are currently in place, while identifying additional practices to implement. The waste toolkit links to every Sodexo available resource for food waste and food recovery in one convenient location. The toolkit serves both food and facilities services.

Sodexo managers needing support reach out to:

United States: Christy Cook at Christy.cook@sodexo.com

Canada: Matt Cameron at Matt.Cameron@sodexo.com

For Aramark sites

Aramark's mission is to enrich and nourish lives. A key way this comes to life is by being responsible stewards of the environment. That's why a core element of the environmental sustainability platform is minimizing waste and responsibly managing the least amount of waste unavoidably created during food production. Their approach to waste minimization follows the US Environmental Protection Agency's food recovery hierarchy - reduce, reuse and recycle food and other waste.

Source reduction is the priority at Aramark. Through a robust food management process, Aramark employs standard processes and controls that support efficient back of the house operations and minimize food waste. Through their reporting systems, they track forecasted production levels, products purchased, amount of leftovers, and evaluation of production against forecast at each location. This process enables Aramark to minimize waste before its even generated.

To support their front-line teams they provide additional tools and resources to reduce, reuse and recycle waste, available in the "environmental sustainability" section on aramark.net. To learn more about Aramark's commitment to environmental sustainability, visit www.aramark.com.

If the facility utilizes a different vendor for food service operations, be sure to contact them, as they may also have a food waste reduction plan or solutions.

By Janet Howard, Director, Member Engagement, Healthier Hospitals, Practice Greenhealth

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Additional Data Collection Guidance Resources

LeanPath free resource How to Conduct a Food Waste Audit for Your Foodservice Operation

RecyclingWorks Food Waste Estimation Tool (includes metrics for hospitals)

Guide to Conducting and Analyzing a Food Waste Assessment

LeanPath's Checklist For Success - Developing a Food Waste Strategy

EPA's Reducing Wasted Food and Packaging A Guide for Food Services and Restaurants, including their form to help track the reasons for food waste.

LeanPath E-Guide: 20 Waste-Cutting Tips Every Foodservice Chef Should Know

Blog "How to Prevent Food Waste Before it Starts"

LeanPath case study with Gundersen Health System

LeanPath case study with Sanford USD Medical

On-Demand LeanPath Webinar: 5 Food Waste Myths to Debunk-Now!

RecyclingWorks How to Reduce Food Waste guide.

Calculation for Pounds of Food Waste per Meal Served:

1. CALCULATE TOTAL NUMBER OF MEALS SERVED (PER YEAR)

Definition: The total number of meals is the sum of patient meals and calculated meals (defined as all other meals (cafeteria, catering, satellite carts etc.).

STEP 1. The **Total Cafeteria Cash & Credit Card Sales** (does not include Meal Tickets or any meals for which the revenue is collected at a later date) is divided by the **Number of Related Register Transactions** to arrive at an **Average Retail Transaction**. The **Average Retail Transaction** (ART) is then used to determine the **Number of Calculated Meals** (from cafeteria/catering (or retail) operations, including non-cash sales).	**Average Retail Transaction= Total Cafeteria Cash & Credit Card Sales / Number of Related Register Transactions** Example: If Total Cafeteria Cash & Credit Sales is $100,000 and Number of Related Register Transactions is $26,500, then $100,000/26,500= $3.77 (or the Average Retail Transaction)
STEP 2. Determine **Number of Calculated Meals** by dividing **Total Non-Patient Food & Beverage Revenue** by the **Average Retail Transaction.**	**Number of Calculated Meals= Total Non-Patient Food & Beverage Revenue/ Average Retail Transaction** Example: If Total Non-Patient Food & Beverage Revenue is $400,000 and the Average Retail Transaction is $3.77 then $400,000/$3.77= 106,101 (or the Number of Calculated Meals)
STEP 3. Determine Number of Patient Meals from Food & Nutrition Services	Example: Number of Patient Meals as reported by Food & Nutrition Services is 566,124
STEP 4. Add Number of Patient Meals to Number of Calculated Meals to get Total Number of Meals Served	**Number of Patient Meals + Number of Calculated Meals = Total Number of Meals Served (per year)** Example: If Number of Patient Meals is 566,124 and Number of Calculated Meals is 106,101 then 566,124+106,101 = 672,225 (or the Total Number of Meals Served)

2. ESTIMATE TOTAL POUNDS OF FOOD WASTE (PER YEAR)

STEP 1. Weigh food waste (in pounds) for 24-72 hours per estimation protocol in Getting Started Guide.	Example: Day 1 generates 420 lbs of food waste. Day 2 generates 599 lbs of food waste. Day 3 generates 524 lbs of food waste.
STEP 2. Divide by number of days to get **Average Food Waste per Day**	Example: Add the food waste from each day and divide by 3 (420+599+524=1543 and 1543/3=~514 lbs of food waste per day)
STEP 2. Multiply by 365 to get **Total Pounds of Food Waste per Year**	Example: 514 lbs of food waste per day * 365 days = 187,610 **Total Pounds of Food Waste** (per year)

3. CALCULATE POUNDS OF FOOD WASTE PER MEAL SERVED

STEP 1. Divide estimated **Total Pounds of Food Waste** (per year) by **Total Number of Meals Served** (per year) to get **Pounds of Food Waste per Meal Served**	Example: 187,610 divided by 672,225=0.27 **Pounds of Food Waste per Meal Served**

Note: The calculation above can be used to determine pounds of food waste per meal served for baseline — and later, for current year. The calculation on page X of this guide can then be used to calculate percent change in food waste per meal served.