WISCONSIN

Food Waste

Evaluation

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This Food Waste Evaluation (Study) was prepared on behalf of the Wisconsin Department of Natural Resources (DNR) and was partially funded by a Solid Waste Infrastructure for Recycling grant provided by the U.S. Environmental Protection Agency (EPA). HDR was contracted by the DNR to conduct the Study, which was completed between June 2024 and December 2025. As part of the Study, HDR completed a significant data review utilizing data provided by the DNR, the U.S. EPA Excess Food Opportunities Map, ReFED Insights Engine (a nonprofit focused on reducing wasted food), and other state-specific information. The Study included robust surveying efforts and listening sessions with numerous groups related to food waste, including industries, food donation, local governments, food waste processing, and waste haulers. The Report provides key details about Wisconsin's existing food waste generation and management, as well as recommendations to reduce food waste to landfills.

1. Introduction

The Wisconsin Department of Natural Resources (DNR) has identified a goal to reduce food waste sent to landfills as part of the State of Wisconsin's commitment to waste reduction and responsible use of resources. **Food waste makes up a significant portion of waste sent to landfills each year and has the potential to be managed in a more environmentally preferred manner. Wisconsin has set a goal to reduce per-capita food waste disposal in landfills by 50 percent by 2030, compared to 2020 levels.**[1] In order to meet this goal, the DNR identified the need to better understand food waste generation and management options, and initiated a comprehensive Food Waste Evaluation (Study). This Study provides key information about food waste management in Wisconsin and identifies opportunities to reduce food waste disposal in landfills. The Study includes the following:

- Details regarding the amounts, types, and sources of food waste generated in order to identify opportunities to prevent food waste.
- Meaningful data and analysis to identify the existing capacity of food rescue and recycling infrastructure that currently supports landfill diversion activities in the state.
- Potential diversion capacity and barriers for diverting food waste within existing outlets in the state.
- Recommendations for waste diversion initiatives, including consideration of economic factors.
- Information to guide policy decisions on food waste reduction and recycling methods.
- Specifics on where additional investment, technical assistance, and education may be needed to meet the State's goals.

The results of the Study will assist the State as it moves forward with potential new or expanded partnerships, infrastructure, data evaluation, and policies to support food waste diversion from Wisconsin landfills.

The U.S. Environmental Protection Agency (EPA) estimates that nearly 30 to 40 percent of the food supply in the U.S. goes unsold or uneaten, and most of it goes to waste.[2] Food waste is the single most common material found in U.S. landfills, wasting the resources used to grow, harvest, process, transport, and distribute it. Food waste in landfills also creates additional environmental impacts. When food waste breaks down under anaerobic (low or no oxygen) conditions, such as in a landfill, it generates methane, a powerful greenhouse gas. Additionally, one in seven Americans is food insecure. Edible food has the potential to be rescued and donated to help those in need.[3]

of food supply in the U.S. goes unsold or uneaten

3.05 million total tons of surplus food generated in 2023 in the Wisconsin Food Supply System

$10.4 billion value of Wisconsin surplus food generated in 2023

1,033 pounds of Wisconsin surplus food per capita based on ReFED estimates

1 dnr.wisconsin.gov/climatechange/action
2 epa.gov/sustainable-management-food/sustainable-management-food-basics
3 From Surplus to Solutions: 2025 ReFED U.S. Food Waste Report, ReFED, refed.org/downloads/refed-us-food-waste-report-2025.pdf

2. Existing Food Waste Generation

2.1 Opportunities to Prevent Food Waste

Wisconsin's goal of reducing food waste sent to landfills is based on the larger goal of more sustainable food management. Through sustainable food management, all aspects of Wisconsin's food supply chain can conserve resources, help businesses and consumers save money, provide access to food for those in need, and mitigate environmental impacts. The State's goal is to reduce food waste and its associated impacts throughout the entire life cycle of food, from production, to transportation, to consumption, and finally disposal. This includes improving manufacturing processes, food sales and consumption, and ultimately, recovery and disposal methods for food waste. This Study provides insights regarding opportunities for the State to reduce food waste in the various stages of the life cycle of food.

The EPA Wasted Food Scale prioritizes actions from the most preferred to least preferred methods to reduce the overall environmental impacts of wasted food, as shown in Figure 1. The most preferred method is to prevent food waste, by growing, buying, and preparing only what is needed and will be consumed. This can save money and reduce the environmental impacts associated with producing, transporting, and disposing of food waste.[4]

FIGURE 1: EPA WASTED FOOD SCALE[5]

2.2 Food Waste Sources & Sectors

Describing and quantifying the current types and amounts of food waste, together with a detailed categorization of food waste sources, are key to providing the context necessary for further evaluation, assessment, and recommendations for reducing food waste sent to Wisconsin landfills.

Food waste is generated by the approximately 2.5 million households in Wisconsin. It is also generated by commercial sectors, including manufacturing, food service, retail, and farms.[6]

This report utilizes existing data from the *2020–2021 Wisconsin Statewide Waste Characterization Study* (Waste Characterization Study)[7], which provided state specific data and evaluated the type of

4 Prevent Wasted Food Through Source Reduction | US EPA
5 epa.gov/sustainable-management-food/wasted-food-scale
6 In addition to state-specific data provided by the Waste Characterization Study, this report uses information from ReFED's Food Waste Monitor, ReFED–Food waste monitor, and the EPA Excess Food Opportunities Map, Excess Food Opportunities Map | US EPA along with more detailed information about businesses present in Wisconsin.
7 dnr.wisconsin.gov/topic/Recycling/Studies.html

materials disposed of in landfills. Additional data sources include ReFED, a nonprofit organization focused on reducing food loss and waste, and the U.S. Environmental Protection Agency (EPA). As part of this Study, a survey was distributed to various sectors within the food industry, and the results are detailed in the following sections. Detailed listening sessions were also conducted to gather insights.

The Waste Characterization Study evaluated materials disposed of in landfills by assessing waste at 15 facilities located throughout the state. **When ranked by subcategory, wasted food and food scraps (and their associated fines[8]) were the first (14.5 percent) and third (6.0 percent) largest components of the municipal solid waste[9] (MSW) waste stream by weight, respectively.** Wasted food accounted for more than one-fifth of all landfilled MSW in Wisconsin in 2020.

FOOD WASTE is an overarching term more commonly used to describe all food that is not eaten—edible and inedible. Food waste can occur throughout the supply chain, including in homes, at retail establishments, and within food service. Food waste can also occur on farms, during manufacturing, and throughout distribution.

WASTED FOOD includes material that is not a result of preparation waste or scraps, but typically edible or spoiled food that was wasted because of spoilage or discarded before being eaten. Examples include unsold food from retail stores, plate waste, uneaten prepared food, kitchen trimmings, and discarded food.[10]

FOOD SCRAPS include traditionally inedible materials, such as food preparation waste, unusable scraps, kitchen scraps, and waste parts from butchered animals. Examples include peels, rinds, cores, bones, and eggshells.

In 2024, approximately 4,500,700 tons of in-state MSW were disposed of in Wisconsin's landfills based on DNR data.[11] Utilizing the waste composition observed during the Waste Characterization Study, it is estimated that approximately 652,000 tons of wasted food (previously edible) and 270,000 tons of food scraps (peels, bones, shells, etc.) were disposed of in Wisconsin landfills in 2024, for a total of more than 900,000 tons of food waste.

ReFED estimates that approximately 3.07 million tons of food waste (referred to as surplus food by ReFED[12]) was generated across the food supply chain in Wisconsin in 2023. Quantifying food waste generation is complex and ReFED uses a variety of existing data sources to make estimations by sector. ReFED's data estimates all food waste generation and includes various disposal locations, including but not limited to landfills.

Understanding the causes of food waste can provide valuable insights into why and how food waste is generated and identify opportunities to prevent it or reuse items. ReFED estimated the amount of food waste produced by specific causes for all food waste generated in the state. Causes of food waste include the following:

- Trimmings and byproducts from the manufacturing, residential, food service, and retail sectors, such as unusable or inedible items (e.g., eggshells, bones, trimmings from prepared foods).
- Excesses from the farming, manufacturing, residential, food service, and retail sectors, such as prepared food that was not eaten, prepared food that becomes inedible, or leftovers that are not eaten.
- Not harvested from agricultural practices due to market or labor variables or not harvesting food items that are damaged or have safety concerns.

8 Fines defined as small fragments, typically less than 2 inches of material time, per Waste Characterization Study
9 Municipal solid waste, defined as various items that consumers throw away after use, also referred to as trash, does not include construction and demolition debris, wastewater sludge, and other non-hazardous industrial wastes per EPA definition, National Overview: Facts and Figures on Materials, Wastes and Recycling | US EPA
10 epa.gov/sustainable-management-food/sustainable-management-food-basics
11 dnr.wisconsin.gov/sites/default/files/topic/Landfills/tonnage/2024tonnage.pdf Accessed February 2025.
12 ReFED–Food waste monitor. Accessed February 2025. Detailed methodology regarding food waste estimates, docs.refed.org/methodologies/food_waste_monitor.html#food-waste-monitor

- Spoiled food from the farming, retail, food service, and residential sectors, and items not being fit for human consumption due to decay, disease, deterioration, or damage.
- Buyer rejections from farms and manufacturing, in which food is delivered and rejected by the buyer.
- Date label concerns from the retail, food service, and residential sectors. This occurs when an item is not consumed due to nearing or being past the labeled sell-by, best if used by, or use-by dates.
- Food safety from retail or residential sectors due to product recalls.

Table 1 details these causes based on data specific to the state.

TABLE 1: ReFED FOOD WASTE GENERATION BY CAUSE IN WISCONSIN

Causes	Quantity in tons	Percent of all Food Waste
Trimmings & Byproducts	2,150,000	69.9%
Excess	274,000	8.9%
Not Harvested	249,000	8.1%
Spoiled	183,000	6.0%
Buyer Rejections	80,700	2.6%
Date Label Concerns	66,400	2.2%
Food Safety	27,600	0.9%
Other	23,400	0.7%
Mistakes & Malfunctions	21,200	0.7%
Total	**3,075,300**	**100%**

FIGURE 2: ReFED FOOD WASTE GENERATION BY CAUSE IN WISCONSIN

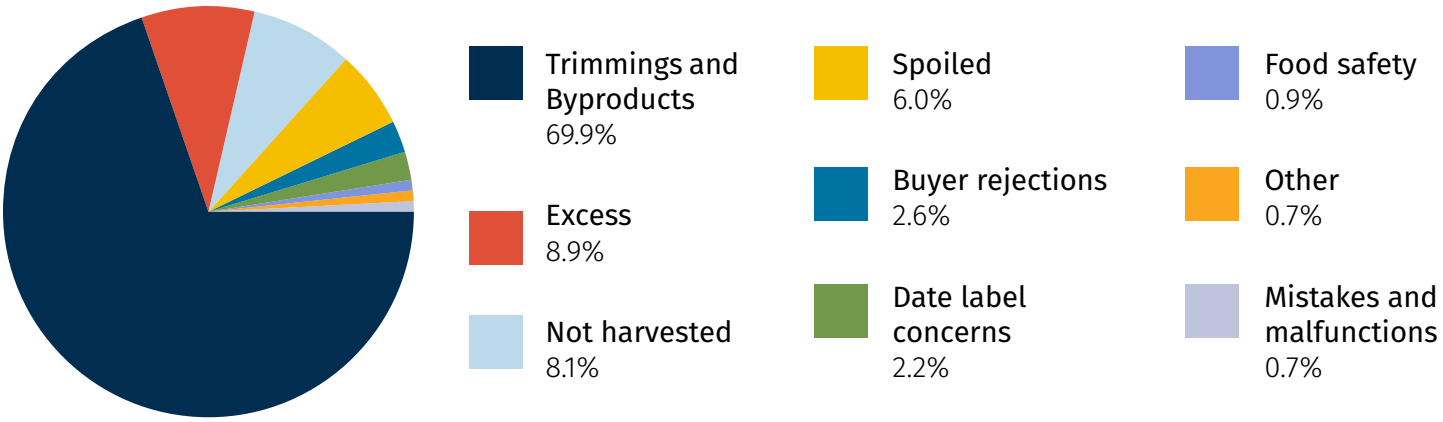


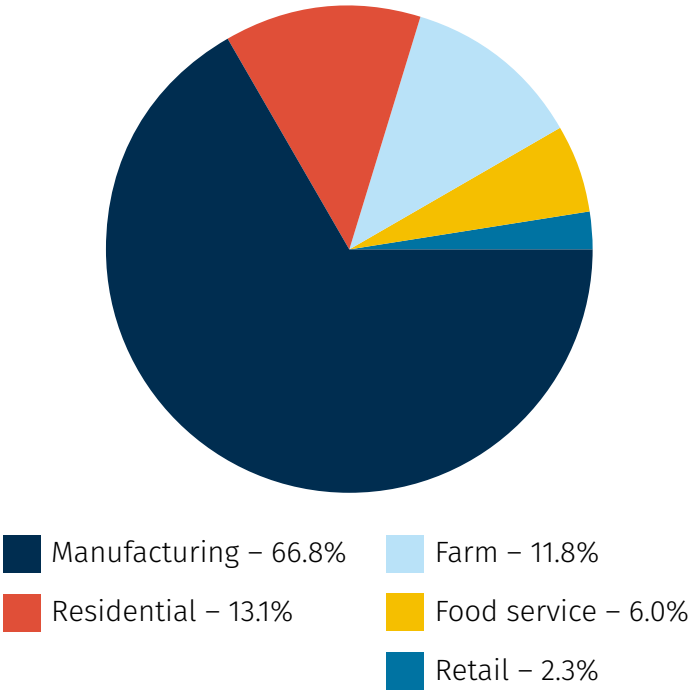
Table 2 details ReFED's information by sector and provides the percentage sent to a landfill as compared to other destinations.[13] As described further in Section 2.3, although a significant amount of food waste is sent to landfills, most manufacturing food waste is managed by landspreading, and other sources contribute to animal feed or are processed through composting and anaerobic digestion (AD). **In Wisconsin, a majority of the food waste going to landfills is derived from residential and food service sources.**

13 ReFED–Food waste monitor. Accessed February 2025.

TABLE 2: ReFED ESTIMATE OF WISCONSIN FOOD WASTE GENERATION & PERCENT TO LANDFILL AND OTHER DESTINATIONS

Sector	Tons of Food Waste Generated	Percent of all Wisconsin Food Waste Generated	Tons of Food Waste Sent to Landfills by Sector	Tons of Food Waste Sent to Other Destinations	Percent of Food Waste Sent to Landfill vs. Other Destinations
Manufacturing	2,050,000	66.8%	25,800	2,024,200	1.3%
Residential	401,000	13.1%	209,000	192,000	52.2%
Farm (Produce Only)	363,000	11.8%	8,600	354,400	2.4%
Food Service	185,000	6.0%	182,000	3,000	98.0%
Retail	69,400	2.3%	23,400	46,000	33.7%
Total	**3,068,400**	**100%**	**449,000**	**2,619,400**	**14.6%**

FIGURE 3: ReFED ESTIMATE OF WISCONSIN FOOD WASTE GENERATION



Manufacturing includes food processing businesses that operate in Wisconsin. These entities generate the most food waste based on ReFED's data. More than 60 percent of the food waste generated by the manufacturing industry is land applied. The remaining food waste is managed through AD, used in animal feed, or composted. Only 1 percent of food waste generated by this industry is sent to landfills.

