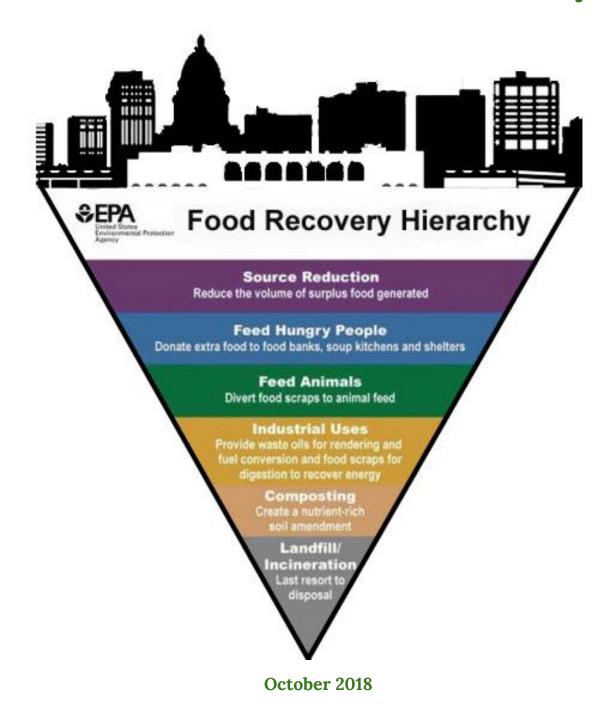
Food Waste and Recovery Guide for Madison and Dane County



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Introduction

UNITED STATES

Nearly 50% of all produce grown in the United States is thrown away¹, with 40% of it never even being touched by a consumer. This translates to more than a third of the average American's grocery bill heading straight into the trash. This wasted food ends up as the single largest occupant of landfills, according to the Environmental Protection Agency. When food is wasted, not only is it contributing to these landfills, but it is also a colossal waste of resources utilized to produce the food in the first place, such as water, land, energy, and labor, including the growing, processing, distributing, and storing of that food².

"Estimating the Quantities and Types of Food Waste at the City Level," a report conducted by the Natural Resources Defense Council³ (NRDC), showed that tied to restaurants, households are actually the top generator of food waste. Yet, 76% of survey respondents believe they throw out less food than the average American, which allows a cycle of perpetual waste to continue. However, results of the study reported that most participants agreed that reducing their household's food waste would be beneficial. This suggests that, no matter how small a change the average American makes in reducing their own waste, the cumulative effect across a population could have great significance.

Furthermore, with around 41 million Americans⁴ currently struggling to put food on the table,

the pressure for cultivating, buying, and consuming "perfect" products only continues consistent to preserve hunger for disadvantaged individuals and a cycle of waste for farmers, producers, and consumers. Additionally, households that are food insecure are much less likely to have access to food that supports a healthy lifestyle⁵. Reducing food waste is an effort that needs more individual commitment, to not only better serve our local communities, but the country as a whole.



¹ "Half of All US food produce is thrown away, new research suggests," The Guardian (2016).

² "Report: What, Where, and How Much Food Wasted in Cities," Natural Resources Defense Council (2017).

³ "Report: Estimating the Quantities and Types of Food Waste at the City Level," Natural Resources Defense Council (2017).

⁴ "Food Security Status of US Households in 2016," Economic Research Service, United States Department of Agriculture

⁵ "Hunger and Poverty Facts," Feeding America (2015).



DANE COUNTY

Food insecurity is defined as having inconsistent access to a sufficient quantity of nutritious foods, and it is a prevalent issue in Madison and Dane County Area, as well. According to the 2015 Dane County Youth Assessment (DYCA), a survey taken every three years by school districts in Dane County, "3,327 youth, or 12.2% of all 7th-12th graders, had to skip meals or eat less at least once, in the past 30 days, because their family did not have enough money for food," showing a slightly higher number than DCYA 2012 assessment.

This increase over the last few years suggests that this issue may not subside unless adequate measures are met on behalf of producers and consumers alike. With commitment at both the national and local level, efforts towards food waste recovery and redistribution can also assist in the decrease of food insecure households. Essentially, one step in solving food insecurity is by funneling excess foods to those in need.

The Environmental Protection Agency's Food Recovery Hierarchy serves as a roadmap for the Food Recovery Resource Guide, including reducing the volume of surplus food generated, donates extra food to food banks, shelters, and soup kitchens, diverting food scraps to animal feeds, industrial uses (such as energy), or composting, with an ideal to throw away the least amount of food possible into landfills. Avoiding food waste, one step at a time.



This Food Waste Recovery Guides aims to:

- Provide tips for consumers to reduce food waste, starting in the supermarket.
- Provide tips for corporations on how to limit their food waste and manage catering events to avoid excess food.
- Understand the rules and regulations that govern expiration dates and lead to unnecessary food waste.
- Navigate food safety concerns and understand tax incentives and write-offs for donating food.
- Allow individuals interested in reducing their impact on food waste to explore alternative options for their unwanted food, such as composting.
- Provide an inventory on organizations, farms, and companies in Madison and Dane County Area dedicated to redistributing excess foods and limiting food waste. This inventory will also serve citizens who are interested in donating goods, as well as those in need of obtaining food.
- Serve as a resource for consumers, farmers, and organizations alike to make a conscious effort in the Dane County Area to reduce food waste.

Avoid Food Waste at Home

CAUSES OF FOOD WASTE

The following are common reasons that lead to food waste in the household:

- **<u>Buying too much</u>** at the grocery store:
 - Makes it difficult to keep up with food before it goes bad.
 - Food becomes spoiled or moldy, and is consequently tossed.
- **<u>Blemished fruits or vegetables</u>** are mistaken as spoiled, or are undesirable in the eye of a grocer or consumer.
- <u>Unwanted leftovers</u> head for the trash, rather than becoming another meal.
- **Scrap waste** (inedible parts) or disfavor of certain parts of food (e.g., pizza crust or apple skin) accumulates into a large amount of waste.
 - Three of the most commonly discarded questionably edible items in a recent study by the Natural Resources Defense Council (NRDC) were apple skins and cores, potato peels, and broccoli stalks. Three of the top five foods wasted in study of Denver, New York, and Nashville, were chicken, coffee, and bananas⁶.
- **Expired date labels** encourage consumers to throw out food based on dates referring to best quality, not safety. Consumers often trash food prematurely based on a misunderstanding of these labels. See the Food Safety section below for more details.

