Hennepin County Current food system report

Prepared for Hennepin County by HDR to inform the development of the county's Wasted Food Prevention Plan



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Current system

Hennepin County is committed to preventing 90 percent or more of all discarded materials from being landfilled or incinerated. To meet this goal, the county must divert food scraps from the trash as well as prevent wasted food. In the county, the average person wastes 3.5 pounds of food per week, and of that waste, two-thirds is potentially edible. Food is the most common material in the trash, making up about 20 percent of what is thrown away in Hennepin County.¹ Wasted food has significant climate impacts, from the energy—and resulting greenhouse gas emissions—used to grow, produce, transport, and store food to the methane generated when food waste is landfilled.

To date, the county has focused on consumer education, supporting the food rescue system, and funding a variety of food waste initiatives in commercial and institutional sectors. The county wants to identify both the barriers to and opportunities for reducing surplus wasted food. Food is wasted at every step of the supply chain, including businesses that handle our food after it leaves the farm, food wholesalers, grocery stores and restaurants, and in our homes.

Food waste is an overarching term more commonly used to describe all food that is not eaten - edible and inedible.



Wasted food describes food created for human consumption that was not used for its intended purpose. Examples include unsold food from retail stores, uneaten prepared food, or produce not used in home kitchens.



Food waste covers food not meant for consumption such as bones, vegetable peels and fruit rinds, in additional to edible food intended for human consumption.

¹ Food rescue diverts excess food to people in need, Hennepin County Climate Action, <u>https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/solid-waste-mgmt-master-plan-18-23.pdf</u>



Figure 1: Amount of food waste generated by sector²

Hennepin County partnered with the Natural Resource Defense Council (NRDC) to use their Wasted Food and Rescue Potential Calculator to estimate the sources and quantities of surplus edible food generated in the county from both residential and commercial sectors and estimate the potential recoverable food from the commercial sector.

The calculator is based on a range of national data sources and includes inputs from various sectors: schools, hospitality, health care, grocery and markets, convenience stores, restaurants, catering, food wholesalers and distributors, food manufacturing and processing, event and recreation facilities, correctional facilities, and other entities. Specific metrics for each facility are used to estimate wasted food, such as revenue and the number of students, employees, patient beds, or visitors.

² Natural Resources Defense Council research completed on behalf of Hennepin County, 2021

In addition to the results shown in Figure 1, the calculator identified food rescue potential from each sector with a total ambitious recoverable potential of nearly 5,000 tons annually which could fill almost 50 percent of the identified meal gap within the county.

Current programs and policies

Hennepin County currently has many programs and policies related to food waste. Understanding the county's existing programs and policies can help define the current system and identify areas for future expansion as the county considers options for reducing wasted food. Appendix A identifies food waste programs and projects managed by the county in detail; a few highlights include the following.



COUNTY STAFF

Food Waste Prevention Specialist: The county has dedicated resources by establishing a permanent staff position focused on source reduction of wasted food and supporting the food rescue system.

SE

EDUCATION

Residential outreach programs including the Stop Food Waste Challenge and Trash or Cash campaign.



FUNDING

Grants for schools and businesses to reduce food waste and funding to support food recovery organizations.



REGULATION

Ordinance 13: Hennepin County requires organics recycling for specific businesses, organizations, and colleges, which may include donating edible food to people.

In addition to the programs and projects listed in Appendix A, Hennepin County has several county plans that include strategies related to reducing wasted food. The county's Zero Waste Plan and Climate Action Plan are further detailed in Appendix B.

Understanding the current policies related to food waste management, food donation, and food safety requirements can help the county identify opportunities and barriers for increased food waste reduction. Appendix C details existing policies related to food waste identified as relevant for this study.

Current system analysis

The county possesses a strong understanding and commitment to food waste reduction as a key strategy to achieve the county's climate-action and zero-waste goals. Wasted food is a significant component of the waste stream in the county.

The U.S. Environmental Protection Agency (EPA) estimates that nearly 40 percent of food in the United States is never eaten.³ Food waste has significant environmental, social, and economic impacts.

Food put in the trash in Hennepin County ends up at a landfill or waste-to-energy facility. When food waste breaks down under anaerobic (low or no oxygen) conditions, such as in a landfill, it generates methane, a powerful greenhouse gas. The EPA's report, Quantifying Methane Emissions from Landfilled Food Waste, notes that 58 percent of total methane emissions released into the atmosphere are generated by landfilled food waste.⁴ Sending food waste to an incinerator is also not optimal because wet food is hard to burn and creates inefficiencies in the system. Furthermore, when food is wasted, the energy and resources used to produce, transport, process, and distribute that food are also wasted.

Hennepin County aims to identify generators with significant amounts of food waste in the county and estimate the quantities of food being wasted as the first steps in reducing wasted food. Food generation and waste amounts will provide a baseline that the county can use to develop wasted food reduction targets and track progress toward its goals.

The purpose of this systems analysis is to understand where food is produced, where food waste occurs across the food supply chain, and how much food waste is generated in the county. As part of this project, HDR gathered data and elicited feedback through the Commercial and Institution Engagement Survey and listening sessions.

³ <u>https://www.epa.gov/newsreleases/epa-releases-new-food-waste-reports</u>

⁴ "Quantifying Methane Emissions from Landfilled Food Waste," US EPA. 2023.

Food flow within Hennepin County

Significant amounts of food move in and out of the county, which somewhat limits data collection specific to the county. It should be noted during review and planning efforts that food flow extends beyond the county border.

Food production

The 20 largest farms In Hennepin County were reviewed in closer detail for food production data; however, only one out of 20 farms had a specific name or production details available.



Hennepin County has more than 700 farms, according to Hennepin County property data, with the largest farm occupying just over 200 acres of land.

Farm data from the United States Department of Agriculture (USDA) identified the types of crops harvested and animals raised within the county.⁵ In 2022, farmers harvested 84 different crop commodities, most intended for human consumption and some listed as non-food crops, such as Christmas trees. As for animal production, 21 different animal commodities are raised in the county. Many of these are intended for human consumption, such as poultry and dairy products, while some are not, like horses and alpacas.

The USDA database does not quantify the crop or animal commodities in a way that provides data regarding food generation. For example, most crop commodities were measured in acres bearing/non-bearing, operations with sales, sales measured in dollars, and acres harvested. Animal commodities were commonly measured in similar metrics, such as operations with sales, sales measured in dollars, sales measured in head, and others specific to farming practices. Only honey and wool were measured in pounds produced, with 56,905 pounds of honey and 1,617 pounds of wool produced in the county in 2022.

⁵ https://www.nass.usda.gov/Statistics_by_State/Minnesota/Publications/County_Estimates/index.php

Based on the National Farmers Market Directory, approximately 46 farmers markets operate in the county.⁶ Many markets focus on supplying the local community with fresh and organic produce options that are locally grown.

Community gardens, also called urban farms, were identified as other entities producing food within the county. The Minnesota Horticultural Society, which manages a statewide map of community gardens, identified 35 community gardens operating in the county.⁷ An additional seven community gardens were identified via additional research.

Food processing and distribution

COMMERCIAL FOOD WASTE GENERATION DATA REVIEW

The project team used existing data to identify which businesses manufacture, process, distribute, sell, or serve food. These businesses are anticipated to create some quantity of wasted food (e.g., manufacturing byproducts, off-spec food or beverages, spoiled or expired food that cannot be sold, kitchen waste, or post-consumer plate scrapings or uneaten food). Available data was used to identify which businesses may be managing or handling the largest quantities of food (and potentially food waste) in the county.

