A Blueprint to Zero Food Waste in Southfield

EGLE
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

MAKE FOOD NOT WASTE

MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

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Executive Summary

There is a direct relationship between landfilled food and a hotter planet. Because we landfill more than two billion pounds of food every year in Michigan, we unnecessarily pump billions of pounds of methane into the atmosphere that in turn, traps heat and brings extreme weather, wildfires, and polluted air. Michigan has recently been identified as having more waste per capita than any other state, equivalent to eleven million metric tons of carbon dioxide.[1]

Eliminating food waste is seen as "pulling the emergency brake" on climate change because it's something we can all do, relatively easily, inexpensively, and quickly. It also has a myriad of benefits, including financial savings for households and businesses, improved water and soil quality, and reduced demand for landfill space. It is for these reasons that Michigan, along with the U.S. government and the United Nations, have set a goal of cutting food waste in half by 2030. Make Food Not Waste (MFNW) believes that by eliminating food waste in the top fifteen most populated cities in Southeast Michigan, this goal could be achievable by 2030. It is a bold strategy that requires a combination of the right engagement, the right infrastructure and support, and the right opportunities. This blueprint is the first to detail what supports would be needed to completely eliminate food waste in a city. It is written with Make Food Not Waste as the primary audience as the expected implementor of the blueprint, and can be adapted to other communities with a different lead. The City of Southfield City Council, staff, and other stakeholders are the secondary audience.

The Natural Resources Defense Council estimates that approximately 15,000 tons of food are wasted in Southfield each year.[2] This plan accounts for every one of those tons, using the EPA's wasted food scale as a model for the strategies employed. Details on how to implement prevention, donation, rescue, and diversion strategies are provided for all sectors within the city, along with a detailed timeline, budget, and additional resources for implementation. The underlying foundation of the strategies is a communication and social campaign that works to shift the culture and pave the way for adoption of the behavior change strategies for each sector. The blueprint provides strategies for the following sectors:

- Residences
- Food-based businesses
- Schools and institutions
- Other places (e.g., offices, parks, and places where food may be eaten)

1 Blair, C. (2024, July 31). Michigan leads nation in toxic methane emissions from landfills. Detroit Metro Times.

2 Natural Resources Defense Council (NRDC). (2024).

Costs have been identified for full implementation of all strategies in each sector, to the extent possible and are broken down by strategy and year below. This plan estimates the total cost of implementation of the entire plan over the course of three years to be $4,754,216, with an additional $422,136 as an ongoing service fee for food waste hauling.

TABLE 1. Implementation Costs

	Year 1	Year 2	Year 3
Supporting Strategies	$429,975	$327,217	$294,598
Residences	$691,119	$1,489,747	$3,700
Carts for food waste diversion**	$0	$914,628	$0
Food-Based Businesses	$429,665	$429,665	$404,665
Schools and Institutions	$20,300	$104,850	$103,500
Other Places	$8,405	$8,405	$8,405
Total	**$1,579,464**	**$2,359,884**	**$814,868**
Total Cost Over 3 years	**$4,754,216**		

*The entire cost for the carts is allocated in Year 2 at a cost of $52 per cart (including shipping and distribution). Priority Waste has offered an option to spread cart costs out at the rate of $2.50 per household per month for five years for a total cost of $150 per bin. The cost of the bins could be passed on to residents to avoid an additional expense to the City.

TABLE 2. Ongoing Costs

Cost per Household per Year	Number of Households	Cost per Year
$24	17,589	$422,136

The changes outlined in this blueprint have the potential to significantly and positively impact residents, the community, state, and world. Modeling shows that these changes have the potential to drastically cut greenhouse gas emissions associated with food waste from Southfield (RRS, 2024). Further, the average 4-person household could save $2,500 per year if all edible food is eaten and not discarded, indicating that the average Southfield household with 2.09 people could save $1,306 annually, far outweighting the cost of the hauling service. Businesses can save 3-5% on food costs, a signficant amount in an industry with small margins. The following table outlines next steps for key players to take to implement this Blueprint.

TABLE 4. Next Steps for Blueprint Implementation by Key Player

Player	Responsibility
Make Food Not Waste	Lead implementation by collaborating with city leaders and staff, school administrators, and local service providers, Apply for funds, Support evaluation efforts as needed
City Council	Support initiative in word and resource allocation, when possible
City Planning Department	Support plan implementation, provide guidance on implementation of strategies, facilitate connections with other departmetns, create policies that support the goals of this plan
City Administration and Office of Management and Budget	Negotiate contracts with citywide food scrap hauler, assist in identifying resources for implementation
Public Works Department	Assist implementation of curbside food scrap pickup, maintain food scrap drop-off sites
Economic Development and Downtown Development Authority	Connect businesses with technical support and facilitate bulk purchasing of contracts for food scrap hauling
City Communications Department	Promote the initiative and related resources, information, and events
Food Rescue Organizations	Increase capacity to transport food from donation sites to distribution sites
Food Distribution Sites	Increase capacity as needed to better meet client needs with surplus food available

Introduction

Southfield Food Waste Elimination Project

Funded by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to catalyze bold action toward meeting the food waste reduction goal set out in the MI Healthy Climate Plan, the Zero Food Waste Study Pilot Project is intended to create the action plan for a single jurisdiction to completely eliminate food waste. This bold goal—to completely eliminate food waste sent to landfills—is needed if the state is serious about cutting its food waste in half by 2030. Working to reach zero food waste, as opposed to simply reducing food waste, provides a clear, concrete, and measurable goal. This is a turnkey plan that provides the steps needed to create the environment, build the infrastructure, and provide the supports to reach zero food waste across all sectors of the city.

Why food waste?

According to Project Drawdown,[1] addressing food waste is the number one solution to reduce heat-trapping gases responsible for global warming. Food waste is food that is ultimately not consumed by humans and is discarded, including food that is safe to eat and food that is unsafe to eat or inedible. Not only can addressing food waste have a big impact on greenhouse gas emissions, but it is something that everyone can contribute to and benefit from. It has the potential to improve food security, saving households up to $2,500 per year. It can improve air and water quality, improve soil health, and build resilient communities. The benefits of reducing food waste are so significant that local and state governments, globally, have begun to implement strategies to address food waste.

1 https://drawdown.org/solutions/table-of-solutions

Why Southfield?

The city of Southfield was selected as the pilot city for several reasons, including its commitment to sustainability, the support received by Oakland County's Office of Sustainability, and the city's proximity to Make Food Not Waste (MFNW) and its partners. Additionally, Southfield has four census tracts that are considered Justice40 zones, or areas that the federal government has identified as disadvantaged communities that have been marginalized by underinvestment and overburdened by pollution and should receive (collectively) forty percent of the overall benefits of certain federal investments related to climate, clean energy, and affordable housing. The Justice40 zones in Southfield are designated as such due to several socioeconomic factors, including various health concerns—such as high rates of asthma, diabetes, and heart disease— high poverty rates, high housing costs, and resident proximity to and volume of traffic throughout the city. These census tracts are home to 16% of Southfield's population.

Southfield is a great candidate to participate in this pilot project to create a comprehensive plan to eliminate food waste from all sectors. It is diverse racially and economically, as well as in terms of age demographics ranges and the range of housing types in the city. Almost half of the city's housing units are considered multi-family (See Community Profile: Southfield on page 14 for more details about Southfield). The food system within Southfield is relatively simple with no farms, large food manufacturing sites, or big event venues other than hotels and banquet centers.

The city's support for the project was affirmed on December 18, 2023, during a City Council meeting, which passed a resolution to participate in the pilot. Due to the characteristics and opportunities presented, as well as others, Southfield is an ideal choice for a pilot study in order to learn best practices to eliminate food waste.

Southfield will be the first Michigan city to trial this comprehensive approach to not only reduce its food waste but eliminate it entirely, allowing the city, its residents, MFNW, and its partners to identify what does and does not work and why. This approach will allow MFNW to use the findings from this study and adapt the plan for other communities throughout Southeast Michigan to achieve the state's goal of cutting food waste in half over the next six years.

17TH

MOST POPULOUS CITY IN THE STATE OF MICHIGAN

76,107

RESIDENTS

(118,477 DAYTIME POPULATION)

26.6

SQUARE MILES

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates

Community Profile: Southfield

Location

Southfield, an inner-ring suburb of the city of Detroit, is located in Oakland County in southeast Michigan. The city shares a border along 8 Mile Road with Detroit and is conveniently situated about 20 minutes from downtown Detroit as well as most other southeast Michigan communities.

Demographics

RACE

64.9%
BLACK

25.1%
WHITE
(10% OTHER)

EDUCATION (25+)

6.1%
WITHOUT H.S. DIPLOMA

93.9%
H.S. GRADUATE OR HIGHER

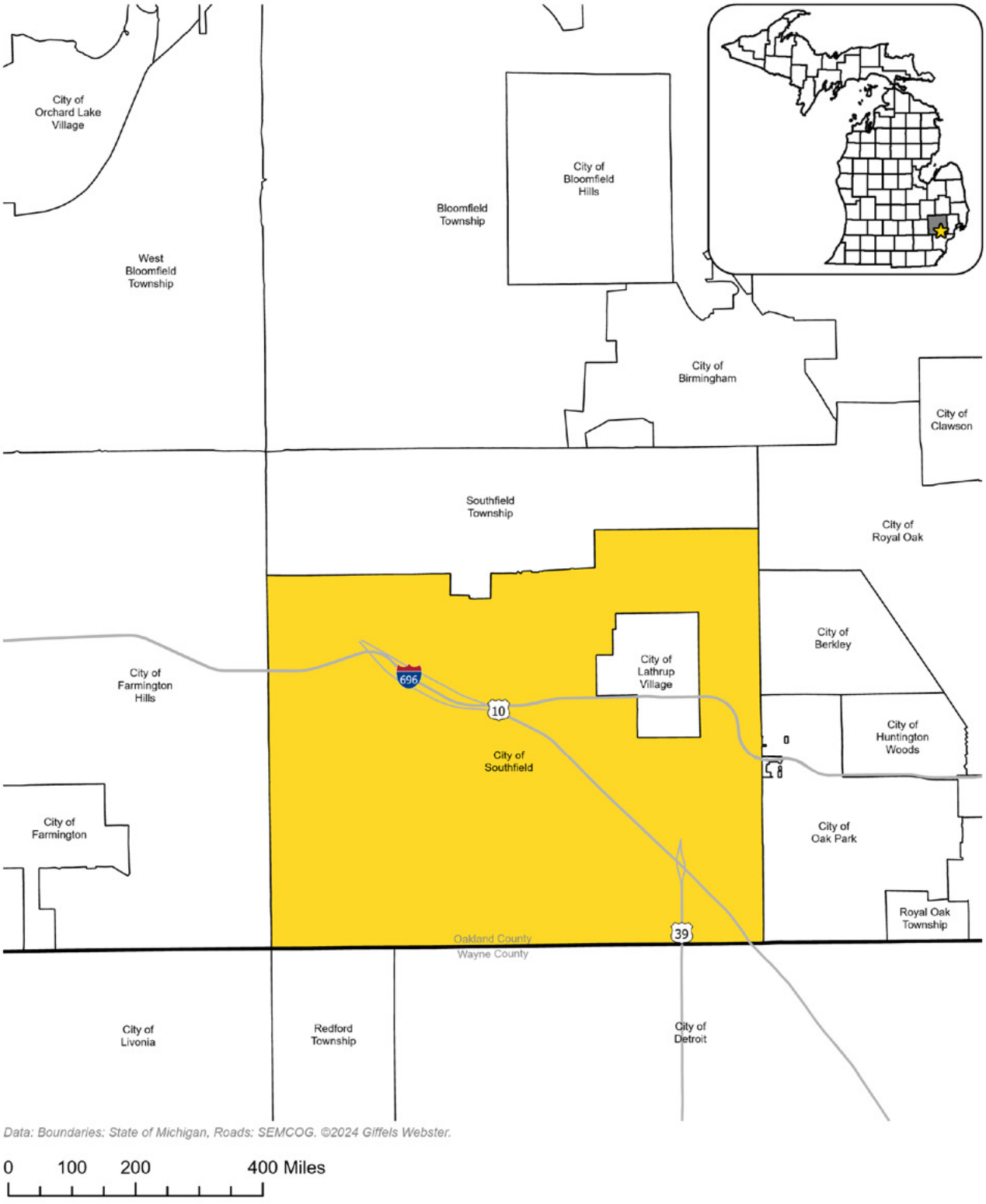
$63,980
MEDIAN HOUSEHOLD INCOME

11.3%
POPULATION IN POVERTY

13.9%
OF HOUSEHOLDS

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates

MAP 1. Location: Southfield



Households

34,404
HOUSEHOLDS

2.09
AVERAGE HOUSEHOLD SIZE

35.4%
HOUSEHOLDS WITH SENIORS (65+)
(12,162)

18.0%
HOUSEHOLDS WITH SENIORS LIVING ALONE
(6,204)

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates

Housing

Though Southfield has many single-family neighborhoods, a characteristic shared with most suburbs of Detroit, almost 50% of the housing units in Southfield are within multi-family apartment buildings. This has implications for this project, as these are considered commercial sites and do not fall under the city's contract for waste management services. Map 2 shows the multi-family housing in the city with the number of units for each listed.

37,176
HOUSING UNITS

47.3%
SINGLE-FAMILY UNITS
(17,589)

52.4%
MULTI-FAMILY UNITS
(19,475)

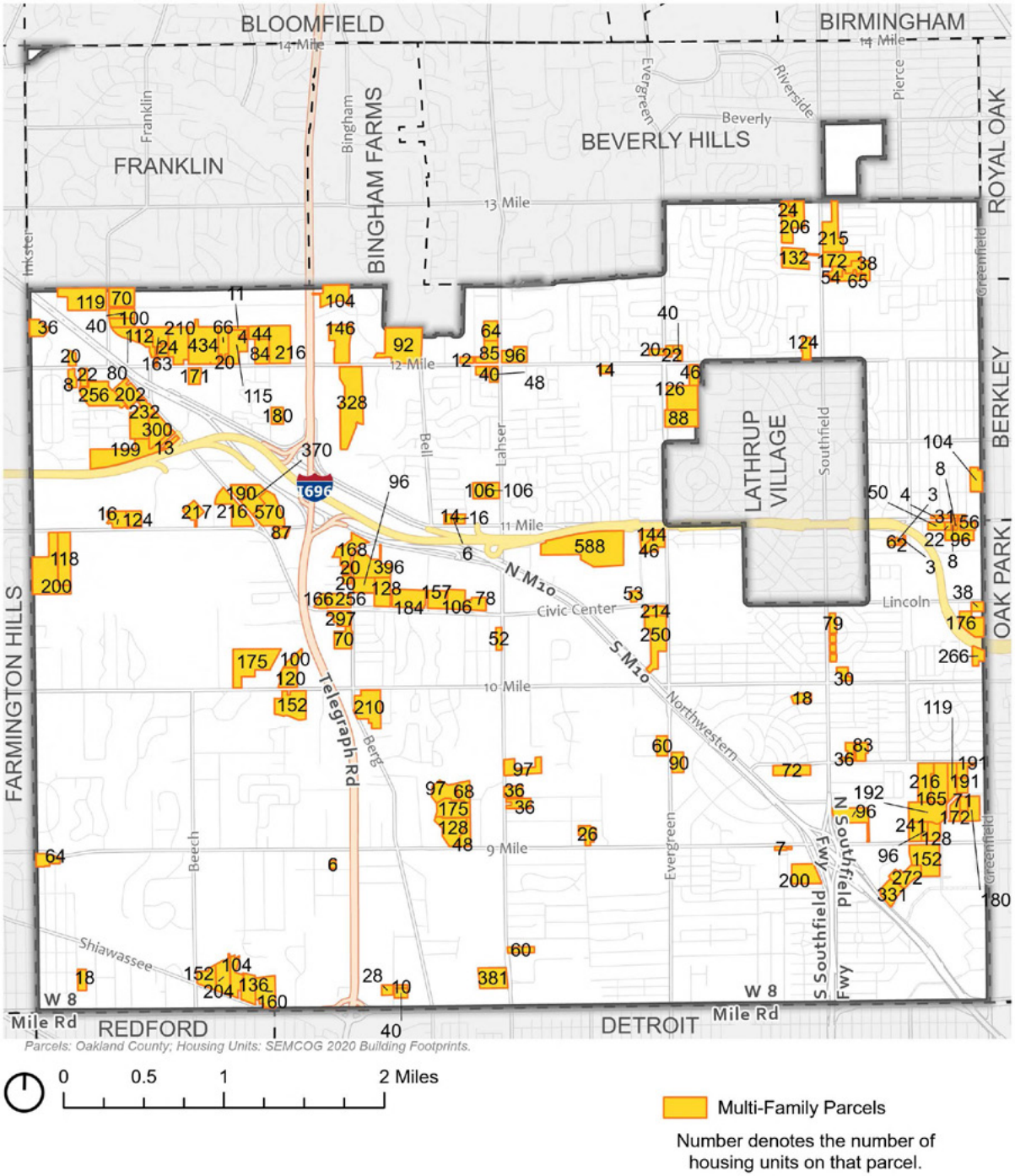
0.3%
MOBILE HOMES OR OTHER
(112)

Source: U.S. Census Bureau, 2018-2022 American Community Survey 5-Year Estimates

Community Facilities

Map 3 shows community buildings and facilities in Southfield. Some of these locations could be large food waste generators, such as hospitals, schools, and colleges.

MAP 2. Multi-Family Housing: Southfield



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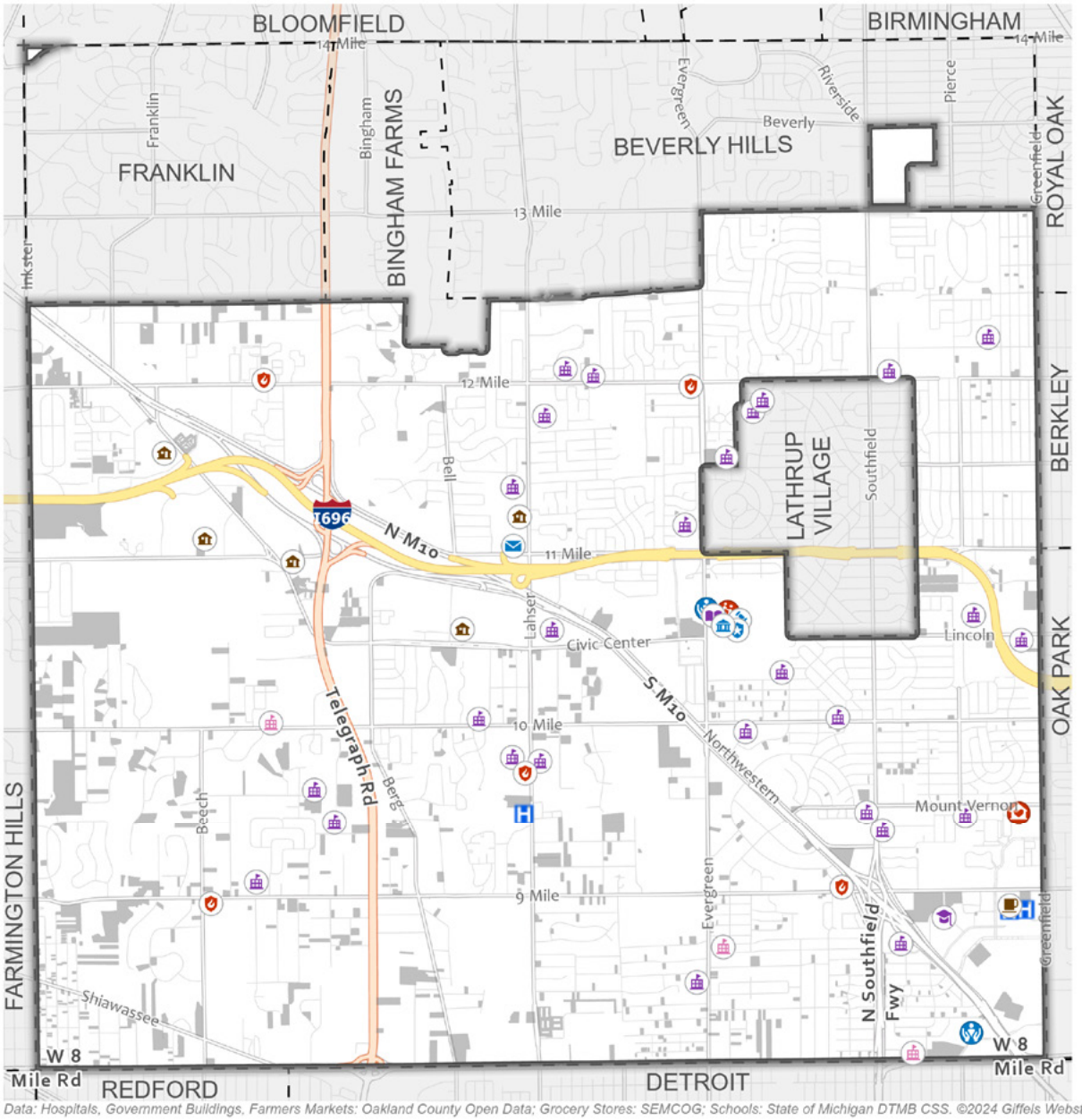
MULTI-FAMILY HOUSING
SOUTHFIELD

MAKE FOOD NOT WASTE

MAP 3. Community Facilities: Southfield



Data: Hospitals, Government Buildings, Farmers Markets: Oakland County Open Data; Grocery Stores: SEMCOG; Schools: State of Michigan DTMB CSS. ©2024 Giffels Webster.

