



2022

# Memphis Food Rescue Landscape Analysis

We gratefully acknowledge funding support for this project from the City of Memphis and the Natural Resources Defense Council.



# Table of Contents

---

<b>Executive Summary</b> .....	<b>1</b>
<b>Introduction</b> .....	<b>2</b>
<i>Background on food waste and food rescue</i>	
<i>Introducing organizations</i>	
<i>Research objectives</i>	
<b>Research Methods</b> .....	<b>3</b>
<i>Stakeholder database documentation</i>	
<i>Survey instrument</i>	
<i>Stakeholder meeting</i>	
<b>Results</b> .....	<b>4</b>
<i>Last mile organizations</i>	
<i>Interest and barriers to expanding food rescue</i>	
<i>Opportunities</i>	
<b>Recommendations</b> .....	<b>9</b>
<i>Identify a food rescue coordinator</i>	
<i>Establish a working group with communication strategies</i>	
<i>Strengthen funding streams and social capital</i>	
<i>Evaluate buy-in from other actors in the local food system</i>	
<i>and local government entities</i>	
<i>Develop a technology application</i>	
<b>Closing Summary</b> .....	<b>11</b>
<b>Appendix</b> .....	<b>13</b>

## Executive Summary

---

The purpose of this report is to present major findings from research examining the food landscape in Memphis and the role that last mile organizations and donors currently do and could potentially play in food rescue efforts. More specifically, it seeks to convey how Clean Memphis might better (1) improve Memphis's food systems; (2) support last mile organizations (LMOs) and vulnerable community members and constituents; and (3) alleviate the challenge of food insecurity in Memphis.

Last mile organizations work directly with people experiencing food insecurity. Their food service may be set up as a pantry, on-site meal service, or meals delivered to another location. The primary goal of this landscape assessment is to identify local last mile organizations' (LMOs') capacity for and interest in receiving and distributing rescued food from donation sources. The project has a particular interest in rescued protein, fresh produce, and ready-to-eat meals that have been locally prepared. To meet these goals, Innovate Memphis conducted a series of key stakeholder interviews, a survey instrument, site visits, and two collaborative stakeholder meetings with LMOs and donors.<sup>1</sup>

This landscape assessment engaged 30 unique LMOs and donors to identify challenges, needs, opportunities, and recommended actions. Challenges that LMOs experienced included inconsistent food donations, capacity issues due to a heavy reliance on an aging volunteer population, and a lack of resources such as equipment and storage space. Opportunities included expanding donations by educating and incentivizing local restaurants, small grocers, and local farmers to donate fresh produce and prepared foods. Other opportunities included building a local sustainable food economy that prioritizes connections among local farmers and constituents, addressing capacity issues, developing a smartphone technology to identify and connect LMOs with constituents and donors, and decreasing food waste through a food rescue coordinator position. Not all findings are presented in this report. Additional questions and findings were provided to Clean Memphis.

Recommendations for action included: (1) identifying a food rescue coordinator, developing a work plan, and allocating responsibilities for future follow up; (2) establishing a food rescue network of participants to share information; (3) evaluating shared social capital such as mutual connections, boards, volunteers, and resources; and (4) identifying and using a technology application.

---

<sup>1</sup> Survey questions are included in the Appendix.

# Introduction

## *Background on food waste and food rescue*

Food insecurity occurs when safe and nutritious foods are unavailable, inaccessible, or unaffordable. While food insecurity can be situational, it has become a reality for an increasing number of Americans. In Memphis, food insecurity is an increasingly prevalent issue that has been exacerbated by the COVID-19 pandemic. The food insecurity rate amongst constituents in Shelby County rose from 15%—a total of 140,940 food insecure people—in 2019 to 21.6%—202,954 food insecure people—in 2020, according to the Mid-South Food Bank. The organization also reported increases in the number of food insecure children and the rate of food insecurity amongst children in their service area from 21% or 94,710 food insecure children in 2019 to 30.2% or 136,382 food insecure children in 2020 (Mid-South Food Bank).<sup>2</sup> The rate of food insecurity is significantly higher amongst Black (24%) and Latinx (21%) populations when compared to White non-Hispanic (8%), shedding light on prevalent racial inequities (*Feeding America Map, 2022*).

Emergency food aid—food assistance services such as community kitchens, food banks, soup vans, and subsidized community markets—can mitigate community food needs in high-income countries in tandem with public assistance programs. As such, food banks have largely been seen as supplements but not permanent or exclusive solutions to food insecurity. Yet an increasing number of food insecure people have come to rely on food banks for food. In fact, 4.9% of service requests from the City of Memphis’s 211 call center between November 3, 2021 to November 2, 2022 were related to food. Of these, top food inquiries included information about food pantries (66.2%), assistance buying food (24.0%), and requests for home-delivered meals (5.1%).

Cities across the nation are strategizing ways to mitigate food waste and food insecurity, improve quality of life, and ensure more equitable outcomes for constituents. While food waste does not necessarily cause food insecurity, the high rates of food waste and food insecurity are reflective of structural issues within the food ecosystem that result in some not having enough food while others waste food. Food rescue initiatives have the potential to address both food waste and food insecurity by rescuing and redistributing food. In doing so, food rescue efforts could disrupt the current food ecosystem by increasing the affordability and accessibility of food, decreasing economic losses from food waste, and decreasing the harmful environmental impacts of food waste. Conversations about food waste are vital in stabilizing the local food economy and addressing systemic inequities that have contributed to food waste and food insecurity. Moreover, conversations and actions to increase food rescue initiatives can create tangible, meaningful change in constituents’ lives in the immediate future.