Residential homes in the state generate the second largest amount of food waste, and nearly half of that food waste goes to landfills. ReFED estimates more than 30 percent is composted, and nearly 13 percent is sent down the sewer, as well as limited amounts used for animal feed and incinerated.

Farms represent domestic agricultural food production, including fruits, vegetables, and nut commodities, and do not include meat, seafood, or dairy. Farms only dispose of about 2 percent of their food waste in Wisconsin landfills. More than 68 percent of food waste at farm is not harvested, nearly 20 percent is used for animal feed, and the remaining is donated or incinerated.

Food service includes consumer-facing businesses, such as restaurants, catering, educational institutions, healthcare, and other businesses. Although they only produce 6 percent of the state's overall food waste, nearly all of this food waste goes to landfills. The remaining two percent of food waste is incinerated, donated, composted, sent to anaerobic digestion (AD) facilities, or used for animal feed.

Retail represents grocery stores and supermarkets, which generate only 2 percent of all food waste in the state. Roughly one-third of this material goes to landfills. The remaining food waste is donated (nearly 20 percent), composted (18 percent), used for animal feed (18 percent), and sent to AD facilities, land applied, or incinerated.

2.3 Food Waste Destinations & Causes

Although landfills managed more than 900,000 tons of food waste in 2024, other destinations received significant portions of the food waste generated in the state. ReFED outlines the other food waste destinations in Wisconsin and estimates the amount that goes into each and the causes of food waste.[14]

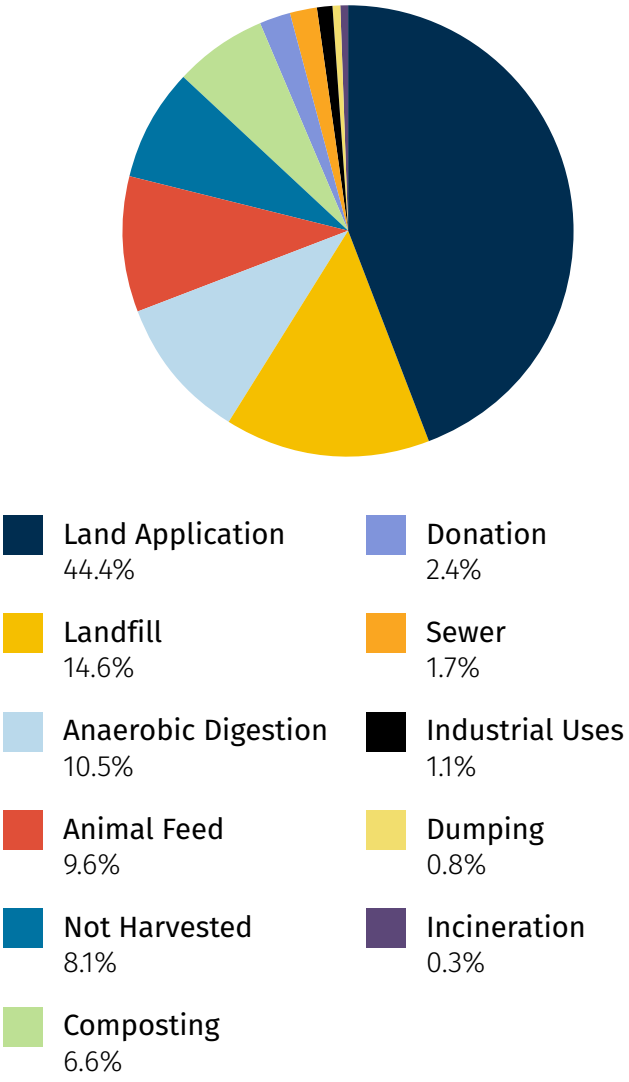
In Wisconsin, approximately 44 percent of food waste goes to land application. Land application, also called landspreading, includes spreading, spraying, or otherwise incorporating food waste into the land to enhance soil quality. Landspreading provides more environmental benefits than landfilling material. Wisconsin's robust agricultural industry allows for landspreading to be feasible on a large scale. The manufacturing sector land applies more than 60 percent of the food waste it generates and avoids landfill disposal of those materials.

Food waste sent to landfills in Wisconsin is generated predominantly by residents and the food service sectors. Additional food waste destinations include:

- **Food rescue:** Donating food to people and using food waste for animal food are defined in this Study as food rescue, and together with leaving food unharvested in the field, are preferred management methods over other diversion options. Existing food rescue efforts and opportunities are detailed in Section 3.
- **Food waste processing:** Composting and anaerobic digestion (AD) are methods used to recycle food waste into beneficially usable end products. Processing includes techniques to manage food waste, reducing the environmental impacts of disposal and potentially recovering valuable materials through recycling. The state's existing processing infrastructure and opportunities are included in Section 4.
- **Other destinations:** These destinations vary widely, from food being sent down sewers to industrial uses.

Figure 4 illustrates the destinations of all food waste in Wisconsin based on ReFED data.

FIGURE 4: FOOD WASTE DESTINATIONS[15]



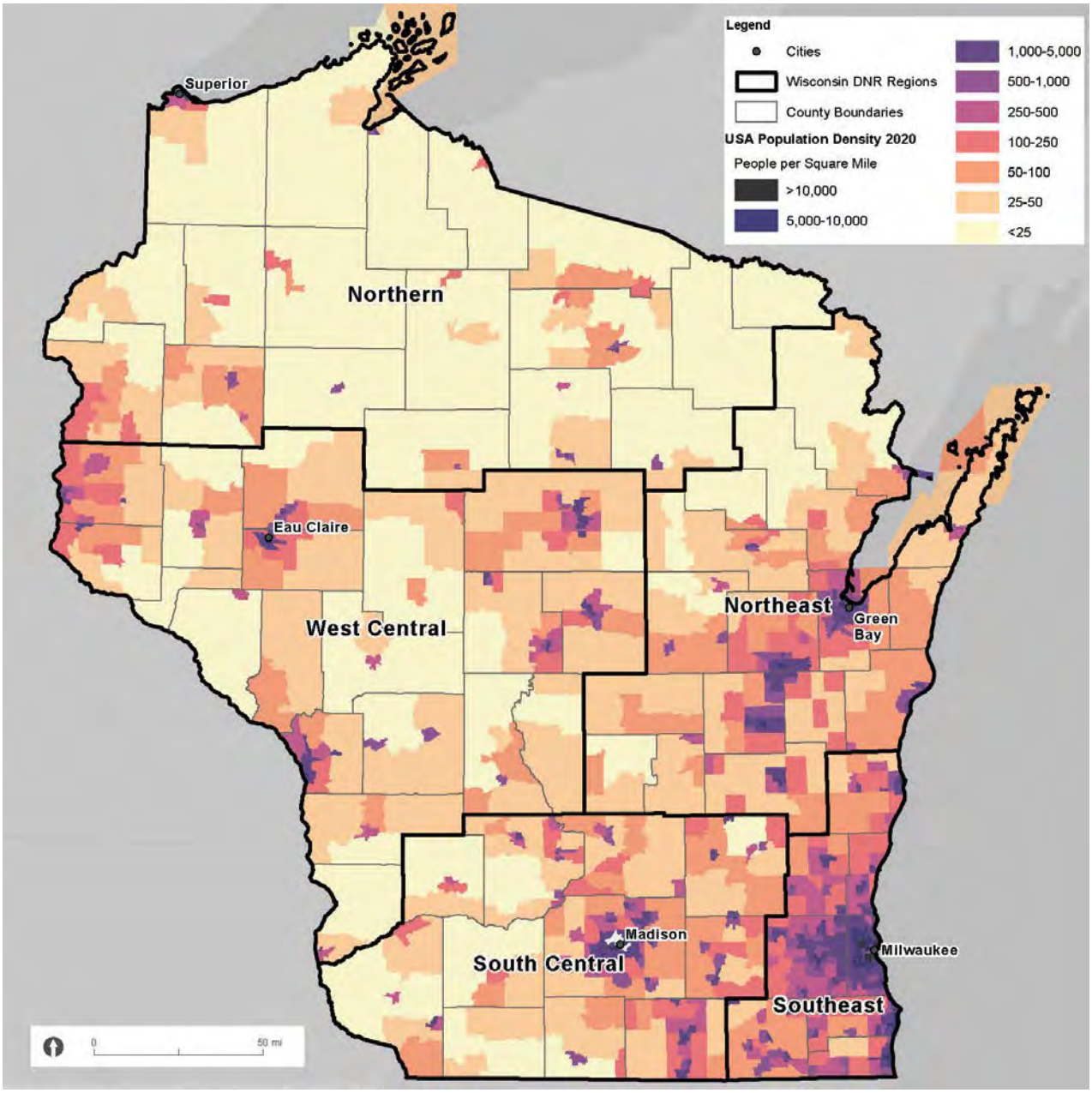
Based on the results of the Waste Characterization Study, more than 652,000 tons of previously edible food and an additional 270,000 tons of food scraps were disposed of in landfills in 2024. These results highlight an opportunity to divert a significant amount of previously edible food to food rescue, rather than disposing of it in landfills.

14 ReFED–Food waste monitor. Accessed February 2025.
15 ReFED–Food waste monitor. Accessed March 2025.

2.4 Food Waste Sources by Region

Wisconsin presents wide-ranging differences by region in population density, industries, and associated food waste generation and landfill disposal. The five regional designations the DNR commonly uses include: Northern, West Central, Northeast, South Central, and Southeast. Wisconsin has a wide variation in rural to urban population distribution, which impacts where, what kind, and how much food waste is generated as well as what food waste destinations are available. Figure 5 shows the regions in the state and the population density in each region.

FIGURE 5: DNR DESIGNATED REGIONS AND POPULATION DENSITY[16]



16 dnr.wisconsin.gov/sites/default/files/topic/Brownfields/rr/regionmap.pdf. Accessed February 2025.

- Although the smallest in size, the Southeast Region is home to 33 percent of the population, making it the most densely populated region in the state.
- The Northern Region is one of the largest Regions in the state by size; however, it is home to only 7 percent of the population, making it the least dense region in Wisconsin.
- The South Central Region is home to 22 percent of the population.
- The Northeast Region and the West Central Region are comparable in size and population, representing 22 percent and 17 percent of the state's population, respectively.

Commercial Food Waste By Region

The U.S. EPA estimates facility-specific food waste data by state, county, and municipality in its Excess Food Opportunities Map.[17] This tool identifies facilities that may generate significant amounts of food waste based on their North American Industry Classification System (NAICS) code.[18] Commercial generators include the following:

- Correctional facilities
- Educational institutions
- Farmers markets
- Food banks
- Food manufacturing and processing facilities
- Food wholesale and retail
- Healthcare facilities
- Hospitality industry
- Restaurants and food services

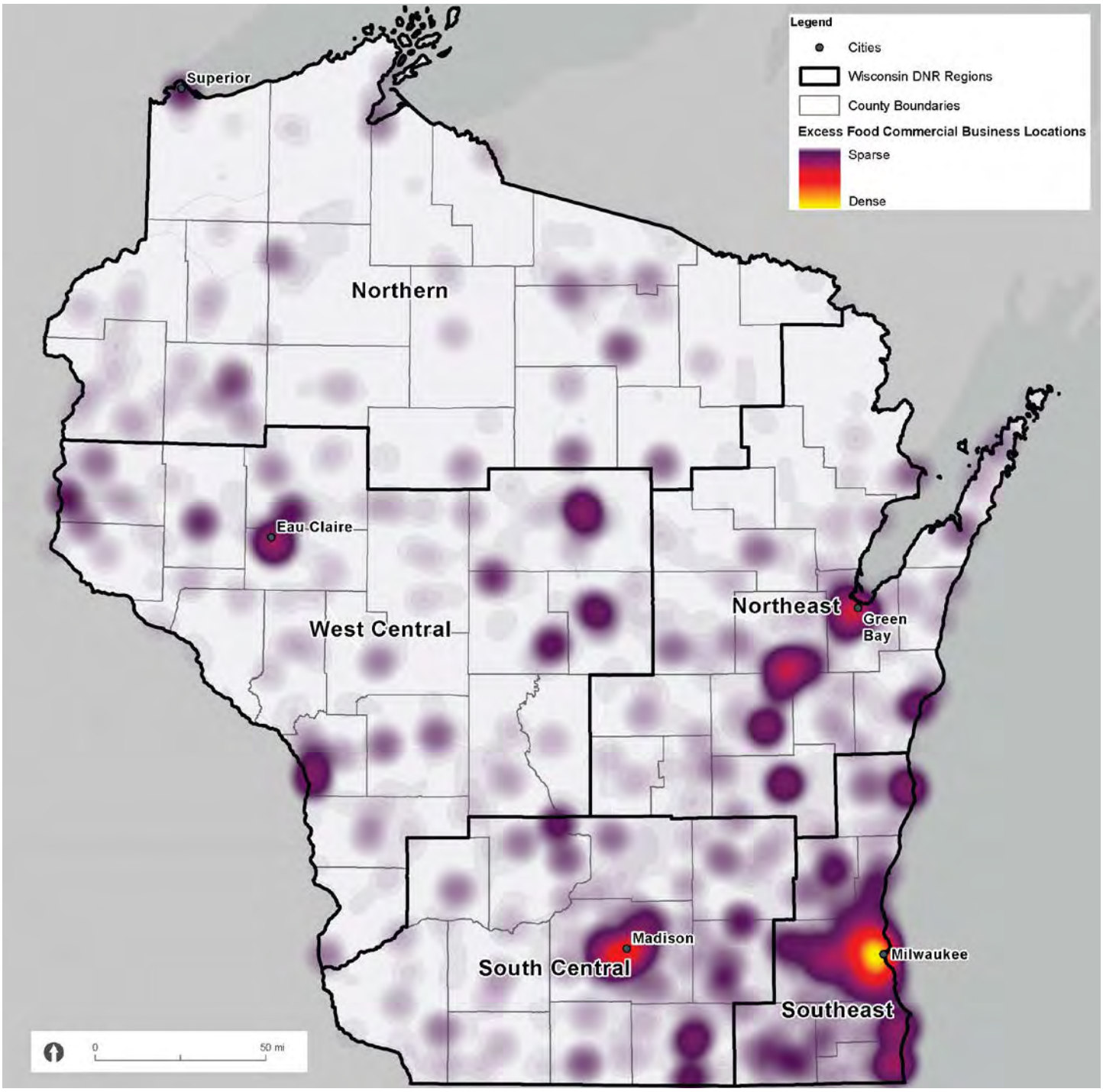
The number of commercial generators per DNR region is presented in Table 3 together with the low and high estimates for excess food waste produced based on the type of industry. The estimated total excess food accounts for all potential excess food, regardless of disposal method, and provides a range of estimated tons based on industry.[19] The number of generators per region was used to produce a heat map of businesses that may produce excess food (see Figure 6).