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COMMUNITY FACILITIES
SOUTHFIELD

Food Access Sites

Based on records from the Oakland County Health Division, the Southfield Department of Economic Development, and the State of Michigan Department of Licensing and Regulatory Affairs (LARA) there are almost 300 food access points in the city, with most of them being restaurants (shown on Map 4). Despite all of these food access points, there are only 11 full-service grocerers in Southfield, and many are clustered and/or located near the city's border. This results in many Southfield residents residing in a food desert.

TABLE 5. **Food Access Points: Southfield**

Facility	Count
Banquet or Catering	15
Hotel	9
Restaurant	205
School or Place of Worship	29
Shared Kitchen	1
Limited Assortment Grocery	10
Pantry	5
Supermarket	11
Adult Home Care Services	1
Hospital Cafeteria	1
Senior Living	5
Service Facility	2
Total	**292**

Source: Oakland County Health Division (2024), Southfield Department of Economic Development (2024), LARA (2024),

The United States Department of Agriculture (USDA) defines a food desert as a community or neighborhood with limited to no access to affordable and nutritious food.[1] More descriptively, an urban community residing more than one mile, or a rural community residing more than 10 miles, from a supermarket or large grocery store resides in a food desert.[2] Therefore, a major challenge that Southfield residents experience is limited access to affordable, nutrient-dense food.

1 U.S. Department of Agriculture Economic Research Service (ERS). (2012). ERS Report Summary - Characteristics and influential factors of food deserts. https://www.ers.usda.gov/webdocs/publications/45014/30939_err140_reportsummary.pdf?v=0

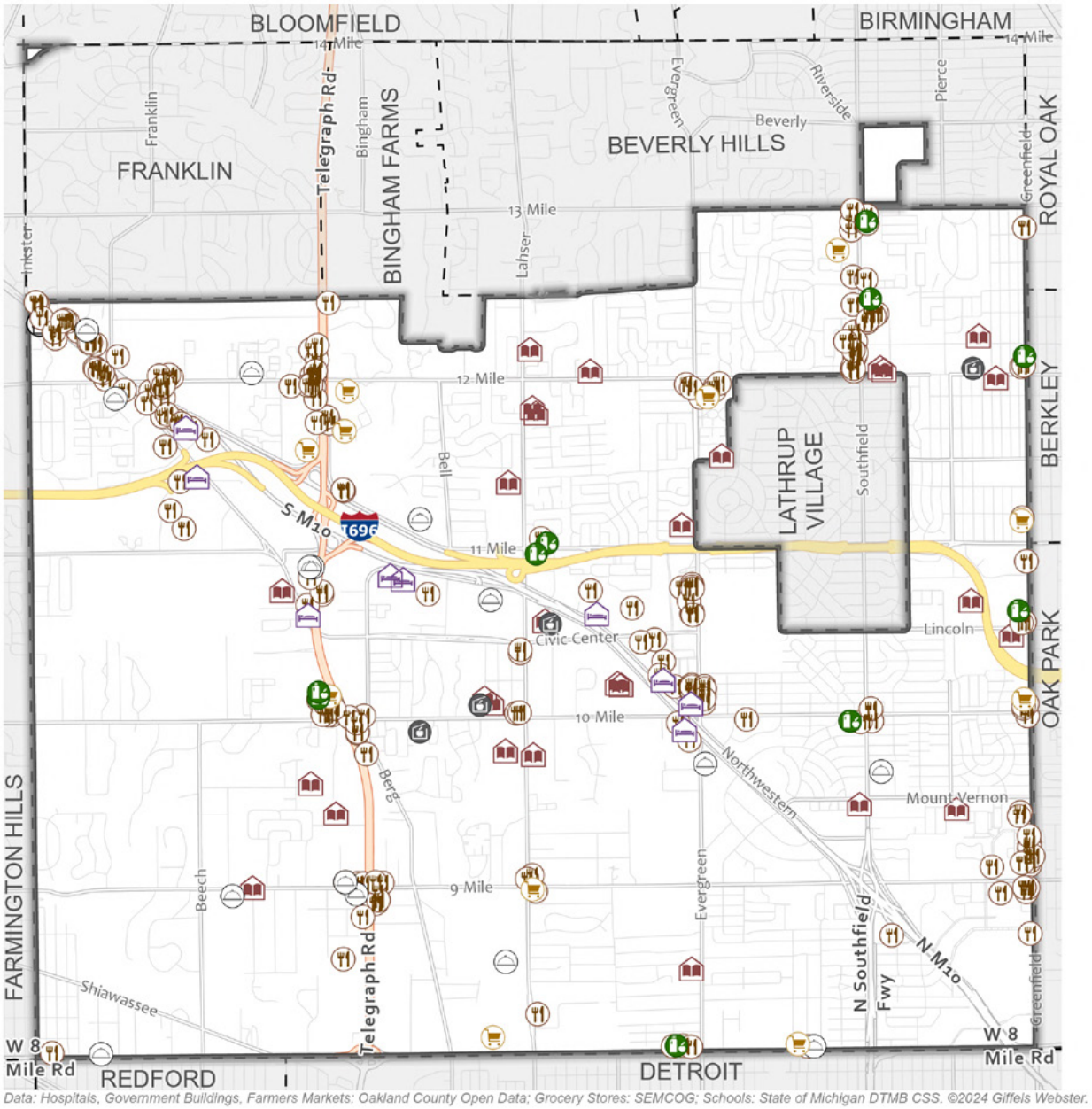
2 Congressional Research Service (2021). Defining low-income, low-access food areas (Food deserts). https://crsreports.congress.gov/product/pdf/IF/IF11841

Commercial Buildings

Map 5 shows non-residential buildings in Southfield, which have been color-coded by use type. Southfield has roughly 27 million square feet of office space and retail and industrial space that spans more than 7 million square feet, catering to a daytime population of approximately 175,000 people.[1] Based on NRDC's report (see Figure 1 on page 24), these sites collectively have a significant potential for food rescue.

1 City of Southfield. (2023). City of Southfield, MI Fact Sheet. https://www.cityofsouthfield.com/sites/default/files/inline-files/Southfield%20Fact%20Sheet%20-%20Jan%202023.pdf

MAP 4. Food Access: Southfield



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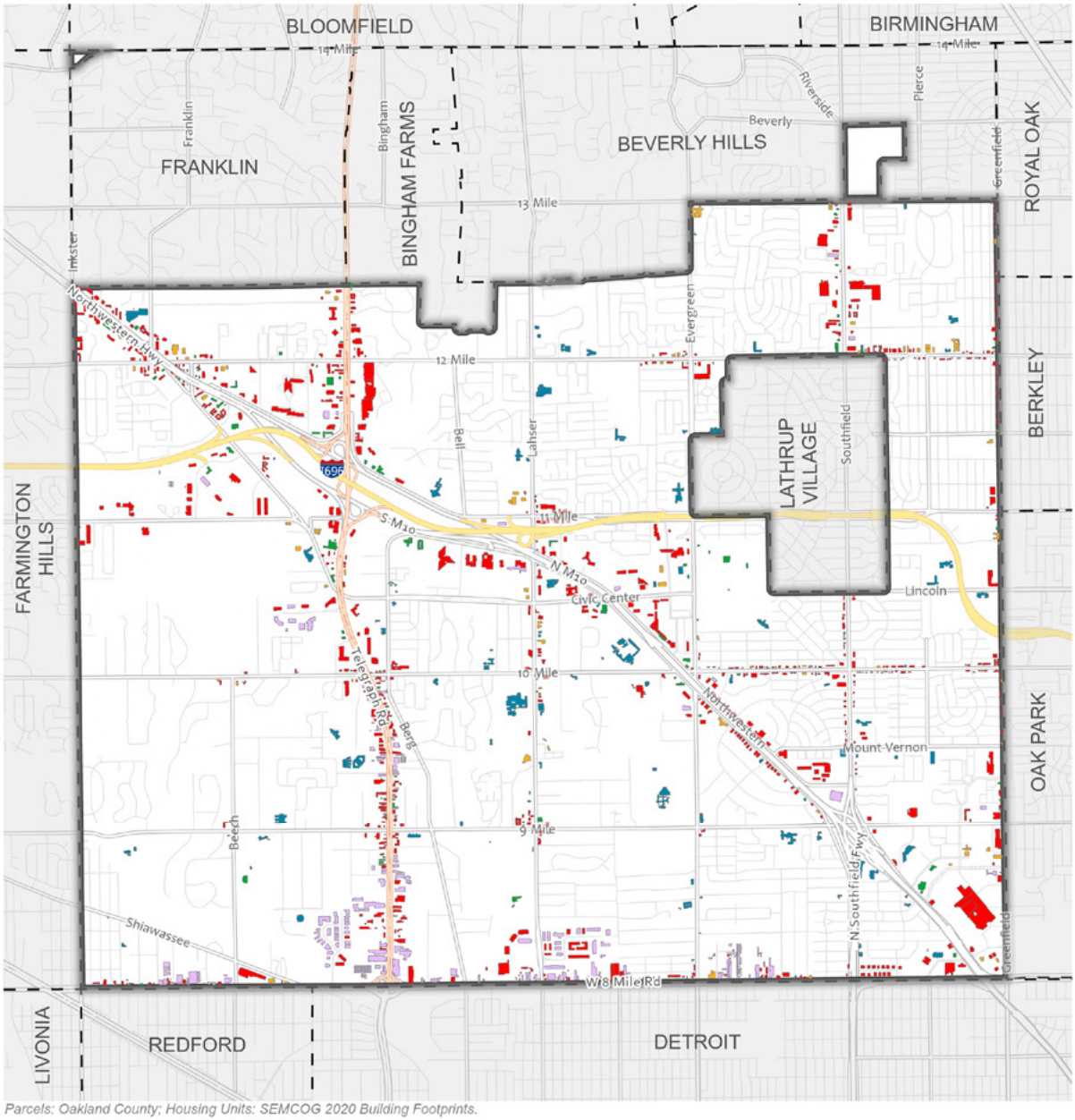
FOOD ACCESS
SOUTHFIELD

MAP 5. Building Types: Southfield



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BUILDING TYPES
SOUTHFIELD

MAKE FOOD NOT WASTE

Schools

The city of Southfield is home to 30 public and private schools, including a nationally recognized public school system, a specialized early childhood development center, and parochial and Hebrew schools. Refer to Table 6 for a summary of all Pre-K-12 schools in Southfield and Map 3 for their locations depicted on a city map.

The city also promotes lifelong learning through its higher educational offerings, which include three colleges and universities, as well as articulation agreements between the high schools and these institutions.

TABLE 6. Number and Types of Schools: Southfield

Grades	College	Day Care	Independent Charter	Montessori	Private	Southfield Public Schools	Total
Day Care		1					**1**
Pre-K				2	1	1	**4**
K-5			1		1	5	**7**
K-8			4		1	3	**8**
Pre-K-8					2		**2**
6-8						1	**1**
Pre-K-12			2		2		**4**
9-12						2	**2**
University	3						**3**
Total	**3**	**1**	**7**	**2**	**7**	**12**	**32**

A full list of schools and contact information has been compiled as part of this project and will be provided to the Schools Coordinator.

Food Waste in Southfield

According to NRDC's report on Food Waste and Rescue Potential in Southfield, 15,000 tons of food waste are produced in the city each year while 9% of the population is considered food insecure. It's estimated that the food rescue potential in Southfield is $3.8 million.

9%
FOOD INSECURITY

15,000
TONS OF FOOD WASTE PER YEAR
(= 30M POUNDS)

$4.4M
OF UNMET MEALS

$3.8M
VALUE OF FOOD RESCUE

8%
OF GREENHOUSE GAS (GHG) EMISSIONS COME FROM FOOD WASTE

11.1%
POPULATION IN POVERTY

13%
OF HOUSEHOLDS

FIGURE 1. Food Waste and Rescue Potential: Southfield

FOOD WASTE & RESCUE POTENTIAL IN SOUTHFIELD

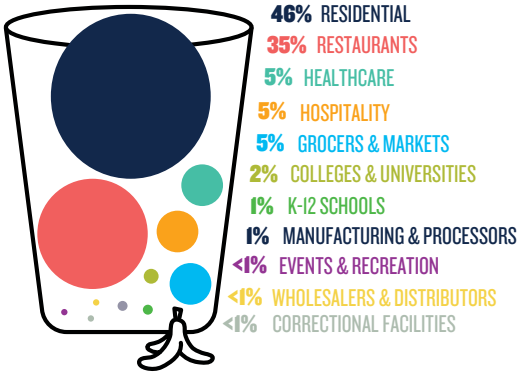
By tackling food waste, cities can rein in climate emissions, reduce municipal waste costs, and help relieve community food insecurity.

Through NRDC's Food Matters project, we have estimated a city-wide baseline level of food waste generation and assessed the potential for increased rescue of surplus food. This snapshot can help identify opportunities for policy, outreach, and interventions to achieve the city's goals.

FOOD WASTE IN SOUTHFIELD

Though actual measurement of wasted food is optimal, waste audits can be costly, time-consuming, and sometimes impractical. The model for calculating these estimates using proxy metrics was identified from a range of national sources and NRDC's original research.

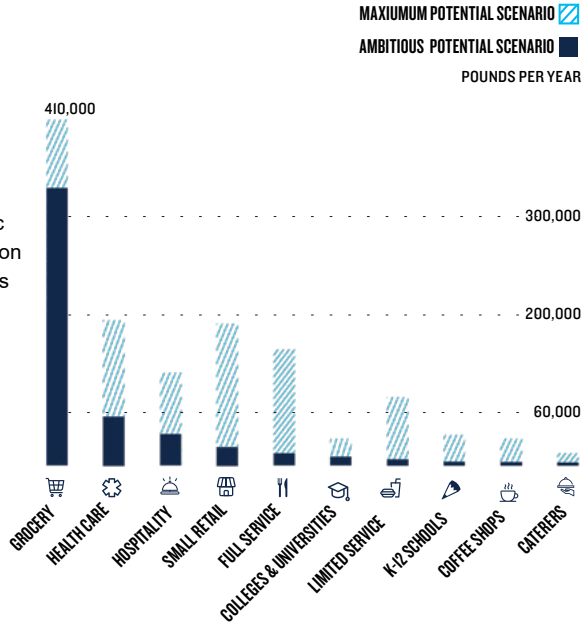
We estimate 15,000 tons of food waste are generated in Southfield each year. The residential sector is the highest food waste producing sector generating nearly 7,000 tons of food waste per year.



FOOD RESCUE OPPORTUNITIES

Donation of surplus food serves an important role in meeting the immediate needs of those facing food insecurity. The ambitious scenario used realistic assumptions and existing donation patterns to estimate an ambitious but attainable expansion of food donation efforts.

While restaurants represent a larger portion of overall wasted food, much of that waste occurs after the food is served and is unsuitable for rescue.



KEY FACTS

9% food insecurity in Southfield

15K tons of food waste in Southfield

40% of all food in the U.S. is wasted

$4.4M of unmet meals in Southfield

$3.8M value of food rescue potential in Southfield

8% of global greenhouse gas emissions come from food waste

NRDC | FOOD MATTERS

MAKE FOOD NOT WASTE

DOWNLOAD THE FOOD MATTERS TOOLKIT

Source: National Resources Defense Council (NRDC), 2024

Eliminating Food Waste: Benefits for Southfield

By keeping food waste from being landfilled, Southfield can expect the following direct benefits each year:

- For residents: $38 million in financial savings from prevention[1]
- For restaurants: $1.5 million in food costs savings[2]
- For the community: Over 1 million meals for residents facing food insecurity[3]
- For the planet: 20,178 tons of CO2 emissions prevented[4]

In addition to the direct benefits, Southfield can expect the following indirect benefits:

- Reduced need for new or expanded landfills
- Increased compost supply to meet demand for healthy soil and carbon sequestration
- Volunteer opportunities and youth and senior engagement
- Improved air quality for communities residing near landfills
- Helping the State of Michigan accomplish the food waste reduction goals in the MI Healthy Climate Plan

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1 This is based on 76,107 residents and a savings of $500 per person per year.

2 This is based on a mid-sized restaurant estimated yearly savings of $7,200 (expected that 4% of average yearly food cost can be prevented through interventions) across 205 restaurants.

3 Based on 1,270,000 pounds of food that can be donated and Feeding America's conversion rate of 1 lb of food being equal to 0.83 meals.

4 Based on Scenarios 2 and 3 in RRS's 2024 report where all food waste is either prevented or diverted from landfill to composting. See the appendix for the full report.


MENU
ROAST TURKEY
GLUTEN
VEG STEW - VEGAN
COCONUT MILK
VEGGIE RICE
VEGAN
FRUIT COBBLER
GLUTEN

The Blueprint

The Blueprint

Guiding Principles

This blueprint takes a proven societal change approach and applies it in a novel way to food waste reduction in two ways. First, it seeks to not only reduce food waste, but completely eliminate it from being sent to landfills. This approach establishes a very clear and concrete objective, requiring robust interventions that cannot be misinterpreted as reduction efforts being sufficient if food waste continues to be generated throughout the city. Second, it seeks to create a cultural and behavioral shift that makes wasting food abnormal and socially unacceptable. The strategies described in this plan support this culture shift and facilitate ways that people can engage with the initiative to reduce their own food waste for collective impact.

The following are the guiding principles for this blueprint:

1. This blueprint is based on the EPA's Wasted Food Scale, which highlights prevention, rescue, and composting as preferred solutions to food waste. It assumes that change requires multiple strategies and solutions, and consequently, collaboration between multiple stakeholders and partners. The strategies in this plan span the continuum of the Wasted Food Scale. Additional strategies that were considered but not included in the plan, as well as rationale for their exclusion can be found in Appendix G on page 446.
2. Further, this blueprint is grounded in the Motivation-Ability-Opportunity framework. This approach emphasizes the combination of awareness campaigns, skill development, and infrastructure development and uses these as guides for the strategies to be implemented.
3. This blueprint relies on past pilots, studies, and established best practices to determine the course of action that will lead to complete food waste reduction and diversion.
4. Finally, this blueprint realistically estimates the total costs necessary to achieve the goal of zero food waste in Southfield.