To analyze food waste in different food industry sectors, the project team used the definition of excess food from the EPA's Wasted Food Opportunities Map. In this, "excess food" generally refers to food — whether processed, semi-processed, or raw — that is not used for its intended purpose and is managed in a variety of ways, such as donation to feed people, creation of animal feed, composting, anaerobic digestion, or sending to landfills or combustion facilities.⁸ Therefore, all data in the following tables include surplus food that could have been eaten as well as inedible food scraps.

HDR used North American Industry Classification System (NAICS) codes and the EPA Wasted Food Opportunities Map to identify which food-related businesses are currently operating in the county and estimate food waste by generator. The two data sources provided slightly different information, and each had distinct advantages and disadvantages.

⁶ <u>https://nfmd.org/mn/#:~:text=Minnesota%20has%20approximately%20218%20farmers%20markets.</u> <u>Hennepin%20County%20hosts%20the%20maiority%20with%2046</u>

⁷ <u>https://northerngardener.org/resource/map-of-community-gardens/</u>

⁸ <u>https://www.epa.gov/sustainable-management-food/frequent-questions-about-us-epa-excess-food-opportunities-map</u>

Food-related businesses by sector in the county included the following NAICS Codes:

Table 1: NAICS codes

NAICS Code	Sector Title
11	Agriculture, Forestry, Fishing and Hunting
31-33	Manufacturing
42	Wholesale Trade
44	Retail Trade
61	Educational Services
62	Health Care and Social Assistance
71	Arts, Entertainment, and Recreation
72	Accommodation and Food Services
922140	Correctional Institutions



Using the EPA Wasted Food Opportunities Map, the following types of entities were included in the food-related business sector analysis:

HDR's project team completed an analysis of both data sets, noting limitations and discrepancies within the data, and provided details about the logic used.

COMMERCIAL FOOD WASTE GENERATION RESULTS

The project team identified the food related companies that have the largest presence (in terms of number of locations) in the county. As shown in **Table 2**, many of the businesses in the top 15 most likely to generate food waste are national food chains, convenience stores, and gas stations.

The businesses listed below are anticipated to handle significant quantities of food and therefore may dispose of significant quantities of food waste. However, the businesses listed in **Table 2** may have corporate policies or sustainability goals focused on waste reduction (including food waste reduction), and therefore these businesses may not necessarily produce the most food waste in the county. The specific food waste management practices of the businesses listed below, and other commercial entities were evaluated during the engagement process.



Figure 2: Food sector businesses based on the number of locations

Table 2: Businesses with most locations in County

Ranking	Company/business name	Number of locations in Hennepin County	
1	Caribou Coffee	101	
2	Starbucks	82	
3	Holiday Station stores	74	
4	Subway	73	
5	Speedway	55	
6	Walgreens	45	
7	McDonald's	43	
8	Jimmy John's	39	
9	CVS Pharmacy	37	

Ranking	Company/business name	Number of locations in Hennepin County
10	Dairy Queen	33
11	Domino's	30
12	Chipotle Mexican Grill	30
13	Cub	25
14	Pizza Hut	22
15	Dollar Tree	22

Tables 3, 4, and 5 show the companies in the county that are estimated to have the largest quantities of food waste by sector, based on EPA waste generation estimates. The project team calculated high and low estimates for waste generation by facility using the EPA's Excess Food Opportunities Map (Version 3.0 – Technical Methodology).⁹

In general, food waste generation rates are estimated using either the annual revenue of the facility or the number of employees. The NAICS data included annual revenue data and number of employees by facility and was therefore used for the analysis. The data type used to calculate estimates varies by business sector.

FOOD MANUFACTURERS AND PROCESSORS

Based on the NAICS data, approximately 240 businesses were classified as food manufacturers and processors in the county (some businesses had multiple locations).¹⁰ **Table 3** shows the estimated quantity of food waste for the top eight potential producers of food waste in the county in the food manufacturing and processing industry sector, the top 15 are shown in Appendix D.¹¹ The low estimates ranged from 520 tons per year (TPY) to 15,290 TPY of food waste, based on annual revenues. The high estimate ranged from 1,650 TPY to 48,720 TPY.

⁹ <u>https://www.epa.gov/system/files/documents/2023-08/EFOM%20V3%20Technical%20Methodology%2008.03.2023.pdf</u>

¹⁰ NAICS codes for Food Manufacturers and Processors: 311211, 311212, 311213, 311221, 311224, 311225, 311230, 311313, 311340, 311351, 311412, 311421, 311423, 311511, 311513, 311514, 311520, 311611, 311612, 311615, 311710, 311811, 31181, 311821, 311911, 311919, 311920, 311941, 311942, 311991, 311999, 312111, 312120, 312130, 312140.

¹¹ The top 15 entities were identified throughout the report to summarize data and limit data review to the largest in the county.

The total amount of food waste estimated for all food manufacturing and processing businesses in the county ranged from 58,730 TPY (low estimate) to 188,260 TPY (high estimate).

Company/ business name ¹	Sales volume/ asset max	Quantity generated – low estimate (tons/year) ²	Quantity generated – high estimate (tons/year) ²
Deli Express Fast Foods	\$573,163,000	15,190	48,720
Hawkins Specialty & Food Group	\$89,557,000	2,370	7,610
American Fish & Seafood	\$59,309,000	1,570	5,040
Peace Coffee	\$43,096,000	1,140	3,660
Pepsi Beverages Company	\$33,995,000	900	2,890
ADM Milling	\$32,634,000	860	2,770
Hormel Foods	\$28,659,000	760	2,440
The Iron Exchange	\$23,621,000	630	2,010

Table 3: Top eight food manufacturers and processors

Notes:

¹ Each business has one location in the county.

² Generation rates are based on annual revenue for Food Manufacturers and Processors, as listed in Section 2.2 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The low generation rate is 0.053 lb/annual revenue (\$)/year, and the high generation rate is 0.17 lb/annual revenue (\$)/year.

FOOD WHOLESALE AND RETAIL

Based on the NAICS data, approximately 300 businesses were classified as wholesale and retail grocery stores in the county (some businesses had more than one location).¹² **Table 4** shows the estimated quantity of food waste for the top 10 potential producers of food waste in the county in the food wholesale and retail industry sector. The top 15 potential producers are detailed in Appendix E. The low estimates for individual producers ranged from 70 tons per year (TPY) to 1,110 TPY of food waste, based on annual revenues. The high estimate ranged from 590 TPY to 9,570 TPY.

The total amount of food waste estimated for all food wholesale and retail businesses ranged from 7,210 TPY (low estimate) to 64,050 TPY (high estimate).

Company/ business name	Number of locations in Hennepin County	Number of employees	Quantity generated – low estimate (tons/year) ¹	Quantity generated – high estimate (tons/year) ¹
Cub*	25	4,125	1,110	9,570
Target ²	19	4,096	1,110	9,500
Walmart Supercenter	4	1,480	400	3,430
Lunds & Byerlys	18	1,346	360	3,120
Hy-Vee	5	1,231	330	2,860
Whole Foods Market	5	721	190	1,670
UNFI Distribution Center	2	697	190	1,620
Costco Wholesale	3	498	130	1,160

Table 4: Top 10 wholesale and retail

¹² NAICS codes for Wholesale and Retail: 424410, 424430, 424440, 424450, 424460, 424470, 424480, 424490, 445110, 445120, 445210, 445230, 445291, 445292, 445299, 452210, 452311.