Cities across the nation are strategizing ways to mitigate food waste and food insecurity, improve quality of life, and ensure more equitable outcomes for constituents.

## *Introducing organizations*

Clean Memphis and Innovate Memphis engaged in a partnership to conduct this research. Clean Memphis, a non-profit organization focused on environmental issues and education, has developed programming around reducing food waste in recent years with its program Project Green Fork. Clean Memphis has partnered with a variety of public and private partners including the City of Memphis, the Memphis and Shelby County Office of Sustainability and Resilience, the Natural Resources Defense

<sup>2</sup> Statistics were retrieved from the Mid-South Food Bank website with data only available from years 2019 and 2020.

Council, Compost Fairy, Epicenter, Kroger, the Mid-South Food Bank, and the Tennessee Department of Environment and Conservation. Clean Memphis aims to reduce food waste to save money, improve the environment, and help ensure fewer Memphians go hungry.

Innovate Memphis is a nonprofit civic innovation office that provides professional services to government and community leaders to research, collaborate, and develop sustainable solutions for the public good. Innovate Memphis began food systems research in 2022 in partnership with No Kid Hungry to identify and advance potential projects, policies, and programs that might address the food insecurity challenge in Memphis.

### **Research objectives**

Research objectives are listed as follows: (1) Identify and document local food rescue organizations and related initiatives in Memphis; (2) Assess the current practices and challenges related to the donation of foods that are experienced by last mile organizations (LMOs) and potential donors; (3) Assess the interest and capacity of LMOs and donors to expand food donations, particularly produce, protein, and locally prepared meals; (4) Identify how to connect LMOs with existing local donors and resources; (5) Assess how a technology application could increase food rescue processes, notably in regards to prepared foods.

In this research, particular emphasis was placed on interest in locally prepared meals since anecdotal evidence suggested that many donors of ingredients, such as grocery stores, are already engaged in donation practices through the Midsouth Food Bank. Some locally prepared meals—such as those donated by local colleges and universities—are also already part of a donation network. However, multiple sectors that serve food—such as hospitality and healthcare—may comprise a relatively untapped market for potential food donations that could be of value to last mile organizations.

## **Research Methods**

Innovate Memphis is involved in several research efforts examining food rescue and food systems that are outside the scope of this project. These efforts include but are not limited to initial stakeholder interviews conducted by the Morehead Cain Scholars, site visits to LMOs, and community research. For the purpose of this report, we will primarily draw upon the survey instrument and stakeholder meetings.

### **Stakeholder database documentation**

Innovate Memphis created a stakeholder database for documentation throughout this project. Using exploratory methods and existing databases such as the Mid-South Food Bank directory and United Way of the Mid-South Tennessee 211, a list was compiled of 110 LMOs and potential donors in Memphis. In the database, we recorded the organization name, type, channel, food usage, food preferences, facilities, location for service, schedule, and capacity, among other categories. Drawing upon the stakeholder database, we then initiated outreach by sending the survey to each organization via mass email. We initially received few responses and revised our outreach strategy to individually contact each organization via personalized email, phone call, and/or physical mail.

## Survey instrument

We conducted a survey among LMOs to better understand how Clean Memphis can help increase food donations, support LMOs serving people experiencing food insecurity, and address gaps in the Memphis food system. The survey instrument was developed in collaboration with Clean Memphis and modeled after similar studies by the NRDC Food Matters collaborations in Nashville and Baltimore. The survey asked respondents to describe and categorize their organization along with its goals, food and food-related services, capacity, and clients. Respondents also answered questions about their operating hours, operating budget, food donation practices, transportation and delivery services, capacity to accept more food donations, challenges, and needs. The source information from individual responses has been incorporated into an updated version of the stakeholder database.

In total, we received 33 responses from 30 unique organizations. Five responses were from non-LMOs who were not directly involved in food rescue or services. We then followed up with the LMOs to recruit participants for further discussion in stakeholder meetings.

## Stakeholder meeting

Innovate Memphis and Clean Memphis collaboratively hosted two stakeholder meetings. The purpose of the stakeholder meetings was to (1) present, discuss, and build upon findings from the survey and (2) connect LMOs with existing local donors and resources. The first stakeholder meeting was hosted remotely in a virtual setting and included participants from 8 unique organizations. The second stakeholder meeting was in person and had a total of 15 attendees representing 10 unique organizations. In both meetings, participants and facilitators discussed challenges, opportunities, and existing resources related to food rescue. The meetings were action-oriented and stakeholders discussed tangible steps that would expand and deepen their work, which informed the recommendations proposed in this report.