FIGURE 2. EPA's Wasted Food Scale

Source: United States Environmental Projection Agency

Integration of Learnings

It is expected that new information and insights will arise as these initial steps are completed and interwoven into the day-to-day life and happenings in Southfield. Recognizing these learnings, integrating them as appropriate and feasible, and recording them for consideration for other communities, will be an important component of this project. The plan will be posted on the city's food waste dashboard website along with a list of updates to the plan as new information is received. The original plan will still be available for download. The site will also have a platform for anyone to submit ideas to improve the plan and/or its implementation.

Expected Plan Impacts

It is important to understand how the impacts of the changes proposed in this plan can impact costs and greenhouse gas (GHG) reductions. To that end, RRS has created a model to simulate the outcomes of modest, stretch, and expansive scenarios of intervention. Their report can be found in Appendix E.

Future Implications of This Project

This plan will serve as a pilot project with the potential for future applications and work both in terms of plan implementation and future studies and plans, including additional citywide plans and the state-required county Materials Management Plans. To that end, representatives from Dearborn, MI, and Sterling Heights, MI, participated in this project in an "on deck" capacity to learn what to anticipate when moving to zero food waste in their community and begin developing strategies to plan for zero food waste.

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Chapters of the Blueprint

Supporting Strategies

To get to zero food waste in Southfield, support for no food waste needs to be everywhere in the city so that regardless of where you are, reducing food waste is easy and doable and something everyone is expected to do. These supporting strategies are the foundation of the rest of the activities in this blueprint and will show leadership by the city on this issue thereby facilitating buy-in and effectiveness of the other strategies presented.

An overarching communication strategy that can be tailored to the population and various sectors in Southfield has been identified as key to creating a culture of zero food waste in the city. A one-stop resource hub for all things food waste-related will support this, reducing the burden on residents, business owners, and other stakeholders to find information and strategies. Adoption of policy at the city and advocacy at the state for food waste-related strategies is also needed. A community advisory committee and monitoring system will help the project team understand how interventions are being perceived by stakeholders in the community and make real-time adjustments accordingly. A plan to measure and evaluate progress towards goals is also discussed in this chapter as well as identification of staff to coordinate and manage all aspects of implementation. Finally, a risk management strategy provides a guide for how expected challenges will be addressed.

Supporting Strategies

An enthusiastic attendee ready to Beet Food Waste at the 2024 Community Feast.

TABLE 7. **Timing of Activities: Supporting Strategies**

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
01 **Communication campaigns**												
01.A **Overall campaign: Creating a culture of zero food waste in Southfield**												
01.A.1 Promote the campaign website and online resource hub via mailers sent to residences and businesses												
Design materials												
Mail materials												
01.A.2 Promote the campaign through the city newsletter												
Develop and share material												
01.A.3 Promote the campaign through social media												
Develop and share material												
01.A.4 Promote the campaign through the press												
01.A.5 Promote local champions												
Identify local champions												
Train local champions												
01.A.6 Create ways for people to make a public commitment to address food waste												
Create and print yard signs, flags, and door signs												
Create online pledge												
Promote pledge												
Distribute signs and flags												
01.A.7 Host a citywide food waste summit												
Planning												
Promotion												
Event												
01.B **Household prevention communication campaign**												
01.B.1 Promote the prevention campaign via mailers												
Design, print, and label materials												
Mail materials												
01.B.2 Promote the campaign through the city newsletter												
Develop and share material												
01.B.3 Promote the campaign through social media												
Develop and share material												
01.B.4 Promote the campaign through the press												

TABLE 7. Timing of Activities: Supporting Strategies (Continued)

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
01.C Household diversion communication campaign												
01.C.1 Promote the diversion campaign via mailers												
Design materials												
Mail materials												
01.C.2 Promote the campaign through the city newsletter												
Develop and share material												
01.C.3 Promote the campaign through social media												
Develop and share material												
01.C.4 Promote the campaign through the press												
01.D Prevention and diversion communication campaign for spaces where food is outside of homes												
01.D.1 Promote the diversion campaign via mailers												
Design materials												
Mail materials												
01.E Maintenance communication campaign												
01.E.1 Promote the campaign through the city newsletter												
Develop and share material												
01.E.2 Promote the campaign through social media												
Develop and share material												
01.E.3 Promote the campaign through the press												
01.E.4 Provide ongoing education via presentations, webinars, demos, and workshops												
02 Online resource hub												
02.A Develop the online resource hub												
02.B Create content for the online resource hub												
02.C Promote the online resource hub												

TABLE 7. **Timing of Activities: Supporting Strategies (Continued)**

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
03 Food waste policy												
03.A Draft and adopt language for policy on using locally created compost in city projects												
03.B Create standards for backyard and community composting												
03.C Draft and adopt language for policies requiring that all city-sponsored programs and events donate excess food and have food scrap collection bins if food is served												
03.D Require that all special events donate excess food and have food scrap collection bins if food is served												
03.E Update site development standards to include food waste management in plans												
04 Continuous feedback and learning												
04.A Advisory committee												
04.A.1 Develop application process												
04.A.2 Promote advisory committee and share applications												
04.A.3 Select committee members												
04.A.4 Quarterly meetings												
04.B Integrate learnings												
05 Monitoring and evaluation												
05.A Measuring the 100% elimination goal												
05.A.1 Register sites for audits												
05.A.2 Conduct audits												
05.A.3 Report results												
05.B Measuring outcomes from prevention and rescue activities												
05.B.1 Create pre/post survey												
05.B.2 Promote and distribute pre-campaign survey												
05.B.3 Promote and distribute post-campaign survey												
05.B.3 Analyze results												
05.B.3 Report results												
06 Project implementation team												
06.A Post job positions												
06.B Interview and select candidates												
06.C Onboarding												
06.D Project management and implementation work												

An example poster for the initial communication campaign, “Dumb Problem. Easy Solution.”

The following strategies will set the stage and support the strategies used to address food waste by the various generators in the city:

01 Communication campaigns

This strategy includes a broad communications campaign focused on raising awareness and motivating action, followed by materials for various food waste prevention and diversion strategies across groupings of food waste generators: residents, food-based businesses, schools, offices, and public facilities and events.

01.A Overall campaign: Creating a culture of zero food waste in Southfield

Completely eliminating food waste in Southfield will require everyone, everywhere, all the time, to prevent food waste and divert it from landfills. An overarching communication campaign that raises awareness of the issue and motivates everyone to participate is needed. This campaign will set the stage for the initiative and will be seen throughout the city via the city's website and social media platforms, in the press, and on signs in retail stores. It will also be seen at events with neighborhood ambassadors and a citywide summit.

In order to develop a strong communications campaign for this project, the team reviewed other food waste reduction campaigns, conducted surveys with Southfield residents and businesses, and interviewed campaign managers from other areas in the U.S. The Work Department's report of these findings and the survey results can be found in Appendix E.

The resulting name of the initiative is "Every Bit Counts." This title underscores that eliminating food waste requires everyone's participation as well as all of the solutions from prevention to organics recycling. Information about "Every Bit Counts" will live on the MFNW website and will include general information about the initiative and the need to prevent and divert food waste. A sub-page for Southfield-specific resources will be linked on the Every Bit Counts web page and will be accessible by visiting SouthfieldCounts.org. As more cities are brought into Every Bit Counts, sub-pages for those cities (i.e. DearbornCounts.org, CantonCounts.org, etc) will have resources and information specific to those jurisdictions.

With this foundation in place, the program will have an outreach campaign that will change over time. The initial campaign, created by Modish Creative Co., is titled "Dumb Problem. Easy Solution." The campaign rests on the following concepts:

- Food waste is considered by many to be the "world's dumbest environmental problem" because landfilled food waste causes significant harm while being relatively easy to avoid.
- People seek entertainment, often tuning out messages that feel moralizing, negative, or overly educational.

The "Dumb Problem. Easy Solution." campaign takes a humorous approach to draw people into the issue and encourage them to become involved. This campaign theme will be applied to all communication materials. Examples of the web page, signage, social media, and direct mail are included throughout this chapter of the blueprint.

An example brochure for the initial communication campaign, "Dumb Problem. Easy Solution."

01.A.1 Promote the campaign website and online resource hub via mailers sent to residences and businesses

Two mailers will be sent to all addresses in Southfield at the launch of implementation of this plan that will introduce the campaign, raise awareness about the issue of food waste, provide resources, and generally prime the community for the overall initiative. As described in Strategy 02 on page 47, an online resource hub for one-stop-shopping of food waste information, resources, and support will be linked to the city's website and shared through social media. This resource hub will follow the look and feel of the rest of the campaign assets so it is obvious that this site supports the other outreach efforts in the community. Getting stakeholders familiar with the site will be important, as this will be the go-to place for information related to the entire initiative.

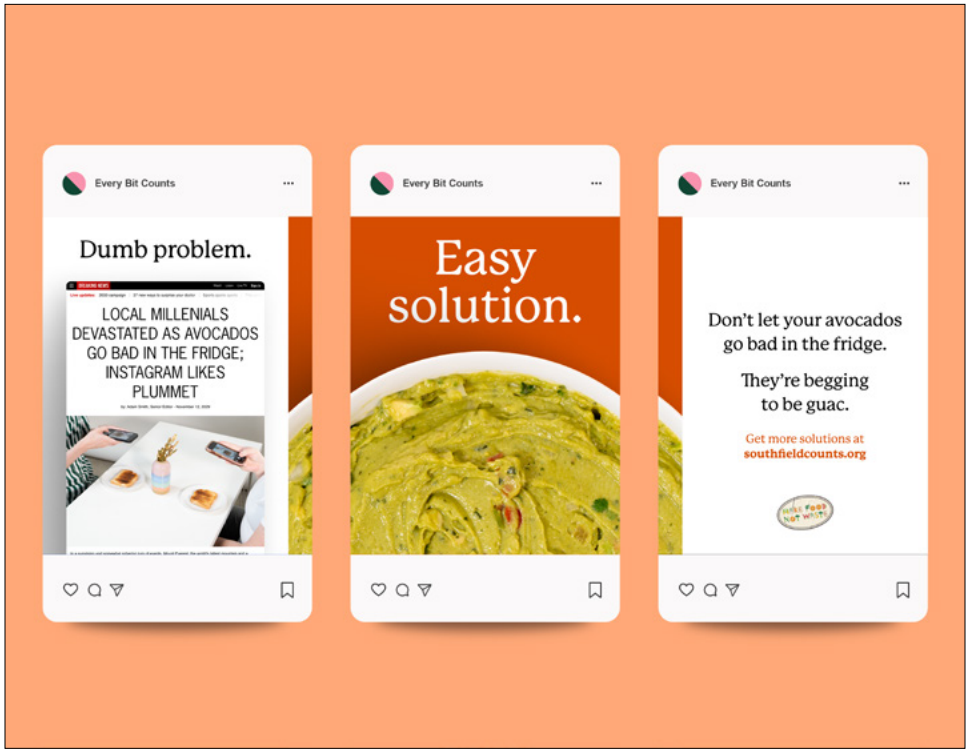
01.A.2 Promote the campaign through the city newsletter

Information about the initiative, the city's progress towards its food waste elimination goals, links to resources, and endorsements from local leaders championing the project will be shared through the city's newsletter monthly.

An example mailer for the initial communication campaign, "Dumb Problem. Easy Solution."

01.A.3 Promote the campaign through social media

Social media (Facebook, Instagram, TikTok, YouTube) and other social platforms such as NextDoor will be utilized to reach residents and other community members. Respondents to the resident conducted in summer 2024 indicated that email was a preferred way to receive information (selected by 56% of respondents), followed by Facebook (39%) and community meetings (33%). Other social media platforms could also be useful, with 23% and 19% of respondents indicating that they receive information from Twitter/X and Nextdoor, respectively. Flyers (32% of respondents) and neighborhood ambassadors (20%) were also somewhat popular ideas of ways to receive information.



Left: Example social media posts for the initial communication campaign, "Dumb Problem. Easy Solution."

Below: Campaign materials on a mobile phone.

01.A.4 Promote the campaign through the press

Opportunities to share information about the campaign through traditional press outlets will also be utilized. Press related to the launch of the initiative, community events that support reducing and eliminating food waste, and other opportunities to highlight this work will be sought and used. Opinion/Editorial articles may also be used to further initiative goals.

01.A.5 Promote local champions

Behavior change science tells us that humans are influenced by others, particularly those they see as leaders in the community. Further, we know that many local leaders are passionate about creating healthy neighborhoods and sustainability. We will supply interested political and religious leaders, school administrators, leaders of local groups and block clubs with ways they can engage their networks through events, demonstrations, presentations, and social media.

Chef Will Coleman presents his 6-1 grocery shopping method, which went viral on TikTok in early 2024, at a community feast on April 13, 2024.

Attendees enjoying the meal provided at the community feast on April 13, 2024.

01.A.6 Create ways for people to make a public commitment to address food waste

In addition to being influenced by leaders, we are also influenced by our peers. Seeing others do something or hearing them commit to something often increases motivation to also act in a similar manner. Providing ways for people to make a public commitment to eliminating food waste can support a culture of not throwing food in the trash, as people will see that throwing food in the trash is not the norm here and that "everyone" is on board with food waste reduction strategies. Yard signs and flags are often used to show support for a cause, and can be employed in Southfield to show support for food waste elimination. Signs and flags that look and feel like the overarching communication campaign will be created for local champions to have in their yard, showing support for the initiative. Signs for apartment doors will also be created. Residents and business owners will be able to sign an online pledge indicating their commitment to eliminating food waste and will have the option of getting a yard or door sign if they would like.

01.A.7 Host a citywide food waste summit

A half-day, free, celebratory summit will bring together food waste champions and those interested in addressing the problem of food waste, specific to Southfield. It will be an important event facilitating connections between people, sharing of resources, and increasing pride around Southfield's zero food waste plan. We currently foresee three focused tracks to reach audiences where they are and support them in their food waste elimination journey. The tracks and their content are outlined below.

Residential track

- Become an ambassador
- Take part in a crash course/demos in how to reduce food waste at home
- Learn how to backyard compost

Commercial track

- Understand tech solutions: Leanpath/Toast, Too Good To Go
- Learn how to engage staff and customers
- Become familiar with donation liability and how to safely donate

School track

- Learn about low tech strategies for food waste elimination, such as share tables, changing the order of lunch, longer lunches, etc.
- Understand how to integrate food waste into the curriculum
- Begin collecting food scraps in cafeterias without the mess

01.B Household prevention communication campaign

The Natural Resources Defense Council (NRDC) estimates that of the 30 million pounds of food waste produced in Southfield each year, approximately 15% of that generated in homes (2,070,000 pounds per year) can be prevented. Prevention is the most important strategy of food waste reduction, as it uses the vast amount of various resources that went into making food - water, nutrients, energy, labor - as intended. It also has the potential to improve food security, reduce hunger, and increase disposable income of households. For these reasons, prevention is the most preferred option on the EPA's Wasted Food Scale (see Figure 2 on page 29).

Several food waste prevention strategies have been identified for Southfield. The strategies identified below that support households in preventing food waste follow the Motivation, Opportunity, Ability (MOA) framework, research on behavior change and food waste, case studies, and expert insights from partners including the EPA, NRDC, and MTRE. MFNW will apply for funding to implement these strategies related to preventing food waste in households as opportunities arise.

We know that messaging is most effective when it is tailored to its intended audience. Information that households need to prevent and divert food waste differs from what restaurants, grocery stores, schools, and other places need. Findings from The Work Department indicate that messaging to residents should be hopeful and take a humorous or playful approach, emphasize the need for collective effort and avoid messages centered around guilt or shame, and make getting to zero food waste sound easy. Messaging should include information about financial and environmental incentives to reduce food waste, information on cost and time savings from food waste reductions, emotional appeals, and efforts to counter beliefs around being a "good provider." The residential campaign should also include practical information on how to measure food waste and set goals and monitor household food waste reduction. These considerations and aspects have been integrated and considered during the development of the communication campaign for this initiative.

01.B.1 Communication campaign

Ongoing messaging is needed to maintain a heightened awareness of the issue of food waste and what each person can do to contribute to the solution, at least until new habits are formed. This set of messaging will focus on not just awareness-raising, but begin to share ways to prevent food waste in households. Assets for this campaign will need to be developed and tested for outreach to residents via direct mail (two mailings), social media, community platforms, press, and ambassadors. The new assets will reflect the overarching campaign as outlined in Strategy 01.A, which will still be in use even as this is rolled out. Topics covered in this outreach include:

- Instructions on how to store food to extend its life, including safe temperatures and effective storage solutions
- Refrigerator and freezer organization techniques
- Food safety and date labels
- Strategies for avoiding or managing bulk/discount purchases
- Guidance on meal planning and appropriate portion sizes
- Information on the safety and nutrition of imperfect foods
- Information about Too Good To Go

Promote Too Good To Go

Too Good To Go (TGTG) is an existing app that allows restaurants and retailers with surplus food to sell their food for 30% of the retail value. Buyers purchase the "bags" online and pick up the product on site during a time window set by the seller. The food is sold by value and is not specified as to what is in the bag.

Too Good To Go originated in Europe and is active in all major U.S. markets. The expansion team underwent a soft launch of the app in metro Detroit, including Ann Arbor, in Spring 2024 with a media launch in June 2024.

Promotion of TGTG will be done through social media and residential newsletters. The team will also work with the company to provide targeted ads in Southfield to reach people online and in print.

- Information about Southfield's Give Freely Buy Nothing group
- Information on MTRE, a food waste tracking tool for households
- Prime residents for household food waste prevention toolkits that will soon be delivered. For more information about the toolkits, see the Residences chapter on page 55.

Part of the communication campaign assets include signage in places where people purchase food, such as grocery stores, retail stores that also sell food such as Target, and discount stores such as Dollar Tree and Dollar General. The signs will remind people of the campaign and may provide a QR code that links to the resource hub for information on how to determine how much food to buy, how to store food properly, and other tips that would be relevant when grocery shopping.

Support the Give Freely Buy Nothing Group to facilitate more resident-to-resident food sharing

Give Freely Buy Nothing - Southfield Mi is a free, existing group on Facebook that facilitates sharing, at no cost, among people in and near Southfield. The group is active, with 1,410 members and almost 100 posts during June 2024. It is currently available to anyone living in Southfield or within one mile of the city's borders. While this group is not food specific, excess food that is safe to share can easily be shared. It's a simple process: those with extra food can post what they have, which becomes searchable. Anyone looking for food can search and arrange to pick up what has been posted.

Encouraging more people to join this community to share surplus food is one way to reduce food waste among households. Supporting the Give Freely Buy Nothing group to develop guidelines around food donations, such as requiring anything packaged to be unopened, and making food sharing a normal thing, will help newcomers to the group feel comfortable both taking and sharing food.

01.C Household diversion communication campaign

Despite best efforts to prevent food waste and share excess food, inevitably there will still be some food that will not be eaten, in addition to the food that cannot be eaten due to safety concerns. We estimate that the majority of food waste in Southfield will fall into this category, specifically 84% (11,592,000 pounds per year) of all food waste from residential uses. This must all be diverted from landfills.

A variety of methods centered around composting, aerobic digestion, and anaerobic digestion have been explored. At the core, almost all food scraps in Southfield (the only exception being the small amount diverted through backyard composting, less than 1%) will have to be transported elsewhere for further processing. Fortunately, the site that currently takes yard waste is licensed to also take food scraps, and the two may be comingled in the future for pickup and transporting.

The city provides services such as recycling, yard waste, and trash pickup for single-family residences only. Multi-family residences are considered commercial uses and therefore not serviced by city contracts, requiring property owners to negotiate their own contracts for these services. Given that, two different strategies are needed for food waste diversion for single-family versus multi-family households. This blueprint plans for weekly curbside pickup for single-family residences and community food scrap drop-off sites for use by anyone, but primarily put in place for those living in apartments and other multi-family residences. The details of these two diversion methods are in the Residences chapter, but details about the diversion communication campaign follow.