TABLE 3: EPA EXCESS FOOD ESTIMATE BY DNR REGION

Region	Number of Commercial Generators	Low Total Excess Food Estimates (tons per year)	High Total Excess Food Estimates (tons per year)
Northeast	2,921	162,085	507,456
Northern	1,308	15,488	35,910
South Central	3,102	40,003	109,203
Southeast	4,988	135,797	408,261
West Central	2,669	34,415	98,675
Total	**14,988**	**387,788**	**1,159,505**

17 geopub.epa.gov/ExcessFoodMap. Accessed February 2025.
18 census.gov/naics. Accessed February 2025.
19 Excess Food Opportunities Map | US EPA

FIGURE 6: HEAT MAP OF BUSINESSES THAT MAY PRODUCE EXCESS FOOD[20]



20 Location and number of entities based on EPA Excess Food Opportunities Map, accessed May 2025 Excess Food Opportunities Map Experience Builder, V3.1.

Major economic industries in the state influence the types and quantities of food waste generated. The Wisconsin Economic Development Corporation identified food and beverage manufacturing as a key industry in Wisconsin.[21] NAICS data indicates there are approximately 1,550 manufacturing locations in Wisconsin that may generate food waste. In addition, there are more than 10,000 restaurants, 7,000 healthcare and social service businesses, and many more businesses across the state that may generate food waste.[22]

Agriculture is also a significant industry in Wisconsin that may generate food waste, contributing $116.3 billion to the state's economy annually, with food processing activities contributing $107 billion and dairy farms contributing $52.8 billion. The state is home to more than 58,000 farms.[23] These significant industries generate food waste and may provide opportunities for landfill diversion.

Food Waste Generation & Population Density

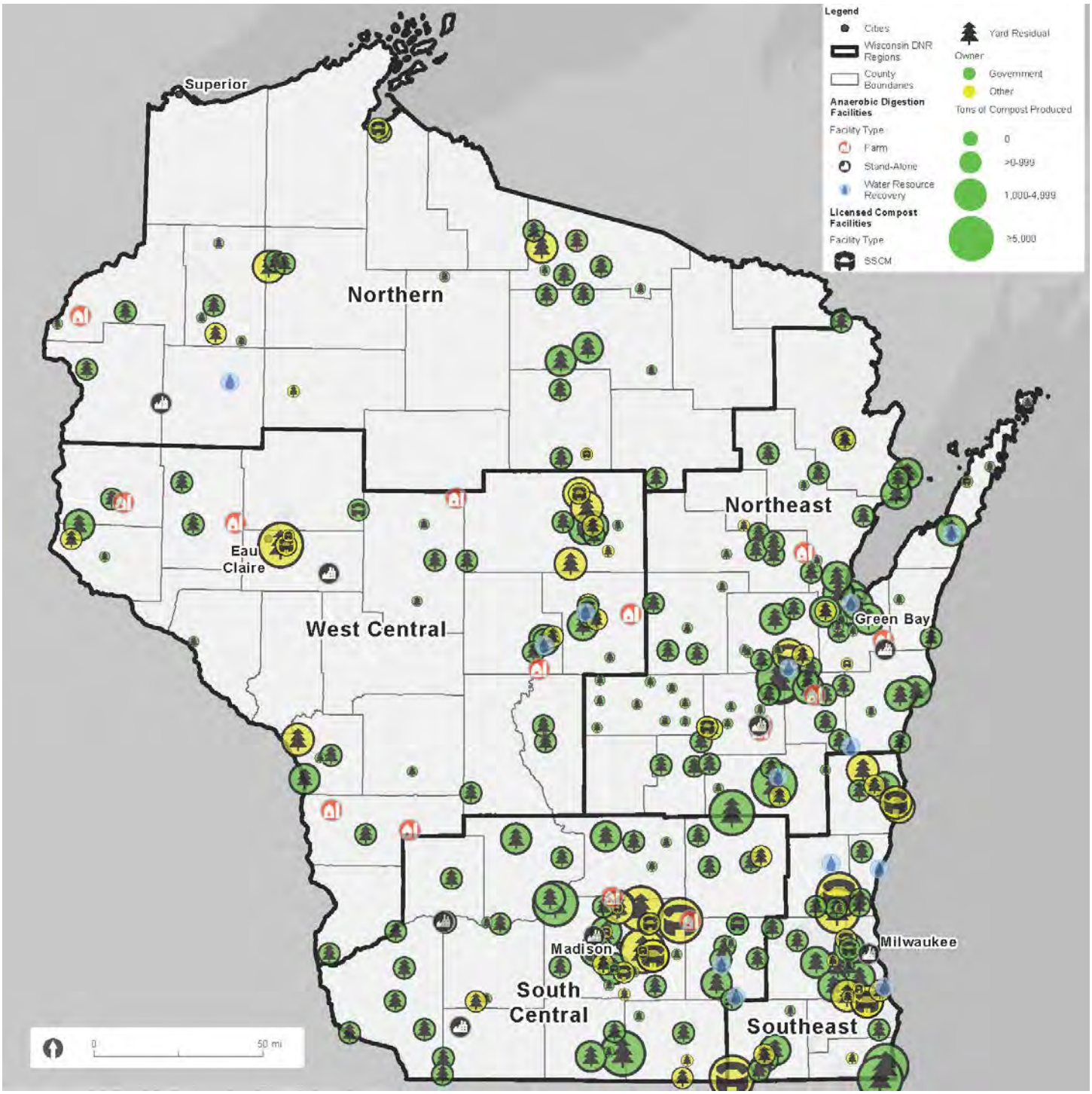
As noted in Table 2, ReFED estimates that, in 2023, the residential sector in Wisconsin generated approximately 401,000 tons of food waste, and 52 percent of that food waste (209,000 tons) was sent to landfills. The food service sector generated approximately 185,000 tons of food waste, and 98 percent of that food waste (182,000 tons) was sent to landfills. These two sectors sent the highest percentage and tonnage of food waste to landfills compared to other sectors. Areas with higher population density, like the Southeast Region, generate more residential and food service food waste than less populated areas.

When the State considers how to support landfill diversion, it should account for where food waste is generated and transportation distances. Traditionally, food waste is disposed of at the nearest disposal facility, which is commonly a landfill. Food waste is heavy and challenging to transport long distances efficiently, particularly due to the odor and liquid generated from food waste.

Food waste processing facilities, such as composting and anaerobic digestion facilities, are typically located near areas of high food waste generation. The state's existing food waste processing facilities, including composting facilities, are concentrated near population centers, and these facilities do not currently have enough available capacity to manage the entire amount of food waste generated in the state. Food waste processing is further discussed in Section 5.

21 wedc.org/key-industries
22 See Figure 2-5 in Task 2 for more details, data included from NAICS information collected in late 2024.
23 datcp.wi.gov/Pages/Publications/WIAgStatistics.aspx

FIGURE 7: EXISTING ORGANICS PROCESSING FACILITIES AND POPULATION DENSITY[24]



24 Anaerobic digestion facilities based on EPA Excess Food Opportunities Map, accessed May 2025 Excess Food Opportunities Map Experience Builder, V3.1. Licensed compost facilities provided by WDNR

3. Food Rescue

Wisconsin has existing programs and infrastructure that support the diversion of food from landfills, and understanding these systems is necessary for analyzing, evaluating, and making recommendations to increase diversion. As discussed previously in Section 2.1, consistent with the National Strategy for Reducing Food Loss and Waste and Recycling Organics, the EPA Wasted Food Scale prioritizes the highest-ranked management pathways when possible. The most preferred option is preventing food waste; however, when waste cannot be prevented it is most preferred to donate or upcycle, thereby rescuing the food to feed people. If such management methods are not possible, it is recommended to rescue food waste to feed animals or leave the food unharvested. Food crops are ideally harvested, but sometimes are not harvested due to market or environmental factors outside the control of farmers, causing crops to remain unharvested. Leaving crops unharvested avoids the impacts of picking, processing, packaging, and distributing food that will be wasted, and provides benefits to soil health for future crops when left in the field.[25]

Recycling organics through composting, anaerobic digestion, and landspreading, are preferred to landfill disposal, and will be discussed in Section 4.

For the purposes of this Study, **food rescue** includes donating edible food ingredients or food products to feed people and creating animal food with remaining food that would otherwise be lost. This food should be wholesome, safe and contain approved ingredients per existing state and federal regulations.

Food donation represents an opportunity to use food in its intended way—to feed people. **ReFED estimates that 72,300 tons of food were donated in Wisconsin in 2023, which is equivalent to approximately 2 percent of all food waste in the state.**[26] Food donation outlets include food banks and food shelves or pantries that collect and distribute food.

Feeding food waste and food byproducts to animals also supports landfill diversion and accounts for an estimated 9 percent of all food waste in the state. ReFED estimates that 295,000 tons of food waste were used for animal feed in 2023 in Wisconsin.[27] Wisconsin is home to more than 1.2 million dairy cows and more than 5,000 dairy herds.[28] Many of these dairy farms use food byproducts for animal feed, including spent brewers' grain.

25 epa.gov/sustainable-management-food/wasted-food-scale
26 ReFED - Food waste monitor. Accessed March 2025
27 ReFED - Food waste monitor. Accessed March 2025
28 Wisconsin Cheese: Farm & Dairy Statistics, wisconsincheese.com/media/facts-stats/farm-dairy-statistics

3.1 Food Donation – Feeding People

In Wisconsin, nearly one in every eight people face hunger and lack sufficient food to meet their basic needs.[29] The State has programs to support nutrient and food assistance through the Wisconsin Department of Health Services, and there are community, non-profit and private food donation outlets throughout the state. Donating food to people allows food to be used for its intended purpose and helps provide needed resources to community members.

Numerous food donation organizations are present in Wisconsin, contributing to the estimated 72,300 tons of food donated in the state. Preventing food waste by feeding people is the most preferred food waste diversion method, both environmentally and socially. Increasing food donation in the state can help provide available food to those in need.

FOOD BANKS are non-profit organizations that serve as food donation hubs or warehouses. Food from food banks is delivered to **food shelves or food pantries**, where it is then distributed to people.[30]

Key food donation organizations in Wisconsin include the following:

- **Feeding Wisconsin** is a statewide association of food banks that supports more than 1,000 food programs across all 72 counties.[31]
- **Feeding America Eastern Wisconsin** has the largest presence in the state. This organization serves 35 counties and distributed more than 19,000 tons of food between July 2023 and June 2024.[32]
- **Second Harvest Foodbank of Southern Wisconsin** distributed more than 13,000 tons of food in fiscal year 2024, of which 53 percent was fresh produce, dairy, or high-protein foods.[33]
- **Feed My People Food Bank** serves 14 counties and distributed nearly 3,800 tons of food between July 2022 and June 2023.[34]
- **Hunger Task Force** provides food to a network of local food pantries, shelters, and meal programs in the Milwaukee area to serve more than 50,000 people every month.[35]
- **Nourish Community Food Centers** provide food to more than 54,000 people in the Milwaukee area. In 2023, they distributed more than 1 million pounds of food, a 23 percent increase from 2022.[36]

Food Donation – Current Capacity and Barriers

As part of this Study, food donation outlets were surveyed to better understand their current operations, capacity to accept and distribute additional food, and challenges related to diverting food waste. All survey respondents noted their organizations have some capacity to accept or distribute more food; however, barriers restrict their ability to expand operations significantly.

Based on survey results, food donation organizations identified barriers to distributing more food to people, including the following:

- Limited operational capacity and logistical challenges in distributing food.
- Lack of refrigeration, including space and funding for refrigerators to store perishable items.
- Lack of collection opportunities, storage space, funding, and personnel.

29 Feeding America, Wisconsin, Wisconsin | Feeding America
30 feedingamerica.org/hunger-blog/what-difference-between-food-bank-and-food-pantry
31 Feeding Wisconsin State Association of Food Banks, feedingwi.org
32 Feeding America Eastern Wisconsin, feedingamericawi.org
33 Second Harvest Foodbank of Southern Wisconsin, secondharvestsw.org
34 Feed My People Food Bank, fmpfoodbank.org
35 Our Food Bank, Hunger Task Force, hungertaskforce.org/what-we-do/food-bank
36 Our Way, Nourish Community Food Centers, nourishmke.org/our-new-brand

Respondents noted they are interested in support from the State, including the following methods:

- Support streamlined pathways (including transportation vehicles and staff support) to ensure donated food is transported safely and directly to the outlet to eliminate time spent in transit.
- Support to enhance the capability to process and store donated foods (freezers, refrigerators, personnel, repackaging equipment, etc.).