Company/ business name	Number of locations in Hennepin County	Number of employees	Quantity generated – low estimate (tons/year) ¹	Quantity generated – high estimate (tons/year) ¹
Kowalski's Markets	5	405	110	940
Trader Joe's	5	380	100	880

Notes:

* Business is listed in the top 15 in Hennepin County (Table 2).

¹ Generation rates are based on generation rates per employee for Food Retail, as listed in Section 2.3.3 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The EPA had an option to estimate generation rate based on employee number or annual revenue. Employee number was selected for consistency with other calculations. The low generation rate is 0.27 tons/employee/year, and the high generation rate is 2.32 tons/employee/year.

² Target Corporation's headquarters is located in Hennepin County and was included in the data set, as it has the same NAICS code as Target stores. Due to the large number of employees at the headquarters building, it was listed as generating a large volume of food waste and would have been in the top 15. However, HDR understands that the headquarters building has different operations than Target stores and is not anticipated to produce food waste at a rate that aligns with the EPA's food waste generation rates, and it was therefore not included in this data set.

RESTAURANTS AND FOOD SERVICE

Based on the NAICS data, approximately 1,900 businesses were classified as restaurants and food service in the county (some businesses had more than one location).¹³ **Table 5** shows the estimated quantity of food waste for the top 10 potential producers of food waste in the county in the restaurant and food service industry sector. The top 15 potential producers are detailed in Appendix F. The low estimates for individual restaurants and food service businesses ranged from 520 TPY to 2,820 TPY of food waste, based on annual revenues. The high estimate ranged from 700 TPY to 3,840 TPY.

The total amount of food waste estimated for all restaurants and food service businesses ranged from 62,830 TPY (low estimate) to 90,000 TPY (high estimate).

¹³ NAICS codes for Restaurants and Food Service: 722320, 722330, 722511, 722513, 722514, 722515.

Company/ business name	Number of locations in Hennepin County	Number of employees	Quantity generated – low estimate (tons) ¹	Quantity generated – high estimate (tons) ¹
McDonald's*	43	2,265	2,820	3,840
Caribou Coffee*	100	1,290	1,610	2,190
Starbucks*	82	1,246	1,550	2,110
Jimmy John's*	39	683	850	1,160
Chipotle Mexican Grill*	30	649	810	1,100
Subway*	73	582	730	990
Dairy Queen*	32	574	720	970
Wendy's	19	510	640	860
Domino's*	30	499	620	850
Burger King	18	482	600	820

Table 5: Top 10 restaurants and food service

Notes:

* Business is listed in the top 15 in Hennepin County (Table 2).

¹ Generation rates are based on generation rates per employee for Restaurants and Food Services, as listed in Section 2.8 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The low generation rate is 2,494 lb/employee/year, and the high generation rate is 3,392 lb/employee/year.

The county may also benefit from identifying the top 10 potential producers of food waste from restaurants and food services businesses that are locally owned and operated and not national chains (as shown in **Table 5**). Table 6 identifies the county's top 10 local and non-chain restaurants and food services businesses.

Company/ business Name	Number of locations in Hennepin County	Number of employees	Quantity generated – low estimate (tons) ¹	Quantity generated – high estimate (tons) ¹
Maynards-Excelsior	1	250	310	420
D'amico Catering	2	211	260	360
The Metropolitan Ballroom & Clubroom	1	200	250	340
Lord Fletchers	1	200	250	340
Mintahoe Catering	1	200	250	340
Manny's at Foshay	1	200	250	340
The Oceanaire Seafood Room	2	167	210	280
Tavern on France	1	150	190	250
Hell's Kitchen	1	150	190	250
Hazelwood Food & Drinks	1	150	190	250

Table 6 Top 10 local/non-chain restaurants and food service

¹ Generation rates are based on generation rates per employee for Restaurants and Food Services, as listed in Section 2.8 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The low generation rate is 2,494 lb/employee/year, and the high generation rate is 3,392 lb/employee/year.

Food manufacturers and processors, wholesale and retail, and restaurants and food service make up a majority of the potential food waste generated by the commercial sector. However, other industry sectors are included in the EPA Wasted Food Opportunities Map. These include the hospitality industry, correctional facilities, health care facilities (e.g., hospitals and nursing homes), and educational institutions. Food waste generation rates are difficult to estimate for these industries, as the EPA used data sources and generation rates for those entities other than revenue and employees. For example, correctional facilities' food waste generation rates are estimated on the number of inmates, with a conversion to number of employees, and hospital food waste estimates are based on the number of beds in the hospital. The project team was able to generate high and low food waste estimates for all Food Manufacturers and Processors, Wholesale and Retail, Restaurants and Food Service, Hospitality, and Correctional Facilities, as shown in **Table 7**. However, the project team was not able to estimate food waste for the Health Care and Educational Institutions sectors based on NAICS and EPA food waste generation rates, as the generation rates were based on metrics that the project team did not have (see Notes for **Table 7**). For those two sectors, food waste estimates from the EPA Wasted Food Opportunities maps were used instead.

Industry sector	Quantity generated – low estimate (tons)	Quantity generated – high estimate (tons)
Food Manufacturers and Processors*	58,730	188,260
Wholesale and Retail*	7,210	64,050
Restaurants and Food Service*	62,830	90,000
Educational Institutions **,14	3,240	17,000
Hospitality * ^{,15}	3,050	17,240
Health Care ***, ¹⁶	540	2,910
Correctional Facilities *,17	180	300
Total	135,780	379,760

Table 7: High and low food waste estimates by sector

Notes:

*Food waste estimates were generated by the project team, using the methods described in Section 3.

**Food waste estimate could not be generated by the project team, as the EPA food waste generation rate was based on the number of students by school. The project team did not have access to this data, and therefore the food waste estimate listed in the EPA Wasted Food Opportunities Map was used instead.

***Food waste estimate could not be generated by the project team, as the EPA food waste generation rate was based on the number of beds per hospital. The project team did not have access to this data, and therefore the food waste estimate listed in the EPA Wasted Food Opportunities Map was used instead. Note that the EPA was not able to develop a food waste generation rate for nursing homes, which make up a majority of the health care facilities located in the County.

The food waste estimates listed in the sections above are to be considered planning-level estimates to identify major players in the county. Food waste estimates included in this report should not be considered as actual amounts of food waste generated by facility. The county plans to use this data to conduct outreach to businesses that may generate large quantities of food waste to understand actual food waste generation and management in the county.

¹⁴ NAICS codes are not used for National Center for Education Statistics, and therefore NAICS codes were not identified by the EPA for this analysis.

¹⁵ NAICS codes for Hospitality: 713210, 721110, 721120, 721191, 721199.

¹⁶ NAICS code for Health Care: 622110, 622210, 622310, 623110, 623210, 623220, 623311, 623312, 623990.

¹⁷ NAICS code for Correctional Facilities: 922140.