The channels used for other outreach - mailers, social media, the city newsletter and website, press, and community ambassadors - will be employed to share information about the food scrap collection program being implemented throughout the city. Two mailed communications about this service and additional communications will be provided on other channels before the service begins, and will continue to be sent out frequently for the first few months of the program and then less frequently as the program becomes more established. The following topics will be covered in outreach to all residents:

- What items can be collected
- What items cannot be collected
- How to use your countertop caddy
- What liners to use and where to get them
- How to prepare bins for curbside pickup/how to prepare your food scraps for drop-off
- Pickup dates for curbside pickup
- How to prevent contamination (removal of stickers, wrappers, etc.)
- How to avoid attracting pests
- Seasonal tips to avoid food scraps freezing in your bin
- Who to contact if there is an issue

01.D Prevention and diversion communication campaign for spaces where food is outside of homes

As discussed further in the chapter on Food-Based Businesses, this blueprint brings prevention and diversion campaigns to places outside of homes together instead of rolling them out separately to increase efficiency and impact. Mailers will be sent to all businesses, schools, institutions, offices, and other places that are not homes to share opportunities for technical assistance to prevent food waste and support implemention of food waste diversion strategies.

01.E Maintenance communication campaign

It is critical that the momentum and resulting culture shift from the communication campaign and other strategies are maintained to continue to benefit from the impacts of reduced greenhouse gas emissions, increased household disposable income, reduced food costs at food-related businesses, and the many secondary and tertiary benefits that come with eliminating food waste. Some of the communication topics shared earlier will need to be shared again to support new businesses and residents, or simply to support the zero food waste culture in the city.

01.E.1 Ongoing communication to support a zero food waste culture

The communication strategy outlined in this blueprint sets the tone and expectation citywide that this is a place where food is not wasted, and that wasting food is seen as socially unacceptable. Continuing this messaging in bursts at key points in the year, such as at the holidays before Thanksgiving or in the summer when there is an abundance of fresh produce and it is tempting to overbuy, would help keep the issue of food waste and the city's commitment to eliminating it at the fore, reinforce tips and tricks shared in earlier phases, and provide a point for those new to the city gain the information provided earlier in this initiative. Additionally, given the length of time to form new habits, change behavior, and implement city infrastructure and supports, the communication campaign will need to be refreshed throughout the initiative. A full communication plan can be found in Appendix D that provides the detail needed to execute the campaign effectively.

Additionally, ongoing education will be needed. Technologies and best practices change, residents and businesses change. The information that was provided earlier in the initiative may not have been applicable to someone at the time it was shared, but can be incorporated at a later point. Sharing new and old techniques, tips, tricks, and skills will all be done to maintain an awareness of the issue of food waste and what everyone can do about it.

Content provided by MFNW could be shared with the city for sharing to residents and businesses via mailers, social media, press, presentations, webinars, demonstrations, and hands on workshops, or another third party may arise between now and this phase to assist with ongoing communication about being a zero food waste city.

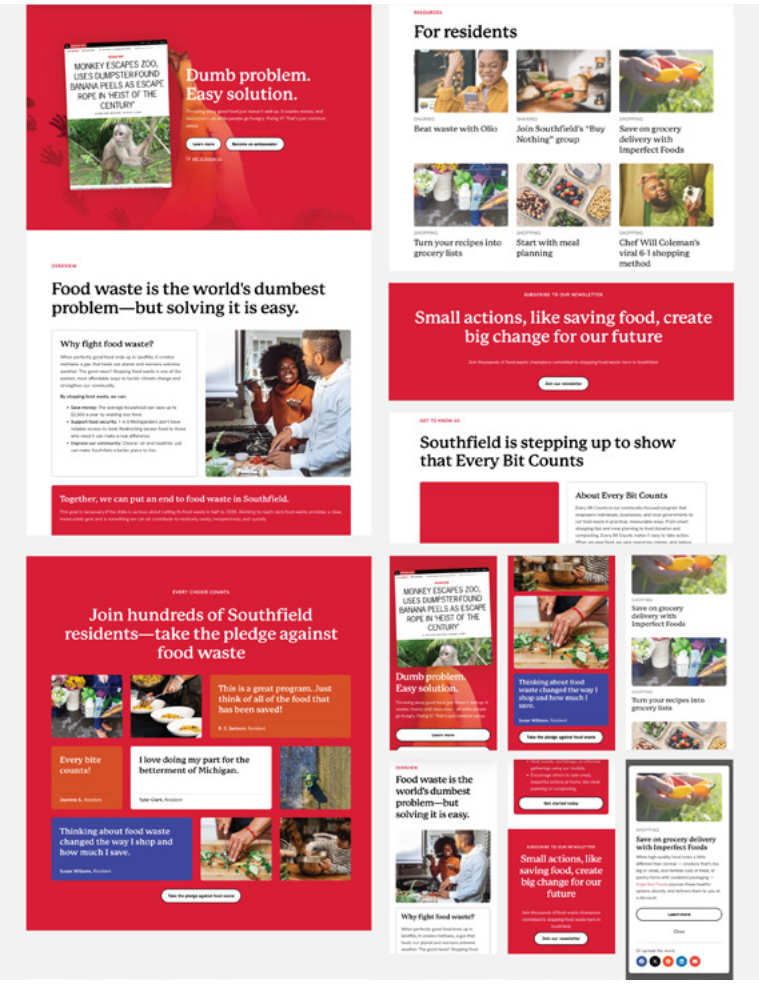
02 Online resource hub

There are many online resources already available to support food waste reduction strategies, including:

- Meal planning websites that can also convert recipes into shopping lists
- Recipe apps that provide ideas on how to use leftovers or odds and ends in the pantry
  - » Recipe finder on Save The Food Recipes - https://savethefood.com/recipes/
  - » Supercook
- Information on how to store and preserve food
  - » Guides explaining what date labels actually mean
- Liability information for donations
- Contact information for rescue and upcycling organizations
- Instructions on how to compost
- Information about local food scrap collection services
- Olio app for neighbor-to-neighbor food sharing
- Too Good To Go for discounted surplus food from restaurants
- Flashfood

The web pages for MFNW and the Oakland County Health Division both have many of these resources. Compiling these resources in one spot and cross-referencing/linking them creates a one-stop shopping experience sourced from credible organizations for those looking for support in their food waste reduction journey.

This resource hub will have a domain-specific chat bot that allows users to quickly and easily find answers to questions related to reducing food waste, donation, and composting. It will be updated as new information and resources become avaialble. It will also serve as a dashboard for tracking progress on food waste prevention and diversion in the Southfield.



Online resource hub with communication campaign.

03 Food waste policy

There are several city policies that should be implemented or updated in Southfield that would better support the food waste elimination strategies proposed later in this plan. Implementing these sends the message that the city is taking the issue of food waste seriously and is being a leader in implementation efforts, helping to create a citywide culture of responsibility for food.

It is important for the city to lead the way in food waste prevention and diversion efforts to set the standard for the rest of the community. This will help to show that this is an issue that is being taken seriously, and that the solutions are feasible and worthwhile. This strategy is multi-pronged, and includes the following:

- Creating policies for using locally created compost in city projects
- Creating standards for backyard composting
- Making policies requiring city-sponsored and non-city sponsored events to donate excess food and have food scrap collection bins
- Updating site development standards to include food waste management plans

Additionally, advocacy at the state level for policies such as requiring reporting for large food waste generators and banning food waste in landfills is important, as those policies would support local efforts, provide enforcement mechanisms, and likely significantly increase participation in the other strategies outlined in this blueprint. These strategies are outside the scope of this blueprint, but worth noting.

03.A Draft and adopt language for policy on using locally created compost in city projects

Compost created through city food scrap collection initiatives has value to the city, as it can be used in landscaping and restoration projects to support the growth of vegetation, reduce stormwater runoff, and help mitigate the urban heat island effect, just to name a few benefits. Compost can be expensive. Given the amount of green space under the city's care, reducing compost costs by using locally created compost would support current efforts the city has for creating beautiful spaces while also increasing demand for the output of local food scrap processing within the city. The city could adopt a policy to first use locally-created compost before purchasing it from elsewhere.

03.B Create standards for backyard and community composting

The city of Southfield currently does not have any ordinances that provide specific standards for backyard or community composting practices. Developing these standards can encourage people to participate in composting by clearly outlining what is permitted and where, as well as the requirements to mitigate potential nuisances such as odors and pests. Chapter 111 of the city's code covers nuisances, and Section 9.3(2) describes nuisances that may be related to composting. Having clear standards for composting will support code enforcement in determining when remediation is needed for sites that participate in composting.

Making an amendment to the zoning ordinance would require the Southfield Planning Department and the City Council to develop and approve any amendment language. Fortunately, there are many good examples of zoning language focused on backyard and community composting uses, including ones by the US Composting Council and The Institute for Local Self-Reliance. The language we recommend for this is found in Appendix D.

03.C Draft and adopt language for policies requiring that all city-sponsored programs and events donate excess food and have food scrap collection bins if food is served

Southfield already benefits from the food rescue experience and support of one of the nation's largest food rescue organizations and from the dedicated support of other newer food rescue organizations. However, the potential for food rescue in Southfield is quite significant. Community events and programs sponsored by the city could be a place to recoup some of the food that is purchased and recirculate it in the community. This could include senior luncheons, parks and recreation events, summer camps, the city's Eat to the Beat concert series, the Kimmie Horne Jazz festival, and holiday events such as Boo Fest and the Christmas tree lighting.

Event and program organizers should include food rescue and food scrap diversion in their waste management plan and event requirements. Local food rescue organizations such as Food Rescue US - Detroit, Forgotten Harvest, and Metro Food Rescue should be contacted ahead of the event to allow time to coordinate a sufficient number of volunteers to pick up surplus food and identify places for it to go. Food scrap collection bins should also be used at the event for food that cannot be rescued. Organizers should check with the hauler and compost facility to ensure compostable tableware is accepted. If so, use of such tableware is strongly recommended to make collection easier and reduce the likelihood of contamination. Alternatively, having volunteers stand at bins to help event attendees properly sort waste would be an option if compostable materials are not available.

Example ordinance language for this strategy is found in Appendix D.

03.D Require that all special events donate excess food and have food scrap collection bins if food is served

The city of Southfield is home to special events put on throughout the year by organizations outside the city. These events, often held at the Pavilion and local hotels, draw people from not only the city, but throughout the region and state. This is a prime opportunity for Southfield to showcase how it is a food waste prevention leader.

Policies that require events that serve food to donate surplus food and collect the remaining for compost are needed to divert all food waste in the city. Creating a policy for events that are not city-sponsored can be included in the policy discussion above for city-sponsored events, or considered separately.

Example ordinance language for this strategy is found in Appendix D.

03.E Update site development standards to include food waste management in plans

Most municipalities, including Southfield, require waste management plans and space on site for dumpsters when reviewing development plans for multi-family, commercial, and institutional sites. This requirement could be expanded to require plans and space for food scrap collection, which would advance the adoption of good food scrap management practices (a similar requirement is currently being considered by the city for recycling). Adding this requirement to site plan reviews would be a relatively minor update to the zoning ordinance that could have large scale impacts.

04 Continuous feedback and learning

04.A Advisory committee

In developing this plan, team members conducted resident focus groups, school discussions, and commercial outreach in addition to discussions with city staff. The guidance provided by all groups was helpful in informing what strategies to include in this plan. Having a group that represents the community and can provide feedback as the plan is implemented, help troubleshoot issues that arise, and provide ideas as the plan is implemented would be helpful. An advisory committee composed of a government leader, city staff person, school board member, business owners, and residents will be created to serve this role. Requests for committee members will be made via the city newsletter and website, social media posts, outreach to specific groups such as the Southfield Garden Club, and flyers at the municipal campus. Interested persons will be asked to complete a short survey. The advisory committee will meet quarterly to discuss the plan's implementation throughout the first two years. Advisors will get a $25 stipend for each meeting they attend.

04.B Integrate learnings

It is expected that new information and insights will arise as these initial steps are completed and interwoven into the day-to-day life and happenings in Southfield. Recognizing these learnings, integrating them as appropriate and feasible, and recording them for consideration for other communities, will be an important component of this project.

05 Monitoring and evaluation

05.A Measuring the 100% elimination goal

The purpose of this plan is to identify the suite of methods that would be needed to completely eliminate food waste within the city of Southfield if everyone in the community participated fully, and determine the costs to implement and maintain those methods. To that end, the metric most important to measure is how much food is still going to the landfill.

To measure this, audits of trash receptacles will be conducted on a regular basis once food scrap collection is rolled out. All sites with known food scrap collection services or access to community drop-off sites (as may be the case for multi-family housing) will be asked to sign up to be randomly selected for food waste audits to check how the city is doing in meeting this goal. Multiple sites for each sector (single-family, multi-family, commercial, schools, and institutions) will be selected for each audit group. Results from the audits will be aggregated and the pounds of food waste found across the sites will be reported for that sector. The results of these audits will be shared on the project website and announced in communications from the city, on social media, and other channels used throughout the project. Findings of these audits will guide any additional programming that is needed to improve food waste diversion rates.

05.B Measuring outcomes from prevention and rescue activities

Beyond the main goal of this initiative, further evaluation and measurement can be done on the impact of the various categories of strategies. It will be useful to measuring the impact of prevention and rescue strategies to learn what strategies are most effective for future implementation of plans. This impact can be measured via pre/post-prevention campaign surveys of food waste actions adopted by Southfield residents and employees and related outcomes such as how much money a restaurant is saving in food costs by implementing food waste prevention techniques. We anticipate that funding sources for implementation will require robust evaluation of the program, and will adjust our monitoring and evaluation plan accordingly to fit the needs of the funder.

Key Performance Indicators (KPIs)

It is important to track how effective the interventions implemented are, and to what degree. Measuring indicators of how these strategies are changing behavior and culture on a regular basis can help identify areas that need additional support or a new strategy and help communities adjust their plans in the future to use the strategies that are most effective. The key performance indicator table in Appendix C outlines each strategy and performance indicators that will be used to measure and gauge its progress over time.

06 Project implementation team

The successful implementation of this comprehensive initiative requires additional people-power and expertise. The following describes the anticipated needs in terms of staffing by MFNW to manage the project and the partners that can support various strategies.

Project management and staff

A coordinated team dedicated to plan implementation is needed to facilitate the roll out of the various interventions throughout the city to reach the food waste elimination goal. MFNW is qualified and ready to serve as the organizing body of the implementation of this plan. Positions will be posted once funding has been identified for each, and recruitment and screening of candidates will begin immediately. Positions specific to each sector will facilitate implementation, coordinating and collaborating with partners who have expertise in the sector and/or the strategy being employed. Following that structure, the following positions and partners have been identified.

Staff to coordinate and manage all aspects of implementation

- Project Manager - This person would oversee the 2030 Project in its entirety. This person would work on implementation for the overarching government and policy changes needed to address food waste in Southfield. Reporting would also be a task for someone in this role. Strong project and people management skills are needed for this position.
- Commercial Food Waste Elimination Coordinator - This person would specialize in implementing food waste elimination strategies for restaurants, grocery stores, restaurants, hotels, convention centers, venues, and other non-residential and non-school sites. Experience in hospitality, food and beverage services, grocery, catering, food rescue, and/or safe food handling is ideal for this position.
- Residential Food Waste Elimination Coordinator - This person would focus on how to address food waste in homes. This person may also assist and work collaboratively with the Schools Food Waste Elimination Coordinator, as the two sectors are closely linked. Experience in communications, community outreach, and/or behavior change would be ideal for this position.
- Schools Food Waste Elimination Coordinator - This person would specialize in eliminating food waste in schools, adapting plans and strategies to meet the needs of each school. This position would benefit from someone with experience working in schools, food service, and/or child nutrition food policy.

Partner experts

- City of Southfield - The City of Southfield's Planning Department will publicly support plan implementation by community partners and service providers, assisting with connections to other city departments, providing guidance on how to roll out the strategies, and other facilitative tasks. They will also be responsible for creating the policy pieces such as those about backyard composting and special events. City administration staff and staff from the Office of Management and Budget will take the lead on negotiating contracts with a citywide food scrap hauler for single-family residences. The Communications Department will assist with promoting the initaitive and sharing practical information about food waste management strategies. Staff from the Public Works Department will assist with implementation of food scrap pickup at single-family residences and maintaining the community food scrap drop-off sites. Economic Development and DDA staff will help connect businesses with technical support to prevent and divert food waste, as well as relaying information about food waste diversion options and facilitating bulk purchasing of contracts if that is of interest to the property owners. In general, staff from all the departments listed will work closely with the MFNW team to ensure smooth implementation of the various strategies that their department can support.
- Food rescue organizations - Food rescue organizations such as Metro Food Rescue, Forgotten Harvest, and Food Rescue US Detroit are currently operating in Southfield and surrounding areas. They work to divert excess food from grocery stores, hotels, restaurants, and catered events to distribution sites such as food pantries and other resource hubs. Their contact information will be provided to commercial food businesses and to city of Southfield leadership and staff as a resource for food donations and distribution to people facing food insecurity.
- Creative design and communications - The overarching and targeted sub-communication campaigns are key components of this plan as they give identity to the initiative, motivate and inform stakeholders, and support the other strategies. Modish has been working on our communications for this campaign thus far, and will likely continue that work.
- Backyard composting - The Suburban Rat Hater Guide to Composting teaches individuals how to compost effectively in backyards, covering the use of different styles and materials.
- Community composting and demonstration sites - There are some opportunities to begin community composting as well as demonstration sites in Southfield. Several organizations in the region have experience setting up these sites and helping maintain and manage them, and could be employed to do this in Southfield.
- Single-family food scrap collection, curbside and community drop-off sites - There are several local food scrap haulers that could work with the city and MFNW team to develop a contract for citywide curbside single-family food scrap collection and collection from community drop-off sites, and work with schools for their food scrap diversion program.
- Commercial and multi-family composting - My Green Michigan is a food scrap hauler that currently serves businesses in Southfield. They are willing and able to expand their operations to meet the food scrap diversion needs of all commercial, office, and institutional sites.
- Evaluation - The implementation of all of these strategies calls for robust evaluation and monitoring, both to make adjustments in real time based on learnings but also to share outcomes and findings from the overall project for use in other communities. MFNW currently has a partnership with a team of researchers at Eastern Michigan University who are experts in food and program evaluation who are able to manage the evaluation portion of this initiative.

07 Risk management

Given that this is a pilot with many different strategies that require buy-in and participation from a large number of people, it is likely that there will be challenges throughout the implementation process. We've identified some of the likely challenges below, and describe how these will be mitigated.

Lack of local and state regulations requiring food waste prevention and diversion

Currently, there is no requirement at the local or state level that requires food waste to be diverted from landfills. There is a state ban on yard waste going to landfills, and this regulation has been effective. Gaining full participation without a similar ban for food waste will be challenging at best and require heavy investments in emotional appeals, social pressure, and incentives. Regulations at the municipal or state level that require everyone to, at a minimum, divert food waste from the landfill are encouraged and will be advocated for when possible.

Insufficient stakeholder engagement

Full participation by all residents, business owners, city government officials, and all other stakeholders in the city is needed to achieve zero food waste in Southfield. This will be a significant challenge, and one that is not taken lightly. To address this issue, this plan includes strategies that help change the culture around food waste, making food waste something that is not done in Southfield and socially unpopular and unacceptable. Strategies such as the overarching communication campaign, providing ways to make public commitments against wasting food, and simply implementing prevention and diversion strategies citywide will make this ubiquitous. The support provided to each sector helps make the choice to prevent, donate or share, and divert food waste easy, possibly just as easy as throwing it away, and the benefits of reducing food waste at the personal, organizational, community, and global level will be clearly presented and shared as motivation to participate.

Budget constraints

This plan was developed without budget constraints in mind as an exercise to understand what the full cost would be to fully implement strategies to achieve zero food waste in a city. However, the real world has financial constraints and overcoming those could also pose a significant challenge. Fortunately, the issue of food waste has been gaining attraction and attention as the top solution to mitigate global warming and subsequently, funding for food waste reduction and diversion efforts is being allocated at the federal, state, and local levels. Additionally, the state has identified addressing food waste as a key priority in its MI Healthy Climate Plan and the U.S. government has created a National Strategy for Food Loss and Waste. Further, food waste prevention and diversion has the potential to decrease food insecurity, freeing up funds used to address food insecurity for other uses. It also has the potential to reduce the cost of waste management, as prevention efforts reduce the volume to be managed. If the state and federal government are serious about meeting the food waste reduction goals, it is expected that funds to support projects such as this will be available.