# Results

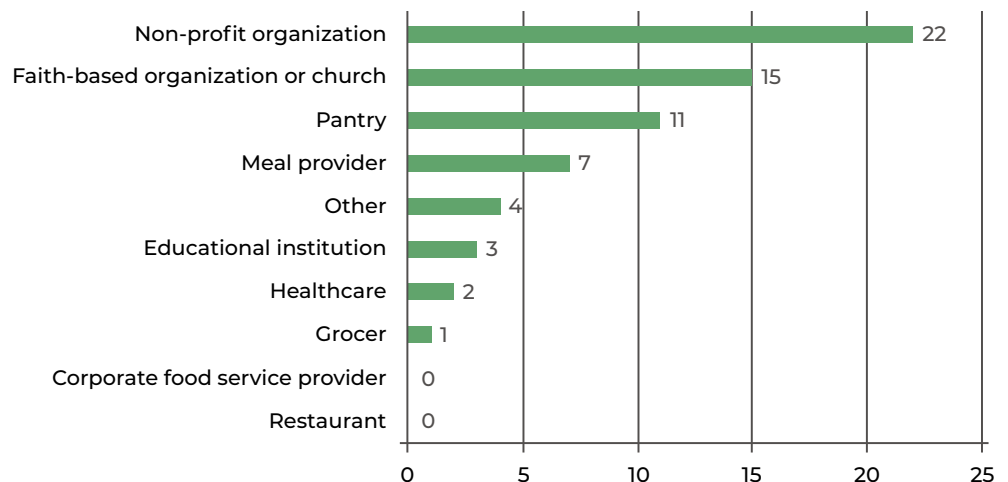
## Last mile organizations

### Organization types and constituents

For the survey, respondents were asked to self-identify their organization and could select multiple answer choices for most question types. The number of responses will be provided in raw count, rather than percentage, since many organizations selected

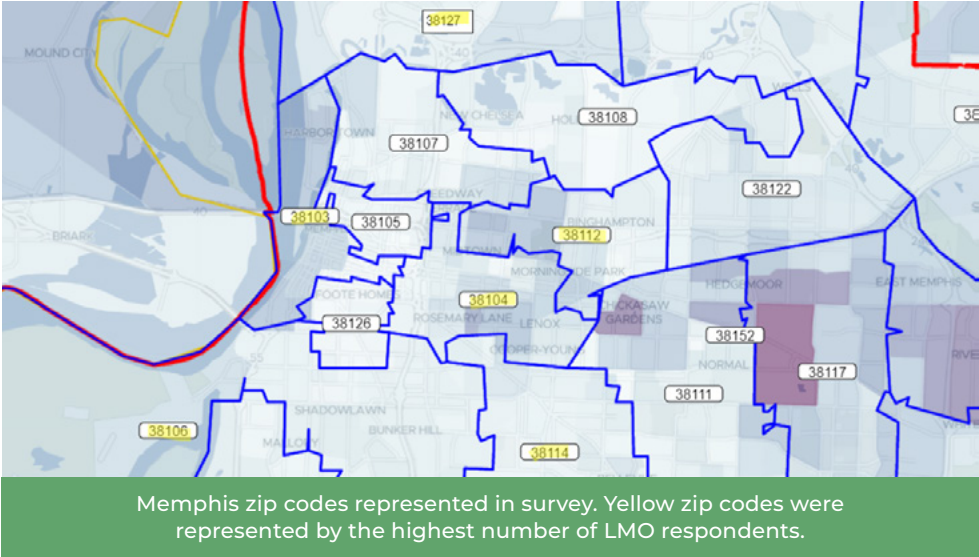
more than one option. Survey respondents represented multiple organizational types including non-profit (22), faith-based organizations (15), pantries (11), meal providers (7), educational institutions (3), healthcare (2), and grocers (1). It is important to note that these categories were not mutually exclusive and several organizations selected multiple categories.

## LMOs AND DONORS BY ORGANIZATION TYPE





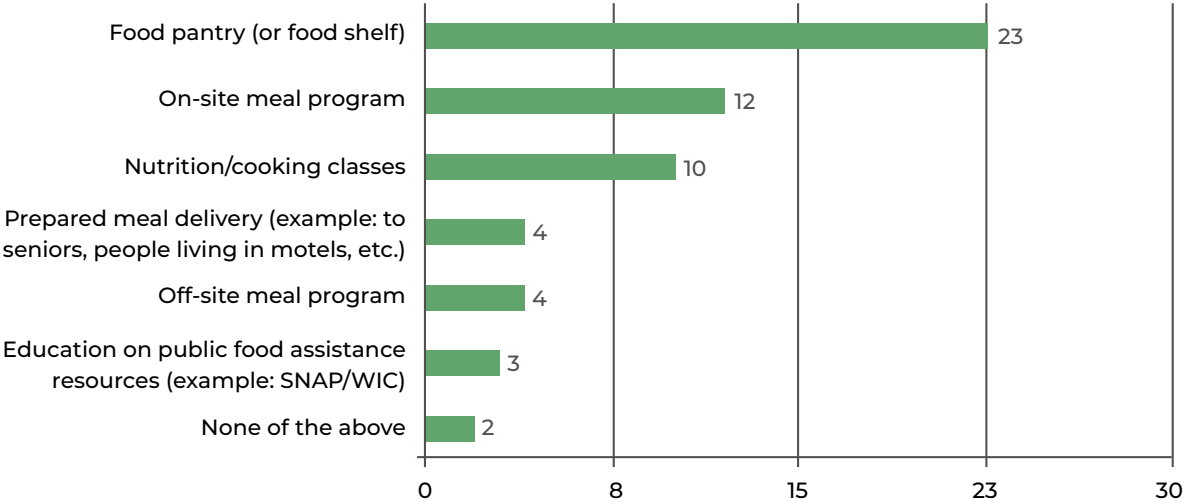
Respondents primarily served constituents who were low-income (27), unhoused (19), older adults (19), families (19), youth (15), immigrants (6), members of a religious group (2), or other (8). Again, respondents could choose multiple categories, though “low-income” was selected in almost all LMO responses. Some LMOs targeted constituents with a specific health condition, while others focused on certain age groups. All organizations shaped their operations in some way according to their geographic locations within the city and the surrounding areas. Zip codes with the highest representation among LMO survey respondents were 38104, 38103, 38114, 38112, 38127, and 38106, showing overlap with two zip codes (38114 and 38127) with the highest call volumes to Memphis 211 requesting food assistance. Further research could explore in more depth whether people from zip codes with high levels of poverty have convenient geographic access to food pantries and other nutrition services.