SCHOOL FOOD WASTE GENERATION

According to the World Wildlife Fund, there are nearly 100,000 schools serving lunches to 29.6 million students each day, including 20.2 million free meals through the National School Lunch Program. There is considerable variation in how food waste is managed across schools and districts. It is estimated that food waste in schools could be costing as much as \$1.7 billion every school year.¹⁸

Hennepin County is home to over 198,000 students in K-12 public and private schools and over 177,000 students in higher education institutions. According to the NRDC study, K-12 schools create 2,282 tons of food waste per year with a potential 50 tons of surplus food eligible for donation. On college campuses, 4,202 tons of food waste occurs each year and 74 tons of that could be collected for people to eat.¹⁹

RESIDENTIAL FOOD WASTE GENERATION

Households and consumers are the most wasteful part of the food chain according to the EPA, ReFED, and other studies. Each year, an estimated 63 million tons of food are wasted in the U.S.²⁰ In Hennepin County, approximately 20 percent of the trash from homes and businesses is food waste (edible food and inedible food scraps) and, on average, residents are wasting 3.5 pounds of food per person per week.²¹

Edible wasted food makes up 14 percent of residential and commercial trash based on the Minnesota Pollution Control Agency's 2022 waste composition study.²² Looking at source-separated organics, seven percent of the residential organics recycling stream is edible wasted food based on the City of Minneapolis' 2024 organics recycling waste sort²³ and reinforced by the City of Seattle 2021 organics composition study.²⁴ The most commonly wasted food items in homes are produce, dairy, and leftover food items.²⁵

¹⁸ https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/8k9ldd2tdx_FoodWasteWarrior_BusCase_121119.pdf

¹⁹ Natural Resources Defense Council research completed on behalf of Hennepin County, 2021

²⁰ https://www.fda.gov/food/consumers/food-loss-and-

waste#:~:text=In%202018%20alone%2C%20over%2063,percent%20of%20municipal%20solid%20waste.

²¹ https://www.hennepin.us/en/climate-action/what-hennepin-is-doing/food-rescue

²² 2019-2022 Food Waste Generation and Composition Study Analysis, <u>https://www.pca.state.mn.us/sites/default/files/w-sw1-67.pdf</u>

²³ <u>2024 Residential Organics Sort</u>

²⁴ 2022 Seattle Residential Waste and Recycling Composition Study,

https://www.seattle.gov/documents/Departments/SPU/Documents/Reports/SolidWaste/2020ResidentialWasteRecyclingCompositionStudies.pdf

²⁵Hennepin County Consumer Behavior Research, 2021 by Russel Herder, <u>https://mc-379cbd4e-be3f-43d7-8383-5433-cdn-endpoint.azureedge.net/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/reduce-food-waste-report.pdf?rev=17b3b5c347ee4e4abb6e3f46a93150e1&hash=E2D165DE6FFBF43F518C4BD5322E8363</u>

While the amount of food being wasted is substantial, consumers view wasted food as a less important topic compared with other societal issues such as homelessness and inflation.²⁶ A residential study in 2023 found that half (54 percent) of county residents believe they waste less food than the average household, illustrating that they do not see themselves as contributors to the issue. The top two reasons for wasted food at home were that food spoiled before it was eaten, and leftovers were stored but not consumed. Residents said the biggest challenges for them to waste less food are improving meal planning and grocery shopping.

According to this same research, the main motivator for residents to waste less food is money. Wasted food also costs consumers a significant amount of money. In 2023, the average American spent \$788 on food that went uneaten.²⁷

End use of food

As it flows through the system, surplus food and food scraps must be handled. Food in good condition, such as excess inventory, can be sent to people in need through food shelves or other means. Inedible food such as food scraps from processing or spoiled food is sent to feed animals, be composted, or sent to a landfill or incinerator.

FOOD-TO-PEOPLE

After source reduction, food donation is the most preferred method for managing excess food because it feeds people and uses food for its intended purpose: consumption. Businesses and people who have excess food for various reasons may donate food to food shelves or food banks where it is then redistributed to people. According to the county's 2023 Solid Waste Report, 14,389 tons of food were distributed to people in the county.²⁸

Food security and rescue organizations are entities that ensure people have consistent, reliable access to safe, nutritious, and culturally appropriate food. Food banks are large facilities that store massive quantities of food and household goods that are then distributed to food shelves over a specific geographic area.

The largest food bank in the county is Second Harvest Heartland, a Feeding America affiliate, which distributes 350,000 pounds of food each day to communities in Minnesota and western Wisconsin, totaling 12 million pounds of food distributed annually.²⁹ Between April and June 2024, Second Harvest Heartland food shelf partners collected and distributed approximately 3.4 million pounds of donated food that would have otherwise been wasted to food shelves from 121 different retailer

²⁶ Padilla 2023 Hennepin County Pre-campaign Study

²⁷ ReFED Consumer Food Waste <u>https://refed.org/food-waste/consumer-food-waste</u>

²⁸ 2023 Minnesota Score Report, Minnesota Pollution Control Agency, https://www.pca.state.mn.us/air-water-land-climate/understanding-solid-waste

²⁹ https://www.2harvest.org/about-us2/our-impact/food-bank/food-distribution

locations ranging from Target stores to Kwik Trip convenience stores (not all retailers reside in Hennepin County). Of the 38 food shelves located throughout the county, 26 food shelves operate in Minneapolis. Second Harvest Heartland partner retailers donated food to 38 food shelves in the county. These food shelves may further distribute the donated food to smaller food shelves or community organizations within the Feeding America system.

Additionally, The Food Group also operates a food bank in the county and distributes food to more than 180 partners. The Food Group provided more than 6 million meals to communities in Minnesota and Western Wisconsin.³⁰ No tonnage information was provided by this entity.



Twin Cities Food Justice is a nonprofit based in Minneapolis, working with co-ops, grocery stores, and farmers markets to redistribute unsalable food to food rescue organizations through their Food Rescue Program. This organization focuses on produce and bread because food rescue organizations often have challenges providing fresh food to the individuals they serve. The organization uses volunteers to collect, sort, and deliver food from donating entities to local hunger relief organizations.

³⁰ <u>https://www.thefoodgroupmn.org/about/impact/</u>

Twin Cities Food Justice works with 17 donors and 37 recipient organizations in Hennepin County and surrounding cities.³¹ In 2023, Twin Cities Food Justice collected 198,590 pounds of surplus food.

Based on the Hennepin County Food Resource Map, 35 free meal locations, 31 free food box locations, and 55 food shelves operate in the county, many of which work with either Second Harvest Heartland or The Food Group.³² Not all food access providers rely on donated food to feed people. The food shelves reviewed did not have publicly available metrics for food donated or distributed by their individual organizations.

According to the survey results gathered for the Hennepin County Food Rescue Report published in 2023, 21 food security organizations (food shelves) rescue about 6.1 million pounds of food annually.³³ Not all donated food gets eaten. Based on industry research and local information provided, approximately 20 percent of food at food rescue organizations is wasted due to spoilage or food passed its date label, with varying amounts due to seasonality. Second Harvest Heartland reports that they work with their food donor partners to ensure that 85-90 percent of food donations are good quality, edible food.

Technology has created an opportunity to further distribute food that may otherwise be wasted through real-time availability of specific food items. Too Good to Go (TGTG) is a platform founded in Copenhagen in 2015 with 170,000 restaurants, bakeries, and other food service partners that sell food at a discount to avoid throwing it away. Minneapolis is one of the 29 U.S. cities included in the TGTG network. TGTG does not provide information about food waste diversion or pounds of food sold through the app, but the customer and business can see the amount of carbon dioxide equivalent avoided, and money saved through the program.