Food Donation Regulations

In order to protect individuals and businesses that donate food to people, federal and State protections are in place to address liability concerns.

- The Bill Emerson Good Samaritan Food Donation Act provides civil and criminal limited liability protection to donors who make good faith donations and protection to entities that distribute the donations, such as food banks.[37]
- Wisconsin law provides civil liability protections to people involved in processing, distributing, and selling food products who donate or sell food to charitable organizations or food distribution services.[38]
- The U.S. Food and Drug Administration 2022 Food Code clarified that food donations from food retail establishments are acceptable if proper food safety practices are followed.[39]

3.2 Food to Animals

Diverting food to feed animals is the next preferred method of managing food waste based on the EPA Wasted Food Scale. Wisconsin's strong farming industry already supports using wasted food for animal feed, and **ReFED estimated that 295,000 tons were used for animal feed in 2023.**[40] There are additional opportunities to expand using food waste to create animal feed.

The Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) regulates commercial animal feed and requires entities to have a license to manufacture, label, and distribute commercial animal feed. These entities are also required to submit tonnage reports.[41] **In 2023, more than 96,000 tons of human food byproducts were used as ingredients for commercial animal feed**, which accounted for approximately 2 percent of the total reported tonnage of commercial animal feed (approximately 4.5 million tons in total).[42]

Wisconsin is home to more than 1.2 million dairy cows and more than 5,000 dairy herds.[43] Using more wasted food and food processing waste to create animal feed could divert additional tonnage from landfills, particularly in rural regions with strong agricultural industries.

Survey respondents noted that regulations may be barriers to using additional food waste as animal feed, including hauling requirements for food waste and concerns with the quality of food items used for animal feed. Currently, disposing of food byproducts in landfills can be more cost effective than creating animal feed, particularly due to transportation and regulatory requirements. Additionally, Wisconsin law does not allow feeding animal-derived materials to swine.[44] DATCP requirements for commercial animal feed licenses are complex, and simplified guidance may support expanded food-to-animal operations.

37 PUBLIC LAW 104–210—OCT. 1, 1996, govinfo.gov/content/pkg/PLAW-104publ210/pdf/PLAW-104publ210.pdf
38 REDUCING FOOD WASTE, Wisconsin Department of Natural Resources, dnr.wisconsin.gov/topic/waste/residentialfoodwaste.html
39 New FDA Food Code Reduces Barriers to Food Donations, U.S. Food and Drug Administration, February 14, 2023, fda.gov/food/hfp-constituent-updates/new-fda-food-code-reduces-barriers-food-donations
40 ReFED–Food waste monitor. Accessed March 2025.
41 Livestock Feed and Pet Food, State of Wisconsin Department of Agriculture, Trade and Consumer Protection, datcp.wi.gov/Pages/Programs_Services/LivestockFeedPetFood.aspx
42 Commercial Animal Feed Tonnage Reported for 2019-2023 Wisconsin Department of Agriculture, Trade and Consumer Protection, datcp.wi.gov/Documents2/2023TonnageReport.pdf
43 Wisconsin Cheese: Farm & Dairy Statistics, wisconsincheese.com/media/facts-stats/farm-dairy-statistics
44 Using food waste as livestock feed, Outagamie Extension, outagamie.extension.wisc.edu/files/2012/10/Using-Food-Waste-as-Livestock-Feed.pdf

3.3 Food Rescue Current Operations

Wisconsin's existing network of food rescue organizations works to get food to people in need and divert material to create animal feed. Both diversion methods provide beneficial landfill diversion across the state.

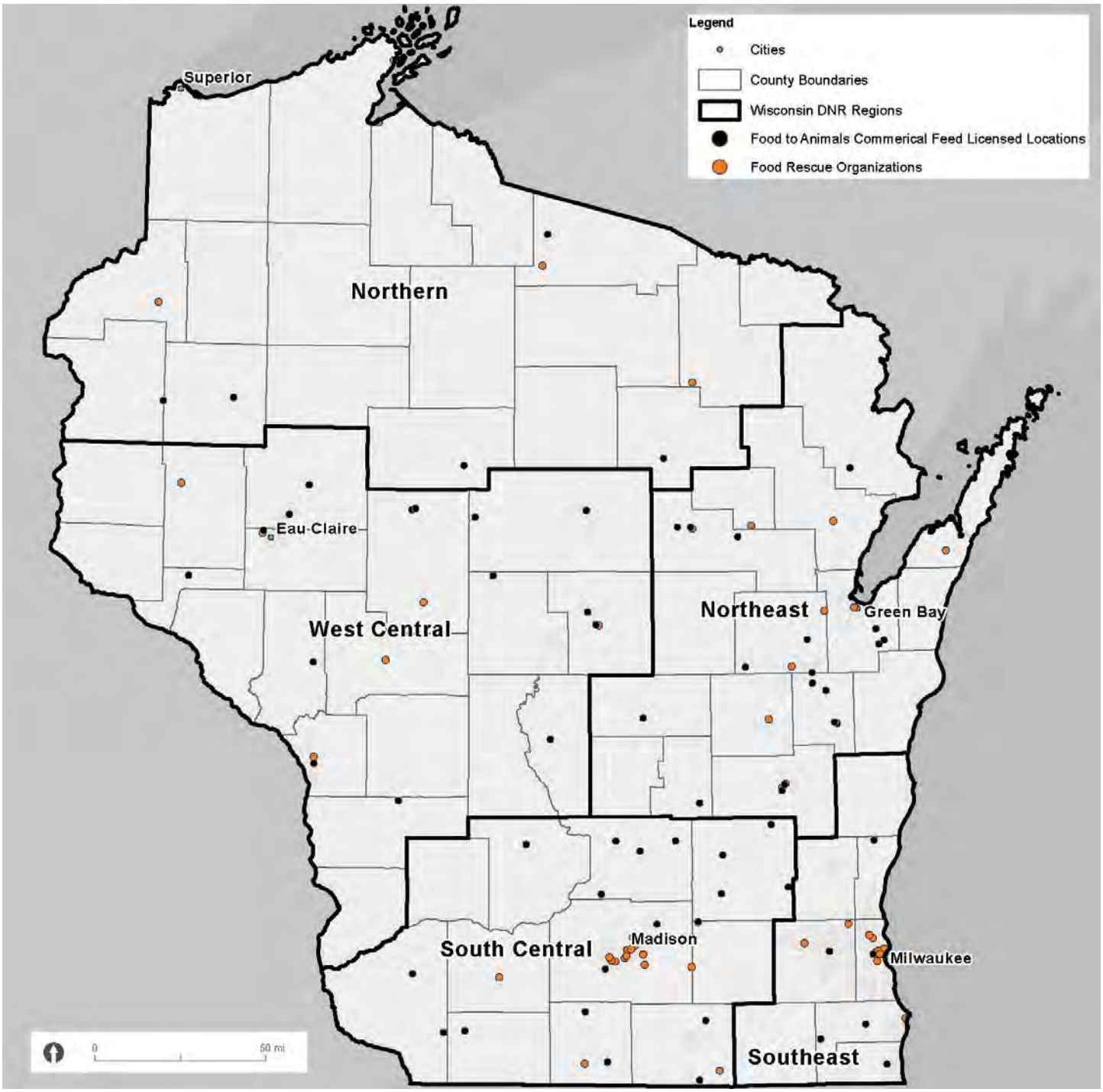
Figure 8 shows existing large food banks, including Feeding Wisconsin's network of six food banks and the EPA's identified key food banks, food pantries, and other donation outlets. **The map of nearly 50 existing food donation outlets aligns with densely populated areas.** These outlets are less common in the state's more rural areas. Although not an exhaustive list, these key outlets identify where food donations are most prevalent in the state.

Figure 8 also includes the locations of roughly 70 entities with animal commercial feed licenses, indicating operations that use food products as animal feed. **Dairy cows consume a large portion of the state's overall food waste, estimated to be 9 percent of all food waste** by ReFED.[45] The map highlights the occurrence of existing food rescue efforts in the South Central and Southeast regions, as well as the lack of available outlets in the Northern and West Central regions.

The state's existing food donation outlets and food-to-animal operations are estimated to manage 11 percent of all food waste in the state.[46] There is opportunity to expand the capacity of existing food rescue operations and to create pathways for new programs to divert additional food waste. In 2024, more than 652,000 tons of wasted food that was previously edible was disposed of in landfills, nearly nine times the amount managed by food donation outlets in the state. There are opportunities to expand the diversion of food to feed animals through regulatory support and guidance for complying with commercial animal feed requirements. The large number of dairy farms across Wisconsin presents an opportunity to continue to divert food waste to feed animals and for the State to support and expand existing and new partnerships.

45 ReFED–Food waste monitor. Accessed March 2025.
46 ReFED–Food waste monitor. Accessed March 2025.

FIGURE 8: FOOD RESCUE ORGANIZATIONS AND COMMERCIAL ANIMAL FEED LICENSED LOCATIONS



4. Food Waste Processing

Moving along the EPA Wasted Food Scale, when prevention, donation, upcycling, feeding animals, or leaving food unharvested are not possible, the next preferred food waste management methods are composting and anaerobic digestion (AD) with beneficial use of digestate or biosolids, followed by AD without beneficial use and landspreading. Food waste processing infrastructure, including composting facilities, stand-alone anaerobic digestion, wastewater treatment plants (WWTP) with anaerobic digestion, and waste landspreading facilities, are a critical component of successful food waste recycling and sustainable food waste diversion from landfills.

The Study analyzed the state's existing food waste processing infrastructure to identify current operations, capacity, and barriers for diverting additional food waste. Additionally, data from solid waste haulers (also called transporters) was included, because they play a key role in moving food waste to processing and landspreading facilities. The following sections provide details on the current Wisconsin-licensed food waste processor, landspreading, and hauling operations.

4.1 Composting Facilities – Current Conditions

COMPOSTING **is the biological process that breaks down organic material (such as food waste, leaves, grass clippings, and other yard waste) in the presence of oxygen.** The byproduct is finished compost, a nutrient-rich soil amendment that can be used for agriculture, erosion control, reseeding after construction and road development, gardening, and landscaping.

Source-Separated Compost Material Facilities

Composting operations in the state already provide management for organic materials, including leaves, grass clippings, and other yard waste materials. **The state has 286 licensed composting facilities, including 30 approved to accept food waste**, which are referred to as source-separated compost material (SSCM) facilities.[47] SSCM facilities may accept a wide range of food items, including food scraps; crop residues; fruit, vegetable, and grain processing residues; fish harvesting and processing leftovers; American Society for Testing and Materials (ASTM)-certified compostable packaging products; and similar items.

There are two licensing levels for SSCM facilities: less than 5,000 CY of material on-site at one time and more than 5,000 CY of material on-site at one time. Facilities that process more than 5,000 CY have additional operating and approval requirements.

Yard Residuals Licensed Facilities

Facilities licensed to process yard residuals may accept only the following materials:

- Leaves
- Grass clippings
- Yard and garden debris and brush
- Clean woody vegetative material less than 6 inches in diameter
- Incidental spoiled fruit and vegetables from noncommercial sources

47 SSCM is a regulatory term used in Wisconsin solid waste code regulations to refer to wastes that can be composted under a composting facility license issued under the authority of s. NR 502.12, Wis. Adm. Code. It includes food waste, plant waste (including crops and aquatic plants), fruit and vegetable food processing waste, fish processing waste, yard residuals, manure and animal bedding from herbivorous (non-meat-eating) animals that are not deer or elk, clean chipped wood and sawdust, nonrecyclable compostable paper, and certified compostable plastics. NR 500.03(219m), Wis. Adm. Code.

There are two licensing levels for yard residual facilities: less than 20,000 CY of material on-site at one time and more than 20,000 CY of material on-site at one time. Facilities that process more than 20,000 CY have additional operating and approval requirements. Existing facilities that are already operating have the potential to add food waste to their facilities with few changes, relative to a new facility.

License Exempt Composting Facilities

A composting facility that manages 50 CY or less of food waste or other SSCM at one time does not need a State solid waste approval or a composting facility license. A composting operation that is on a farm and primarily for farm residuals also does not need approval or a license (e.g., on-farm composting operations). These sites may also accept off-site food waste if the operation follows specific operating requirements. Because of these details, several compost operations are not included in the current materials processed (Table 4).

Current Materials Processed

Table 4 displays the number of licensed composting facilities by materials processed and size for 2023.

TABLE 4: NUMBER OF LICENSED SITES BY FACILITY TYPE (2023)

Material Type	Licensed Size	2023 Number of Licensed Sites
Yard Residuals	50–20,000 CY	254
May include Food Scraps (SSCM)	50–5,000 CY	29
"Non-Exempt Sites" – Food Scraps (SSCM)	>20,000 CY of yard residuals or >5,000 CY of SSCM	1
"Non-Exempt Sites" – Yard Residuals	>20,000 CY of yard residuals	1
Other Solid Waste[48]	N/A	1
Total		**286**

Table 5 displays information provided by licensed composting facilities and the materials processed by material type and region for 2023.

TABLE 5: TOTAL MATERIAL PROCESSED BY MATERIAL TYPE BY REGION IN CUBIC YARDS (CY) (2023)

Region	Yard Residuals (CY)	Food Scraps (CY)	Food Processing (CY)	Crop Residuals (CY)	TOTAL (CY)
Northeast	488,675	15	105	2,370	491,165
Northern	64,545	700	50	5,890	71,185
South Central	303,995	1,530	130	4,600	310,255
Southeast	469,635	16,810	9,800	700	496,945
West Central	211,500	4,575	500	130	216,705
Total	**1,538,350**	**23,630**	**10,585**	**13,690**	**1,586,255**

48 Other solid wastes includes industrial solid waste including paper mill sludge or slaughterhouse wastes.

Licensed composting facilities in Wisconsin managed a total of nearly 1.6 million CY (approximately 322,000 tons) of organic materials in 2023.[49] Most food scraps and yard residuals are managed at lower capacity licensing tiers. Only one facility is licensed for processing more than 20,000 CY of yard residuals on-site at a given time, and one facility is licensed to process more than 5,000 CY of SSCM. Approximately 85 percent of the state's materials are managed by yard residuals facilities licensed for less than 20,000 CY on-site at a given time.