WAYS TO PREVENT AND REDUCE FOOD WASTE AT HOME:

PURGE

- Start by taking a look at your fridge, freezer, and pantry and identifying spoiled goods. (Note: Items past their "Sell By" or "Best By" date may still be good to eat. Check out the *Food Safety* section below for tips on knowing when to toss goods past their date.)
- Once you have thrown out anything spoiled, take inventory of what you have and update it when you go shopping. Putting a paper list or whiteboard on your fridge is a great way to keep track of its contents.
- Organize your refrigerator by putting food that should be consumed first in a specific area.

SHOP

• Before going grocery shopping, **make a list and only buy what you need**. Don't purchase anything you already have. Be realistic in your goals and do not buy excessive

⁶ "Estimating Quantities and Types of Food Waste at the City Level," Natural Resources Defense Council (2017)

amounts of foods you are unlikely to eat. For example, think about how many meals will include lettuce and how much lettuce per meal to determine how much to buy.

- Having a specific recipe in mind may help you determine what quantities to buy. Write down amounts or have a plan for leftover ingredients. Check out https://www.savethefood.com/cook-it for ideas on how to use leftover bits.
- **Be careful when buying in bulk.** If the bulk price is the cheaper option, be sure you can freeze or store it properly. See the Store subsection below for storage tips.
- **Buy the ugly fruit at markets and stores!** Don't be discouraged by misshapen fruits and vegetables. Despite their cosmetic issues, which make them more likely to hit the can at the end of the day, they have the same nutritional value and taste. Just be wary of bruises and rotten spots -- simply remove bruises and consume the rest.

STORE

- Proper storage of your food will help you gain control over its lifespan and reduce the amount of rotten produce you toss.
- If you are unsure you will be able to use something before it spoils, <u>freeze</u>, <u>pickle</u>, <u>can</u>, or <u>dry</u> it⁷.
- Curious about the safety of freezing foods? Check out this <u>Q&A by the USDA</u>⁸. Find more information and tips on freezing <u>here</u>⁹.
- <u>https://www.savethefood.com/food-storage</u> is an excellent guide to finding the best methods to store fruits, vegetables, meats, condiments, and more. Below are a few examples and basic tips to remember when storing food.



⁷ Visit the <u>National Center For Home Preservation</u> for more tips

⁸ The USDA's Food Safety Education section provides a helpful list of answers about nutrient retention, freezer burn, and safe thawing.

⁹ "Freeze more, Waste less," Natural Resources Defence Council (2015).

Food	Refrigerate?	When Freezing
Bread	No. Bread is best within a few days, stored at room temperature in a paper bag.	Slice before freezing (if using slices) and wrap tightly or in a freezer bag. Toast or thaw at room temperature.
Bananas	Optional when ripe. Store on counter. Leaving them next to other fruit will speed ripening.	Freeze loose with peel on, or peel first and freeze in an airtight container.
Salad Greens	Yes, put in an airtight container with a damp cloth in a crisper drawer. Or, store on counter in a glass of water (like cut flowers).	Not recommended.
Leafy Greens	Yes. Store loosely with a damp cloth in a crisper drawer.	Blanch (cook in boiling water for 1 minute), dunk in ice water, dry, and place in an airtight container or freezer bag.
Berries	Yes. Store in a covered bowl. Or, even better, store in container or on a tray with cloth above and below each layer.	Rinse, dry, freeze in a single layer on baking sheet, then transfer to an airtight container.
Root Vegetables	Yes. Separate greens and store in a bag in the crisper drawer. Store in watertight bag in crisper drawer for at least a couple weeks.	Cook beets fully; slice, cube, or puree and put in freezer bag. Blanch and chop or puree carrots, or shred for baking. Cook sweet potato until almost tender, then slice or mash.

RECIPES

Find ways to repurpose leftovers and scraps, rather than throwing them out:

- Make vegetable stock out of the scraps, or broth from animal bones and uneaten parts. <u>The Kitchn</u> has a basic stock recipe you can adapt to your needs.
- <u>Pickle</u>¹⁰ almost any vegetable.
- Use old <u>bananas</u> or <u>mushy apples</u> to bake a sweet treat¹¹.
- Turn <u>carrot tops</u> into a garlicky pesto spread.
- <u>https://whatscooking.fns.usda.gov</u> provides recipes, along with storage recommendations, nutritional information, and usage tips for a wide range of household ingredients.
- Use foods you already have at home, rather than buying a new one to fit a recipe. Reference http://foodsubs.com for help in substituting ingredients.

¹⁰ <u>Foodinjars.com</u> has a plethora of pickling and canning recipes

¹¹ Visit your favorite food blog for inspiration on how to use up ingredients.

DON'T MIND THE WILT

Understand what is edible and what isn't. Refrain from tossing those wilted greens, old herbs, and stale bread—they can be revitalized!



<u>Save the Food</u> has tips on how to revive and use up different types of food. Below are a few examples.

Food	Revival
Bread	Stale bread, if not too old, can be heated or toasted at 140 degrees F.
Cooked Rice	Add a bit of water and heat on low, if hardened. Or, use in fried rice or rice cakes.
Salad Greens	Soak wilted greens in ice water for 5 to 10 minutes.
Basil	Trim the stems of wilted basil, ,then soak in ice water for 15 minutes.

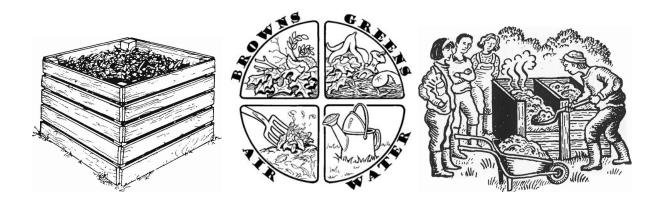
LOOK IN YOUR TRASH

Keep an eye out for items you more regularly throw out, or toss in greater quantities. Next time you purchase that item, either buy a smaller quantity, have a larger variety of uses in mind, or be sure to use it before it goes bad.