FOOD-TO-ANIMALS

Food that is not suitable for people to eat may still be viable for animals. According to the 2023 Minnesota SCORE Report, 20,289 tons of food waste was fed to livestock.³⁴ These wasted food items are typically cooked and directly fed to livestock or processed into livestock feed ingredients. ReConserve in Rosemount (Dakota County) collects bakery goods and food by-products to produce livestock feed ingredients.

Food-to-animal operations provide collection equipment such as lined plastic carts to customers for collection ease. Barthold Recycling reported that they accept 9,900 tons annually of food waste from

³¹ https://www.tcfoodjustice.org/

³²https://hennepin.maps.arcgis.com/apps/webappviewer/index.html?id=cdee2da836034644bf8e818b359e24da

³³ <u>https://mc-379cbd4e-be3f-43d7-8383-5433-cdn-endpoint.azureedge.net/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/food-rescue-</u>

report.pdf?rev=f4415245b4bd476bb75312d11e52a423&hash=EB3564245ADB66EDF7E28308519E5A03

³⁴ 2023 Minnesota Score Report, Minnesota Pollution Control Agency, https://www.pca.state.mn.us/air-water-land-climate/understanding-solid-waste

businesses in Hennepin County. The other entities do not have information available regarding the amount of food waste managed annually.

FOOD DISPOSAL

A significant portion of food produced ends up in the waste stream. On average, 2.33 pounds of edible food are wasted per person per week.³⁵ The county requires cities to offer organics recycling programs to their residents and requires food waste diversion for many commercial entities. According to the 2023 Minnesota SCORE Report, 20,054 tons of source-separated organic materials were collected in the county.³⁶ Of that amount, residents participating in curbside and drop-off organics recycling programs collected just under 12,000 tons of food and compostable materials.³⁷

Seven composting facilities accept food in Minnesota, with two providing service for organics collected from the county:

- Shakopee Mdewakanton Sioux Organics Recycling Facility, Shakopee, Scott County
- Specialized Environmental Technologies' Empire Processing Facility, Rosemount, Dakota County

Backyard composting and small-scale community composting provide additional waste diversion options, yet residential diversion is limited. A 2024 Hennepin County Community Recycling Opinion Survey report shows 25 percent of residents said they use backyard composting as their main method to dispose of organics materials.³⁸ Such operations are often very small, providing organics management for a single household or some commercial entity.

Even with easier access to pick-up and drop-off organics recycling programs, residents and businesses still often dispose of food waste in the trash. Approximately 20 percent of the municipal solid waste (MSW) sent to the Hennepin County Energy Recovery Center (HERC) was food waste.³⁹ That means 73,048 tons of edible food and inedible food scraps were incinerated in 2023.

³⁵ <u>https://www.hennepin.us/en/climate-action/what-hennepin-is-doing/food-rescue</u>

³⁶ 2023 Minnesota Score Report, Minnesota Pollution Control Agency, https://www.pca.state.mn.us/air-water-land-climate/understanding-solid-waste

³⁷ 2023 Recycling Progress Report, Hennepin County, <u>https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/recycling-progress-report.pdf</u>

³⁸ <u>https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/recycling-opinion-survey-report-2024.pdf</u>

³⁹ <u>https://mc-379cbd4e-be3f-43d7-8383-5433-cdn-endpoint.azureedge.net/-/media/hennepinus/your-government/facilities/documents/herc-</u>

Also in 2023, 380,911 tons of MSW generated in the county were landfilled.⁴⁰ Using that same composition breakdown as material sent to HERC, approximately 76,944 tons of food waste were buried in a landfill in 2023.

Most of the municipal solid waste generated in the county is sent to one of these three landfills: ⁴¹

- Pine Bend Landfill operated by Republic Services, Inver Grove Heights, Dakota County
- Burnsville Sanitary Landfill operated by Waste Management, Burnsville, Dakota County
- Elk River Landfill operated by Waste Management, Elk River, Sherburne County

Anaerobic digestion is another option for trash and compostable material; however, no large facilities that accept food waste from county businesses currently operate in the region.

Data reviewed in this section indicates that the majority of food waste is being generated downstream when consumers dispose of food. Efforts to prevent and reduce food waste should cover the entire food supply chain, especially the links where the majority of food waste is generated.

Figure 3 illustrates how food waste – surplus food and inedible food scraps – flows within the county from each sector as previously described.

⁴⁰ 2023 Hennepin County Recycling Progress Report <u>https://mc-379cbd4e-be3f-43d7-8383-5433-cdn-endpoint.azureedge.net/-</u> /media/hennepinus/your-government/projects-initiatives/solid-waste-planning/recycling-progressreport.pdf?rev=8e671d377cbf4ae1a7e2f499b9e840f6&hash=03C42AB5AA33B7F88801EA1BD552D3C3

⁴¹ 2023 Recycling Progress Report, Hennepin County, <u>https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/recycling-progress-report.pdf</u>

Food Waste in Hennepin County

*This graphic is guided by the Minnesota Waste Management Hierarchy regarding the most to least preferred management pathway for waste.

*Food waste generation from farms in the County was not available for inclusion in the graphic.

FOOD FLOW

The flow of food within the county, from production to processing to retail to restaurants and ultimately to people for consumption, is complex. Figure 3 illustrates how food moves from various entities, identifying the number of entities within the county. Many other factors from outside the county impact the food system, and this visual aims to illustrate the relationships specific to how food flows inside the county.

Food Flow in Hennepin County

Wasted food prevention research

The focus of this plan is reducing **wasted food**, **referring specifically to** edible food that could have been eaten.

To make progress toward reducing wasted food, Hennepin County identified other communities with food waste prevention plans to provide insight into successful programs and lessons learned from similar work. After completing a review and interviews with identified communities, the project team found that no other community has a plan specifically focused on preventing wasted food. Many of the other plans include or are focused on organics recycling and food rescue. Other communities' approaches and programs were useful, though, and were included in the development of this plan's strategies.

Other communities use education and outreach around reducing food waste as the main focus and include campaigns for residents and sometimes commercial food sectors. This education is often tied to environmental benefits, cost savings, and food justice.

Policy and regulations are often included in plans as enforceable aspects of reducing food waste. However, the majority of plans focus on the diversion and recycling of food waste, rather than preventing wasted food.

Common themes for commercial strategies in these plans included tracking food waste, identifying tools to help entities better monitor food waste, and funding or incentives to monitor food waste. Some plans noted challenges in engaging with businesses to use a waste tracking tool. Vancouver's engagement model found success in using peer-to-peer resource sharing within the commercial sector.

As for food waste prevention goals, many communities had large aspirational goals in their plans, such as becoming a leading city in food waste prevention or reducing the amount of edible food waste. Other communities opted for specific goals with associated metrics, such as:

- Reduce food waste generated annually by 50 percent from the 2015 baseline by 2030. The Use Food Well Washington Plan commits to reducing food waste generated annually by 1.3 million tons, reducing edible food waste by at least 295,000 tons per year and creating \$4 in benefits for every \$1 spent, amounting to more than \$1 billion in annual net benefits for the State of Washington.⁴²
- Enable consumers to more easily minimize household food waste and expand food waste prevention technical assistance (San Diego Food Vision 2030).