Funding timing does not allow for implementation of all strategies at once

A key premise of this plan is that if food waste becomes a known issue in all facets of daily life and there are easy and common ways of handling food waste regardless of where one is, all food waste can be diverted from landfills. This plan was written with the intent that certain strategies would be deployed simultaneously to create that "no food waste" environment and culture change. The MFNW team is currently working to line up sources of funding to implement all aspects of the plan according to the timeline to facilitate synergies among the strategies. Grants, corporate sponsorships and donations, and traditional fundraising will all be used to fund the plan for implementation as intended. If there is funding for some strategies but not others, the strategies that are funded will be implemented according to the funding timeline and additional funds will continue to be sought through as many channels as possible to work to implement the remaining strategies as outlined in the plan. When possible, funded strategies will be continue to be employed to allow for continuity of programming around food waste and overlap with other strategies as new funding is found for implementation.

Resistance to change

Behavior change is always a challenge. This plan asks all stakeholders in Southfield to change how they think about food and what they do with food that will not be eaten by them. Behavior change is easier when the changes to be made are expected and part of the social norms of those around you. This challenge of resistance will be mitigated in the ways described above regarding stakeholder engagement, specifically the use of an overarching communication campaign to motivate, educate, and inspire people to make these changes and the support provided to make the "right" choice the easy choice when it comes to food waste.

Implementation delays

Despite best laid plans, delays in implementing various components could arise for a variety of reasons. Delays can be prevented and mitigated by having realistic timeframes within the plan for developing materials and resources needed for each strategy, having sufficient staff time and resources to develop and implement the strategies, and open and ongoing communication among all parties involved in the implementation. This plan follows these best practices for preventing delays.

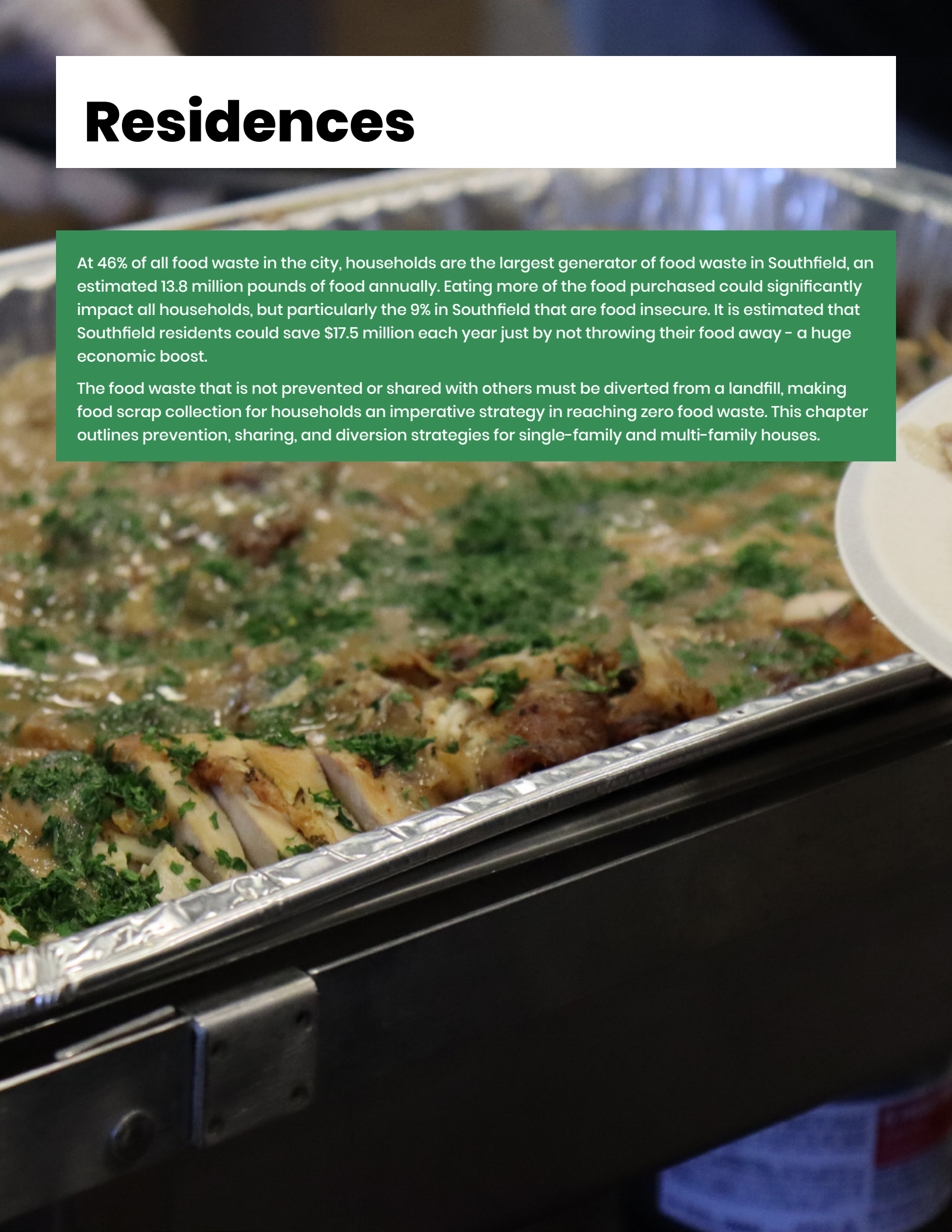
Economic downturns

Economic downturns could create challenges with funding sources for this work. This will be mitigated by seeking a variety of funding sources for initial implementation efforts, and having a sustainability plan for how those efforts will be continued if still needed, transitioned to something else if the need evolves, or discontinued if no longer needed at the start of the funding. Finding sustainable sources of funding for ongoing costs such as the food scrap collection service will be a priority. Training and other short-term or one-time costs could more reasonably be funded through a grant or funding streams that are also short-term or one-time.

Residences

At 46% of all food waste in the city, households are the largest generator of food waste in Southfield, an estimated 13.8 million pounds of food annually. Eating more of the food purchased could significantly impact all households, but particularly the 9% in Southfield that are food insecure. It is estimated that Southfield residents could save $17.5 million each year just by not throwing their food away - a huge economic boost.

The food waste that is not prevented or shared with others must be diverted from a landfill, making food scrap collection for households an imperative strategy in reaching zero food waste. This chapter outlines prevention, sharing, and diversion strategies for single-family and multi-family houses.



Residences

Turkey and herbs, the main dish served at the 2024 Community Feast. The meal was prepared with food that otherwise would have gone to waste.

TABLE 8. **Timing of Activities: Residences**

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
01 **Engage residents on the issue of food waste**												
01.A Speak to community groups on food waste reduction strategies												
01.B Provide pop-ups/demos at community partners and city and community events												
01.C Train residents in ways to safely reduce food waste												
01.D Track food waste rates compared to other households												
01.E Introduce a household food waste comparison metric												
01.F Host a food waste reduction competition among households												
02 **Household food waste prevention toolkits**												
02.A Create toolkits												
02.B Distribute toolkits												
03 **Support the city in planning for and implementing a food scrap collection program for single-family residences**												
03.A Develop and issue an RFP for food waste collection services												
03.B Review applications and select provider												
03.C Provide bins and education to households												
03.D Purchase liners and set up sites for them to be purchased at cost												
03.E Launch weekly curbside food scrap collection												
04 Food scrap collection for multi-family residences not served by city curbside services												
03.B.1 Plan and execute pilot study to understand best practices for food scrap diversion												
Promote the study and enroll residents in the study												
Set up community food scrap drop-off sites												
Set up food scrap collection bins near apartments												
Procure dehydrators												
Train residents in how to use the various methods (drop-off, collection bins, dehydrators)												
Run pilot, provide technical assistance as needed												
Collect data (baseline, midway, post-intervention)												
Analyze data												

TABLE 8. **Timing of Activities: Residences (Continued)**

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
03.B.2 Use results of pilot to determine best practices to implement citywide												
05 **Provide countertop caddies and liners to support residents in sorting food scraps**												
04.A Print educational materials												
04.B Procure caddies												
04.C Procure liners												
04.D Mail caddies and liners to homes												
04.E Set up places in the city to purchase liners												
06 **Prevent contamination of household food scrap streams**												
06.A Create clear signage on what can and cannot be composted												
05.A.1 Create signage for countertop caddies												
05.A.2 Create signage for organics recycling carts												
05.A.3 Create signage for community food scrap collection sites												
06.B Recognize those who are sorting food scraps well												
05.B.1 Set up audit program registration												
05.B.2 Promote and recruit for audit program												
05.B.3 Conduct audits												
05.B.4 Recognize those who are sorting well												
07 **Support backyard and community composting**												
07.A Backyard composting guide												
06.A.1 Design guide												
06.A.2 Share guide via social media, city newsletter, and online resource hub												
07.B Demonstration sites												
06.B.1 Identify, secure, and build demonstration sites												
06.B.3 Promote demonstration sites												
06.B.4 Provide tours and demonstrations												

TABLE 8. **Timing of Activities: Residences (Continued)**

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
07.C Bulk purchase backyard composting supplies												
06.C.1 Develop online form												
06.C.2 Promote bulk purchasing option												
06.C.3 Purchase supplies												
06.C.4 Distribute supplies												
08 **Evaluate effectiveness of prevention and diversion strategies**												
07.A Conduct survey												
07.A.1 Develop surveys												
07.A.2 Distribute surveys												
07.A.3 Analyze surveys												
07.B Conduct audits												
07.B.1 Conduct audits												
07.B.2 Analyze audit results												
07.C Report results												
09 **Keep up the momentum**												
09.A Continue food scrap collection services												
09.B Help new residents integrate into a culture of zero food waste												

Chef Dom from Make Food Not Waste providing a demo on how to use common pantry items in a dish at the Community Feast.

01 Engage residents on the issue of food waste

The communication campaigns will provide a strong foundation to engage with residents on the issue of food waste. Individual or group conversations, experiences, and interactions can further understanding of the issue and enhance motivation to act to reduce food waste. Opportunities to reach residents in the following ways will be sought throughout the entire initiative and will build upon residents' understanding of and concern about food waste. More details about residents' current knowledge levels and behavior with regard to food waste can be found in Appendix E.

01.A Speak to community groups on food waste reduction strategies

Learning about a topic with others, particularly those who already have a shared interest in the issue, and committing to take action on it can be powerful in promoting behavior change. Community groups such as those at places of worship, schools, and leisure and volunteer groups will be contacted to learn more about food waste, how it connects to the things they are passionate about, and what they can do to prevent food waste. Sessions will be tailored to each group in terms of time and content. A list of community groups in Southfield is in Appendix D.

01.B Provide pop-ups/demos at community partners and city and community events

Attending events that people are going to for other reasons and connecting with them is an effective strategy to reach people and raise their awareness of the issue and campaign. Many existing events have the potential for MFNW staff to have real time conversations with attendees, provide resources and information, and encourage attendees to take action on food waste. Additionally, providing an opportunity for attendees to make a public pledge to reduce food waste can reinforce a culture of not throwing food away and accelerate uptake of prevention and diversion habits.

The following events could potentially include a table or another platform to share information about the food waste elimination campaign:

- Eat to the Beat concert series
- The Kimmie Horne Jazz festival
- Boo Fest
- Christmas tree lighting
- Parks and recreation events

Top: Summit attendee making a public pledge to reduce food waste.

Bottom: The local food rescue organization, Forgotten Harvest, ready to greet attendees at the 2024 Community Feast.

01.C Train residents in ways to safely reduce food waste

Providing demonstrations and hands-on training on ways to safely reduce food waste is needed to help residents feel confident and comfortable purchasing less food and eating more of it. Demos can be done at the community events and speaker events discussed previously. In addition, workshops that train residents in ways to reduce food waste will be conducted monthly and cover a variety of topics, including:

- Preparing meals from scratch
- Repurposing leftovers and/or excess ingredients
- Food preparation and storage
- Using the five senses to decide whether food is still good
- Using foods that have over-ripened
- Eating all parts of the fruit/vegetable
- Preservation techniques (freezing, canning, pickling, fermenting)
- Time-saving tips and tools such as batch cooking

Local chefs may be brought in to assist with the workshops. Attendees will be asked to make a $5 donation to offset the cost of the workshop.

01.D Track food waste rates compared to other households

While it is helpful to know how your household's food waste is changing over time, it is often even more motivating to understand how your household is performing compared to other similar households. Quarterly surveys will be sent to a sample of residents asking them to document their food waste for one week and provide information about their household compositions, such as number of people and their ages. The information will be analyzed and a report will be provided in future communications. Households can use this information as a benchmark for how they are doing in terms of reducing food waste and to motivate them to find additional ways to reduce their food waste.

01.E Introduce a household food waste comparison metric

The information reported through the quarterly surveying mentioned above will be aggregated and these metrics posted online to show how much food waste a 1-, 2-, 3-, 4-, and 5+ person household creates each week. These values will be reported in the city's newsletter, via social media, and through other channels.

01.F Host a food waste reduction competition among households

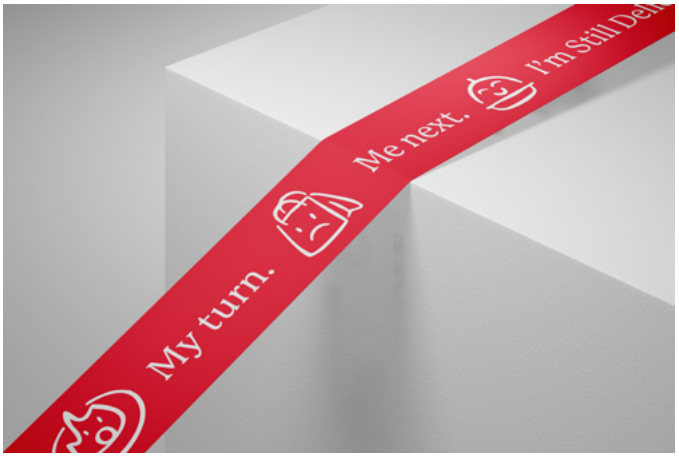
Competitions can be a great impetus for behavior change. Hosting an annual food waste reduction competition where households compete for the largest reductions in food waste, to have the least food waste, or to create the biggest cost savings can raise awareness of how much each household is throwing away. The competition format allows for dedicated time to focus on ways to reduce what is being tossed. While competitive, creating a social media group for the challenge can build a community of support among those interested in reducing their food waste. The ripple effects of competitions can be impactful, as people see what food prevention methods are effective and possible for them by taking the challenge. If the reductions and savings are large enough, they are likely to share that information with others, motivating them to give some of the actions a try.

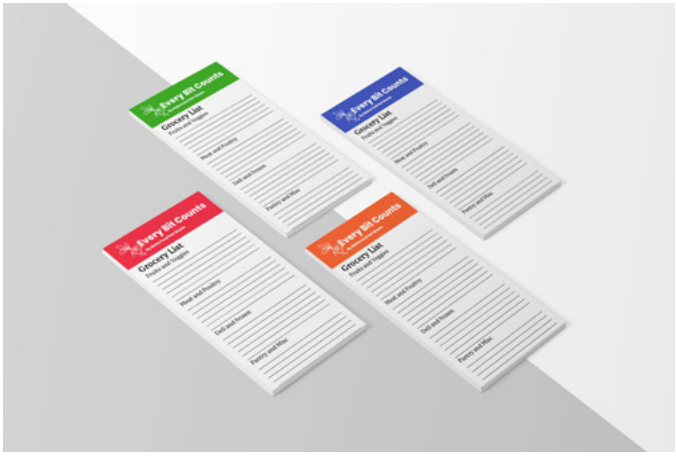
Voluntary competitions will be held annually to encourage households to find ways to reduce their food waste. Prizes that further support food waste reduction such as storage containers, cookbooks with tips for upcycling or preserving food, cooking classes and equipment, and several months of paid-for composting service will be available for participants to earn.

02 Household food waste prevention toolkits

The communication campaigns will give residents much of the information and educational resources they need to prevent food waste. Prevention will also rely on residents having the necessary tools to reinforce new skills. Providing those tools will support households in reducing the amount of food they throw away.

A toolkit containing proven “low tech” tools including reminder magnets/stickers, a refrigerator thermometer, grocery list pad, recipes, and “use up” tape will be mailed to all 37,200 households. These will be mailed to all residences with key tips and information related to the toolkit items.





An example household food waste prevention toolkit. Stickers (top) and tape (bottom left) can be used to help prioritize and remind people what food should be eaten soon. The grocery lists on the right are proven tools to prevent overbuying and impulse buying of food, which can reduce food waste and save households time and money.

03 Support the city in planning for and implementing a food scrap collection program for single-family residences

Other communities across the United States have found curbside food scrap pickup for single-family homes to be an effective strategy for diverting food scraps from the landfill. Similar to recycling, residents separate their food scraps out of their trash and place them in a separate paper bag or rolling cart, either with or without their yard waste. The cart is then picked up on a regular basis to avoid odors and attracting pests. While Southfield residents cannot currently include food scraps with their yard waste due to limits on the City's contract, the current processor of yard waste is capable of accepting both yard and food waste from Southfield in the future. A recent study conducted by RRRASOC of those in their service area showed that 86% of respondents would participate in a food scrap collection program if it were part of their community's services, but only 25% indicated that they would participate in taking their food scraps to a composting facility or community drop-off location. Similar results were found when Southfield residents were surveyed. More details about these surveys can be found in Appendix E.

The report by RRS that models the costs and greenhouse gas (GHG) emission savings of composting indicates that curbside recycling with designated carts for pickup is likely to see the highest participation rate and will divert the most food from landfills, resulting in an estimated CO2e savings of 20,178 tons per year if full participation is achieved. This suggestion for curbside carts was validated by Southfield residents who indicated that the main resource needed for curbside composting would be a cart dedicated to food scraps. Both reports can be found in Appendix E.

Based on the findings from the analysis by RRS, best practices, case studies from throughout the country, preliminary results from a survey done on the food scrap pickup in the RRRASOC service area,[1] findings of the survey conducted in Southfield, and preferences by Priority Waste for providing this service, this plan calls for year-round curbside food scrap pickup in carts (Scenario 2 of RRS's report). Currently the city of Southfield has yard waste pickup on a weekly basis from mid-April through mid-December. This service would need to be extended to be year-round, as food scraps are created all year.

Conversations with representatives from other communities that have implemented food scrap pickup to various degrees have all impressed the importance of the RFP for getting not only the basic service sought, but also creating a partnership that makes the initiative successful. In particular, the following considerations have been suggested:

- Whether or not the city wants a "turnkey" food scrap collection program that includes processing, or if it prefers to have a separate services for hauling and processing
- If the current provider can provide collection services as part of the current contract
- Require education for residents and businesses as part of the application
- Identify the end use for the compost. Will some of it go to participants of the food scrap collection program? How much of it? At what price? Who is responsible for notifying those who are eligible for the compost product?
- For community drop-off sites, identify what party is responsible for cleaning the cart and replacing liners
- Use a locked system with registrants receiving a QR code to unlock the bin at community drop-off sites

These considerations will need to be addressed in whatever negotiations occur for single-family curbside pickup and for the community food scrap collection sites.

[1] *RRRASOC survey preliminary results. Spring 2024. An overview of preliminary key findings of this survey is in* Appendix E.

03.A Develop and issue an RFP for food waste collection services

While this plan proposes citywide food scrap collection be implemented in Year 2, we expect that the City's process to line up services will be just as long if not longer than the roll out of prevention strategies to residents. Therefore, it is important that these conversations begin early in the implementation so that the launch of food scrap collection services is well-timed with when residents and business owners are primed and prepared for that next step. City administrators should follow their usual process for issuing RFPs. Priority Waste, the City's current waste hauler, has indicated interest and capacity to provide this service in Southfield but would require the use of carts and weekly pick ups. Other considerations for the RFP and resulting contract gleaned from other communities who have curbside food scrap pick up are in the sidebar on the previous page.