**Current operations**

Respondents were also asked to describe their organization’s food-related services. They could choose as many categories as applied to them. Services included food pantries (23), on-site meal programs (12), nutrition or cooking classes (10), prepared meal delivery (4), off-site meal programs (4), and education on public food assistance resources such as SNAP/WIC (3). The variety of services offered suggests that, as a group, these organizations can be responsive to diverse needs among their constituents. Several of these services build capacity and education among constituents in addition to meeting emergency food needs.

**LMOs AND DONOR FOOD-RELATED SERVICES**



The types of food offered varied among LMOs. As one of the goals of the research was to assess interest in prepared meals available through food rescue, particular note was taken of opportunities with this potential resource. Nearly one-half of respondents did not serve prepared meals. Of the organizations that did serve prepared meals, over half reported serving meals at their locations and just under half delivered prepared meals to another site.

Additionally, we asked respondents to indicate which food-related facilities or assets they currently use or operate, of which refrigeration space (26), dry goods storage (24), and freezer storage (23) were the most common. Other facilities listed included meal programs (13), commercial kitchen (11), office space, dining space, and other.

The survey asked organizations to report how they obtained their food and to indicate percentages of food from their donation sources. Three-quarters of respondents purchased food from grocery stores, accounting for 25% of their total food source. Two-thirds of respondents also purchased food from the Mid-South Food Bank which comprised a greater makeup of their food source (45% of the total food source). Approximately 40% of respondents indicated receiving donations from various sources such as other nonprofits, civil programs, businesses, grocers, and farms. However, these donations accounted for only as much as 20% of total food source for these LMOs. A number of organizations selected 'other' and elaborated that they "sometimes/often" receive donations from a local church or their parishioners, or they grow their own food on site, accounting for 10% of total food source.

### ***Interest and barriers to expanding food rescue***

Respondents reported both interest in and barriers to expanding food rescue efforts. The main challenges included insufficient refrigeration or storage space, staff/volunteer capacity, inconsistency in the quality and quantity of food donations, and a lack of education and outreach to donors. One-third of sites reported having limited capacity to accept perishables due to lack of cold storage. Two-thirds of respondents were responsible for food pickup and primarily relied upon personal vehicles. While several organizations expressed interest in expanding food rescue efforts, many expressed concerns that it would not be realistic to do so until and unless the current challenges they are experiencing are addressed. The following section will outline the challenges and opportunities for LMOs to expand their food rescue efforts.

### ***Quality and types of food donations***

Across all research methods, LMOs consistently expressed concern about the quality and types of food donations they receive. More specifically, LMOs described frustration with a lack of control in regard to which donations they received. Inconsistency in the quantity and quality of donations contributed to food waste as several LMOs expressed that they often found themselves sorting through foods – notably meats and fresh produce – that had spoiled prior to or during the donation process. Consequently, LMOs were left sorting through spoiled foods to identify foods that could be rescued and distributed in their food pantries or food-related services. LMOs also expressed frustration in receiving a large number of any one particular donated food and not being able to distribute the full amount, thereby also contributing to food waste. Donations with large amounts of spoiled foods have at times overwhelmed LMOs who are already working at limited capacity due to staffing shortages and a heavy reliance on volunteers. Since most LMOs did not have access to composting services, most of these spoiled foods ended up in the trash and LMOs incurred the waste hauling costs.

While several organizations expressed interest in expanding food recovery efforts, many expressed concerns that it would not be realistic to do so until and unless the current challenges they are experiencing are addressed.



One LMO proposed greater regulation of donations with more stringent procedures as a possible solution, but simultaneously acknowledged fear that more regulation could dissuade donors from participating altogether. An efficient means of communication about type and quantity of food supplies among LMOs and donors could help streamline distribution of donations. Aside from storage and capacity challenges, the programming at each LMO and their respective constituent population also determined which types of food were preferred. Some sites offer assistance in managing a health condition or their population has cultural preferences, which impacts food preferences.

### *Prepared meals and safety*

According to the survey, the most accepted and preferred foods were fresh produce (14), canned or shelf-stable produce (13), dry or shelf stable goods (8), frozen meat (7), canned or shelf stable meat (7), bread (6), milk or dairy products (5), eggs (4), and fresh meat (3). Lack of equipment or storage space was cited by one-third of respondents as a reason for not accepting fresh, frozen, or refrigerated items. Site visits confirmed survey responses that cold storage was limited and usually reserved for fresh produce and frozen meat.