COMPOST

As a last resort for spoiled food or inedible scraps, composting is an environmentally friendly way to divert food waste from landfills, while inputting nutrients back into the soil. See the *Composting* section for more information.





PRODUCT DATING AND FOOD SAFETY

A major source of food waste is the result of misunderstandings around date labels, such as "Best if Used By" or "Sell By" dates. These labels refer only to quality and, with the exception of infant formula, has nothing to do with the foods safety. In fact, product dates are not even required by the Federal law. According to the USDA, "The quality of perishable products may deteriorate after the date passes, however, such products should still be safe if handled properly. Consumers must evaluate the quality of the product prior to its consumption to determine if the product shows signs of spoilage." Food past its date can even be donated, if no signs of spoilage are present¹².

Term	Definition	Reference to Food Safety?
Best If Used By/Before	Indicates when a product will be of best flavor or quality.	No.
Sell By	Tells the store how long to display the product for sale for inventory management.	No.
Use By	Last date recommended for the use of the product while at peak quality.	No, except for when used on infant formula.

To identify spoiled foods, identify any odd odor, flavors, or textures. Food spoilage can be caused by one of two bacteria: pathogenic, which can cause foodborne illness, and spoilage, which only causes the food to deteriorate. Do not consume any spoiled foods, as it could result in foodborne illness. Below are more resources on food safety:

• <u>FoodSafety.gov</u> has general food safety information.

¹² "Food Product Dating," USDA FSIS (2016).

- Visit the <u>Food Safety and Inspection Services of the USDA</u> for facts on safe thawing of frozen foods.
- Safety tips for donating food is found on the <u>Food and Drug Administration</u> website.
- The FDA also contains information on <u>safe practices with produce</u> and <u>produce safety</u> <u>standards</u> under the FDA Food Safety Modernization Act.

TRACK YOUR PROGRESS

Tracking food waste at home and at work creates awareness and provides a base against which to compare improvements. According to the NRDC, "just by putting an automated system in place, many operations experience an immediate 20% decline in waste, because it raises employee awareness and gets them to start thinking differently about waste." See how much waste you can reduce, or, better yet, challenge your co-workers or friends to see who can waste the least. Here's a <u>Waste-tracking Logbook¹³</u> to start you off.

ADDITIONAL RESOURCES

More tips to reduce food waste:

https://food.unl.edu/14-ways-consumers-can-reduce-food-waste https://www.epa.gov/recycle/reducing-wasted-food-home

- City of Madison's Waste Watchers Program: http://www.cityofmadison.com/streets/programs/wasteWatchers.cfm
- The DC Food Recovery Resource Guide: <u>https://dcfoodrecovery.files.wordpress.com/2017/10/dc-food-recovery-guide-2017.pdf</u>

¹³ Find this logbook on the EPA website

Avoiding Waste at Events and Restaurants

In a 2017 study, the Natural Resources Defense Council found that, on average, restaurants and caterers produce nearly half of the total food waste in the cities studied¹⁴, which is significantly more than waste produced by any other sector. At such a large scale, corporations, catered



events, and food businesses have the potential for great impact on food and environmental sustainability by minimizing their waste.

Reducing your company's food waste will have many benefits for your business and the environment, including decreased greenhouse gas emissions caused by the amount of food in landfills, lowered waste disposal costs for your operation, and tax benefits for surplus food donations.

The following sections provide tips on how to begin to eliminate food waste as a company and at catered events.

CORPORATIONS

Below are some recommendations for kickstarting food waste reduction in the corporate setting:

- 1. <u>Prevent food waste</u>: Reducing the amount of food your company throws out will not only serve the environment well, but will also save your business money. Challenge your employees to track the amount of food waste they produce (use this <u>Paper Waste Logbook</u> or this <u>Food Waste Management Cost Calculator</u>¹⁵) and visibly see results when they improve their habits. Engage your staff and consumers in education about the detrimental effects of food waste and why their efforts are important. See *Avoiding Food Waste At Home* for educational materials.
- 2. <u>Donate extra food</u>: Unserved food at a catered event can be donated to a non-profit organization and redistributed for charitable, religious, or educational purposes. Businesses are protected from liability under the Good Samaritan Act and can use these donations for tax benefits. See the *Donation* section below for

¹⁴ <u>"Estimating Quantities and Types of Food Waste at the City Level,"</u> Natural Resources Defense Council (2017)

¹⁵ Both found on the EPA Website.

tips on donating and organizations to contact, and *Legal and Financial Issues* for more information on legal protection and tax benefits.

3. <u>Compost scraps</u>: In many cases, businesses do not need to make any purchases to start composting their waste. By simple repurposing or repositioning existing waste bins, an institution can set up a composting system and reduce waste management costs. Restaurants, hotels, grocery stores and any other businesses that generate food or organic waste are eligible to compost. Businesses could also encourage their employees to compost at home (see tips in the *Composting* section). Additional information about installing a pilot program and the differences between back-of-house and front-of-house composting can be found in the *Composting* section and in this <u>article¹⁶</u>.

See the <u>EPA's Reducing Wasted Food and Packaging: A Guide for Food Services and</u> <u>Restaurants</u> for more information on how your business can reduce its waste.



Several non-profit organizations in Madison and Dane County are equipped to accept food donations in large quantities. Be sure to contact these organizations before your event to ensure they are prepared to intake your leftovers and to establish a plan to do so.

• Organizations in Madison

- <u>Healthy Food For All</u> is the organization most likely to be able to pick up and recover catered food.
- Meal sites, such as Port St. Vincent and the Salvation Army Homeless Shelter,

¹⁶ <u>"Composting for Businesses and Organizations</u>," Environmental Leader (2013).

are suited to intake (but will not pick up) catered food in smaller quantities.

- Other pantries may take items, but will need to be contacted first as to whether they are equipped to accept prepared food. See *Food Redistribution Inventory* for a full list of pantries, recovery organizations, and meal sites in Madison.