⁴² Use Food Well Washington Plan, Department of Ecology – State of Washington, February 2022 <u>https://apps.ecology.wa.gov/publications/documents/2107027.pdf</u>

- Increase recovery of edible food for human consumption by 20 percent by January 1, 2025, via California's Short-Lived Climate Pollutant Reduction law, known as SB1383.⁴³
- Reduce residential food waste collected by 57 percent by 2030 (Denver Food Vision).⁴⁴.
 Reduction from 20,000 tons in 2008 to 13,200 tons in 2030. (Note no specific commercial food waste reduction goals are included.)
- Rescue 78,000 additional tons of edible food by 2025 and reduce edible food waste by at least 195,032 tons annually by 2030 (King County, Washington).⁴⁵
- Reduce food waste by 50 percent per capita at the retail and consumer level by 2030 and reduce food losses along the food production and supply chains (European Union Sustainability Goal).⁴⁶

⁴³ Download San Diego County Food Vision 2030, San Diego County, <u>https://sdfoodvision2030.org/download-the-plan/</u>

⁴⁴ Denver Food Vision, City and County of Denver, October 2017, <u>https://denvergov.org/files/assets/public/v/1/public-health-and-environment/documents/denverfoodvision_2017.pdf</u>

⁴⁵ Washington Center for Sustainable Food Management, Department of Ecology – State of Washington, <u>https://ecology.wa.gov/waste-toxics/reducing-recycling-waste/organics-and-food-waste/sustainable-food-center</u>

⁴⁶ EU Food Loss and Waste Prevention Hub, European Commission, European Union, <u>https://ec.europa.eu/food/safety/food waste/eu-food-loss-waste-prevention-hub/</u>

Appendix A: County programs and projects

Program/project	Description	Audience	
County staff: Food Waste Prevention Specialist and Food Security Coordinator	The County has dedicated resources by establishing two permanent staff positions focused on food waste prevention and food security.	Residents and businesses of all types.	
Stop Food Waste Challenge	The Stop Food Waste Challenge is part of the County's Zero Waste Challenge programs. This one-month challenge encourages participants to examine wasted food in their household and then apply tips and tricks from the County's website and additional resources focused on educating participants about how to reduce food waste. Participants are encouraged to create a profile, join a team and select up to ten specific actions to reduce food waste.	Residential households of all types.	
Zero Waste Challenge	This Zero Waste Challenge offers personalized one-on- one support and accountability from trained waste experts over eight months to approximately 50 households per round.	Residential households of all types.	
Food Rescue System Audit	Environment and Energy, Public Health and Strategic Planning are County departments that work with food security organizations. These departments worked to identify gaps and opportunities to divert more food to people and identify gaps in the food rescue system's responsiveness to community needs for both highly nutritious and culturally significant foods. The audit identified who participates in hunger relief, how the system needs to evolve and ways client voices could be more prominent.	Food donation partners and organizations, and the individuals served by such organizations.	
Waste Prevention Grants	This grant opportunity helps businesses prevent waste in their operations. An organization that wants to reduce its food waste can apply for funding for equipment or technology to prevent or redistribute surplus food.	Businesses generating food waste such as commercial kitchens, grocery stores, meal programs for people experiencing food insecurity and other related industries.	

Program/project	Description	Audience
Food Recovery Grants	Environment and Energy, Public Health, and Human Services departments created the Food Security and Recovery Services Grant to assist emergency food providers in purchasing food and rescuing surplus food. Funding aims to support new and existing programs that collect and redistribute surplus food to feed residents.	Emergency food providers or organizations that support emergency food providers
Residential Education	The County's website includes numerous articles and educational information focused on reducing food waste at home including <i>Creating Meals, Not Waste</i> and <i>Eat the Food You Buy</i> articles. County staff also give presentations and host event booths about the benefits of reducing food waste, environmental and economic impacts, social and ethical impacts, sources of food waste and resources to improve habits.	People who live, work or visit the County, general outreach and education.
Trash or Cash Campaign	The County launched the Trash or Cash campaign in 2024 to reduce the estimated \$1 billion in food that goes to waste in County households annually. The campaign has a game-show theme including a dedicated website, printable materials, interactive tools and social media content. Residents are encouraged to sign up for Fridge Check Friday emails, which remind people to use up what is in their fridge.	County residents, focused on primary grocery store shoppers between ages 21- 45.
Business Organics Recycling – Ordinance 13	Hennepin County revised its recycling ordinance to take effect January 2020 requiring organics recycling for specific businesses, organizations and colleges. Organics recycling for businesses and organizations can include management through composting, anaerobic digestion, food to people or food to animals.	Businesses operating in the County.
School Waste Prevention and Recycling Program and Grants	The County offers technical assistance and grants to schools to facilitate food waste prevention or donation. Funding is available for establishing food sharing tables, donating, storage capacity and tracking software.	Schools in the County, including preschools, K-12 schools and higher- education institutions.

Program/project	Description	Audience	
Free Food Resource Map	The County's interactive Free Food Resource Map provides information on where individuals can access free food in the County. The locations identified include food shelves, food box programs, and free meal sites. Many of these sites depend on rescued surplus food.	Anyone in the County in need of free food.	
Community Recycling Ambassadors	Volunteers are trained on waste prevention, reuse, recycling, composting and effective communication skills through this County program. The program focuses on waste prevention and thoughtful consumption and includes a session on food waste reduction.	Residents who live or work in the County.	
City Programs and Ordinance 13	City recycling coordinators offer some wasted food prevention education to residents. Cities are required to make organics recycling service available to all households with curbside recycling service, either through collection or drop-offs.	City staff and elected city representatives	

Appendix B: Existing county plans

Hennepin County Zero Waste Plan⁴⁷: The County's Zero Waste Plan includes numerous goals related to waste reduction, reuse and recycling including the following specific goals related to food waste.

- Launch a broad consumer campaign on food waste prevention
- Expand grants for businesses including food waste reduction programs
- Increase compliance with organics requirements (Ordinance 13) and expand requirements, including business food waste recycling requirements and an emphasis on food rescue and donation options
- Establish food waste reduction targets and timelines
- Develop and implement a County plan to eliminate food waste
- Aim to adopt policies that accelerate the transition to a zero-waste future including food waste

Figure 5: Pathway to zero waste

⁴⁷ Hennepin County Zero Waste Plan, 2023, <u>https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/zero-waste-plan.pdf</u>

Hennepin County Climate Action Plan⁴⁸: The Climate Action Plan focuses on reducing greenhouse gas emissions, with a goal to reduce emissions by 45% from 2010 levels by 2030 and achieve net zero emissions by 2050. Goals specific to food waste include:

- Increase the resilience of the built environment and protect natural resources including locally produced food
- Reduce emission in ways that align with core county functions and priorities, including reducing food waste by preventing food waste and diverting organic material from the trash

Hennepin County Solid Waste Management Plan⁴⁹: Metropolitan counties are required to prepare solid waste management plans every six years to meet the goals and objectives identified by the Minnesota Pollution Control Agency. The 2024-2029 Solid Waste Management Plan identifies specific strategies related to food waste including the following.

- Develop and implement a plan to eliminate food waste
- Provide grants for or access to software that can track food waste.
- Establish partnerships between food rescue organizations and restaurants/stores to increase food rescue.
- Launch bi-annual sustainable consumption challenges for residents, including the Stop Food Waste Challenge.
- Work with health inspectors to educate restaurants and other establishments that have excess prepared food to donate.