Survey results indicated that prepared foods were least preferred; however, dialogues in both stakeholder meetings and site visits indicate that LMOs were interested in prepared foods but again lacked storage and equipment necessary to accept these products. Some LMOs also feared that restaurants or grocers would struggle to maintain safe temperatures of food prior to donation. These donors would also require dedicated storage onsite of prepared foods before redistribution to LMOs, highlighting the challenge of storage space and equipment. An app that showed availability of temperature-controlled food and cold storage availability could assist in donation coordination and may better assure safe food handling temperatures are maintained between donor and LMO.

**A resource that showed availability of temperature-controlled food and cold storage availability could assist in donation coordination and may better assure safe food handling temperatures are maintained between donor and LMO.**

LMOs stated that restaurants and grocers believe that food safety and handling protocol has different processes for donations when in fact, readying food for donation follows the same procedures necessary for food preparation. This indicates that this key group of potential donors may still lack education in safely donating prepared foods. Prepared meals offer a unique opportunity to expand the food rescue ecosystem by collaborating with small grocers, caterers, and local restaurants in a multi-pronged approach prioritizing education and transportation.

Clean Memphis collaborated with the Shelby County Health Department to produce a safe food handling brochure to share at annual health inspections in efforts to educate and increase safe food donations. While the Health Department offers monthly trainings on safe food handling, local restaurants, small grocers, and LMOs could be part of an outreach campaign about the safe food donation practices, which are identical to existing safe food handling practices (Good Samaritan Act, 2022). These classes could also include information on the 2023 federal Food Donation Improvement Act and could empower LMOs to take on more donated food with confidence about its safe handling.



### *Volunteer and staff capacity*

The vast majority of respondents reported a heavy reliance on volunteers in their operations. While the range of volunteers was 0-5,000 the median number of volunteers was twelve. The range of full-time staff was much lower, however, at 0-50 with the median being two full-time staff. Participants in stakeholder meetings expressed concern over the future of programming that relied on an aging volunteer population as there were little to no new and/or younger volunteers. Challenges related to capacity also present opportunities. Given that the vast majority of LMOs interviewed overwhelmingly rely on an aging volunteer population, social networks are vital to sustain the work of LMOs as they could offer a shared volunteer work force. Future initiatives, for instance, could recruit younger volunteers and increase communication and awareness around food donations to address the mismatch between preferred and donated foods. Local organizations that offer a sustainable source of trained volunteers, particularly younger volunteers, could also help with labor and management of resources.

### *Remodeling food pantries to prioritize dignity and respect*

LMOs reported the importance of prioritizing dignity and respect in the construction, organization, and operations of food pantries. To do so, participants underscored the importance of making food pantries look and feel similar to grocery stores to create a shopping experience in which constituents can choose their foods and purchase them for a low price. Participants strategized ways to create this environment, discussing playing music and having grocery carts and organized food options. This scenario was offered in contrast to the experience of picking up a prepackaged bag filled with groceries that constituents may or may not want and that therefore might be wasted.

**Participants underscored the importance of making food pantries look and feel similar to grocery stores.**

### *Funding*

LMOs reported a heavy reliance on grants and private donations to run their facilities. The lowest operating budget was \$1,000 whereas the highest was \$100,000, with the average operating budget being \$43,000. Of the 33 responses, 16 respondents reported an operating budget between \$1,000 and \$25,000. Seven respondents reported an operating budget between \$26,000 and \$74,000. Nine respondents reported an operating budget between \$75,000 and \$100,000. Participants in the stakeholder meeting discussed the desire for increased investment and support, notably from governmental, non-profit, and for-profit organizations, to expand their capacity through fiscal donations toward equipment, for instance. More specifically, participants reported needing money to update, replace, or expand refrigeration and freezer space as several reported that their equipment was failing or that they were limited in what they could accept due to a lack of cold storage space.

Increased funding could significantly support LMOs in addressing challenges they experience in regard to limited capacity and resources. Access to funding to purchase equipment such as refrigerators or freezers, for instance, could directly increase LMOs' capacity to accept additional foods, thereby increasing the amount of food available to food insecure constituents.

**Access to funding to purchase equipment such as refrigerators or freezers could directly increase LMOs' capacity to accept additional foods, thereby increasing the amount of food available to food insecure constituents.**

## Opportunities

### Existing resources amongst LMOs

Facilitators and participants in stakeholder meetings discussed existing resources amongst LMOs and donors in addition to potential resources in the Memphis region. Resources can be categorized into social and professional networks and shared physical assets such as storage space and equipment.

Social and professional networks included the local universities and colleges, some of which donate food through the national program Food Recovery Network. Another local resource shared at the meeting was Resource Redistribution Ministries, a volunteer-led nonprofit that transports food from grocery stores to senior centers and other food distribution hubs. Meeting participants also listed Food Donation Connection, a national donation program for restaurants, as a valuable part of the local food rescue landscape.

Discussions of social networks covered participants' professional roles and as well as organizations such as compost facilitators in both nonprofit and for-profit sectors. Several participants emphasized the importance of expanding social networks to include stakeholders in the local food rescue ecosystem with a particular focus on incentivizing local farmers, small grocers, and local restaurants to increase their food donations. They prioritized raising awareness about tax incentives for local farmers and small-scale, local businesses to donate fresh produce, proteins, and prepared meals.