03.B Review applications and select provider

Following the RFP announcement and applilcation deadline, Southfield should then reivew applications and select a provider and service using the City's usual protocol and process for creating new service contracts. While this will be primarily the task of administrators and City Council, Make Food Not Waste can provide support to answer questions about best practices and help ensure the services proposed will meet the needs of the community.

03.C Provide bins and education to households

Once a provider is in place, all households will need to receive their curbside bins and education about the new service. Provision of the bins could be included in the RFP and provided by the hauler. The modeling provided in the report by RRS includes carts that can hold up to 32 gallons to hold all food scraps and yard waste. However, grant opportunities for infrastructure support such as curbside carts for organics do exist and are fairly common. This may require additional staff time from the city to distribute the bins, or a separate contract with an organization that could efficiently deliver the bins to every household. The budget currently shows the cost of $2.50 per household per month to be paid for five years to pay for Priority Waste's purchase and delivery of the bins.

Education and promotion of the new service will also be required to explain the new service, get buy-in from residents, answer common questions, and prevent contamination. Details of this education campaign are provided in the Supporting Strategies section, specifcally 01.C Household diversion communication campaign on page 45.

03.D Purchase liners and set up sites for them to be purchased at cost

Bagging food scraps in compostable bags before putting it out at the curb limits odors, reduces the potential to attract pests, and helps maintain the carts without needing an expensive liner for the entire cart. To support this, 1.2 gallon countertop caddies for food scrap collection that can be lined with a compostable liner is needed for each residence (See 05 Provide countertop caddies and liners to support residents in sorting food scraps on page 66 for more details). Liners will be purchased in bulk and be made available for purchase at-cost to residents at various sites throughout the city, such as the City offices, The Pavilion, and the library. Residents can then put the liner in their countertop caddy, fill it with food scraps, tie off the bag and put it in their rolling cart with their yard waste, and place it at the curb for pickup.

03.E Launch weekly curbside food scrap collection

Once bins are available to residences and the contract begins, weekly cursbide food scrap collection can begin. This will need to be monitored and evaluated in several ways. For example, bin audits such as those described in 06.B Recognize those who are sorting food scraps well on page 68 can be helpful in identifying contamination issues while resident surveys and continued outreach can answer questions, understand challenges to participation, and address any issues that may arise. The advisory committee described in 04.A Advisory committee on page 50 would be a good resource for this feedback.

04 Food scrap collection for multi-family residences not served by city curbside services

According to research, collecting food scraps in multi-family housing is a challenge across the U.S. These homes tend to have limited space both inside and outside to collect and store food scraps. Further, property owners often are unwilling to provide service to the residents from both a cost and "hassle" perspective. The most common practice is to offer drop-off locations; however, participation rates vary significantly due to the requirement of driving or walking food scraps to a different location. Without a best practice to follow, this plan recommends conducting a pilot to test a set of collection scenarios in order to determine which, if any, drive needed participation rates. These scenarios include the use of an in-home pre-processing system, onsite pickup, and drop-offs, all combined with resident engagement as follows:

- Providing households with information about community food scrap drop-off locations
- Providing households with an in-home dehydrator and information about food scrap drop-off locations
- Providing households with information about food scrap collection sites located near their apartment, likely on a sidewalk on city property
- Providing households with an in-home dehydrator and information about food scrap collection sites located near their apartment
- Setting up curbside pickup at apartment buildings, similar to trash pickup, and informing residents of this service and how to use it

Make Food Not Waste has secured funding through a NextCycle grant to test these scenarios in Southfield to better understand best practices for food scrap collection in multi-family residences.

05 Provide countertop caddies and liners to support residents in sorting food scraps

Countertop caddies and liners are important tools in reducing the "yuck" factor associated with handling food scraps. Caddies allow for air flow, which reduces the smell of decomposing food. Just like an indoor trash bin, the caddies also provide a consistent and convenient place for scraps to go until they can be placed in the cart outside. Biodegradable liners further reduce the "yuck" factor by keeping liquids contained and limiting odors and the potential to attract pests. These liners can then be put in the curbside cart or community drop-off cart and hauled away, avoiding the potential for a mess that could occur if the contents had to be dumped out of the caddy or another bag. Southfield residents indicated that this would be a key resource for them in diverting food scraps and properly sorting them.

To facilitate participation in the food scrap collection programs, 2-gallon countertop caddies will be provided to each household. The caddies will have a sticker on them providing information about what can go in the caddy and what cannot. A starter kit of Natur-Bag BPI Certified Compostable liners will be provided; 10 per household, to reduce barriers to creating this new habit. Additional liners can be purchased at cost from the city at places such as the Southfield Public Library, Parks & Recreation offices, and Department of Public Works building.

Caddies such as the ones shown above will be labeled with items that can be composted and provided to all residences and businesses.

06 Prevent contamination of household food scrap streams

Contamination of food scrap waste streams is a big issue and can make the effort less effective, as loads that are heavily contaminated often get sent to the landfill instead of being diverted. This blueprint proposes education and signage, incentives, and recognition to decrease the rate of contamination in household food waste streams.

06.A Create clear signage on what can and cannot be composted

Signage on countertop compost caddies, the organics recycling cart for curbside pickup, and at community food scrap collection sites serves as a good reminder about what can and cannot be composted. A sticker will be used as the signage for the compost caddies and organics recycling cart. A larger permanent informational sign will be placed at each community drop-off site explaining what can and cannot be composted and the process for dropping off scraps. A sticker wall where people can place their produce stickers before composting the organics at community drop-off sites could be a fun way to get people to properly sort their waste. Southfield residents indicated that clear signage would support them in being confident in how to properly sort food scraps.

06.B Recognize those who are sorting food scraps well

Public recognition for things that one is doing well can encourage continuation of that behavior and motivate others to strive for the same recognition. In Australia, a gold star was placed on the organics recycling carts of households that sorted food scraps without contamination as determined by random audits. This method will be employed here with gold stars or shout outs on social media or the newspaper to those found to be doing a good job. Sites will be randomly selected from a list of sites that granted permission for an audit of their compost and/or trash bin. Those who earned a gold star could be entered into a raffle to win a prize and be recognized on social media and other communication channels. Regular and randomized audits of food scrap containers can also be a way to check for proper sorting of food scraps.

07 Support backyard and community composting

Backyard and community composting are effective, safe, and efficient ways to manage food scraps when done properly. Its benefits are many: not only does it keep food out of the landfill, but reduces the emissions associated with hauling food scraps to a composter beyond the household or neighborhood while still creating nutrient-rich compost that can be used to replenish soil on site or nearby. Many communities are concerned about the potential for nuisances associated with backyard and community composting. Southfield's zoning ordinance is currently silent on backyard and community composting, but its nuisance ordinance provides guidelines for enforcement about when activities, such as composting, may become a nuisance.

Despite 20% of Southfield residents responding to the survey indicating that they compost their food scraps, this blueprint does not expect backyard composting to divert much of the city's food waste. However, it does anticipate that some additional residents will be interested in this. This requires continued education and communication with residents to build confidence in their ability to sort food waste appropriately and possibly compost in their own backyards.

07.A Backyard composting guide

Information about where backyard composting is permitted, required or suggested ways to prevent nuisances such as odor and pests, and best practices for composting can be collected and shared through city communication channels and other platforms to encourage composting. Contact information for local compost experts who are willing to answer questions and troubleshoot concerns will also be provided in the guide. RRRASOC has a guide that provides general information on composting. This guide would build off that information and provide information about the specific standards and considerations for composting in Southfield.

07.B Demonstration sites

Creating places where those who are interested in managing their own food scraps on site can see a live pile, ask questions, and see firsthand various ways of composting can help residents feel comfortable trying new methods of composting to find one that works for them. These sites can also serve as field trip locations for students and increase knowledge of the importance of recycling food scraps. Community locations such as parks and schools would serve as compost training/demonstration sites to support these education efforts. One is currently under consideration now at the RRRASOC facility. The Mary Thompson Farm and schools (ideally one at the elementary level, one at a middle school, and one at a high school) would also be ideal sites to demonstrate composting. The sites would be designed and equipped to offer training for both backyard and community-scale composting methods.

Education and demonstrations can show residents that community and backyard composting can easily be done. FoodPlus Detroit provided a demo at the 2024 Community Feast.

07.C Bulk purchase backyard composting supplies

While small-scale composting can be done with relatively few and inexpensive tools, the right tools make backyard composting easier and less messy while keeping it contained and out of reach of pests. These materials and tools can encourage someone new to composting to try it and help those already doing it be more efficient and/or continue the practice. Bulk purchasing of these materials and tools lower the individual costs, which can make backyard composting more available to residents when needed supplies are sold at cost. The following materials have been identified as useful to the backyard gardener:

- Tumbler
- Rake
- Shovel

An online form will be promoted that shares the tools listed above and their discounted price. Residents will order and prepay for their tools through the online form, and pick up their tools at the municipal center.

08 Evaluate effectiveness of prevention and diversion strategies

It is important to measure how effective the prevention and diversion strategies are to gauge progress towards the overall goal of food waste elimination, identify gaps and where additional outreach is needed or strategies should be adjusted, and understand what strategies are most effective for use in other communities. Community surveys of residents and businesses, as well as analysis of bin audits from those who gave permission for that will be conducted to gain this information. Surveys will need to be conducted before implementation to get a baseline understanding of the community with regards to food waste, and throughout and after implementation. Surveying before and after prevention toolkits are distributed is recommended. Key performance indicators for the various activities with each strategy are noted in Appendix C.

09 Keep up the momentum

Implementation of these strategies is not enough to reach zero food waste; awareness, training, and supports must be continued. The communication campaign will be continued, although at a slower cadence of messaging (see Strategy 01.E.1 on page 46). Maintaining diversion options and helping new residents participate are two ways to do this.

09.A Continue food scrap collection services

The food scrap collection services must be continued to achieve zero food waste. These services are necessary, as there will always be some food that cannot be eaten and must be composted. Just as other waste management services such as trash and recycling are considered necessities in the city's budget, food scrap collection must also be seen this way and integrated into the annual budget as an expected service to be provided by the city.

09.B Help new residents integrate into a culture of zero food waste

Residents living in Southfield when the household food waste prevention toolkits were delivered received quite a few items to help them waste less food in their home. New residents will miss out on these toolkits. Extra toolkits will be created to be provided to new residents as a new resident welcome package to make them aware of the zero food waste culture and equip them with tools to integrate into the community.

Food-Based Businesses

Following households, food-based businesses are estimated to be the second largest source of food waste in Southfield, according to NRDC. Savings for Southfield restaurants alone is estimated to be $1.5 million each year, a significant amount considering the lean operations and slim margins of most restaurants. Additionally, much of their excess food can be donated, which can help reduce the food insecurity rate in Southfield and surrounding communities. It is estimated that rescued food could provide over one million meals for these residents, which make up 9% of Southfield's population. Addressing food waste at these sites has the potential for large impacts, both at the business and in the community.

Food-Based Businesses

Slow Jams shows how they preserve fruit by making it into delicious jam.

TABLE 9. **Timing of Activities: Food-Based Businesses**

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
01 **Engage Oakland County health inspectors**												
01.A Train Oakland County health inspectors about food rescue best practices, food donation liability, and co-develop materials												
01.A.1 Train health inspectors												
01.A.2 Create materials for inspectors to use												
02 **Increase capacity of food rescue organizations and food pantries**												
02.A Increase capacity of food rescue services												
02.A.1 Increase capacity for planned rescues												
02.A.2 Increase capacity for unplanned rescues and surges												
02.B Create capacity for rescued food to be donated to existing community resource hubs												
02.C Share rescued food with existing community resource hubs												
02.D Share excess donated food at multi-family apartment buildings												
02.E Share excess donated food with sites outside of the city												
02.F Create a space to upcycle food rescued within the city												
02.F.1 Identify potential spaces												
02.F.2 Create use agreement for space/contract												
02.F.3 Install any needed equipment, cold storage												
02.F.4 Upcycle food												
03 **Support businesses in managing food waste from prevention to diversion**												
03.A Educate and train sites, programs, and strategies for managing food waste												
03.B Purchase supplies												
03.C Develop and test materials for food waste sorting at restaurants where people bus their own tables												
04 Keep up the momentum												
04.A Support training of Oakland County health inspectors												
04.B Continue support of food rescue and distribution operations												

Food-based businesses, such as restaurants and grocery stores, and places that serve food regularly like event venues and hotels have a large opportunity to prevent food waste and reduce their food costs. Unlike households, these spaces also have the opportunity to donate food, using food rescue organizations as the connector between them and distribution sites that can share the food with those who need it. Therefore, this chapter of the blueprint also outlines what is needed for food rescue organizations to move the volume of food that is estimated to be rescuable. These sites will inevitably have some food waste that could not be prevented or donated, and will need a diversion strategy to manage it.

Unlike the strategies specific to residences, this chapter suggests bringing all of the strategies that may be useful to these sites to their attention all at the same time instead of rolling them out in phases. This will reduce the amount of time needed to arrange meetings and site visits with each site, and will make the biggest impact while being efficient.

01 Engage Oakland County health inspectors

We expect 15% of all food waste from the commercial sector can be donated, rescued, or upcycled, equalling approximately 2,430,000 pounds per year. Strategies to support this include food donation and liability education by Oakland County Health Division inspectors and connecting food donation sites to food rescuers and upcyclers.

01.A Train Oakland County health inspectors about food rescue best practices, food donation liability, and co-develop materials

Oakland County health inspectors inspect all commercial kitchens in Southfield where food is prepared every six months to confirm safe handling and storage. They have direct contact and conversations with those running kitchens, creating opportuniteis to sharee information about technical assistance programs to reduce food waste and ways to safely donate/sell discounted surplus food as well as answer questions about liability protections under the Bill Emerson Good Samaritan Food Donation Act. While we recognize that kitchen managers would likely not be very receptive to information about food donation during the regular inspections due to the high stress of those events, it is a touchpoint that can be leveraged. To successfully execute this and equip health inspectors to answer questions related to food donation, additional training is needed. The MFNW team will work with the inspectors to draft language and create materials that can be shared online and in person with commercial kitchen owners.

Oakland County Health Division was present at the 2024 Community Feast and ready to share information about food safety and donations.

02 Increase capacity of food rescue organizations and food pantries

While the overarching goal of eliminating food waste is not specific to feeding those who may be facing food insecurity, the potential to do so is significant as NRDC estimates that approximately 1.25 million pounds of food can be rescued in Southfield annually. In 2023, Forgotten Harvest rescued 268,833 pounds of food from within Southfield[1], leaving approximately 80,000 more pounds to rescue. With 11.3% of Southfield's population considered impoverished in 2022 according to the American Community Survey (ASC) and all this surplus food, identifying ways to rescue surplus food and redistribute it to those in need can not only help address the issue of food waste and its associated impacts, but also address food insecurity in the community. Creating or increasing capacity for surplus food storage and access at pantries and in community resource hubs that serve the general population and/or lower income populations can encourage and destigmatize food sharing among all residents.

There are currently four operating pantries in Southfield. Collectively, they serve approximately 300 people each week. Based on conversations with the volunteers at the site, they would be able to share another 30-40 pounds of food per person each week and could distribute to more people. In particular, they are seeking more fresh produce, meat, milk, and eggs, as they typically can easily source non-perishable items, breads, and sweets. However, an increase in the requested items would require more cold storage.

This indicates that these pantries have capacity for approximately 500,000-600,000 pounds of food each year. The remaining two million pounds of food that could be rescued in Southfield would need to go to places in surrounding communities, ideally ones that are close to Southfield such as the YMCA in northwest Detroit, unless other food pantries opened up in Southfield. The costs associated with moving this additional food is included in all years of the budget for this plan, as the rescue agencies may need that time to increase their operating funds to the level needed to cover these costs.

02.A Increase capacity of food rescue services

02.A.1 Increase capacity for planned rescues

There are currently three food rescue organizations that operate in Oakland County: Food Rescue US Detroit, Metro Food Rescue, and Forgotten Harvest. Currently, efforts from all the rescue organizations result in most of the large businesses being rescued from. There may be opportunity for more rescue from these locations either in terms of frequency and/or in prepared foods that often are not included in the big box and chain grocery rescue programs. There is also opportunity for food rescue at independent grocery stores, catering, smaller manufacturers and restaurants.

Capital investments in things such as refrigerated vans/trucks, liftgates, and power jacks are needed to handle this increase in food donation above current operations in addition to more staff and volunteers. The existing food rescue organizations would be responsible for the capital improvements, hiring of additional staff, and other costs associated with this expected, ongoing increase in rescued food.

1 Communication with Forgotten Harvest. August 2024.

Metro Food Rescue shared what they do at the 2024 Community Feast.

02.A.2 Increase capacity for unplanned rescues and surges

Increases in extreme weather have been documented in the area, and climate scientists predict that severe weather will continue to increase, both in intensity and frequency. According to data from the Department of Energy's Office of Cybersecurity, Energy Security, and Emergency Response, the average number of power outages in Oakland County each year between 2014 and 2023 was 1.7. However, the data included in each outage report did not always provide the county that the outage occurred in. Including outages that occurred somewhere in the state even if the county was not specified, the average number of outages each year jumps to 5.3.

Many wholesalers, grocers, and restaurants, especially big-box and chain retailers, have strict policies about keeping food through power outages that often requires food to be thrown out even if it was maintained at a safe temperature. This creates a large and unexpected opportunity for food rescue, in addition to the regular rescue volume, requiring additional staff time to quickly coordinate volunteers, identify sites to store or take the food, and move the food to new locations.

Additionally, large events, especially if food rescue planning occurs close to the event date, can cause surges in food rescue potential. While early planning is ideal, unforeseen circumstances such as low attendance can result in the need for additional food rescue and staff time to coordinate.

02.B Create capacity for rescued food to be donated to existing community resource hubs

As shown on Map 4 on page 20, Southfield currently has four operating food pantries. Their hours, pantry types (client choice vs. pre-selected boxes), clientele, and storage capacity varies. If all of the almost 2.5 million additional pounds of food were rescued, some of the food would need to be distributed to pantries outside of Southfield, as the existing pantries would not have the demand to be able to move all of the food. The food will need to be shared elsewhere in the city or in other nearby communities. A combination of these approaches may be used depending on site interest in sharing food and the types of foods that are rescued.

02.C Share rescued food with existing community resource hubs

Existing community hubs have been identified as places that may be interested in having surplus food donated to distribute to the community for free. A list of these sites, along with notes about what would be needed to create or increase this capacity and information about the residents they serve, is found in Appendix D.

02.D Share excess donated food at multi-family apartment buildings

There are many apartment buildings in Southfield that could potentially be a place to share excess rescued food. Such buildings often have a lobby or communal space where a refrigerator or shelving may be able to be placed. Excess food could be dropped here for consumption by any of the residents. Buildings that tend to have lower-income residents would be prioritized for this option, but it could be implemented in any multi-family building if permitted by the owner and/or property manager. This option could help normalize food sharing, bring food to those who can use it, reduce barriers to food access such as transportation, and support a culture of zero food waste throughout the city.

02.E Share excess donated food with sites outside of the city

We estimate that 20 smaller sites (including the existing pantries within the city and the resource hubs listed in Appendix D and two larger sites outside of the city would be able to take in the additional pounds of food that could not be absorbed by pantries and hubs in Southfield. These sites would likely need upgrades to their storage options such as more shelving and refrigeration space. These one time improvements would allow for them to safely receive the surplus food from Southfield.

02.F Create a space to upcycle food rescued within the city

Much surplus food has a limited shelf life, and either needs to be eaten very soon or processed into something else to extend its life until someone can eat it. Having a space within the city that can take in surplus food, turn it into meals, freeze or preserve it in some way, and send it back out for consumption is needed. Partnering with places, such as faith-based organizations, that have an existing kitchen that is underutilized and available has worked well for MFNW's two Upcycling Kitchens in Detroit, and could be replicated in Southfield. In this model, MFNW partners with the site to use the space at low or no cost, and funds the operations to create the meals, relying heavily on volunteers from the community to assist in making the meals. A Southfield kitchen would be highly visible and a place for residents to learn about food waste, what is being saved in their community, and skills related to food preparation and preservation. The kitchen would be a visible example to support the behavior change sought with this initiative.