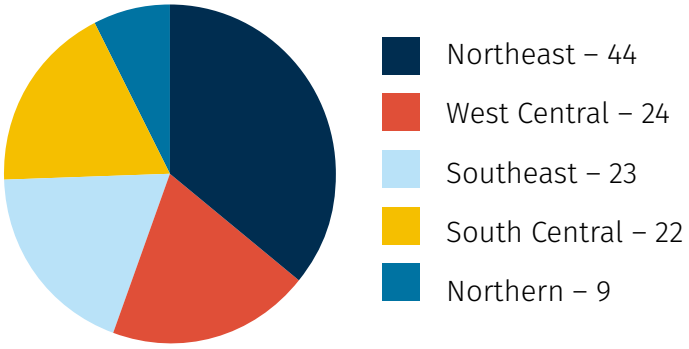
4.2 Anaerobic Digestion – Current Conditions

***ANAEROBIC DIGESTION (AD)* is the biological process of breaking down organic matter in the absence of oxygen to create usable products.**[50] Food waste can be processed through AD to create byproducts like digestate, which can be used as a soil amendment, and biogas to use for energy.

ReFED estimates that AD facilities of all types in the state managed 323,000 tons of AD byproducts and more than 10 percent of all food waste, making AD systems the third most common management destination after landspreading and landfills.[51]

According to the EPA Excess Food Opportunity map, there are 122 AD facilities currently operating in the state. Figure 9 shows the number of AD facilities distributed by DNR regions.[52]

FIGURE 9: NUMBER OF DIGESTERS IN OPERATION BY WDNR REGION



There are three main types of AD facilities:

1. **Non-farm, stand-alone AD:** Feedstocks are mixed but typically consist of food waste and may include dairy manufacturing.
2. **Farm stand-alone AD:** Feedstocks are typically animal manure from dairy cows, cattle, or swine.
3. **WWTPs with AD:** Feedstocks are typically wastewater solids, food waste, and beverage and processing industry waste.

Food waste, fats, oils, and greases, beverage processing waste, and food processing waste are the most common food waste feedstocks across the three facility types. Of the 122 operating digesters, 8 are stand-alone (but not on a farm), 50 are stand-alone operating on farms, and 64 are operating at WWTPs.

Only 37 digesters (30 percent) are listed as specifically accepting food waste. Of these 37 food-waste-accepting digesters, 8 are non-farm stand-alone digestors, 16 operate as stand-alone on-farm digestors, and 13 are at WWTPs.[53] The amount of food waste managed by these AD facilities was not available at the time of this Study.

49 WDNR data 2023, Licensed Composting Facility Data (provided March 2025)
50 Frequent Questions about Anaerobic Digestion | US EPA
51 ReFED–Food waste monitor. Accessed March 2025.
52 Excess Food Opportunities Map Experience Builder, V3.1
53 Excess Food Opportunities Map Experience Builder, V3.1

Wastewater Treatment Plants

WWTPs are another type of facility that may manage food waste. WWTPs treat wastewater from homes, commercial buildings, and industrial facilities. There are approximately 950 licensed WWTPs in the state. Of those, about 300 are industrial and more than 650 are municipal. Only 13 WWTPs currently accept food waste, and the amount of food waste managed by existing WWTPs was not available at the time of this Study. Not all WWTPs can manage source-separated food waste through their systems, because food waste is very different from what is typically found in wastewater material streams.

4.3 Landspreading – Current Conditions

LANDSPREADING **involves directly applying organic materials to agricultural fields to reintroduce nutrients into the soil, which can improve soil quality and reduce the need for synthetic fertilizers.** ReFED estimates that approximately 1.4 million tons of Wisconsin's food waste was land applied in 2023.[54]

Landspreading is the most common form of food waste management in Wisconsin. ReFED estimates that approximately 44 percent of all food waste generated in the state was land applied in 2023.[55] The prevalence of this management method can be attributed to its use by Wisconsin's large food manufacturing and processing industries.

Direct landspreading is common practice in Wisconsin. Wasted food, especially liquid food wastes, and food byproducts from food manufacturing and food processing may be eligible for direct application (also called field application).[56]

Currently, there are 106 licensed industrial WWTPs in Wisconsin that may proccess animal and food waste, operating under a landspreading general permit. Based on information provided by the DNR, the majority are permitted to landspread byproduct solids, sludge, and liquid waste. Managing material on-site reduces the need to arrange for waste to be hauled away for treatment at another facility. Such facilities may already be managing food waste and may have opportunity to manage more material.

4.4 Waste Hauling – Current Conditions

Transporting food waste from sources to processing facilities is a key factor when considering food waste diversion. The DNR licensed approximately 1,260 solid waste haulers in 2024, and **approximately 130 reported that they provide hauling for food waste or compostable materials.**

The DNR is aware that some additional waste haulers provide service on a limited, regional basis for food waste, often called community compost collectors. These collectors may be exempt from needing a solid waste hauling license if they transport less than 20 tons per year. Known compost subscription and drop-off service options are available on the DNR's website for interested residents and commercial customers.

Existing waste haulers offering separate food waste collection are limited, and expanded collection services will be necessary, particularly in densely populated areas, to transport food waste to processing facilities for recycling.

54 ReFED–Food waste monitor
55 ReFED–Food waste monitor
56 Understanding Sustainable Management of Food | | Wisconsin DNR

5. Processing & Infrastructure Needed

As Wisconsin works to reduce food waste disposed of in landfills, understanding the need for new or expanded food waste processing infrastructure is central to diverting material from landfills. It is estimated that more than 900,000 tons of food waste were disposed of in landfills in 2024. The state's total food waste processing capacity depends on current food waste processors and their ability to expand operations, the potential for facilities that do not currently process food waste to accept food waste in the future, and the development of new facilities to manage food waste.

Existing facilities may be able to process more materials, but overall, the state lacks the necessary capacity to divert significant amounts of additional food waste from landfills at this time.

A survey was distributed to facilities and waste haulers in the state to gather insights from entities that currently manage food waste as well as those that do not currently manage food waste. The survey was distributed to composting facilities, WWTPs, and waste haulers across the state. Survey results provided details about current operations and challenges and opportunities for modifying operations to divert food waste from landfills.

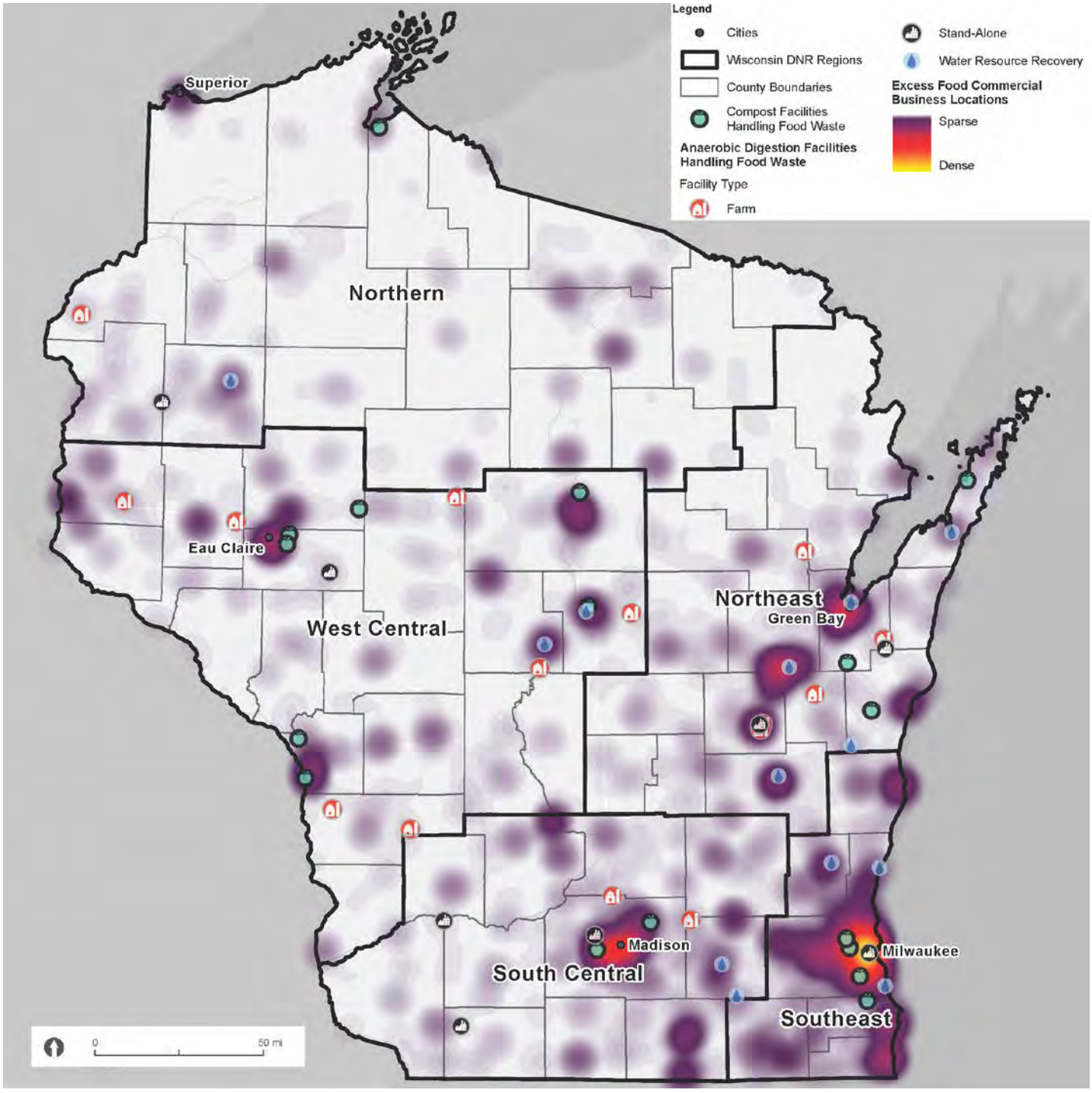
5.1 Food Waste Processing Infrastructure

Identifying the existing facilities in the state that manage food waste can help identify where a potential need exists for new or expanded infrastructure to support food waste diversion and efficiencies. Figure 10 shows the locations of Wisconsin's existing facilities that manage food waste and a heat map of commercial entities that generate food waste.

In general, existing food waste processing facilities, including composting facilities, are concentrated near population centers. Based on the findings of the current conditions analysis, the existing facilities do not currently have enough available capacity to manage the amount of food waste generated in the state.

Additional processing capacity would be most beneficial in the South Central, Southeast, and Northeast regions, which also align with the state's population density.

FIGURE 10: EXISTING LICENSED FOOD WASTE MANAGEMENT FACILITIES AND COMMERCIAL GENERATORS OF FOOD WASTE[57]



*The commercial generators of food waste in this map include correctional facilities, educational institutions, food manufacturing and processors, wholesale and retail, healthcare facilities, hospitality industries, and restaurants and food service industries in Wisconsin. Generation amounts are based on food waste generation estimates from the EPA's Excess Food Opportunities Map.[58]

57 AD facilities based on EPA Excess Food Opportunities Map, accessed May 2025 Excess Food Opportunities Map Experience Builder, V3.1. Licensed composting facilities provided by WDNR, facilities reported managing food waste in 2023.

58 epa.gov/sustainable-management-food/excess-food-opportunities-map#whatis

Composting Facilities

Existing SSCM facilities managed 96,100 CY of material in 2023 based on DNR data. Survey data was used to assess what infrastructure, equipment, and training composting facilities may need to begin accepting SSCM or expand existing SSCM processing capacity. Survey data indicated that new technology and enhanced processes could increase processing capacity at existing facilities.

The state's existing composting facilities do not have enough capacity to manage all food waste generated in the state, even if they were to accept more food waste. **It is estimated that more than 900,000 tons (4,585,000 CY) of wasted food and food scraps were disposed of in Wisconsin landfills in 2024.** Based on the total amount of waste disposed of in landfills in each region of the state, Table 6 shows the percentage of food waste generated by region compared to the state's overall waste generation. Table 6 also compares the amount of food waste composted in each region (as reported in 2023), highlighting the significant increase in operating capacity of composting facilities needed to process food waste in each region if no other reduction or landfill diversion occurred.