The capacity of LMOs to accept donations could be greatly expanded by increasing physical assets such as storage and refrigeration space. The survey asked respondents to indicate their equipment needs, with the top three responses including transportation equipment (which could include refrigerated or unrefrigerated vehicles), storage and collection items (crates, bins, shelves), and stationary refrigeration. Both stakeholder meetings revealed that some LMOs could offer shared equipment and space, such as use of a commercial kitchen, for other organizations that lacked cold storage or preparation space. Others indicated they could assist LMOs with pantry operation best practices and budgeting. The initial LMO database captured operation hours and donation preferences but could be enhanced with the addition of existing resources and serve as a tool for better coordination and collaboration.

## Recommendations

Top priorities identified by stakeholders include: (1) identify a food rescue coordinator; (2) establish a working group with communication strategies; (3) evaluate social capital and existing resources; (4) evaluate buy-in from actors in the local food systems and government entities; (5) develop a technology application.

### Identify a food rescue coordinator

In the National Resources Defense Council (NRDC) Food Matters report "Food Rescue in Baltimore City: Assessing Current Landscape and Potential Growth," a food rescue coordinator role was identified as one solution to address food waste and was included in the survey administered for this project. Survey

### Top priorities identified by stakeholders include:

- 1 Identify a food rescue coordinator;
- 2 Establish a working group with communication strategies;
- 3 Evaluate social capital and existing resources;
- 4 Evaluate buy-in from actors in the local food systems and government entities;
- 5 Develop a technology application.

responses and participants in both stakeholder meetings agreed that a food rescue coordinator could create an opportunity for LMOs and donors to connect and collaborate in a more meaningful way. A food rescue coordinator could lay the foundation for a network of motivated, dedicated individuals to implement tangible action items that could immediately benefit constituents experiencing food insecurity. Participants discussed the role of the food rescue coordinator in follow up, outreach, and determining buy-in from stakeholders for future engagements.

### ***Establish a working group with communication strategies***

Designating the responsibility of communication and education to a food rescue coordinator would assist in future initiatives such as network building, the development of a technology application, and expanding LMO capacity through resources such as equipment or renovations. To do so, a suggested first step for the food rescue coordinator would be to establish a Google group for future follow up and newsletters to stay up to date with their work.

### ***Strengthen funding streams and social capital***

#### ***Use new funding to increase cold storage and transportation capacity***

Increased funding, donations, and public support from outside institutions could meaningfully expand the capacity of LMOs to mitigate the nutritional needs of local residents. Additional cold storage would allow LMOs to offer a wider variety of foods to their guests, including produce, protein, and prepared meals. Dedicated vehicles for transportation of surplus food would ease the dependence on personal vehicles for this work. Some of these assets could require building improvements, which would in turn contribute to the stated desires of LMOs to both increase operational capacity and create a more friendly and dignified experience by simulating a grocery store experience for constituents.

#### ***Expand volunteer outreach and paid staff capacity***

Memphis hosts several online volunteer platforms that connect potential volunteers with local organizations. Volunteer Odyssey and Volunteer Memphis offer opportunities for new and possibly younger volunteers to find organizations like food pantries or meal services. As volunteer capacity increases, a contemporary expansion in paid staff capacity could boost the services offered to community members. New volunteers could bring knowledge of novel funding opportunities, which could lead to a virtuous cycle of improvements in both staffing and physical assets.

### ***Evaluate buy-in from other actors in the local food system and local government entities***

Attendees emphasized the importance of first determining local buy-in from key stakeholders and developing a more systematic, cohesive initiative prior to involving local government. The role that local government and corporations could play in the local food rescue landscape should be further explored within the existing social network prior to engagement. To do so, the food rescue coordinator might organize a series of meetings with LMOs and donors for more in-depth discussions on what engagement, if any, with local government and larger corporations would serve.

The food rescue coordinator should also be mindful of the several audiences they would be engaging with to identify appropriate communication and outreach strategies. As an example, participants in the stakeholder meetings represented a variety of local entities such as health departments, health providers, universities, non-profits, local farmers, food pantries, and community-based organizations. Future outreach to small

grocers and local restaurants could include communication of liability protections and safe food handling, benefitting the food rescue network and potential donation sources.

### *Develop a technology application*

Participants discussed the role of a potential technology application in identifying LMOs based on type and geographic location to potentially match constituents experiencing food insecurity with LMOs near them. Priority features for the technology application included a visual map with pinpoints of nearby LMOs for constituents to easily navigate to, a simple communication tool, and a matching feature to identify LMOs with donors, constituents seeking food services, and volunteers. Most importantly, the application should offer a simple way to identify the names of LMOs and the types of services they offer based on zip code. A technology application could offer a means for communication between service organizations to match LMOs seeking specific foods with potential donors.

Multiple existing apps serve at least some of the stated desires of LMOs. More research is needed to discover which one most closely matches the highest priority items. Decisions about who will host, pay for, and maintain this application will influence any app chosen to support food rescue work in Memphis.

## **Summary**

In summary, this landscape assessment laid the groundwork and initiated deeper engagement for future collaboration amongst LMOs and donors. High priority action items included identifying a food rescue coordinator, establishing a small-scale network of highly motivated and dedicated individuals and organizations to take immediate action, and remodeling local food pantries to prioritize dignity and respect for constituents. Recommendations for action include: (1) identifying a food rescue coordinator, developing a work plan, and allocating responsibilities for future follow up; (2) establishing a food rescue network of participants to share information; (3) evaluating shared social capital such as mutual connections, boards, volunteers, and resources; and (4) identify and use a technology application.