• Organizations in Dane County

- -The <u>Badger Prairie Needs Network</u> in Verona offers food recovery programs with donations from area grocers and ready-to-eat food from local companies with cafeteria services.
- -Other pantries may take items, but will need to be contacted first as to whether they are equipped to accept prepared food. See *Food Redistribution Inventory* for a full list of pantries, recovery organizations, and meal sites in Dane County.

Use the following guidelines to determine what food can and cannot be donated:

Can be Donated	Cannot be Donated
Any food prepared, but never served	Any food that has been on a plate.
Food that is handled safely and kept at appropriate temperatures (see <i>Food Safety</i> section.)	Any food that has been on a buffet line.

The key to donating food from your event is to **plan ahead**. Follow these five steps to ensure your donation goes smoothly:

- **1.** When writing a contract with a food caterer or restaurant, include a statement specifying that leftover unserved food must be donated to an anti-hunger non-profit. This will help the caterer understand that they need to handle food safely and at the appropriate temperature.
- 2. Remember: as long as food is being handled safely, you are protected under the <u>Bill Emerson Good Samaritan Act.</u>
- **3.** Give your caterer or event planner a copy of the Bill Emerson Act to ensure that they are aware of their rights.
- 4. Identify a local organization that will receive the donation and plan the specifics of how they will obtain the food. Be sure to ask the organization about minimum donation quantities and when/where they will pick up or receive the food. Plan to have your caterer or event planner call the organization after the event to verify volume and pick-up time. *See Inventory of Food Pantries and Food Redistribution Organizations* for a more thorough list of who you can contact.
- **5.** Calculate and report the results of your donation. The Rock and Wrap It Up mobile app, the <u>Whole Earth Calculator</u>, converts the pounds of food into a

number of meals, calculated by the U.S.D.A., and greenhouse gas CO2 equivalents, calculated by the E.P.A. Your business can use this information to : show its initiatives in environmental health and social benevity.

Below are a few examples and case studies of businesses successfully donating food from events:

- New England businesses work with the **Boston Rescue Mission**
- <u>EcoSet</u> in L.A. implements the following policies:
 - Unserved catering food is donated when possible under the protection of the Federal Good Samaritan Act to a list of pre-approved partners.
 - Unopened food and food styling ingredients are donated.
 - In special cases, inedible but still useful food is donated to a wildlife group.
- <u>Feeding Forward</u> functions as an on-demand food recovery system in the Bay Area of California.
- See the <u>Los Angeles Food Recovery Guide</u> for more models.



Find out more about safe food recovery and donations with the following guides:

- Wisconsin Harvest Safe Food Recovery, by the Community Action Coalition of South Central Wisconsin
- <u>Reducing Wasted Food and Packaging</u>, by the Environmental Protection Agency
- The Hospitality and Food Service Agreement, by the Waste and Resources Action Programme

ADDITIONAL RESOURCES

Food Donation and Gleaning:

- https://www.usda.gov/oce/foodwaste/resources/donations.htm
- http://extension.wsu.edu/clallam/waste-reduction-program/
- food-waste-reduction-and-gleaning/

Resources for Businesses Looking to Reduce Waste:

- http://www.zerowastedesign.org
- <u>http://www.wrap.org.uk/sites/files/wrap/Food_Futures_%20report_0.pdf</u>

Composting for Businesses:

<u>- https://www.city.waltham.ma.us/sites/walthamma/files/file/file/Composting20</u> _for20businesses.pdf

- https://www.environmentalleader.com/2013/11/composting-for-businessesand-organizations/

Legal and Financial Issues of Food Donation

CAUSE FOR CONCERN

An estimated 48 million people are affected by foodborne illnesses in the United States of America per year¹⁷. More than 6,000 people die after suffering directly from a foodborne illness. This shows that learning more about how these diseases arise and spread is crucial, as it can help with curbing serious illness. The Centers for Disease Control and Prevention (CDC) reported that almost 80% of all foodborne illnesses arise due to some form of microbial contamination. This statistic indicates that a large proportion of foodborne illnesses are caused by poor food handling and preparation.

GOOD SAMARITAN ACT

The Bill Emerson Good Samaritan Food Donation Act is a federal law passed to provide a national standard of liability protection for food donors as well as donee non-profit organization.

Donors include any person donating food or grocery products, where "persons" refers to "individuals, corporations, partnerships, organizations, associations, governmental entities, retail grocers, wholesalers, hotels, motels, manufacturers, restaurants, caterers, farmers, non-profit good distributor, or hospitals." Non-profit organizations that receive these food donations are considered donees, and can be "operating for religious, charitable, or educational purposes."



In addition to donors and non-profit organization donees, the Act also covers gleaners. "The term "gleaner" means a person who harvests for free distribution to the needy, or for donation to a nonprofit organization for ultimate distribution to the needy, an agricultural crop that has been donated by the owner."

The Good Samaritan Act covers food as well as grocery products, as long as they are "apparently fit", fully or in part, for human consumption. The food must comply with Federal, State and local laws regarding its quality and labelling standards, even if it is not attractive enough to be readily marketable. This refers to food items that are subpar due to appearance, freshness, grade, size, surplus, or other such factors.

¹⁷ <u>http//:www.cdc.gov/foodbourneburden/2011-foodbourne-estimates.html</u>. CDC (2016).

The Good Samaritan Act provides a cushion for food donors and donees to carry out donations without having to worry about legal implications. Donors and donees are protected against Civil and Criminal Liability pertaining to acts of food and grocery item donations. Donor and donees can only be legally prosecuted during acts of gross negligence or intentional misconduct. "Donors are protected against strict liability, the typical standard for food products, or mere



negligent conduct."

Food: "Any raw, cooked, processed, or prepared edible substance, ice, beverage, or ingredient used or intended for use in whole or in part for human consumption."

Grocery Product: "A non-food grocery product, including a disposable paper or plastic product, household cleaning product, laundry detergent, cleaning product, or miscellaneous household item."

Gross negligence is more serious than mere or normal negligence. Mere negligence is also a failure to follow rules and regulations completely, it is born out of an awareness of the extent of the misconduct. On the other hand, gross negligence encompasses situations where perpetrators were aware of the harm or misfortune their actions would bring to a person or group of persons. Gross and mere negligence must be differentiated between on a case by case basis.