TABLE 6: FOOD WASTE DISPOSAL BY REGION

DNR Region	Percentage of Overall Waste Landfilled in Region	Food Waste Disposed of in Landfill by Region (CY)	Food Waste Composted by Region (CY)
Northeast	20%	917,000 CY	2,490 CY
Northern	8%	366,800 CY	6,640 CY
South Central	21%	962,850 CY	6,260 CY
Southeast	34%	1,558,900 CY	27,310 CY
West Central	17%	779,450 CY	5,205 CY

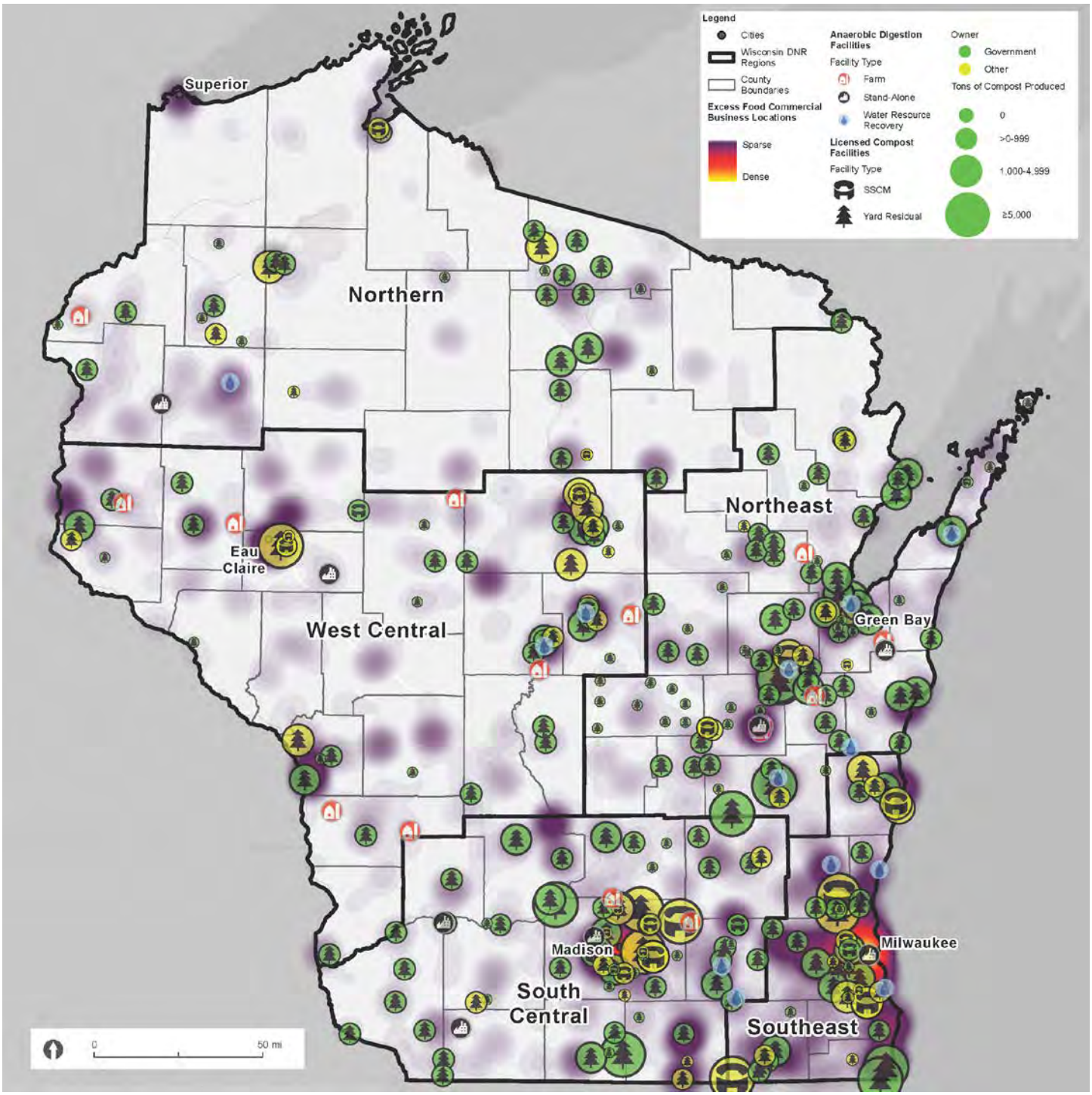
The feasibility of expanding or adding new processing infrastructure for composting relies on many factors, including regulatory considerations, capital and operational costs, food waste transportation, feedstocks, end market demand, and potential partners. Survey responses were received from 18 composting facilities (six of which currently accept SSCM), and feedback regarding barriers for managing food waste varied significantly by respondents. The cost associated with managing food waste was the most commonly noted barrier. Based on survey input from composters, operators would need to purchase new equipment, such as front-end loaders, scales, screeners, and operating pads, to add food waste. They would also require additional staff and training. Based on survey responses, these upgrades would cost facilities approximately $250,000 to $300,000 per upgrade.

Respondents noted that competing with low landfill disposal fees is a major challenge for managing food waste. Other barriers noted include potential odors from adding food waste to operations, necessary permitting changes, additional labor, concerns regarding profits, and overall cost.

State regulations allow for licensed composting facilities to manage certain amounts of food waste based on their licensing level. Supporting opportunities for existing facilities to manage more or begin managing food waste could help divert this material and use existing infrastructure.

Figure 11 identifies all licensed composting facilities based on their size and compares them to the same heat map of commercial entities that generate food waste. Some of the larger yard residual facilities may be able to feasibly add food waste to their operations, and some SSCM may be able to expand providing a more cost-effective method for food waste diversion compared to new facility construction.

FIGURE 11: LICENSED COMPOSTING FACILITIES AND COMMERCIAL GENERATORS OF FOOD WASTE[59]



Along with expansion of existing facilities, additional facilities may be needed for Wisconsin to expand its food waste processing capacity. Industrial composting facilities can be designed to manage significant amounts of food waste using specific technology to increase capacity and throughput. Pre-processing materials can allow for packaged food items to be processed efficiently. The typical

59 AD facilities based on EPA Excess Food Opportunities Map, accessed May 2025 Excess Food Opportunities Map Experience Builder, V3.1. Licensed composting facilities provided by WDNR.

capital expenses for composting operations include land acquisition, engineering costs, construction costs, equipment, and permitting. In Wisconsin, solid waste plan review and licensing fees are waived for any composting or processing facility with a primary purpose of converting solid waste into usable materials, products, or energy in an effort to reduce permitting costs as a barrier. Facility capital costs can range significantly between a few hundred thousand dollars to $5 million or more, depending on the technology, location, size of the facility, and other factors.

Although composting facilities are well established in the state, their operations and capacity alone are not sufficient to divert the large amount of food waste generated in the state. Additional processing capacity should be considered through other types of infrastructure, including WWTPs and AD facilities, on-site management (including farms and other industries), landspreading, and new composting facilities specifically designed to manage large quantities of food waste.

Wastewater Treatment Plants & Anaerobic Digestion

Existing WWTPs and AD facilities may have the capacity to manage additional materials, but their systems are likely specialized for specific feedstocks, such as farm byproducts and wastewater. Survey responses were received from 44 WWTP, and only 4 currently accept separated food waste.

Managing separated food waste at existing WWTPs can be challenging, particularly due to the varying composition of material streams. Through survey results, facility operators reported that, to add food waste processing, the facilities would need to increase staffing and add equipment that assists with a more contaminated stream, including depackagers, high-strength waste receiving and feeding pumps, additional centrifuges, additional dryers, and storage tanks. Multiple respondents noted that adding food waste to current operations would be costly due to necessary system enhancements.

New AD facilities may be a more feasible option, particularly in areas with larger gaps between food waste generated and food waste management capacity. The capital costs for an AD facility can range from a few million dollars to $30 million or more, depending on the size, technology, location, and operation costs.

Landspreading

Landspreading food waste is already well established in the state and used commonly for liquid food waste and food byproducts. Barriers to new or expanded landspreading operations for food waste include logistics for accepting materials and the cost of hauling and landspreading food waste. Again, the lower fees for landfilling food waste may be a disadvantage to expanding landspreading operations. Landspreading is a well-used outlet in the state today and should be supported to encourage continued use of this management option.

Feedback received from one representative of agriculture and dairy industry groups noted that Wisconsin landspreading regulations have made the process more challenging in recent years, particularly related to re-approval for previously approved landspreading locations. Investigating ways to reduce regulatory challenges could support landspreading of manufacturing food waste and decrease disposal in landfills.

Waste Haulers

More than one-third of the haulers who responded to the survey reported they already provide collection of separated food waste from residential and commercial customers (10 of 27 responses). Waste haulers noted that barriers for expanding hauling operations for separated food waste include the following:

- Lack of convenient locations to bring materials
- Lack of interest from potential customers
- Lack of customer density
- Cost of managing food waste
- Regulatory concerns
- Nuisance and odor issues

The survey results indicate haulers have the capacity to expand their current operations, but the cost for managing food waste is the most significant barrier.

6. Evaluation and Strategies for Diverting Food Waste

6.1 Industry Groups

In addition to surveys distributed to food rescue organizations, processing facilities, and waste haulers, a survey was distributed to various industry groups and businesses that are likely to generate food waste. The survey was intended to acquire qualitative data regarding practices that generate food waste, current food waste management methods, and challenges and opportunities for reducing food waste to landfills. Responses were received from 37 entities, including 21 universities, 8 restaurants, 4 businesses (including hospitality and food service), 3 organizations, and 1 county. No representatives from the agricultural or manufacturing industry provided responses.

According to the survey results, common wasted food items in Wisconsin include produce, spoiled and unharvested items, food byproducts, bread and grain, meat, and beverages. The main causes of food waste include over-production (or not selling all items), over-purchasing, spoilage, and date label concerns.

All respondents noted they have considered one or more of the following practices or procedures to reduce food waste that include:

- Serving smaller portions or implementing offer vs. serve (restaurants, universities)
- Directing food waste to animal feeding operations rather than landfilling (businesses, universities)
- Adjusting operations to reduce overproduction and food waste (businesses)
- Implementing food waste tracking and waste auditing (restaurants, businesses)
- Diverting food waste from landfills through food recovery, donations, and composting, both on- and off-site (businesses, universities)
- Focusing education and outreach on customers and students to reduce food waste (businesses, universities)

Barriers identified to reducing food waste from one or more respondents included:

- Lack of time, financial resources, and personnel (restaurants, universities, organizations, businesses)
- Lack of storage space or necessary technology to track and plan to reduce food waste (businesses, universities)
- Unaware of solutions to reduce their food waste generation (businesses, organizations)

Survey respondents also noted barriers to donating additional food include transportation limitations, liability concerns, lack of staff time, and lack of storage. Additional resources that may benefit food donation include financial support (for staff time, logistics, etc.) and resources to understand potential tax benefits for donating food.

Survey respondents provided the following feedback on ways the State could support them:

- Information sharing via practical tips, technical assistance, educational materials, and information sharing between similar organizations.
- Targeted information by industry based on relevant State agencies.
- Financial support for food waste reduction and recovery and expanding composting capacity.
- Consideration of policies to support food waste reduction.
- Support to facilitate relationships between food waste generators and donation outlets.

6.2 Municipalities

A survey was also distributed to Wisconsin municipalities and 81 responses were received. Input was requested about current food waste diversion programs available in their communities and opportunities to divert food waste from landfills. Existing programs include creating animal feed, food donation outlets, and composting operations. Feedback identified the need to support food waste management programming and infrastructure development, including:

- Education and outreach support for food waste management to build public interest.
- Funding and/or grant programs for food waste collection, management, and education.
- Supporting and participating in the Wisconsin U.S. Composting Council Chapter.
- Providing information to municipalities on how they can leverage current State programming to support organics diversion.
- Assisting with building regional networks for hauling and processing capacity.

6.3 Food Waste Prevention and Reduction Strategies

Different sectors have unique opportunities to prevent or reduce food waste based on the type and quantity of material they generate in alignment with the National Strategy for Reducing Food Loss and Waste and Recycling Organics. The DNR has developed a series of webpages that provide educational resources for the different sectors that generate food waste. The following sections summarize some of the food waste reduction strategies by sector from the DNR webpages, and include insights based on the state's current conditions as identified in this Study, feedback from survey results, and best practices implemented in other states.

Strategies for Residents

- Reduce food waste by shopping, storing, and cooking food wisely.
- Better understand the definitions of "sell-by," "use-by," "best-by," and "expiration" dates to avoid disposing of food unnecessarily.
- Expand knowledge by engaging with the DNR's existing educational resources through webpages, social media, news releases, and publications focused on reducing food waste.
- Learn more by reviewing the EPA's national consumer wasted food reduction campaign (currently in development via EPA funding).

Strategies for Farms and Farmers

- Develop and expand markets for imperfect foods, which are labeled as such due to specifications related to the color, shape, and size of products. Misfit Market is an example of an online retailer that sells leftover ends and pieces, discolored food, excess inventory, and items that are too big or too small.[60]
- Promote the sale of surplus food. Selling surplus food directly to consumers or donating surplus food can reduce food waste.[61]

Strategies for Manufacturing

- Upcycle food (using food products to create new food products) within the manufacturing and production stage of food processing.
- Track food waste generated, including off-spec products or mislabeled materials, and evaluate whether this could be reduced by upgrading equipment or changing standard operating procedures.
- Optimize manufacturing lines to reduce food waste.

60 misfitsmarket.com
61 insights-engine.refed.org/solution-database/imperfect-surplus-produce-channels

Strategies for Restaurants

- Conduct waste audits to identify the most common types of food waste and consider serving frequently wasted items upon request only.
- Manage and track inventory to reduce the amount of time food is stored.
- Use specials to feature ingredients that are close to their use-by or expiration dates.
- Consider donating prepared food, including unsold or excess items.
- Offer takeout containers and include storage and reheat instructions.

Strategies for Wholesale and Retail

- Work with food pantries or food banks to donate close-dated food products.
- Use sales or markdowns to increase sales of products that are close to expiration.
- Consider selling "imperfect" produce for a discounted price.

Strategies for Events

- Consider donating excess food to local food banks.
- Leverage resources from the Green Sports Alliance developed to address food waste reduction and diversion at events and sports arenas.

6.4 Food Waste Landfill Diversion Evaluation

Understanding Wisconsin's unique factors can help provide tailored approaches to food waste diversion, and these approaches should consider existing industries, infrastructure, and community factors. As noted, landfill diversion includes food rescue through food donation to people and use as animal feed and food waste processing through composting, AD, and landspreading.

Households and Businesses

- Areas with denser populations and commercial businesses may be more suitable for collecting and processing food waste at composting and AD facilities.
- Areas with lower population densities and fewer commercial businesses face more challenges collecting and transporting food waste for processing, including higher costs. Smaller programs in these regions, such as community composting with small-scale operations, may provide more beneficial approaches.
- Expanding landspreading of industrial food waste may provide beneficial solutions in more rural areas.
- Focus on curbside collection of food waste to collect the greatest amount and make it convenient. In areas where it may not be practical due to the cost of collection and lack of available options for processing, interested parties may consider regional approaches to bolster food waste collection and processing, such as regional processing facilities or centralized collection and transfer points for collected materials.

Food Manufacturing and Agriculture

- Managing food waste through composting, co-digestion at WWTPs, or through AD locally, either on-site or in close proximity, would likely provide more convenient and cost-effective options for landfill diversion.