This report sought to present the findings from our research to examine the mitigating role that food rescue—notably a food rescue coordinator and smartphone application—could play in food waste and food insecurity in Memphis.

## References

Buzby, P. by J., Letzkus, T., Danielle, Stellato, T. Z., Weaver, B., & Chelsea. (2022, August 22). Good Samaritan Act provides liability protection for food donations. USDA. Retrieved November 16, 2022, from [usda.gov/media/blog/2020/08/13/good-samaritan-act-provides-liability-protection-food-donations](https://usda.gov/media/blog/2020/08/13/good-samaritan-act-provides-liability-protection-food-donations).

City of Memphis 211 Call Center Data, 2-1-1 counts. Retrieved November 3, 2022, from [memphis.211counts.org/](https://memphis.211counts.org/).

Feeding America, *Map the Meal Gap: Food Insecurity among Latino (Hispanic) Population in Shelby County*. Retrieved November 3, 2022, from [map.feedingamerica.org/county/2020/hispanic/tennessee/county/shelby](https://map.feedingamerica.org/county/2020/hispanic/tennessee/county/shelby).

Natural Resources Defense Council. *Food Rescue in Baltimore City: Assessing Current Landscape and Potential Growth*. Retrieved February 15, 2023 from [nrdc.org/sites/default/files/baltimore-food-rescue-assessment-20190814.pdf](https://nrdc.org/sites/default/files/baltimore-food-rescue-assessment-20190814.pdf)



# Appendix

## Survey questionnaire

### Memphis Food Rescue Landscape Analysis

Thank you for taking this survey. With this survey, Clean Memphis hopes to better understand how the Clean Memphis can help increase food donations, support nonprofit organizations that serve people experiencing food insecurity, and thereby help address gaps in the Memphis food system.

We will present the findings from this survey at a stakeholder meeting in late summer/early fall. Please consider joining in this gathering with other local organizations. We plan for this to be a time of resource and idea-sharing as well as a forum for sharing challenges that can be addressed with a collective voice.

This survey will take about 20 minutes to complete.

Please make sure to click the "Done" button at the end so that your response is recorded.

Thank you again!

\* 1. What is the name of the organization you are primarily affiliated with?

Name of person completing the survey:

Name of Organization:

Address:

Email:

Phone number:

Primary Contact Person for Organization:

Primary Contact Person Email:

Primary Contact Person Phone number:

\* 2. How would you describe your organization? Please select all that apply.

- Faith-based organization or church
- Non-profit organization
- Healthcare
- Educational Institution
- Pantry
- Meal Provider
- Grocer
- Restaurant
- Corporate Food Service Provider

Other (please specify):

# Appendix cont.

## Survey Questionnaire

\* 3. What would you say is the goal of your organization's food services? (Example: Emergency assistance, culinary education, support a specific population, etc.)

\* 4. How would you describe your organization's food-related services? Please select all that apply and provide more details in the textbox.

- Food Pantry (or food shelf)
- On-site Meal Program
- Off-site Meal Program
- Prepared Meal Delivery (Example: to senior's homes, people living in motels, etc.)
- Nutrition/Cooking Classes
- Education on Public Food Assistance Resources (Example: SNAP/WIC)
- None of the above

Describe your Pantry or Meal Program in greater detail here:

(Example: We operate a dedicated food pantry, mobile food pantry, and an off-site meal program for seniors.)

\* 5. How many paid staff and volunteers do you have involved in your food-related services?

Full-time staff:

Part-time staff:

Volunteers:

\* 6. Who are your primary clients (for food-related services)? Do you serve a specific group of people? Please select all that apply.

- Seniors
- Youth
- Families
- Members of a religious group
- Low-income
- Homeless
- Immigrants

Other (please specify):

# Appendix cont.

## Survey Questionnaire

\* 7. Which zip code(s) does your organization serve?

\* 8. Which food-related facilities do you currently operate? Please select all that apply.

- |  |                                       |
|--|---------------------------------------|
| <input type="checkbox"/> Commercial kitchen    | <input type="checkbox"/> Meal program |
| <input type="checkbox"/> Freezer storage       | <input type="checkbox"/> Dining space |
| <input type="checkbox"/> Refrigeration storage | <input type="checkbox"/> Office space |
| <input type="checkbox"/> Dry goods storage     |                                       |

Other (please specify)

\* 9. What are your days and hours for serving or distributing food?\*

	Midnight to 12:00 pm	12:00 pm to 5:00 pm	5:00 pm to 9:00 pm	9:00 pm to midnight
Monday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please clarify your open hours here:

\* 10. How many people do you serve on average per month?

\* 11. What times of the year are most busy for your organization?

\* 12. If your organization serves prepared meals, where are your prepared meals served?

Please specify percentages (should add to 100; please omit "%" symbol in responses).

Clients come to your location for meals:

Meals are prepared at your site and delivered or served at another location:

Other (please specify):

Not applicable/Does not apply:

# Appendix cont.

## Survey Questionnaire

\* 13. How much food comes into your organization on average, per week?

\* 14. How much food does your organization distribute on average, per week?