Intentional misconduct is an act by a person with the knowledge that their actions would be harmful to a certain person or groups of persons. Therefore, for the Good Samaritan Act to provide liability protection, the donations must be carried out in "good faith". Good faith is any action undertaken with good intention or belief. These are subjective terms, and hence liability cases must be conducted on a case by case basis.

	State Law	Federal Law
Who it protects?	Varies; may only protect donors, not non-profit orgs.	Protects both donor and donee.
What's protected?	Not a uniform definition for food or grocery product.	Uniform definition for "food" and "grocery product."
Type of liability	May only protect against liability.	Protects against both civil and criminal liabilities.
Liability threshold	Varies by state.	Minimum liability standard for gross negligence is set.

COMPARISON OF THE GOOD SAMARITAN ACT WITH EXISTING STATE LAWS

In general, the Bill Emerson Good Samaritan Act provides protection against Civil and/or Criminal Liabilities for donors and donees of food and grocery items. The Good Samaritan Act prevents recipients of donated food from bringing a liability to a donor or donee in a case of illness or injury related to the donated grocery or food product, as long as the donation was made in "good faith", and was absent of gross negligence and intentional misconduct.

TAX INCENTIVES AND WRITE-OFFS

Different kinds of benefits are available to institutions that look to reduce food waste by donating surplus food to charitable organizations. Some institutions that qualify for tax incentives are restaurants, bakeries, grocery stores and farms. Tax incentives can be of two forms—tax credit or tax deductions. Tax credits reduce the amount of taxes a business must pay the government, while tax deductions reduce the amount of the business' income that is subjected to being taxed.

ADDITIONAL RESOURCES

Some statistics here:

https://www.cdc.gov/foodborneburden/2011-foodborne-estimates.html

Basics of food handling:

https://www.fsis.usda.gov/wps/portal/fsis/topics/food-safety-education/Get-answers /food-safety-fact-sheets/safe-food-handling/basics-for-handling-food-safely/ct_index

Liability Protection for Food Donation:

http://www.publichealthlawcenter.org/sites/default/files/resources/Liability%20 Protection%20Food%20Donation.pdf, 42 U.S.C.A. § 1791 (c)(3) (West 2012)

Tax deductions:

https://www.chlpi.org/wp-content/uploads/2013/12/Food-Donation-Fed-Tax-Guidefor-Pub-2.pdf

Composting greens browns CARBON NITROGEN alfalfa meal brown bags coffee grinds dried landscape crushed eggshell waste hair fall leaves fresh landscape sawdust waste straw fruits & vegetables wood chips tea bags poop from fish bones people & meat dairy meat eating diseased plants animals

Composting is a term derived from its definition—*controlled decomposition of organic matter*. To be able to decompose this matter in an organized fashion, a balance must be reached between "green" and "brown" organic matter.

- <u>"Green"</u> organic matter includes substances that contain a large percentage of nitrogen, such as cut grass clippings, food scraps and manure. <u>"Brown"</u> organic matter refers to organic matter like dry leaves and wooden material, which are rich in carbon but have low levels of nitrogen. Getting the right nutrient balance is key and takes practice and judgement.
- Reducing particle size and thus improving surface area can greatly improve the efficiency of microbial action. This can also improve pile insulation to help maintain the compostable material within its optimal temperature range. However, extremely fine particles can lead to a restriction of airflow in the organic matter.

- Moisture is key during composting. As there is already some water content present in the organic matter, intentional watering may be unnecessary, as long as there is sufficient water absorption through rainfall.
- Aeration is another factor that must be found within balance. Adding crumpled newspapers, wood chips, or simply turning the pile of compostable matter can help.

Controlling the above four factors can help maintain optimal temperature conditions maximum decomposition and avoiding pathogens.

Microorganisms thrive in temperatures around and above 140° F. If temperatures do not reach this level, rotting and anaerobic conditions can ruin a compost batch.

WHY COMPOST?

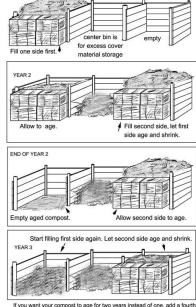
Composting enriches the soil with nutrients and organic matter, which would have ended up as a methane-producing waste entity in a landfill. Adding compost to soil also increases the earth's water retention properties, which reduce the amount one needs to water.

COMPOSTING AT HOME

Backyard composting is a fairly easy method that does not involve much investment. All it takes to start composting is open space and waste material. This method does not rely on worms, and therefore is a slower process. It takes anywhere between two months to two years to obtain compost material.

Finding the right space - use a place in your backyard that is relatively dry and shady, and near a water source.

Developing a pile - Add brown and green materials as they become available, while making sure that large items are added after chopping or breaking up. Moisten dryer items, and once a pile is established, start adding grass clippings and other green material. You can now add fruit and vegetable waste under 10 inches of the compost material. You could also cover the top of the pile with a tarp, to retain moisture. The compost will be ready when it is rich and dark in color.



YFAR

If you want your composit to age for two years instead of one, add a fourth bin to the system. Turning the compost is not necessary (read Chapter 3). A roof over the center bin will keep the cover material dry and unfrozen in the winter months in cold climates (see figure 8.4).

Vermicomposting is also a relatively easy technique that can be practiced in homes and apartments. Special bins, called vermicomposters can be prepared or bought and maintained indoors to produce compost. This method is quicker than backyard composting.

MATERIALS NEEDED

- **1.** Two plastic bins one should be taller and larger so as to fit the other inside it.
 - A. The shorter bin should not be covered.
 - B. A bin made of rubber or plastic with dimensions 15x25x5 inches works best.
 - C. The extra length allows collection of residual liquid, called "worm tea", which can be used in a garden for plants or shrubs.
 - D. The larger bin needs to be covered to contain the worms inside it. The top should be flexible so that holes can be drilled into it.
 - E. An 18 gallon tub with dimensions 15x20x15 inches works well.
- **2.** A one-inch diameter drill and one-eighth inch diameter drill bit is required.
- **3.** Non-metal screening material to cover the holes made in the top.
- **4.** Waterproof glue to maintain the positioning of the screens.
- **5.** Shredded paper to fill the bin up to 3 inches deep. Extra to use once a week while feeding the worms.
- 6. About a pound of dirt.
- 7. Some water to soak the dirt and shredded paper.
- 8. Worms a pound of red wigglers works best as they consume waste the quickest, but earthworms work as well. They can be purchased online, from a USDA extension office, or from another vermicomposter owner
- **9.** A trowel is needed to move the compost as needed in the bin.
- **10.** Food scraps container to collect vegetable and fruit scraps.