03 Support businesses in managing food waste from prevention to diversion

As noted in the Residences Chapter, all other spaces in the community that are not single-family residences are responsible for finding their own waste management services and negotiating contracts. This means that they will also need to set up their own food scrap collection service. These sites have been divided into the following groups:

- Places where food is served
  - » Large - Hotels, event centers, banquet halls, and large sit down restaurants
  - » Medium - Smaller sit down restaurants and restaurants where patrons bus their own table
  - » Small - Restaurants with primarily take out, minimal seating, and/or minimal food waste (bakeries, coffee shops)
- Grocery stores and retailers selling food
- Caterers

There is quite a bit of overlap in the strategies to be used by the various groups. Table 10 outlines which strategies should be considered for each group. The strategies are then described below. Further information about current food waste knowledge, attitudes, and practices among food service businesses in Southfield can be found in Appendix E.

TABLE 10. **Site Types or Strategies for Managing Food Waste**

Site Type/Strategy	Places Where Food is Served			Grocery Stores and Retailers Selling Food	Caterers
	Large	Medium	Small		
Leanpath	X				
Toast's food waste module		X			
MFNW technical assistance program		X	X		X
Promo toolkit	X	X	X	X	X
TGTG	X	X	X	X	
Flashfood				X	
Food rescue	X	X	X	X	X
Food scrap collection service	X	X	X	X	X
Property owner / manager buy-in	X	X	X	X	
Provide incentives for food scrap collection	X	X	X	X	
Contamination prevention	X	X	X	X	

Leanpath

Leanpath is a proven program to address food waste by tracking food waste to understand what is being wasted and why, discovering opportunities to prevent that waste in the future, and driving lasting results through science-based behavioral change techniques. Large food service establishments, hotels, event venues, banquet halls, schools, and hospitals will be encouraged to use this program to reduce their food waste.

Toast's food waste module

Toast offers a range of apps and other resources for restaurants to reduce food waste that is linked to their point of sale systems. These tools are most appropriate for gathering information and tracking food waste at smaller sit down restaurants and restaurants where patrons bus their own tables. This resource will be shared with businesses likely to benefit from it in Southfield.

Too Good To Go

Too Good To Go (TGTG) is an existing app that allows restaurants and retailers with surplus food to sell their food for 30% of the retail value. Buyers purchase the "bags" online and pick up the product on site during a time window set by the seller. The food is sold by value and is not specified as to what is in the bag.

Too Good To Go originated in Europe and is active in all major U.S. markets. The expansion team underwent a soft launch of the app in metro Detroit, including Ann Arbor, in Spring 2024 with a media launch in June 2024.

Promotion of TGTG to residents will be done through social media and residential newsletters. The team will also work with the company to provide targeted ads in Southfield to reach people online and in print. Supporting businesses in signing up and using the app will provide an opportunity for them to save on food costs and possibly gain new customers, and for Southfield residents to save on food costs and support businesses they may not otherwise.

Flashfood

Flashfood is an existing app that allows grocery stores to alert customers about discounts up to 50% off on fresh produce, meat, and other grocery items. This provides an opportunity for grocery stores to move inventory and get something for it, while also helping households meet their food needs despite increasing food costs. The Meijer in Southfield currently uses this platform. Similar to Too Good To Go, promotion of Flashfood to residents will be done through social media and the city newsletter.

MFNW technical assistance program

With experience training food service operations, MFNW will offer hands on technical assistance as follows:

- Customer engagement toolkit that can be used to promote food waste practices on social media and in house
- Support adoption of Leanpath, Toast, or other technology as appropriate
- Support registering with Too Good To Go to sell surplus food at a reduced price
- Support connections to food rescue organizations (where appropriate)
- If applicable, support sharing resources and information with the building owner/manager to encourage providing food scrap collection service, and provide training and informational materials to tenants when implemented
- Staff training on the issue of food waste and how to properly sort materials for diversion from landfill via lunch and learns, demos or other formats
- Janitorial staff training on food waste management
- Support setting up food scrap sorting process in back of house, including providing 5-gallon buckets for food scrap collection and example signage
- Support setting up food scrap sorting process in front of house (where applicable). See Residences for wayfinding designed for institutions and schools that could also be adapted to these sites
- Customer engagement toolkit that can be used to promote food waste practices on social media and in house

Delicious vegetable chips and topping made by staff at Sylvan Table trained in food waste prevention techniques.

MFNW technical assistance for caterers and food trucks

Catered food has unique challenges when it comes to reducing food waste, so the strategies described for brick and mortar restaurants need to be tailored and additional strategies used to eliminate food waste from catering. In addition to the training listed above, additional recommendations are needed for caterers. These include:

- Tips for working with event sites to set up food rescue and compost
- Implement systems to receive feedback from customers about what was and was not eaten eaten to adjust offerings accordingly
- Encourage including to-go containers for excess food to send home with attendees

Food rescue

NRDC's food waste calculator estimates that there is approximately 1.25 million pounds of food that is rescuable in Southfield each year. This presents a great opportunity to support the 9% of Southfield residents that NRDC estimates are facing food insecurity. Lack of knowledge and understanding about the liability associated with donating food and lack of resources to transport food to a donation site are the barriers often cited to donating food. MFNW, with support from the Oakland County Health Division, will provide information to food-based businesses, institutions, and other sites where food donations may be an option about the Bill Emerson Good Samaritan Food Donation Act that protects food donors acting in good faith. MFNW will also address the second barrier by connecting restaurants with food rescue organizations and supporting them in training staff to prepare food for pickup by rescue organizations.

Food scrap collection service

Despite the prevention and rescue efforts described previously, there will be food scraps that need to be diverted from landfills. These should be collected and transported for processing into compost. Knowing that business owners are busy and have limited bandwidth to take on new responsibilities such as adding a contract for food scrap collection, training employees in food scrap sorting and contamination prevention, and finding a place for a new cart, MFNW staff will do some of this legwork. In cases of stand alone businesses (those not located as tenants in strips), institutions, schools, and other entities that have their own waste management contracts, a food scrap collection and hauling service is needed. MFNW will support businesses by communicating with property owners and managers about setting up this service, providing easy to understand information about local haulers and tailored information about what would be possible on their site given their food waste management needs and site constraints.

Property owner/manager buy-in for food scrap collection services

Many businesses in Southfield are tenants in strip malls and use the waste management services provided by their property owner or manager that is included in their rent. To best address issues related to space for a food scrap cart and economies of scale, it makes sense for the entire strip to be served under one food scrap collection contract. MFNW will support businesses by communicating with property owners and managers about setting up this service, providing easy to understand information about local haulers and tailored information about what would be possible on their site given the needs of their tenants and site constraints. When possible, further economies of scale will be sought by encouraging property owners of buildings that are geographically close together to seek a common contract for better pricing. MFNW can help facilitate those conversations and bring interested parties together.

Providing incentives for implementing food scrap collection

While a reduction in landfill fees may result from diverting food from the trash eventually, businesses may need incentives to take on a new practice and the cost of a new service. In addition to the technical assistance and resources described above, other incentives could include promotion of the business or a few free months of food scrap collection service. Results from surveying of businesses occurring this summer may provide other ideas for incentives that will be added at a later time.

Contamination prevention

It is necessary to prevent contamination of food scrap streams in order to make a food scrap program successful. Contamination of food waste streams is a major issue to consider and address everywhere in the city. In addition to the education, training, and ongoing monitoring and feedback about the waste collected provided by most food scrap haulers MFNW will also support proper sorting of food scraps through a variety of strategies, including:

- Training employees and custodial staff on proper sorting via lunch and learns, workshops, demos and other means tailored to the site
- Providing signage to assist employees and patrons in proper sorting
- Recommending wayfinding, zoning, and color-coded bins for waste disposal areas that is consistent with other sites in the city (see further details of this strategy in the Schools and Institutions chapter)
- Encouraging food scrap haulers to monitor bins on a regular basis and notify management if the stream is contaminated

04 Keep up the momentum

04.A Support training of Oakland County health inspectors

Training for Oakland County health inspectors will need to continue as new health inspectors start work for the county and others need a refresher. It is anticipated that this will be done inhouse, but could also be done through partnerships with MFNW and/or food rescue organizations.

04.B Continue support of food rescue and distribution operations

Food rescue operations will likely see an increase in food donations with this initiative, and that elevated number of trips and services may stretch these organizations. Finding ways to increase funding to support these important operations is needed, both in terms of food waste prevention and helping to address food insecurity in the community. While these organizations are responsible for their own funding sources, frequently noting the important piece that food rescue plays in keeping food in the community for consumption and out of landfills can help these organizations find the funding they need for their work that supports the overall goal of zero food waste in Southfield.

Similar to food rescue operations, food distribution operations are often nonprofits with limited budgets and revenue streams. These serve important functions in the community, providing food to those who need it the most. In terms of this plan, they are also important in ensuring food is used for its highest purpose - for consumption by people. These operations may need varied types of support to help them continue their work to serve the community - possibly financial, but also volunteer help, promotion of their service, or new refrigerators, coolers or shelving. Identifying ways to partner with these organizations to support the work they are already doing and help ensure it continues to meet the needs of the community is needed.

Schools and Institutions

According to NRDC's calculator, Southfield schools account for only 1% of the food waste created throughout the city. However, this 1% accounts for roughly 330,000 pounds and $38,000 in wasted food from schools alone. Furthermore, this 1% accounts for 44,000 unmet meals for Southfield children. Due to the large volume of food waste produced at these sites from numerous student meals provided daily, working with schools to reduce food waste is a key focus area of this plan. Institutions of learning would benefit greatly by educating their students about food waste reduction and those students taking home what they have learned to pass on to their families.

Schools and Institutions

Southfield residents enjoy the meal at the 2024 Community Feast.

TABLE 11. Timing of Activities: Schools and Institutions

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
01 School commitment												
01.A Secure commitment from all schools												
02 Food waste tracking portal for schools												
02.A Develop a food waste tracking portal for schools												
02.B Train staff in how to use the tracking portal for schools												
02.B Update the tracking portal for schools												
03 Understand food waste in each school												
03.A Perform resource assessments												
03.B Conduct food waste audits												
03.C Conduct a food survey												
04 Develop individualized school plans												
04.A Develop individualized school plans												
05 Implement school food waste elimination plans												
05.A Implement school food waste elimination plans												
05.B Reduce likelihood of contamination of food scrap streams												
05.B.1 Color coding												
05.B.2 Logos and labels												
05.B.3 Zoning and wayfinding												
05.B.4 Educational recycle wall												
05.B.5 Identify champions to help sort waste												
06 Keep up the momentum												
06.A Identify champions among staff, adminsitrators, and food service providers												
06.B Identify champions among students												
06.C Tie food waste initiative into the curriculum												

Schools are important places to focus food waste education, prevention, and diversion efforts. The schools in Southfield interact with many residents, both students and parents. Students who learn about the issue of food waste and experience the ease of preventing and managing it become better stewards of resources and ambassadors to their family members who will also be learning about food waste and adopting new habits for prevention and diversion. This chapter of the plan details how to engage schools to eliminate their own food waste and bring those practices into homes.

01 School commitment

Ensuring commitment from the schools is needed to allow food waste elimination education, programming, and initiatives to be permitted. This will involve reaching out to each school and district, meeting with school leadership to explain the project's objectives, establishing a relationship with school representatives, and explaining how these goals can be met within the school meal requirements set by the Michigan Department of Education (MDE) and United States Department of Agriculture (USDA). With this commitment, the schools coordinator will develop an individualized food waste elimination plan for the schools and work with the schools to implement the strategies in their respective plan.

A full list of schools and contact information has been compiled by the team and will be available to the Schools Coordinator.

02 Food waste tracking portal for schools

The State of Michigan currently requires all schools to have a healthy schools plan. This plan is created and managed through an online portal that also serves as a hub for ideas and resources for meeting the state's requirements. A similar portal will be used to help schools create and implement plans to manage their food waste. Schools in Southfield will pilot the portal, using it to assess their food waste, identify ways to reduce it, and track progress towards goals. The Schools Coordinator will help develop this portal and later train staff and administrators on how to use it.

03 Understand food waste in each school

Collecting data from each school to establish a baseline is needed to develop plans for how each school can eliminate food waste. Information collected through the following methods should improve understanding of:

- Resource availability in each school's lunchroom and kitchen
- What types of food are wasted
- How much of each type of food is wasted
- Food preferences

The data collected can be used to estimate cost savings, identify areas of opportunity to improve food quality and kitchen and school operations, increase consumption, and decrease waste. This information gathering can also help identify what resources will be needed to eliminate food waste from each school's lunchroom and kitchen. All information should be entered into the food waste tracking portal, which can then be used to make recommendations on strategies to implement to reduce food waste.

03.A Perform resource assessments

Conducting a food service resource assessment will:

- Provide a comprehensive understanding of each school's existing resources—from appliances and equipment to utensils and consumables—which is instrumental for identifying areas of inefficiency and potential improvement in their existing waste reduction efforts,
- Enable each school to optimize their food waste reduction strategies to work effectively within their kitchen, lunchroom, and classroom's existing capabilities while providing schools with future investment opportunities to further support their food waste elimination efforts,
- Identify opportunities to implement food waste prevention and diversion strategies within their existing systems.

This assessment is necessary to ensure that any proposed food waste reduction strategies are feasible and aligned with each school's existing operational capacity.

See Appendix D for a food service resource checklist.

03.B Conduct food waste audits

Conducting a food waste audit in each school allows them to establish a baseline for the volume and nature of wasted food. Establishing this baseline is critical for schools to effectively measure the success of each food waste reduction initiative over time and help schools determine which food scrap management method will be most applicable to accommodate their volume of food waste. The audit also provides students and staff with a hands-on and visual understanding of how their daily food consumption and disposal habits impact their environment. Refer to Figure 3 for waste sorting examples.

Although collecting data from each school is ideal to establish accurate baselines, auditing a sample of schools with the same food service provider would likely be sufficient to understand what universal opportunities exist for reducing food waste in all schools within the district. However, audits should occur at schools of varying grade levels to ensure a clear understanding of how food consumption and disposal habits differ between elementary, middle, and high schools.

See Appendix D for existing food waste audit resources and guides.

FIGURE 3. School Food Waste Audit: Waste Sorting

03.C Conduct a food survey

A food survey is essential for gathering critical data regarding the types, quantities, and reasons for food waste in each school. This survey will also allow students and staff to provide feedback regarding their food preferences, consumption habits, and perceptions of food quality. It will also identify what culturally appropriate foods should be offered daily, allowing each school to pinpoint the key drivers of food waste. The survey results will help each school identify effective food waste reduction strategies and enable schools to make more sustainable, student-oriented decisions to improve meal satisfaction.

See Appendix D for resources to conduct school food surveys.

Potential Partnerships for Food Waste Audits in Schools

Michigan State University Extension (MSUE) has expressed interest in supporting SPS to conduct food waste audits as part of their ongoing Policy, Systems, and Environmental Change (PSE) work to improve community health and well-being by improving access and practicality of making healthy choices.

Therefore, it is recommended that the Schools Coordinator work with MSUE to schedule and plan food waste audits at each school.

04 Develop individualized school plans

04.A Develop individualized school plans

The Schools Coordinator will create a school food waste elimination plan within the food waste tracking portal using the audit and food survey as the baseline benchmark for the strategies included. Possible plan strategies include the following ideas. More detail about each can be found in Appendix E:

- Adopt offer vs. serve for breakfast and lunch in all schools
- Tasting events for new items before adding them to the menu
- More scratch cooking where possible
- Implement share tables in lunchrooms
- Flipped lunches (recess before lunch)
- Extend mealtimes to a 25-minute minimum seating time
- Implement bulk milk dispensers
- Procure child-safe fruit slicers
- Establish a flavor station in school lunchrooms
- Serve recovered food during the next day's meals
- Use Leanpath or another method to track and reduce food waste
- Donate excess food
- Establishing a food scrap collection program (either from a hauler or onsite)
  - » Remove trash cans or create intentional bottlenecks to prevent food items being thrown in the trash
  - » Add surfaces at waste separation stations to set trays and support proper sorting of items
  - » Provide signage and wayfinding; colorcoding bins for consistency is ideal

Composting on site

Some schools and institutions may be good candidates to be demonstration sites for community composting. These sites may be able to compost most or all of their food scraps on site and not need a hauling service. Tools, tumblers, and/or other compost equipment would be needed at these sites. The needs for this are detailed in Strategy 07.B on page 68.

- Host a food waste reduction competition
- Educating food service providers and administrators on meal program requirements
- Integrate food and climate education into the K-12 curriculum
- Introduce vermiculture kits in elementary school classrooms
- Field trips to demonstration composting sites, landfills, digesters

The plans will also include a timeline for implementation of each strategy, resources needed, including funding, and food waste reduction goals. These plans will serve as the blueprint for reaching zero food waste in each school in the city. Additional sources for food waste management in schools can be found in the Development Plan to Eliminate Food Waste in Michigan Schools on page 258.

05 Implement school food waste elimination plans

05.A Implement school food waste elimination plans

The Schools Coordinator, with support from nutrition staff, administration, and student leaders, will work to implement the strategies outlined in the school's food waste elimination plan. Several strategies are low or no cost and likely can be done immediately such as share tables, donating excess food, hosting a food waste competition between grades or lunch periods, and educating food service providers on meal program requirements and students on the issue of food waste. Other strategies typically have windows of time when they can be implemented, including extending mealtimes to 25 minutes, having flipped lunches, and participating in offer vs. serve. These strategies will need to be planned for to ensure those windows of opportunity are not missed. Some of the strategies will require significant changes to operations and potentially costs, and will require diligence and persistence in planning the steps to implementation.

05.B Reduce likelihood of contamination of food scrap streams

In places where lots of people are responsible for sorting their waste, and sometimes with great variation in the types of things to be sorted, many supports are needed to help them get items in the right bin. The College for Creative Studies explored best practices for preventing contamination in places such as cafeterias or restaurants where individuals are responsible for clearing their table and disposing of waste. Their solution focuses on multiple visual cues including color coding, logos and labels, zoning and wayfinding, and an educational recycle wall located near the collection bins. While the focus of this was for settings like cafeterias, it could also be employed in restaurants where eaters bus their own tables and adapted for other settings, such as the office or even home.

FIGURE 4. Contamination Prevention Tools

05.B.1 Color coding

Color coding can be useful in helping guests remember what goes in what bin. The bin and signage colors were picked for each material to be sorted based on how those colors are perceived to be connected with the materials they will be collecting. For example, food scraps is regenerative, so it's bin is green. Blue has traditionally been used to indicate plastic, metal and glass recycling, so that color was maintained for that use. Landfill is often associated with end of life for materials, hence the black bin.