\* 15. How do you obtain the food that you serve? Please select all that apply and specify percentages (should add to 100; please omit "%" symbol in responses).

We purchase it from a grocery store:

We purchase it from Mid-South Foodbank:

It is donated from Mid-South Foodbank:

It is donated to us by another food rescue organization (Example: Shelby County Schools, YMCA, nonprofit or other donor):

It is donated to us by a civil program (local/state/federal):

It is donated to us directly by a retail organization (Example: local business, grocery store, farms, restaurants or other donors):

Other (please specify):

\* 16. What types of food do you currently accept? Please select all that apply.

- Produce (fruits, vegetables)
- Animal Protein (Meat, Dairy)
- Shelf-stable items (Dry Food, Canned Food)
- Prepared foods
- Baby Formula

Other (please specify)



# Appendix cont.

## Survey Questionnaire

\* 23. Who primarily picks up and/or delivers food? Please indicate the average percentage of food distributed by staff and volunteers.

	Picks up/Delivers/Picks up and Delivers	Percentage
Paid staff:	<input type="text"/>	<input type="text"/>
Volunteers:	<input type="text"/>	<input type="text"/>

\* 24. Which types of transportation do you use for pick-up and/or deliveries of food? Please indicate the average percentage for each transportation method.

	Percentage
Personal vehicles of volunteer or staff:	<input type="text"/>
Vehicle owned by your organization:	<input type="text"/>
Rented vehicles:	<input type="text"/>
Uber, Lyft or other rideshare app:	<input type="text"/>

\* 25. On what days and times do you generally have staff or volunteers available to pick up or receive food?

	Midnight to 12:00 pm	12:00 pm to 5:00 pm	5:00 pm to 9:00 pm	9:00 pm to midnight
Monday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please clarify the operating hours that staff/volunteers work?

\* 26. How do you typically schedule pick-ups or deliveries of donated food with your donors?

- The timing is flexible based on when food becomes available.
- We have agreed-on set windows of time (Example: Friday mornings between 6am and 10am)

Other (please specify)



# Appendix cont.

## Survey Questionnaire

\* 27. If your organization prepares meals, how important is food donation timing? (Example: if you only offer one meal per week and it takes place on Wednesdays, are you unable to receive perishable foods on Thursdays)? On a scale of 1 - 5, with 1 being "Not Important" and 5 being "Most Important."

- 1: Not Important
- 2: Somewhat important
- 3: Neutral
- 4: Somewhat important
- 5: Very important
- None of the above

\* 28. How quickly do you redistribute the donated food?

- Within the same day
- Within 2 days
- Within 1 week

Other (please specify)

\* 29. What do you do with the donated food that you cannot serve or redistribute?

- We use it for animal feed
- We turn it to compost
- We throw it in the trash/landfill

Other (please specify)

\* 30. Which food type do you prefer to receive?

- Donation of prepared foods
- Donation of fresh foods
- Donation of pantry items
- No preference

\* 31. At your current organization, would you have the capacity to accept more food donations?

- Yes
- No
- Not Sure

# Appendix cont.

## Survey Questionnaire

\* 32. What are the biggest barriers to you increasing your food distribution? Please select all that apply.

- Funding
- Staff / Volunteers availability
- Physical space limitations
- Refrigeration / freezer capacity
- Supplies for packaging and preparation (including personal protective equipment)
- Transportation and coordination logistics
- Perception and awareness of services
- Concerns over food sourcing, safety, quality
- Supply: food availability, difficulty acquiring food

Other (please specify)

\* 33. What additional equipment would help your organization increase the amount of food it recovers?

- Stationary Refrigeration System
- Transportation Equipment (Refrigerated Truck, Food Safe Container, Insulated Food Carrier, etc.)
- Repackaging Equipment
- Food Preparation and Cooking Equipment (Stoves, Ovens, Dishwashers, Ranges, Stainless Steel Table, etc.)
- Storage and Collection Equipment (Food Crates, Bins, Shelving Units, Pallet Jacks, Forklifts, etc.)
- Other (please specify)

\* 34. A smartphone app is a software program designed for mobile smartphones. These apps can be used to organize donations of food, for example by allowing donors to share information about food they can donate.

On a scale from 1-5, how interested would you be in using a smartphone app or other technologies to receive donations of prepared food?

- 1. Not interested
- 2. Somewhat interested
- 3. Neutral
- 4. Somewhat interested
- 5. Very interested

# Appendix cont.

## Survey Questionnaire

\* 35. Which capabilities or types of information would be most helpful for a smartphone app to provide to your organization? Please select all that apply.

- Type of food available
- Quantity of food available
- Coordination with donors to schedule pickups
- Organize transportation and/or volunteers for pickups
- Request for certain types of food
- Information about the donor or donating organization

Other (please specify)

\* 36. Which, if any, concerns do you have about using a smartphone app?

- No concerns.
- Volunteers and staff are uncomfortable using smartphones.
- Volunteers do not have access to smartphones.
- Staff are only available during limited hours to monitor food that is offered for donation.

Other (please specify):

\* 37. Would you be interested in working with a Food Rescue Coordinator in Memphis?

- Yes
- No
- Maybe, but would like more information.

\* 38. Would you be willing to participate in a follow-up group discussion?

- Yes
- No
- Maybe, but would like more information.

39. Do you have any last thoughts or comments on opportunities or challenges that your organization is facing?