⁴⁸ Climate Action Plan, Hennepin County, May 2021, <u>https://mc-379cbd4e-be3f-43d7-8383-5433-cdn-endpoint.azureedge.net/climate-action/-/media/climate-action/hennepin-county-climate-action-plan-final.pdf?rev=2bf29d6a3ef34a06a06a5928fbf2b49d</u>

⁴⁹ Solid Waste Management Master Plan, Hennepin County, 2018 <u>https://www.hennepin.us/-/media/hennepinus/your-government/projects-initiatives/solid-waste-planning/solid-waste-mgmt-master-plan-18-23.pdf</u>

Appendix C: Federal, state, county, and city policies

Entity	Policy
Federal Policy	 In 2015, the US Environmental Protection Agency (US EPA) and US Department of Agriculture (USDA) jointly set a national goal to reduce food loss and waste by 50 percent by 2030. In June 2024, the USDA, EPA and the White House released the National Strategy for Reducing Food Loss and Waste and Recycling Organics, detailing objectives to meet the goals of preventing food loss, preventing food waste, increasing recycling for all organic waste and supporting policies to incentivize and encourage these objectives.50
	 Federal Tax Incentives 51: The federal government provides tax incentives for businesses that choose to donate food, and the results have been very successful in increasing food donation. The Federal Enhanced Tax Deduction for Food Donation provides enhanced benefits for businesses that donate to specific nonprofit organizations. The recipient organization must use the food for charitable purposes and may not use or transfer the food in exchange for money, property or service.
	 Liability Protection 52: The Bill Emerson Good Samaritan Food Act is a federal law that protects donors if donated food causes harm to the recipients. The Act was amended by the Food Donation Improvement Act in 2022 and provides civil and criminal liability protection for food donors and nonprofit recipients of food for liability that might occur due to harm from donated food items. Specific qualifying foods and grocery products are included and must meet food safety standards. All qualified donations must be through a nonprofit organization to needy individuals. Donations and distribution of food must be done in "good faith." The Emerson Act provides coverage for all individuals, government entities, schools, gleaners, farmers and businesses. The Emerson Act also protects against both federal and state law claims. States may choose to enact additional state-level liability protection.

⁵⁰ National Strategy for Reducing Food Loss and Waste and Recycling Organics, US Environmental Protection Agency, <u>https://www.epa.gov/circulareconomv/national-strategy-reducing-food-loss-and-waste-and-recycling-organics</u>

⁵¹ Federal Enhanced Tax Deduction for Food Donation, A Legal Guide, Harvard Law School's Food Law and Policy Clinic and the University of Arkansas School of Law's LL.M. Program in Agricultural & Food Law, April 2016, <u>https://chlpi.org/wp-content/uploads/2013/12/Food-Donation-Fed-Tax-Guide-for-Pub-2.pdf</u>

⁵² Federal Liability Protection for Food Donation Legal Fact Sheet, Harvard Law School Food Law and Policy Clinic, June 2023, <u>https://chlpi.org/wp-content/uploads/2013/12/Emerson-Act-Legal-Fact-Sheet.pdf</u>

Entity	Policy
	• Food Product Dating 53: Federal law requires food product dating for infant formula only. The USDA requires a "pack date" for poultry and other products to help identify lots and facilitate trace-back in the event of a foodborne illness outbreak.54
	• Food Safety55: The US Food and Drug Administration (FDA) and USDA regulate food safety and labeling. The FDA has the authority to regulate the safety and labeling of all foods with the exception of meat, poultry and some fish, which are regulated by the USDA. Both entities oversee the regulation of egg products. Numerous Acts provide regulation for how specific food items are labeled and safely handled. The Federal Trade Commission is responsible for food advertising regulations. Federal agencies inspect food processing plants and production facilities that create food products that travel between states.
Federal Policy (continued)	• Animal Feed Policy56: Federal statutes and regulations detail the use of food waste as animal feed through the following regulations: Swine Health Protection Act, the Ruminant Feed Ban Rule, the Food Safety Modernization Act Rules on Preventive Controls, and FDA regulations regarding adulteration and misbranding. These detailed regulations aim to properly treat food scraps fed to animals to reduce potential for disease outbreaks linked to animal products in livestock feed. Using food scraps as animal feed is widely viewed as a relatively safe, efficient and environmentally preferred method of food waste disposal, saving money for farmers, businesses and increasing waste diversion.
	 FDA Model Food Code57: Model Food Code (and similarly Minnesota Food Code) includes items like Time as a Public Health Control (time as a control), date-marketing requirements for prepared by/use by dates, hot or cold-holding for safety standards and allergen requirements.
Minnesota State Policies	• Liability Protection 58: Minnesota statute for Liability of Food Donors provides liability protection for donation and distribution of food donations. The regulation applies to food that is fit for human consumption at the time of donation and distributed by the food bank or nonprofit charitable organization to the elderly or needy at no charge. This provides

⁵³ Food Product Dating, US Department of Agriculture, Food safety and Inspection Services, <u>https://www.fsis.usda.gov/food-safety/safe-food-handling-and-preparation/food-safety-basics/food-product-dating#:~:text=Are%20Dates%20for%20Food%20Safety.not%20required%20by%20Federal%20law.</u>

⁵⁴ Manufacturers provide "best if used by" dates to provide consumers quality information about the food. Quality dates are determined by the food manufacturer and there are no uniform or universally accepted descriptions or criteria. Other common phrases for date-labeling include best if used by/before, sell-by, use-by and freeze-by.

⁵⁵ United States Legal Guide Food Donation Law and Policy, The Global Food Donation Policy Atlas, June 2020, <u>https://chlpi.org/wp-content/uploads/2013/12/USA-Legal-Guide-2020.pdf</u>

⁵⁶ Leftovers for Livestock: A Legal Guide for Using Food Scraps as Animal Feed, Harvard Law School's Food Law and Policy Clinic and the University of Arkansas School of Law's LL.M. Program in Agricultural & Food Law, April 2016, <u>https://chlpi.org/wp-</u> <u>content/uploads/2013/12/Leftovers-for-Livestock A-Legal-Guide August-2016.pdf</u>

⁵⁷ FDA Food Code: 2022 Food Code, <u>https://www.fda.gov/food/retail-food-protection/fda-food-code</u>

⁵⁸ 2023 Minnesota Statutes, Section 604A.10 Liability of Food Donors, <u>https://www.revisor.mn.gov/statutes/cite/604A.10</u>