Institutions, Food Service, and Retailers

- The cost of collection and transport can be particularly challenging in industries with low profit margins and limited staff to address diversion, including restaurants and food service. In this case, focusing on staff training, donating food, or on-site composting might provide other opportunities to reduce waste.
- Industries may benefit from working with local commercial composters, AD facilities, or through co digestion at WWTPs, particularly if there are options to depackage materials.
- Small to medium sized industries may benefit from on-site food waste processing technologies, such as small AD units.
- Resources for technical assistance and peer networks may be beneficial for sharing information and resources that are most relevant to this sector's unique challenges.

7. Recommendations

Wisconsin has many unique geographical and cultural factors that impact the type and quantity of food waste generated, the locations where food waste is generated, and how food waste is processed or disposed. The State's existing programs and infrastructure are not currently sufficient to divert all food waste generated from landfills. However, there are opportunities to expand and replicate existing programs and facilities across the state to reduce food waste.

The following recommendations were developed to support the DNR on behalf of the State of Wisconsin, as well as residents, interested food waste generators, and the food waste management industry in taking actions to reduce landfilled food waste.

When considering recommendations, the EPA Wasted Food Scale was used to frame how to preferentially manage food considering environmental benefits, resources, and landfill diversion potential.

FIGURE 12: EPA WASTED FOOD SCALE[62]

FOOD WASTE PREVENTION AND REDUCTION is the highest priority based on the EPA Wasted Food Scale, and this strategy supports reducing food waste to landfills.

- **State agencies such as the DNR, DATCP, and Wisconsin Department of Public Instruction, can create and implement education and consumer behavior change campaigns** to reduce food waste and educate about date labeling, cost savings, and environmental benefits. Existing EPA resources are available and similar agencies provide example campaigns with proven messaging tailored for residents and commercial generators. Successful campaigns have included online education, billboards, and social media campaigns.
- **State agencies, environmental groups, and the waste management industry can continue promoting food waste reduction.** The DNR's existing efforts to educate residents, institutions, and businesses about reducing food waste are very beneficial and should continue to be prioritized. Tailoring messaging and strategies for reducing food waste by industry can help engage food waste generators, such as messaging specific for farmers focused on feeding animals or to universities focused on donating edible food. The DNR's Organics Management News e-newsletter is a great way to connect with people about tips to reduce food waste, available programs, and available resources. Food waste reduction should consider all stakeholder categories, including farms and farmers, manufacturing, restaurants, wholesale and retail, events, and residents. These categories can help inform media channels and targeting methods to direct messages to the right people.

62 epa.gov/sustainable-management-food/wasted-food-scale

- **State regulators and legislators can consider date labeling changes to reduce food waste.** The State could consider changes to date labeling guidelines for quality-based dates and support national initiatives and legislation. Clarifying the meaning of date labels such as "sell by," "use by," and "best before" can help consumers better understand when food is still safe and prevent premature disposal. Food donation opportunities are also limited by specific date labeling requirements.
- **All interested parties can increase collaboration and partnerships to promote food waste reduction.** Exchanging information about existing or planned programs from cities and counties across the state may provide opportunities for collaboration and Wisconsin agencies can leverage these opportunities to forge partnerships. Specific local efforts across Wisconsin are detailed in Appendix A.
- **State legislators can allocate funding for grants to support food waste prevention and diversion.** Grants can support education, food rescue programs, infrastructure development, and food waste collection. Grant programs can target businesses that generate significant amounts of food waste, including food retailers and restaurants. Grants may focus specifically on process efficiencies to reduce food waste generation, such as upcycling food byproducts in manufacturing processes.
- **Food waste generators can explore and implement the use of inventory tracking tools and audits to reduce food waste.** Inventory software and third-party or in-house waste audits can help identify opportunities to reduce wasted food and potentially save money through more efficient inventory management. Food manufacturing and processing industries may be unaware of tools or lack the staff time to implement. Survey results found that such inventory tracking tools are not commonly used in the state.
- **The DNR and county governments can provide training resources to food waste generators on how to prevent food waste.** Best practices can include tracking inventory, using food byproducts, training staff, reducing surplus food production, and monitoring food waste generation to track progress. Efforts may focus on industries that send a high amount of food waste to landfills, including the food service and retail sectors.

FOOD DONATION to people allows food to be used for its intended purpose—to feed people.

- **State agencies, local governments, and industry groups can promote food rescue and food donation.** Offering more comprehensive state liability protection for food donors beyond the federal Bill Emerson Good Samaritan Food Donation Act may encourage more donations. DATCP could partner with the DNR to expand food rescue and assist generators in diverting food waste. State agencies can share information and develop guidance for food donation, facilitate partnerships between food generators and rescue organizations, and implement requirements for food donation.
- State and local regulators can implement **policies to encourage or require food donation**. The State could offer tax incentives and food safety guidance to support rescue efforts, which have been found to increase food donation in other states and are recommended by ReFED. Requiring entities to donate food has been implemented in California by certain commercial food waste generators and has increased landfill diversion. As part of the requirement, California has issued grants and loans, and more than 200,000 tons of edible food were recovered in 2023 alone.
- Community groups, local governments, and state agencies can support and connect **community-level food rescue operations** by leveraging existing programs and connecting food producers with rescue organizations and identifying opportunities for new or expanded services.

- **State agencies, local government, and community groups can support expanded capacity for existing food donation outlets.** Survey results found that food donation outlets in the state have limited operational capacity to manage more food. These outlets face challenges related to food distribution logistics, space for storing food, and a lack of funding and personnel to expand operations.
- **The State can allocate funds or offer grants to encourage participation in food donation through policies** that require participation and provide funding that supports programs. Lack of coordinated donation efforts, including transporting food to food shelves or food banks, can be a barrier that reduces a business's ability to participate in food rescue.

FEEDING ANIMALS is the next preferred method of managing food waste.

- **The State, farm organizations, and industry groups can expand the use of food waste for animal feed.** State agencies can work with partners to support expanding food byproduct use for animal feed and foster connections between food waste generator businesses and farmers who can use byproducts to feed their livestock.
- **The State can help reduce barriers for businesses** interested in providing food waste to animals and consider policy changes to support program growth. State agency regulations and guidance related to creating animal feed from food waste can be overwhelming, and simplifying the process can help increase food diversion to animals.
- To further the organization's reach, promote and use the **Wisconsin Farm Bureau Federation**, which already provides members with resources related to using food waste for animal feed.

Managing food waste through ***PROCESSING INFRASTRUCTURE, LIKE COMPOSTING AND AD***, should be prioritized over landfilling. Supporting landfill diversion includes expanding food waste recycling infrastructure, including hauling food waste to processing facilities.

- **State agencies, local governments, and interested parties can provide education on food waste diversion for residents and businesses.** Educational campaigns can be used to share strategies for reducing food waste at home, provide how-to information on separating food scraps, promote existing diversion programs, and show how to get started with at-home composting, among other topics. More than half of the food waste produced by residential households goes to landfills, representing a sector that should be prioritized for food waste diversion.
- **State and local regulators can review the siting, zoning, and permitting process for organics processing facilities and evaluate how to address current barriers.** Reviewing procedures to streamline permitting regulations can promote the development of new facilities and the expansion of the capacity of existing facilities for both composting and AD. Regulators could consider providing technical assistance during the permitting process.
- **State legislators can implement policies to use landfill tipping fees to provide financial incentives for diversion.** Incentivizing diversion of food waste through higher fees for landfill disposal can be advantageous for food waste processing facilities, like composting and AD facilities. Comparatively low tipping fees per ton of material at landfills can make it challenging for food waste processing facilities to be cost-competitive. Survey responses from composting facilities specifically noted that low fees at landfills are a barrier to their accepting more food waste.

- **The State and processing facilities can develop and support strong end markets for food waste management byproducts, including finished compost and digestate.** End market development can support growth in the industry and aid operations in being more cost-effective. The DNR and other state agencies can support end market development by:
  - Encouraging compost and AD facilities to produce end products that meet industry quality standards to increase their commercial value
  - Continuing to provide technical guidance for producing high quality end products
  - Require or incentivize the use of finished compost in public or state-funded projects, including transportation and right-of-way projects, erosion control, and public landscaping
  - Partner with agricultural organizations to host workshops to educate agricultural businesses on the use and benefits of finished compost application in their practices
  - Legislatively re-instigate the Wisconsin Recycling Market Development Board, that was active in the 1990s and early 2000s, with a focus on food waste. The Board provided grants, loans or manufacturing rebates to governmental or business entities to assist waste generators in the marketing of recovered materials or to develop markets for recovered materials.
- **Waste haulers can expand transportation of food waste from homes and businesses to composting and AD facilities.** Survey data found that, although some waste haulers are currently managing source-separated food waste, many waste haulers are not due to a shortage of disposal locations and the high cost for collection. Unlike garbage and recycling, the collection of food waste at the curb is relatively limited across the state. Expanding collection and hauling can be supported through the following:
  - Increasing customer interest and density to help make collection programs more cost-effective and sustainable through local support.
  - Fostering partnerships with communities, particularly in more dense regions, to create or expand programs for collecting food waste.
  - Encouraging private industry or government entities to locate transfer stations centrally for food waste before going to a compost or AD facility for processing.
  - Implementing consistent education about food waste collection programs to reduce contamination and promote participation through state-coordinated efforts and industry groups.
  - Promoting food waste collection by offering financial incentives to haulers and coordinating with community composters.

- **State agencies and local governments can promote on-site management of food waste**, including backyard composting and landspreading for both residential and commercial sources. Support could include policies and educational opportunities. Landspreading already accounts for approximately 44 percent of all food waste generated in the state and can provide a local approach to divert food waste.
- **State and local agencies can implement food waste recycling or donation requirements for large generators** located within a specific distance of a processing or donation facility. New York implemented a requirement for food waste generators who generate more than 2 tons of food waste per week to either donate edible food or recycle food waste. The regulation only applies to entities that are within a defined radius of a donation outlet or an organics recycling facility.[63] Similarly, Connecticut requires large commercial generators within 20 miles of authorized facilities to divert food waste to composting, AD, or animal feed outlets.[64] Such regulations may provide a valuable regional approach for generators located near existing facilities.

State legislators can establish a landfill food waste ban to support goals consistent with all levels of the EPA Wasted Food Scale. Certain materials are already banned from landfilling in Wisconsin, including yard waste, lead-acid batteries, appliances, tires, waste oil, office paper, cardboard, steel, aluminum, glass, and certain plastic containers. These bans have resulted in the proper management of the materials and increased recycling, while also providing environmental benefits related to reducing landfill waste and creating new materials. Food waste bans rely specifically on strong infrastructure for collecting and processing this material. Political and financial support would be necessary to support a landfill food waste ban, as well as methods to track progress and regulatory mechanisms for enforcement. Policies to require food waste diversion or to incentivize it through higher landfill fees or taxing food waste disposal in landfills could also be considered.

Massachusetts implemented a commercial food waste disposal ban for large generators, such as supermarkets, colleges, hospitals, and more. State grant programs helped support the regulations, which resulted in food waste diversion increasing from about 100,000 tons before the ban to about 380,000 tons in 2023.[65]

The Harvard Law School Food Law and Policy Clinic's Bans and Beyond document published its findings on when a landfill food waste ban may be most appropriate at a statewide level, including when the following conditions are met:[66]

- Reducing food waste specifically is the primary goal, compared to a general focus on landfill diversion.
- The state has enough infrastructure and capacity to process the organic waste diverted from landfills or has plans to develop the infrastructure.
- An organic waste ban is politically and financially feasible, because financial resources are needed to support infrastructure development, to educate residents, and to enforce a ban.
- There is a method for tracking progress toward a goal or target, including a regulatory mechanism for requiring reporting, if applicable, and funding for the regulatory agency to conduct tracking, reporting, and enforcement activities.

Wisconsin would need legislative and administrative changes to meet the conditions outlined. If these conditions are not met, a non-binding strategy or policy may be more feasible, such as a zero-waste plan (a comprehensive plan with goals, strategies, and programs to reduce and recycle waste), a solid waste management strategy (a plan to prioritize solid waste management methods), or establishment of policies to promote infrastructure development.

Appendix B, Food Waste Policies Recommendation and Literature Review provides more details about recommendations and policy examples.

63 New York Food Donation and Food Scraps Recycling Law, Food Donation And Food Scraps Recycling Law–NYSDEC
64 Connecticut Department of Energy & Environmental Protection Commercial Organics Recycling Law, Commercial Organics Recycling Law
65 mass.gov/doc/2025-commercial-organic-waste-ban-economic-report
66 chlpi.org/wp-content/uploads/2013/12/Organic-Waste-Bans_FINAL-compressed.pdf

8. Prioritizing Actions

Numerous programs, policies, and partnerships can help reduce the amount of food waste that ends up in landfills. The recommendations and actions outlined in this Study identify considerations for Wisconsin to reduce food waste to landfills that can be supported and implemented by state agencies, local governments, private industries, and other interested parties.

Near-term actions identify immediate opportunities for landfill diversion without incurring significant costs, time, or regulatory requirements.

Opportunities to reduce food waste in the near term include educational programs and communication campaigns implemented through state or local agencies to increase consumer awareness about preventing food waste. Reducing food waste yields the highest environmental and economic benefits by diverting it from the start. Such campaigns can use existing materials, leverage local government and community partners, and reach all regions of the state. Successful communication campaigns have included broad social media efforts, local and regional media including paid ads, and billboards. Local approaches should consider the target audiences. Food waste prevention efforts may not yield significant landfill diversion, and tracking progress can be challenging; however, the overall cost can be low and could be implemented within a short timeframe, making it instrumental in supporting behavior change.

Expanding existing industries that rescue food for people through donations can help divert additional food waste. Wisconsin's existing network is robust, but it could be expanded by connecting commercial food waste generators with donation outlets and supporting the additional infrastructure they may need, such as staff and vehicles. Survey feedback found that commercial food waste generators lack the resources (time, transportation, staff) to connect edible food with food rescue organizations, and the State could provide support through technical assistance and grants to divert this food.

Wisconsin's manufacturing industry currently manages nearly 98 percent of its food waste through landspreading. Leveraging this practice and identifying opportunities to expand landspreading operations to other sectors can continue to divert food waste from landfills. This management approach may be most beneficial in rural areas of the state because it would reduce the need to transport food waste to disposal or recycling facilities and would use existing open land. The State should review existing regulations regarding landspreading to determine if barriers exist that would prevent increases in landspreading.