To learn more about the methods of preparing the bins, paper and soil, as well as about feeding the worms and general maintenance, read the following post: <u>https://www.epa.gov/recycle/how-create-and-maintain-indoor-worm-composting-bin.</u>

Interested in Becoming a Master Composter?

Dane County UW-Extension offers a Master Composter course to provide training for anyone who wishes to learn more and teach others about home composting, including backyard composting and vermicomposting.

To learn more about the Master Composter course visit: <u>https://fyi.uwex.edu/danecountycommunity</u> <u>development/natural-resources/mastercomposter-program-resources</u>



ADDITIONAL RESOURCES

More about composting:

https://www.epa.gov/sustainable-management-food/types-composting-andunderstanding-process http://cwmi.css.cornell.edu/composting.htm https://www.nrdc.org/stories/composting-way-easier-you-think http://www.findacomposter.com https://www.epa.gov/recycle/composting-home

UW Extension Compost Fact Sheet:

https://learningstore.uwex.edu/Assets/pdfs/A4021.pdf https://www.cityofmadison.com/streets/organics/collectOrganics.cfm

Rules and regulations of composting in Wisconsin:

https://dnr.wi.gov/topic/Recycling/regs.html

An easy "What to Compost" guide:

https://dnr.wi.gov/files/PDF/pubs/wa/wa1785.pdf

2012 Compost Facility Survey:

https://dnr.wi.gov/topic/recycling/documents/2012CompostFacilitySurvey.pdf

The City of Madison is piloting a Community Organic Recycling Program to divert organic material from the landfill.

https://www.cityofmadison.com/streets/organics

Food Redistribution and Organizations in Dane County

FOOD PANTRIES AND MEAL SITES

Organized alphabetically

Acewood Alliance Pantry

	2
Phone:	(608) 288-0797
Address:	602 Acewood Blvd., Madison, WI 53714
Hours:	By Appointment
Website:	http://www.nbacmadison.org/community-connect/
	<u>acewood-alliance-pantry</u>
Type/Keywords:	Appointment

AIDS Network

Phone:	(800) 359-9272
Address:	600 Williamson St., Suite H, Madison, WI 53703
Hours:	By Appointment
Website:	http://www.arcw.org/social-services/food-pantry
Type/Keywords:	HIV AIDS, Appointment

Allied Food Pantry

Address:	4619 Jenewein Rd., Madison, WI 53711
Hours:	W: 10-12pm & 6-7:30pm
Website:	http://alliedfoodpantry.wixsite.com/allied-food-pantry
Type/Keywords:	Emergency

Badger Prairie Needs Network

Phone:	(608) 848-2499
Address:	1200 E. Verona Ave., Verona, WI 53593
Hours:	MTF: 10-12pm, R: 10-6:30pm, Sa: 10-12:30pm
Website:	http://www.bpnn.org/food-pantry.html
Type/Keywords:	Assistance

Belleville Food Pantry

Phone:	(608) 424-3341
Address:	24 W. Main St., Belleville, WI 53508
Hours:	T: 8-12pm, R: 1-4pm
Website:	http://www.bellevillewi.org/index.asp?Type=B_BASIC&SEC={7F550D17-4D8C-
Type/Keywords:	<u>4CED-A58C-15D935A97599}&DE={4527C8BE-3096-4FD0-B20E-D41343672690}</u> Emergency, Non-food Items

Bethel Lutheran Church Food Pantry

Phone:	(608) 257-3577
Address:	312 Wisconsin Ave., Madison, WI 53703
Hours:	M-F: 12-3pm, Sa: 9:30-11:30am
Website:	https://www.bethel-madison.org/bethel-food-pantry
Type/Keywords:	Appointment, Emergency, Non-food Items

Blue Mounds Countryside Communities Center

Phone:	(608) 437-5224
Address:	11010 Blackhawk Dr., Blue Mounds, WI 53517
Website:	http://trollway.com/business/blue-mounds-food-pantry
Type/Keywords:	Emergency

Catholic Multicultural Center

Phone:	(608) 661-3512
Address:	1862 Beld St., Madison, WI 53703
Hours:	R: 9-10am
Website:	https://cmcmadison.org/programs-services/basic-needs/food-pantry
Type/Keywords:	Emergency, Meal Site

Cambridge Food Pantry and Resource Center

Phone:	(608) 423-8142
Address:	211 South St., Cambridge, WI 53523
Hours:	M: 9-1pm & 4-5pm, W: 9-12pm, R: 8-3pm
Website:	http://www.cambridgecap.net/cambridge-food-pantry-and-
	<u>resource-center</u>
Type/Keywords:	Assistance, Client

Bashford United Methodist Church Food Pantry

Phone:	(608) 249-9222
Address:	329 North St., Madison, WI 53704
Hours:	M: 9-10pm, TR: 6-7pm
Website:	http://www.bashfordchurch.org/FoodPantry.html
Type/Keywords:	Client, Emergency

Deerfield Food Pantry

Phone:	(608) 764-5935
Address:	3 W. Deerfield St., Deerfield, WI 53531
Hours:	W: 12-2:30pm, R: 6-7pm, Sa: 9-11am
Website:	http://www.dccenter.org
Type/Keywords:	Assistance, Non-food items

DeForest Area Food Pantry

Phone:	(608) 469-4415
Address:	4434 Second St., Windsor, WI 53598
Website:	http://www.vi.deforest.wi.us/foodpantry
Type/Keywords:	Emergency, Non-Food Items

East Madison Community Center

Phone:	(608) 249-0861
Address:	8 Straubel Ct., Madison, WI 53704
Hours:	T: 12-2pm
Website:	http://eastmadisoncc.org/programs/nutrition-health
Type/Keywords:	Client, Non-Food Items