Entity	Policy
	liability protection in addition to that provided by the Emerson Act detailed in Federal policies.
	 Minnesota Certified Food Protection Manager: A certified food protection manager (CFPM) is a leader for a food establishment related to food safety, required by the Minnesota Department of Health and the Minnesota Department of Agriculture. The CFPM is required to complete training, certification, exams and forms with the state.
	• Date Labeling 59: The state requires date labeling on dairy products, eggs, shellfish and perishables defined in State Statute 31.782 related to a quality assurance date.
	• Food Safety for Food Donation Guidance60: The Minnesota Department of Agriculture and Department of Health created a comprehensive guide for food safety to assist donors, distributors, those serving donated food and regulators to consistently interpret food safety regulations. The guidance is based on state and federal food codes.
	• The Minnesota Department of Agriculture and University of Minnesota Extension provide additional guidance for the sale of locally grown food including eggs, produce and hunter-harvested deer, including donation information.
	 Animal Feed61: Minnesota statute details requirements for using garbage as animal feed, including safety measures for protecting public health and livestock diseases.
State Policies (continued)	 State Resources: Many state departments include information and resources about reducing food waste including food donation via the Minnesota Department of Education, food to animals via the Minnesota Department of Agriculture, and liability protection for food donation.
	 Minnesota Free Meals Program62: Students are required to take three components including a fruit or vegetable for meals to be qualified for reimbursable, which may increase wasted food.
Hennepin County	Ordinance 13 Recycling for Hennepin County ⁶³ : This ordinance details requirements for solid waste source separation, including organics material collection requirements for residential households and commercial generators. Under this ordinance, covered generators must implement organic material collection to divert food and food scraps from back-of-house beginning January 1, 2020. Commercial covered generators include restaurants, grocery stores, food wholesalers, distributors and manufacturers, hotels, hospitals, sports venues, event centers,

⁵⁹ Minnesota Date Labeling Regulations, ReFED US Food Waste Policy Finder, <u>https://policyfinder.refed.org/minnesota</u>

⁶⁰ Food Safety for Food Donation, Onsite Feeding Locations, Food Shelves and Food Banks, State of Minnesota, March 2020, https://www.health.state.mn.us/communities/environment/food/docs/license/fooddonate.pdf

⁶¹ Minnesota State Statute Chapter 35: Animal Health, Section 35.76 Garbage, Treatment. <u>https://www.revisor.mn.gov/statutes/cite/35/pdf#page=17</u>

⁶² Minnesota State Statute Chapter 124D, Section 1245D.111 School Meals Policies <u>https://www.revisor.mn.gov/statutes/cite/124D.111#:~:text=Free%20school%20meals%20program%20aid.per%20student%20per%20school</u> <u>%20day.</u>

⁶³ Ordinance 13, Hennepin County, <u>https://www.hennepin.us/en/your-government/ordinances/ordinance-13</u>

Entity	Policy				
	caterers, nursing and residential care facilities, office buildings with dining services, farmers markets, food shelves and food banks, colleges and universities with dining services, shopping centers, airports, golf clubs and country clubs, and rental kitchens or shared-use commercial kitchens. Covered generators are those that generate one ton of trash per week or contract for eight cubic yards or more per week of trash collection service. Beneficial use of organics material includes donation of edible food for human consumption, collection of organic material for food- to-animal programs, collection for composting or for anaerobic digestion. The County provides additional resources regarding how to safely donate food and organizations that accept food donations.				
	The ordinance requires cities with more than 10,000 residents to provide curbside organics collection, either through a contract or by requiring the haulers in their city to offer the service.				
	Cities with less than 10,000 residents can choose to provide an organics drop-off instead of providing curbside organics collection.				
City	All cities in the County were contacted regarding any existing policies or ordinances related to food waste, food donation or similar programs. Cities reported they do not have such policies.				

Appendix D: Top 15 manufacturers and processors

Company/business name ¹	Sales volume/ asset max	Quantity generated – low estimate (tons/year) ²	Quantity generated – high estimate (tons/year) ²
Deli Express Fast Foods	\$573,163,000	15,190	48,720
Hawkins Specialty & Food Group	\$89,557,000	2,370	7,610
American Fish & Seafood	\$59,309,000	1,570	5,040
Peace Coffee	\$43,096,000	1,140	3,660
Pepsi Beverages Company	\$33,995,000	900	2,890
ADM Milling	\$32,634,000	860	2,770
Hormel Foods	\$28,659,000	760	2,440
The Iron Exchange	\$23,621,000	630	2,010
Town Hall Tap	\$19,684,000	520	1,670
Modist Brewing Co.	\$19,684,000	520	1,670
Lakes & Legends Brewing	\$19,684,000	520	1,670
Brew Crew	\$19,684,000	520	1,670
Pryes Brewing Company	\$19,684,000	520	1,670
Broken Clock Brewing Inc.	\$19,684,000	520	1,670
Utepils Brewing Co.	\$19,684,000	520	1,670

Notes:

¹ Each business has one location in the county.

² Generation rates are based on annual revenue for Food Manufacturers and Processors, as listed in Section 2.2 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The low generation rate is 0.053 lb/annual revenue (\$)/year, and the high generation rate is 0.17 lb/annual revenue (\$)/year.

Appendix E: Wholesale and retail

Company/ business name	Number of locations in Hennepin County	Number of employees	Quantity generated – low estimate (tons/year) ¹	Quantity generated – high estimate (tons/year) ¹
Cub*	25	4,125	1,110	9,570
Target ²	19	4,096	1,110	9,500
Walmart Supercenter	4	1,480	400	3,430
Lunds & Byerlys	18	1,346	360	3,120
Hy-Vee	5	1,231	330	2,860
Whole Foods Market	5	721	190	1,670
UNFI Distribution Center	2	697	190	1,620
Costco Wholesale	3	498	130	1,160
Kowalski's Markets	5	405	110	940
Trader Joe's	5	380	100	880
Sam's Club	2	370	100	860
Performance Foodservice-Twin Cities	1	300	80	700
Jerry's Foods	2	289	80	670
Wedge Community CO- OP	2	255	70	590
Lakewinds Food Co-Op	3	240	60	560

Notes:

* Business is listed in the top 15 in the County (Table 2).

¹ Generation rates are based on generation rates per employee for Food Retail, as listed in Section 2.3.3 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The EPA had an option to estimate generation rate based on employee number or annual revenue.

Employee number was selected for consistency with other calculations. The low generation rate is 0.27 tons/employee/year, and the high generation rate is 2.32 tons/employee/year.

² Target Corporation's headquarters is located in Hennepin County and was included in the data set, as it has the same NAICS code as Target stores. Due to the large number of employees at the headquarters building, it was listed as generating a large volume of food waste and would have been in the top 15. However, HDR understands that the headquarters building has different operations than Target stores and is not anticipated to produce food waste at a rate that aligns with the EPA's food waste generation rates, and it was therefore not included in this data set.

- Nordstrom was included in Wholesale and retail per NAICS but removed from the top 15 list due to relevance for this category related to food waste.

Appendix F: Restaurants and food service

Company/ business name	Number of locations in Hennepin County	Number of employees	Quantity generated – low estimate (tons) ¹	Quantity generated – high estimate (tons) ¹
McDonald's*	43	2,265	2,820	3,840
Caribou Coffee*	100	1,290	1,610	2,190
Starbucks*	82	1,246	1,550	2,110
Jimmy John's*	39	683	850	1,160
Chipotle Mexican Grill*	30	649	810	1,100
Subway*	73	582	730	990
Dairy Queen*	32	574	720	970
Wendy's	19	510	640	860
Domino's*	30	499	620	850
Burger King	18	482	600	820
Panera Bread	12	476	590	810
Taco Bell	21	471	590	800
Applebee's Grill + Bar	8	436	540	740
Perkins	7	435	540	740
Chick-fil-A	10	415	520	700

Notes:

* Business is listed in the top 15 in the County (Table 2).

1 Generation rates are based on generation rates per employee for Restaurants and Food Services, as listed in Section 2.8 of the Excess Food Opportunities Map Version 3.0 – Technical Methodology. The low generation rate is 2,494 lb/employee/year, and the high generation rate is 3,392 lb/employee/year.