Wisconsin's limited composting facilities, including community composters, do not currently have enough capacity to manage a significant portion of the food waste generated in the state.

New composting facilities designed for food waste would provide additional capacity. New facilities, whether publicly or privately operated, should consider the location and capabilities of existing composting facilities as well as regions of the state with dense populations and a prevalence of food service and restaurant industries.

Medium-term actions identify landfill diversion program opportunities that require more effort, funding, or partner support to implement.

Increasing food donations can reduce food waste in landfills, decrease the need for food recycling infrastructure, and can be supported through targeted policies. Wisconsin's current regulations do not offer additional liability protection beyond federal protections or tax incentives for food donation. Policy modifications to make food donation more feasible (i.e., date changes, labeling requirements) and financially beneficial (i.e., tax credits) have been successful in other states. Increasing food donations can reduce food waste in landfills, decrease the need for food recycling infrastructure, and can be supported through targeted policies.

Providing grants for tools and/or technical assistance for food waste generators can increase operational efficiencies and reduce food waste. Tools to support food waste reduction and diversion could include matching programs—for example, online platforms that connect producers with surplus (e.g., "I have 200 pounds of strawberries") to buyers or processors with demand ("I need 150 pounds of strawberries"). Additional tools may include inventory tracking systems that enable facilities to monitor surplus or byproducts in real-time, helping prevent waste before it occurs.

Technical support could be tailored to Wisconsin's large food manufacturing and agricultural industries. This could involve helping companies identify innovative uses for byproducts (e.g., converting whey into protein powders, using fruit pulp in baked goods, or redirecting imperfect produce into value-added products). Technical assistance may also guide information about food safety requirements and business model development for scaling up circular practices.

Regional approaches to managing food waste are crucial, given Wisconsin's regional population density, manufacturing industry, and dominant agricultural sector. Food waste processing facilities and hauling operations should focus on densely populated regions to reduce the time and cost associated with transporting food waste. Further analysis may be necessary to determine optimal locations for larger food processing facilities, specifically accounting for locations of large food waste generators.

Long-term actions identify opportunities for significant landfill diversion through regulations, infrastructure, and private industry involvement to make meaningful impacts on the state's waste system.

Siting locations for new food waste processing infrastructure can divert significant amounts of food waste from landfills, particularly if the costs of recycling food waste are comparable. Locating facilities near densely populated areas and/or areas with significant food service and retail sectors may provide the largest benefit.

Financial support for food waste diversion, through higher landfill tip fees or incentives for diversion, can make food waste recycling more feasible. Food waste processing facilities are more likely to be developed if there is an incentive for food waste generators to use their facilities over landfills.

Requirements for diverting food waste from landfills, through donation or food waste recycling requirements, have been implemented successfully in other states. Example regulations include requirements to donate edible food from specific generators, food waste recycling requirements for commercial entities, or landfill food waste bans. Successful programs rely on political support, donation and recycling infrastructure, and enforcement. Although such regulations may not be immediately feasible in Wisconsin, phased-in approaches or requirements for specific entities (such as retail and restaurants) may be more practical. The State should consider specific requirements for donation or recycling in areas with existing infrastructure. A phased-in approach with additional requirements in future years may be more politically feasible and easier to adopt.

To further support long-term actions and provide policy examples, a literature review was completed to identify existing policies and programs that have been implemented elsewhere to reduce food waste in landfills. The recommendations include identifying such policies or programs that are applicable to Wisconsin and could result in food waste reduction, as detailed in Appendix B.

Appendix A: Potential Partners

The potential partners listed below are existing programs, organizations, and businesses that are currently involved with tracking, studying, and reducing food waste in Wisconsin. This list provides examples and is not exhaustive.

A.1 Food Rescue Organizations

The following key organizations are currently working in food rescue:

- **The Badger Prairie Needs Network** fights poverty and hunger locally with volunteer support. They run a grocery-style food pantry, serving 87,000 people and 1.9 million meals in 2024. The organization repackages prepared food for families and has diverted more than 350 tons of food waste since 2018.
- **Rooted In** rescues food going to waste, prepares meals, and offers education about cooking. Their Glean Team collects excess fresh food from local sources and redistributes items.
- **Wisconsin Farm Bureau Federation** supports member farms using food waste for animal feed, including providing resources.
- **Hunger Relief Federation of Wisconsin** is a statewide association of food banks and food pantries that share resources and address hunger.
- **The Food Recovery Network** is a national nonprofit with 200 college chapters that collect surplus food from dining halls. In Wisconsin, six chapters work actively in Appleton, Ashland, Beloit, La Crosse, Madison, and Milwaukee.
- **Grow It Forward** is a nonprofit organization that fights hunger through goods boxes, donations, soup suppers, gardens, and education.

A.2 Local Wisconsin Efforts

Wisconsin is home to numerous local efforts targeting food waste reduction through local and municipal government programs and regional approaches.

- **The Southeastern Wisconsin Regional Planning Commission's** Regional Food System Plan works to ensure accessible and affordable healthy and fresh food.
- The City of Milwaukee created the **FEED MKE Project** pilot program with public, private, and government partners to address food insecurity, waste reduction, landfill diversion, and environmental impacts.
- **City of Madison Restaurant Class Sanitary Sewer Bill** encourages restaurants to participate in food waste collection programs to reduce grease and food waste being sent to sanitary sewers and lower their sewer billing rates.
- **Dane County Food Action Plan** is developing a plan for a sustainable and equitable food system, including farmers, retailers, institutions, and community members.
- **The Associated Recyclers of Wisconsin** has a committee dedicated to Organics Reduction and Composting that is working to advance programs, provide education, and connect groups to support organics diversion.
- **Recycling Connections** is a nonprofit supported through service contracts, grants, product sales, and donations for waste reduction, recycling, and resource conservation.
- **The Wisconsin Composting Council** is a local chapter of the U.S. Composting Council, now present in Wisconsin, working on various efforts to support composting.

A.3 State Agencies

State agencies can collaborate to address food waste diversion.

- **Department of Agriculture, Trade, and Consumer Protection (DATCP):** Focuses on food safety regulations and standards, as well as animal feed and landspreading licensing.
- **Department of Health Services (DHS):** Offers programs specific to food safety, proper food storage, and food poisoning prevention, as well as connections to food banks and pantries.
- **Department of Natural Resources (DNR):** Focuses on environmental protection including clean air, clean water, and healthy landscapes as foundations of the State's economy, environment, and quality of life.
- **Department of Public Instruction (DPI):** Oversees food safety in schools and school nutrition programs and provides guidance about food sharing programs and food donation.
- **University of Wisconsin Extension:** Provides resources, information, and courses about composting, food waste prevention, food donation, campus programs, and feeding animals.

Appendix B: Food Waste Policies Recommendation and Literature Review

A literature review was completed to identify existing policies, programs, and actions that support food waste diversion from landfills. The topics include food waste prevention, food rescue, and food waste management and processing. Each action includes details regarding necessary policies or resources, various potential timeframes for implementation, and reference materials

Topic	Policy, Program or Action Recommendation	Necessary Policy or Resources	Timeframe	Reference Materials
Food Waste Prevention	**Education and Consumer Behavior Change Campaigns:** Consumer education campaigns specific to food waste reduction, date labeling, cost savings, environmental benefits, and more. Commercial campaigns focused on using technology to track inventory and policies about food donation.	Staff time and funding to create and implement campaigns, work with partners, and promote campaigns. Expertise in what makes an education campaign effective.	**Short term:** Use existing resources. **Medium term:** Create new and targeted campaigns.	US EPA: Estimating the Cost of Food Waste to American Consumers US EPA: Tools for Preventing and Diverting Wasted Food USDA Food Loss and Waste for Businesses - Businesses
	Institution and Business Food Waste Prevention Programs: Grants and incentives focused on food waste reduction for institutions and businesses generating significant amounts of food waste.	Policy to support programs for grant funding. Provide technical support, facilitate business cohorts, and offer funding to support efforts.	**Short term:** Technical assistance and recognition of businesses for efforts. **Medium term:** Grant funding for infrastructure and costs associated with food rescue.	Vancouver Circular Food Innovation Lab US Food Waste Pact
	Leverage Existing Programs and Partners: Support and connect existing programs and leverage for additional food waste diversion.	Policies to support staff time and financial resources to implement programs and expand efforts.	**Short term:** Support existing programs and encourage similar. **Medium term:** Create pilot programs or cohorts with businesses, counties, and cities. **Long term:** Designate funds and staff time through policies and the Legislature to support food waste reduction efforts.	FEED MKE Pilot Project

Topic	Policy, Program or Action Recommendation	Necessary Policy or Resources	Timeframe	Reference Materials
Food Rescue	**Policy Changes to Encourage and Require Food Donation:** Change regulations to address date labeling and tax incentive policies to support food rescue.	Modifications to state statutes or administrative code and legislation to create tax incentives, with staff and political support.	**Short term:** Review existing policies. **Medium term:** Establish stakeholder working groups for policy changes. Draft new regulations/policies. Create food safety guidance for food rescue. **Long term:** Consider policy changes for liability protection and tax incentives for food donors. Implement food rescue requirements.	Zero Food Waste Coalition Toolkit Achieving Zero Food Waste: A State Policy Toolkit, May 2023
	Support Community-Level Food Rescue Opportunities: Leverage existing programs, connect food producers with food rescue organizations, and provide education and outreach.	Programs and staff support, including funding, to provide resources for food rescue organizations, including private companies, counties, and cities.	**Short term:** Connect food rescue with businesses producing excess food. **Medium/long term:** Provide funding to address logistics, including storage space, refrigeration, and staffing.	State agencies working closely together and with existing food rescue organizations ReFED Stakeholder Recommendations: Policymakers
	Incentives or Requirements to Participate in Food Rescue: Policies for businesses to participate in food rescue efforts (voluntary or required).	Policies to incentivize businesses or require participation in food rescue through policies or funding support.	**Short term:** Facilitate connections between businesses and food rescue organizations. **Medium/long term:** Consider policies and support businesses donating food.	Sample legislation from California for Food Donors
	Increase Food Diversion to Animals: Expand use of food scraps and byproducts for animal feed by addressing regulatory challenges and providing technical assistance.	Identify opportunities to promote food diversion to animals, reduce barriers for businesses, and consider policy changes.	**Short term:** Coordinate with state agencies and encourage partnerships with local farms. **Medium/long term:** Encourage food diversion to animals through statute or administrative code changes and State or private funding. **Long term:** Policy changes to expand opportunities for food diversion to animals.	State agencies working closely together to leverage policies present in other states to support additional food diversion to animal feed. Zero Food Waste Coalition Toolkit

Topic	Policy, Program or Action Recommendation	Necessary Policy or Resources	Timeframe	Reference Materials
Food Waste Management & Processing	**Implement a Food Waste Landfill Ban or Mandatory Organics Recycling Policy:** Require or incentivize food waste diversion through phased approach or focus on specific categories of significant food waste generators.	Policies to require food waste diversion or incentivize through higher landfill fees or taxing food waste disposal. Regulatory support should include oversight and enforcement. Adequate infrastructure for processing and transporting food waste is critical.	**Short term:** Support existing programs and identify opportunities for new programs. **Medium term:** Expand education for both residential and commercial generators. **Medium/long term:** Develop drop-off programs and pilot programs for food waste and offer technical assistance. **Long term:** Implement policies to ban food waste from landfills, limit food waste disposal, and require mandatory report. Staff time and resources will be necessary for oversight and enforcement	Consider existing programs and regulations in other communities as a reference, including sample legislation. Achieving Zero Food Waste: A State Policy Toolkit, May 2023
	Support the Development of Food Waste Processing Infrastructure: Expand existing and support development of new infrastructure, including composting, AD, and other management options, through technical assistance, regulatory guidance, and funding.	Policies and funding to support new infrastructure, including regulatory support, reducing barriers, and supporting both public and private industries.	**Short term:** Provide technical assistance and regulatory guidance for permitting facilities. **Medium/long term:** Financial support for new infrastructure and regulatory support. **Long term:** Policy for surcharge on food waste disposal to create a funding source for food waste diversion efforts.	Consider policies and tools for regulatory support for new or expanded facilities, using model language as reference. Achieving Zero Food Waste: A State Policy Toolkit, May 2023 US Composting Council 2024 Public Policy Report
	Promote On-site Management of Food Waste: Regions of the state may be better suited for on-site management through AD, backyard composting, and landspreading from both residential and commercial sources.	Policies and funding to support education for on-site management.	**Short term:** Provide educational resources for management options and explore available technologies. **Medium/long term:** Provide funding for programs to use on-site food waste management technologies.	Leverage existing on-site management options and review industry best practices. Zero Food Waste Coalition Toolkit
	Support for Existing Facilities and Haulers: Leverage and expand existing programs to collect and manage food waste.	Policies to provide grants and technical assistance to facilities and haulers to expand their efforts to increase capacity.	**Short term:** Create online resources to connect generators and haulers. **Medium term:** Identify opportunities to expand existing operations.	Continue to connect with existing facilities and haulers, working to gain more information and identify opportunities to support them.
	Development of Strong End Markets: Requirements or incentives to use finished compost and biogas can support market development.	Policies to incentivize or require the use of end products, including finished compost in State projects or State-funded projects.	**Short term:** Use finished compost in State and local projects. **Medium/long term:** Requirements for using finished compost in State-funded projects. **Long term:** Funding for the use of end products.	Leverage existing regulations, including Washington State's 2020 House Bill 27 compost procurement policy and other model policies. Achieving Zero Food Waste: A State Policy Toolkit, May 2023 US Composting Council 2024 Public Policy Report
	Support and Leverage Existing Partners: Many cities and counties are already supporting food waste diversion efforts, which State, private industry, or non-profit funding could build on.	Policies and funding to support programs through staff time and coordination.	**Short term:** Continue to support partners and identify how best to use State resources. **Medium term:** Fund opportunities for technical assistance and expand partnerships.	Use existing relationships, key Counties and Cities, WI US Composting Council Chapter, and other key groups.