First United Methodist Church of Madison

Phone:	(608) 256-9061
Address:	203 Wisconsin Ave., Madison, WI 53703
Hours:	MW: 10-12pm
Website:	http://firstunitedmethodistmadison.org/event/865821-2018-02-07-food-pantry
Type/Keywords:	Emergency

Good Shepherd Lutheran Church

Address:	5701 Raymond Rd., Madison, WI 53711
Hours:	R: 10-12pm & 5:30-7pm
Website:	http://www.gslcwi.com/need-help-food-pantry
Type/Keywords:	Emergency

Goodman Community Center Fritz Food Pantry

Phone:	(608) 241-1574
Address:	149 Waubesa St., Madison, WI 53704
Hours:	T: 9:30-12pm, W: 6-8pm, R: 12:30-3pm
Website:	https://www.goodmancenter.org/services/fritz-food-pantry
Type/Keywords:	Assistance, Meal Site

Grace Food Pantry

Phone:	(608) 255-5147
Address:	116 W. Washington Ave., Madison, WI 53703
Hours:	TWR: 1-3pm, Sa: 10-12pm
Website:	http://www.gracechurchmadison.org/grace-food-pantry
Type/Keywords:	Emergency, Non-food Items, Homeless Services

Helping Hands Outreach Ministry Food Pantry

Phone:	(608) 446-2718
Address:	7475 Mineral Point Rd., Suite 18, Madison, WI 53717
Hours:	TWR: 11-1pm, Sa: 9-11am
Website:	https://hhom.weebly.com
Type/Keywords:	Emergency

Kennedy Heights Community Center Food Pantry

Phone:	(608) 244-0767
Address:	199 Kennedy Hts., Madison, WI 53704
Hours:	M: 6-6:30pm
Website:	http://www.khcommunitycenter.org
Type/Keywords:	Emergency, Client

Lakeview Lutheran Church

Phone:	(608) 244-6181
Address:	4001 Mandrake Rd., Madison, WI 53704
Hours:	M: 4:30-6:30pm
Website:	http://lakeviewlutheranchurch.org/about/ministries
Type/Keywords:	Emergency

Luke House

Address:	310 S. Ingersoll St., Madison, WI 53703
Hours:	MTWR: 11:30-12:30pm, SuMTWR: 5:45-6:30pm
Website:	https://www.lukehousemadison.org
Type/Keywords:	Meal Site

Lussier Community Education Center

Phone:	(608) 833-4979
Address:	55 S. Gammon Rd., Madison, WI 53717
Hours:	W: 7-8pm, Sa: 12-1pm
Website:	<u>http://lcecmadison.org/eat/pantry</u>
Type/Keywords:	Emergency

Madison East Seventh-Day Adventist Church

Phone:	(608) 513-5208
Address:	910 Femrite Dr., Monona, WI 53716
Hours:	T: 4:30-7pm
Website:	http://www.madisonadventistchurch.com/community-services
Type/Keywords:	Client

Marshall-Waterloo Food Pantry

Phone:	(920) 478-3041
Address:	17 E. Madison St., Waterloo, WI 53594
Hours:	W: 12-1pm & 7-8pm, Sa: 9-10pm
Website:	http://www.waterloowi.us/community-resources/food-pantry
Type/Keywords:	Emergency

McFarland Community Food Pantry

Phone:	(608) 658-0927
Address:	5404 Anthony St., McFarland, WI 53558
Hours:	M: 3-6pm
Website:	http://mcfarlandfoodpantry.org
Type/Keywords:	Assistance

Middleton Outreach Ministry (MOM)

Phone:	(608) 836-7338
Address:	3502 Parmenter St., Middleton, WI 53562
Hours:	MTWR: 10-2pm, FSa: 9-12pm
Website:	http://momhelps.org
Type/Keywords:	Assistance, Homeless Services

Mount Horeb Area Food Pantry

Phone:	(608) 437-7887
Address:	102 E. Lincoln St., Mount Horeb, WI 53572
Hours:	M: 5-7pm, Sa:10-12pm
Website:	https://www.food-pantry.org
Type/Keywords:	Emergency

Oregon Area Food Pantry

0	
Address:	107 N. Alpine Pkwy, Oregon, WI 53575
Hours:	R: 3-7pm
Website:	http://www.obfp.org
Type/Keywords:	Assistance, Monthly
Savory Sundays	
Address:	Capitol Basement (2 E Main St., Madison, WI 53703) or
	James Madison Park (614 E Gorham St, Madison, WI 53703)
Hours:	Su: 2pm
Website:	http://savorysunday.org
Email:	SavorySunday@gmail.com
Type/Keywords:	Meal Site

Second Harvest Food Bank

Phone:	(608) 223-9121
Address:	2802 Dairy Dr., Madison, WI 53718
Website:	https://www.secondharvestmadison.org
Type/Keywords:	Emergency

Stoughton Area Food Pantry

Phone:	(608) 873-8103
Address:	520 S. 4th St., Stoughton, WI 53589
Hours:	MTWR: 9-12pm & 1-3pm, F: 10-12pm
Website:	http://www.ci.stoughton.wi.us
Type/Keywords:	Assistance, Monthly

St. Mark's Lutheran Church

Phone:	(608) 256-8463
Address:	605 Spruce St., Madison, WI 53715
Hours:	T: 10-12pm, R: 5:45-7:30pm
Website:	http://stmarksmadison.org
Type/Keywords:	Meal Site, Emergency

St. Stephens Lutheran Church

Phone:	(608) 441-1123
Address:	5700 Pheasant Hill Rd., Monona, WI 53716
Hours:	MTWR: 11-1:30pm
Website:	https://www.ststephensmonona.org/serve/communityoutreach/
	foodpantry
Type/Keywords:	Client, Emergency

St. Vincent de Paul Food Pantry

Phone:	(608) 257-0919
Address:	2033 Fish Hatchery Rd., Madison, WI 53713
Hours:	TF: 10:30-2:30pm, R: 2:30-6:30pm, Sa: 9:30-11:30 pm
Website:	http://www.svdmadison.org/need-help/food-pantry
Type/Keywords:	Emergency

Sun Prairie Emergency Food Pantry

Phone:	(608) 513-1044
Address:	18 Rickel Rd., Sun Prairie, WI 53590
Hours:	MWF: 10-2pm, TR: 5-7pm, Sa: 9-12pm
Website:	http://www.sunprairiefoodpantry.com
Type/Keywords:	Emergency, Monthly

The Salvation Army of Dane County Food Pantry

Phone:	(608) 250-2264
Address:	3030 Darbo Dr., Madison, WI 53714
Hours:	T: 12-2pm, WR: 10-12pm
Website:	http://www.salvationarmydanecounty.org
Type/Keywords:	Emergency

The River Food Pantry

Phone:	(608) 442-8815
Address:	2201 Darwin Rd., Madison, WI 53704
Hours:	TR: 11:30-1pm & 5-6:30pm, F: 6-7pm
Website:	http://www.riverfoodpantry.org
Type/Keywords:	Assistance, Meal Site, Non-Food Items

Waunakee Food Pantry

Address:	806B S. Division St., Waunakee, WI 53597
Hours:	M: 11:30-1:30pm, TR: 4:30-6:30pm, W: 10-12pm
Website:	http://www.waunakeefoodpantry.org
Type/Keywords:	Assistance, Non-Food Items

Westwood Christian Church

Phone:	(608) 274-0266
Address:	5210 Odana Rd., Madison, WI 53711
Hours:	R: 12-6pm
Website:	https://westwoodchristian.com
Type/Keywords:	Emergency

Wil-Mar Neighborhood Center

Phone:	(608) 257-4576
Address:	953 Jenifer St., Madison, WI 53703
Hours:	W: 1-3pm, Sa: 11:30-2:30pm
Website:	https://www.wil-mar.org
Type/Keywords:	Emergency, Meal Site

RECOVERY ORGANIZATIONS

Community Action Coalition for South Central Wisconsin (Dane County)

Phone:	(608) 246-4730
Address:	1717 N. Stoughton Rd., Madison, WI 53704
Hours:	MTWRF: 8-4:30pm
Website:	http://www.cacscw.org/food-bank
Type/Keywords:	Grocery/Restaurant/Baker/Caterer Recovery, Non-Food Items

Healthy Food For All (Dane County)

Phone:	(608) 204-7017
Address:	1219 N. Sherman Ave., Madison, WI 53704
Website:	<u>http://hffadane.org</u>
Type/Keywords:	Farm and Corporate Recovery

Rooted Curbside Compost- Mazomanie (Available to all of Dane County)

Phone:	(608) 205-7971
Address:	114 E Hudson St., Mazomanie, WI 53560
Hours:	join at any time, weekly pickup
Website:	http://www.rootedcurbsidecompost.com
Type/Keyword:	Compost

UW-Madison Food Recovery Network (Madison)

Phone:	(608) 397-7673
Address:	2308 University Ave., Madison, WI 53726
Hours:	determined by members
Website:	https://win.wisc.edu/organization/FRNUW/about
Type/Keywords:	Dining Hall Recovery

ADDITIONAL PROGRAMS/ SERVICES

Community Groundworks

Phone:	(608) 240-0409
Hours:	change by location
Address:	500 Troy Dr. (Troy Gardens), 3601 Memorial Dr., Suite 4 (mailing)
Website:	http://communitygroundworks.org
Type/Keywords:	Urban Farm

DateCheck Pro

Phone:	(262) 458-2470
Website:	http://datecheckpro.com
Type/Keywords:	Expiration Tracker

FairShare CSA Coalition - Madison

Phone:	(608) 226-0300
Address:	303 Paterson St., Suite 1b, Madison, 53703
Hours:	Periodic delivery
Website:	https://www.csacoalition.org
Type/Keywords:	Farm-Fresh Produce Delivery

FoodShare Wisconsin/QUEST Card - Dane County/Wisconsin

Phone:	1-877-366-3635
Website(s):	http://www.getaquestcard.org, also accessible through Second Harvest
Type/Keywords:	Benefit Card

Local Thyme

Address:	Online program
Hours:	Online
Website:	http://www.localthyme.com
Type/Keywords:	Waste-Free Recipes

Seed to Table

Phone:	(608) 206-2662
Address:	149 Waubesa St., Madison, WI 53704 (Goodman Community Center)
Hours:	Summer Program
Website:	http://www.communitygroundworks.org, Curriculum, Application
Type/Keywords:	Urban Farm

Authors



Angad Dhariwal is pursuing his B.S. in Plant Pathology at the University of Wisconsin - Madison, with a Certificate in Business Management for Agricultural & Life Sciences. Post-graduation, Angad hopes to work towards establishing sustainable nutritional security and overall human wellbeing in developing parts of the world. Currently a House Fellow at a University Housing Residence Hall, Angad works to promote sustainable and healthy practices among his residents, and ensures a conducive educational environment for all. Follow him on Instagram @dhareewal for a sneak peek into his fantastic life!



Johanna Doren is currently the Administrative and Communications Coordinator at FairShare CSA Coalition, where she supports small local farmers and helps connect them with consumers. She has worked extensively in the food and farming industry, including with REAP Food Group and Troy Farm. In each of these settings she has encountered different aspects of the complex issues of our food system, particularly food waste. Johanna hopes to continue education around a just food system, influence consumer practices, and strengthen systems to redistribute uneaten food and divert waste.



Mouna Algahaithi is working on her B.S. in Educational Policy Studies, with a minor in Criminal Justice at the University of Wisconsin-Madison. Mouna aspires to lead workshops and classes in afterschool settings for low-income, disadvantaged youth pertaining to mindfulness, nonviolence communication, food sustainability and cooking. Currently a Cultural Event Facilitator at the Multicultural Student Center on campus, Mouna advocates for social justice and empowerment of marginalized identities, and hopes to gain skills to make her an effective community leader and educator.



Samantha Minor is presently studying at the University of Wisconsin - Madison in pursuit of a B.S. in Environmental Sciences. She aspires to help her community in redirecting food waste from the landfill, to promote sustainable living and agriculture, and to build food security in Dane County families. Along with working on this project, Samantha is also the Database and Development Intern for Clean Lakes Alliance and a volunteer outdoor gardener for Olbrich Botanical Gardens in Madison.