05.B.2 Logos and labels

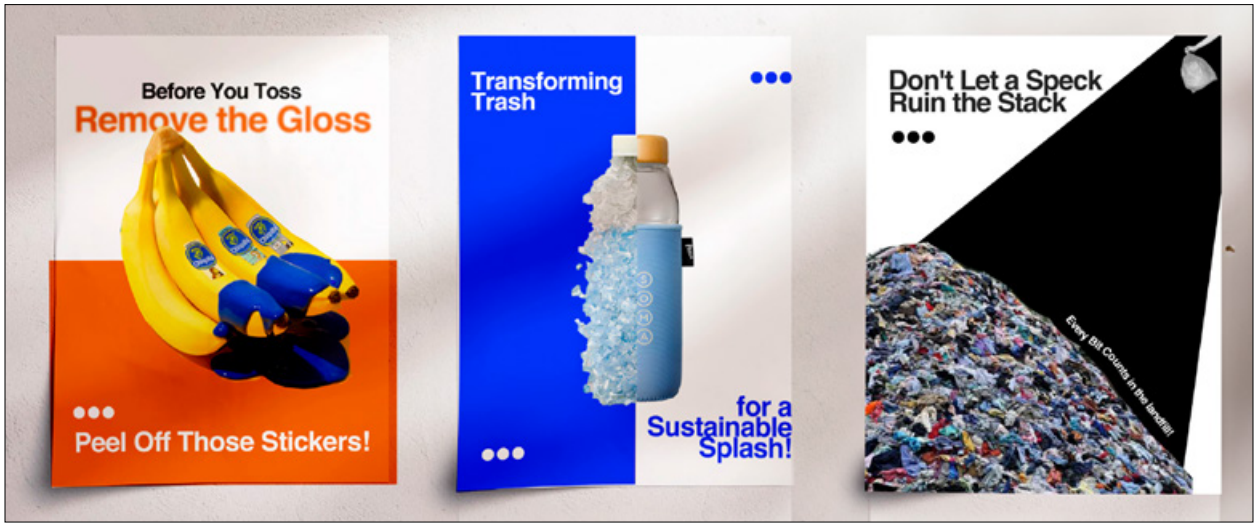
Easy to understand and read pictures and text work with the color coding of the bins to further identify and confirm what materials go in each.

05.B.3 Zoning and wayfinding

Colored pathways on the floor correspond to the color of the bins and the materials the bins can take will help guests get to the correct bin for each material that must be sorted. This can also help custodial staff remember which order the bins go in so guests that frequent a place can expect the bins to always be in the same order.

05.B.4 Educational recycle wall

The posters on this wall provide reminders about why sorting of materials is important and helpful tips to prevent contamination, such as removing the stickers from fruit before composting the peel.



Example posters for the educational recycle wall. Posters will be updated to match the campaign branding.

See the full presentation on the contamination prevention design solution by the College for Creative Studies in Appendix E.

05.B.5 Identify champions to help sort waste

At schools, colleges, and universities where there are set times of year where there is an influx of new students, identifying champions to volunteer to support eaters in properly sorting waste in the cafeteria during the first week or two of school can go a long way in helping others learn how to properly sort their waste and set the expectation that food does not go to the landfill.

06 Keep up the momentum

As in the other sectors, the new habits and processes implemented in schools will need to be maintained. The Schools Food Waste Elimination Coordinator will work to identify food waste champions among staff and administrators to support food waste prevention and diversion activities. In particular, food service providers will be engaged and supported to reduce their food waste (and costs!). The Schools Food Waste Elimination Coordinator will also engage students in the classroom, connecting through their experiences in the cafeteria to curriculum goals, and will identify students to become ambassadors to educate their peers on this issue and work on additional implementation strategies that are part of their school's food waste elimination plan. Anchoring this initiative in various stakeholder groups at school will help keep the practices going, even when the Coordinator is not at the school.

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Other Places

Other Places

Rice and vegetables served at the 2024 Community Feast. This dish was made from food that otherwise would have gone to waste.

TABLE 12. Timing of Activities: Other Places

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
01 **Technical assistance and infrastructure support for prevention and diversion in offices and small businesses**												
01.A MFNW Technical Assistance program												
01.B Engage employees												
01.C Provide countertop caddies and liners												
02 **Place food scrap collection bins in municipal facilities and public space**												

This chapter serves as a catch-all to include any other places in the city where people may consume food, likes offices and parks. If we are to plan for 100% of the food waste in the city not being sent to a landfill, we must also plan for how to support food waste prevention and diversion in these spaces.

01 Technical assistance and infrastructure support for prevention and diversion in offices and small businesses

Many of the strategies outlined for food-based businesses may also be useful in preventing and diverting food waste in an office or public setting with some minor adjustments and likely scaled down due to a smaller volume of food waste at these sites. Specifically, technical assistance, a promotional toolkit, a food scrap collection service (leveraging owner/manager relationships), providing incentives for food scrap collection and kitchen caddies, and working to prevent contamination are all needed for these sites. The strategies that require more adjustments are described below with those adjustments

01.A MFNW Technical Assistance program

See the Food-Based Businesses Chapter for more detail on the technical assistance program provided to food-based businesses.

01.B Engage employees

Widespread education about the importance of addressing food waste, the role everyone can play in preventing and diverting it, and how to do those things is crucial in the success of this plan. Businesses can support this effort by equipping employees with the knowledge and confidence needed to prevent food waste and properly sort and divert it through lunch and learns, the internal employee newsletter, and partnering with the Southfield Public Library to host information events. These short, informal sessions hosted by MFNW will share information about how to eliminate food waste in the workplace. Simple things such as how to manage a shared refrigerator, how to order an appropriate amount of food when calling in catering for company events, having reusable containers to take leftover food home in, and guidelines for donating excess catered food could all be covered. Resources to support these habits in the workplace will be provided. Workplaces could also host additional lunch and learns and/or other educational sessions on how employees can get the most of their paycheck when it comes to food, covering tips for household food waste prevention.

In larger office buildings, competitions between floors, departments, or other groupings and other incentives may increase buy-in and support the adoption of proper sorting of food scraps. The city can lead the way in these education and engagement efforts so city staff is knowledgeable and can answer questions from the public about the initiative as needed.

01.C Provide countertop caddies and liners

Offices and small businesses that are not food-oriented and do not serve food regularly likely still have some food waste to manage, namely from food that employees bring from home. These sites would benefit from smaller food scrap collection caddies in their communal kitchens or gathering spaces where people tend to eat to make it easy to separate food waste. Caddies, a starter pack of liners, and instructional signage will be provided to offices and small businesses with this need, and employees will be trained on how to properly sort waste. Additional liners will be available for purchase at cost from the city or online. Caddy size will be based on the expected volume coming from the site during their usually scheduled housekeeping/custodial services. Custodial staff will be instructed on where to take food scraps and find liners, and what to do if there are no liners or the one used is not compostable. Waste collected in the caddies can either be picked up via a collection service or dropped off at the community food scrap collection sites.

02 Place food scrap collection bins in municipal facilities and public space

Southfield has a beautiful municipal campus, complete with offices, library, large venue "The Pavilion" (Pavilion), court, sports arena and ice rink, outdoor sports fields, picnic shelters, and parks. There are other parks outside of the municipal campus, including Inglenook Park, Carpenter Lake Nature Preserve, Bauervic Woods, Bedford Woods, Beach Woods, Berbian Woods Nature Preserve, Burgh Historical Park, Freeway Park, John Grace Park and Community Center, John R. Miller Park, Lahser Woods, Lincoln Woods, Mary Thompson House and Farm, Pebble Creek, Simms, Stratford Woods Commons, Valley Woods Nature Preserve, and Beech Woods Recreation Center. Many of these currently have waste receptacles on site. Areas where food is expected to be eaten on a regular basis should also have receptacles for food scraps to pair with traditional waste receptacles. These may be smaller bins that are then aggregated elsewhere more frequently, in the same way that trash is currently collected from these sites. Food scrap receptacles should be just as convenient, if not more so, than general trash receptacles. Custodial and operations staff will need to monitor these bins and empty them frequently to prevent odors and other nuisances. Traditional waste receptacles may be removed over time as fewer are needed due to greater prevention and diversion rates.

This 1.9 gallon Sure-Close countertop caddy will be provided to residences, offices, and small businesses.

Appendices

List of Appendices

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APPENDIX A:
Timeline

Appendix A: Timeline

Timeline

TABLE 13. Timeline

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SUPPORTING STRATEGIES												
01 **Communication campaigns**												
01.A Overall campaign: Creating a culture of zero food waste in Southfield												
01.B Household prevention communication campaign												
01.D Prevention and diversion communication campaign for spaces where food is outside of homes												
01.E Maintenance communication campaign												
02 **Online resource hub**												
02.A Develop the online resource hub												
02.B Create content for the online resource hub												
02.C Promote the online resource hub												
03 **Food waste policy**												
03.A Draft and adopt language for policy on using locally created compost in city projects												
03.B Create standards for backyard and community composting												
03.C Draft and adopt language for policies requiring that all city-sponsored programs and events donate excess food and have food scrap collection bins if food is served												
03.D Require that all special events donate excess food and have food scrap collection bins if food is served												
03.E Update site development standards to include food waste management in plans												
04 **Continuous feedback and learning**												
04.A Advisory committee												
04.B Integrate learnings												
05 **Monitoring and evaluation**												
05.A Measuring the 100% elimination goal												

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
RESIDENCES												
01 **Engage residents on the issue of food waste**												
01.A Speak to community groups on food waste reduction strategies												
01.B Provide pop-ups/demos at community partners and city and community events												
01.C Train residents in ways to safely reduce food waste												
01.D Track food waste rates compared to other households												
01.E Introduce a household food waste comparison metric												
01.F Host a food waste reduction competition among households												
02 **Household food waste prevention toolkits**												
02.A Create toolkits												
02.B Distribute toolkits												
03 **Support the city in planning for and implementing a food scrap collection program for single-family residences**												
03.A Develop and issue an RFP for food waste collection services												
04 Food scrap collection for multi-family residences not served by city curbside services												
05 **Provide countertop caddies and liners to support residents in sorting food scraps**												
04.A Print educational materials												
04.B Procure caddies												
04.B Procure liners												
04.B Mail caddies and liners to homes												
04.B Set up places in the city to purchase liners												
06 **Prevent contamination of household food scrap streams**												
06.A Create clear signage on what can and cannot be composted												
06.B Recognize those who are sorting food scraps well												
07 **Support backyard and community composting**												
07.A Backyard composting guide												
07.B Demonstration sites												
07.C Bulk purchase backyard composting supplies												

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
08 Evaluate effectiveness of prevention and diversion strategies												
07.A Conduct surveys												
07.B Conduct audits												
07.C Report results												
09 Keep up the momentum												
09.A Continue food scrap collection services												
09.B Help new residents integrate into a culture of zero food waste												
FOOD-BASED BUSINESSES												
01 Engage Oakland County health inspectors												
01.A Train Oakland County health inspectors about food rescue best practices, food donation liability, and co-develop materials												
09.B Help new residents integrate into a culture of zero food waste												
02 Increase capacity of food rescue organizations and food pantries												
02.A Increase capacity of food rescue services												
02.B Create capacity for rescued food to be donated to existing community resource hubs												
02.C Share rescued food with existing community resource hubs												
02.D Share excess donated food at multi-family apartment buildings												
02.E Share excess donated food with sites outside of the city												
02.F Create a space to upcycle food rescued within the city												
03 Support businesses in managing food waste from prevention to diversion												
03.A Educate and train sites, programs, and strategies for managing food waste												
03.B Purchase supplies												
03.C Develop and test materials for food waste sorting at restaurants where people bus their own tables												
04 Keep up the momentum												
04.A Support training of Oakland County health inspectors												
04.B Continue support of food rescue and distribution operations												

Strategy	Year 1				Year 2				Year 3			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
SCHOOLS AND INSTITUTIONS												
01 School commitment												
01.A Secure commitment from all schools												
02 Food waste tracking portal for schools												
02.A Develop a food waste tracking portal for schools												
02.B Train staff in how to use the tracking portal for schools												
02.B Update the tracking portal for schools												
03 Understand food waste in each school												
03.A Perform resource assessments												
03.B Conduct food waste audits												
03.C Conduct a food survey												
04 Develop individualized school plans												
04.A Develop individualized school plans												
05 Implement school food waste elimination plans												
05.A Implement school food waste elimination plans												
05.B Reduce likelihood of contamination of food scrap streams												
06 Keep up the momentum												
06.A Identify champions among staff, adminsitrators, and food service providers												
06.B Identify champions among students												
06.C Tie food waste initiative into the curriculum												
OTHER PLACES												
01 Technical assistance and infrastructure support for prevention and diversion in offices and small businesses												
01.A MFNW Technical Assistance program												
01.B Engage employees												
01.C Provide countertop caddies and liners												
02 Place food scrap collection bins in municipal facilities and public space												

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APPENDIX B:

Budgets

Appendix B: Budgets

Summary Budget

Costs have been identified for full implementation of all strategies in each sector, to the extent possible. This plan estimates the total cost of implementation of the entire plan over the course of three years to be $5,387,420, with $422,136 as an ongoing service fee for food waste hauling and the remainder ($4,472,792) as one-time expenses. The costs are broken down by year and strategy focus below:

	Year 1	Year 2	Year 3
Supporting Strategies	$429,975	$327,217	$294,598
Residences	$691,119	$3,424,537	$425,836
Food waste hauling fee (ongoing)*	$0	$211,068	$422,136
Carts for food waste diversion**	$0	$914,628	$0
Food-Based Businesses	$429,665	$429,665	$404,665
Schools and Institutions	$20,300	$104,850	$103,500
Other Places	$8,405	$8,405	$8,405
Total	**$1,579,464**	**$2,570,952**	**$1,237,004**
Total Cost Over 3 years	**$5,387,420**		

*This cost is for six months of service in Year 2 and year round service in Year 3.

**The entire cost for the carts is allocated in Year 2 at a cost of $52 per cart (including shipping and distribution). Priority Waste has offered an option to spread cart costs out at the rate of $2.50 per household per month for five years for a total cost of $150 per bin. The cost of the bins could be passed on to residents to avoid an additional expense to the City.

Funding Sources

The plan outlined above will need to be funded in a variety of ways. Make Food Not Waste is committed to looking for grants and other funding to cover the expenses related to the one-time costs for implementation, an estimated total of $4,472,792. This plan recommends that the cost for the carts ($914,628) be passed to residents if grant funding is not available for this use. There is currently a lot of state, federal, and private funding opportunities for projects that address food waste. Make Food Not Waste has already applied and been granted funds to pilot the study to determine best practices for multi-family residences and will continue to apply to various funding sources as they become available.

Due to the ongoing nature of the waste hauling service that is needed, the City would be the best partner to fund this. The estimate received from Priority Waste in Fall 2024 for hauling was $2 per month per household. This is much lower than the market rate for private service, which is $30 per household per month. This cost could also be passed along to residents, as other prevention measures described in the plan are expected to save them much more than the annual cost of hauling services (cost of hauling services is $24 per year; expected cost savings per household is up to $2,500).

Year 1

TABLE 14. **Budgets: Supporting Strategies, Year 1**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
01 **Communication campaigns**		
01.A **Overall campaign: Creating a culture of zero food waste in Southfield**		
Design fee for all year 1 materials (mailers, yard and door signs, etc.)	$15,000	Design Firm
01.A.1 Promote the campaign website and online resource hub via mailers sent to residences and businesses		
Design, print, label, and mail materials	$32,667	Mailing House
Google ad spend	$7,200	Project Manager
01.A.2 Promote the campaign through the city newsletter		
Develop and share material	Included	Design Firm, Project Manager
01.A.3 Promote the campaign through social media		
Develop and share material	Included	Design Firm, Project Manager
01.A.4 Promote the campaign through the press		
Labor	Included	City Communications, Project Manager
Southfield newspaper ad	$3,798	City Communications, Project Manager
01.A.5 Promote local champions		
Identify local champions	Included	Residential Coordinator
Train local champions (pre-created social media toolkits, resources)	Included	Residential Coordinator
01.A.6 Create ways for people to make a public commitment to address food waste		
Design yard and door signs	Included	Design Firm
Print yard signs	$34,000	Residential Coordinator
Print signs for apartment doors	$1,530	Residential Coordinator
Create online pledge	Included	Residential Coordinator
Promote pledge	Included	Residential Coordinator
Distribute signs	Included	Residential Coordinator
01.A.7 Host a citywide food waste summit		
Space rental at city site	$-	Project Manager

TABLE 14. **Budgets: Supporting Strategies, Year 1**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
Labor - Promotional material and registration	$625	Event Coordinator
Labor - Event organization	$3,750	Event Coordinator
Labor - Event communication	$1,250	Event Coordinator
Labor - Volunteer coordinator	$625	Event Coordinator
Labor - Logistics/chef coordinator	$313	Event Coordinator
Promotion	$750	Event Coordinator
01.B **Household prevention communication campaign**		
01.B.1 Promote the prevention campaign via mailers (two mailings)		
Design, print, label, and mail materials	$32,667	Residential Coordinator, Mailing House
01.B.2 Promote the campaign through the city newsletter		
Develop and share material	Included	City Communications, Project Manager
01.B.3 Promote the campaign through social media		
Develop and share material	Included	City Communications, Project Manager
01.B.4 Promote the campaign through the press	Included	Project Manager
01.D **Prevention and diversion communication campaign for spaces where food is outside of homes**		
01.D.1 Promote the diversion campaign via mailers		
Design materials	Included	Design Firm
Mail materials	$15,000	Commercial Coordinator, Mailing House
02 **Online resource hub**		
02.A **Develop the online resource hub**	$5,000	Design Firm
02.B **Create content for the online resource hub**	Included	Project team
02.C **Promote the online resource hub**	Included	Project team, City Communications
03 **Food waste policy**		
03.B **Create standards for backyard and community composting**	Included	City Planning staff, Project Manager

TABLE 14. **Budgets: Supporting Strategies, Year 1**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
03.C Draft and adopt language for policies requiring that all city-sponsored programs and events donate excess food and have food scrap collection bins if food is served	Included	City Planning staff, Project Manager
03.D Require that all special events donate excess food and have food scrap collection bins if food is served	Included	City Planning staff, Project Manager
03.E Update site development standards to include food waste management in plans	Included	City Planning staff, Project Manager
04 Continuous feedback and learning		
04.A Advisory committee		
04.A.1 Develop application process	Included	Project Manager
04.A.2 Promote advisory committee and share applications	Included	Project Manager, City Communications
04.A.3 Select committee members	Included	Project Manager
04.A.4 Quarterly meetings	Included	Project Manager
04.A.4 Quarterly meetings - Stipends for members	$800	Project Manager
04.B Integrate learnings	Included	MFNW
06 Project implementation team		
06.A Post job positions	Included	MFNW Executive Director
06.B Interview and select candidates	Included	MFNW Executive Director
06.C Onboarding	Included	MFNW Executive Director
06.D Project management and implementation work		
Project Manager	$70,000	MFNW Executive Director
Commercial Coordinator	$60,000	MFNW Executive Director
Residential Coordinator	$60,000	MFNW Executive Director
Schools Coordinator	$60,000	MFNW Executive Director
Evaluation Team	$25,000	University Partner

TABLE 15. **Budgets: Residences, Year 1**

Strategy	Cost	Responsible Party
RESIDENCES		
01 **Engage residents on the issue of food waste**		
01.A **Speak to community groups on food waste reduction strategies**		
Labor	Included	Project Manager, Residential Coordinator
01.B **Provide pop-ups/demos at community partners and city and community events**		
Labor	Included	Project Manager
Print materials for events	$500	Project Manager
01.C **Train residents in ways to safely reduce food waste**		
Promotion of monthly workshops	Included	Residential Coordinator
Organization and communication of workshops	Included	Residential Coordinator, Project Manager
Speaker fees (chefs, health department)	$1,500	Residential Coordinator, Project Manager
Labor for hosting monthly workshops	Included	Residential Coordinator, Project Manager
Materials for workshops	$1,200	Residential Coordinator, Project Manager
01.D **Track food waste rates compared to other households**		
Labor - Develop quarterly survey	Included	Evaluator, Residential Coordinator
Labor - Distribute quarterly survey	Included	Residential Coordinator
Labor - Analyze results of quarterly survey	Included	Evaluator
01.E **Introduce a household food waste comparison metric**		
Labor - Report findings of quarterly survey via social media and city newsletter	Included	Residential Coordinator, City Communications
01.F **Host a food waste reduction competition among households**		
Labor - Promote competition	Included	Residential Coordinator
Labor - Facilitate competition	Included	Residential Coordinator
Labor - Report results of compettition	Included	Residential Coordinator
Incentives/prizes	$500	Residential Coordinator

TABLE 15. **Budgets: Residences, Year 1**

Strategy	Cost	Responsible Party
RESIDENCES		
02 **Household food waste prevention toolkits**		
02.A **Create toolkits**		
Labor - Coordinating creation of toolkits	Included	Residential Coordinator
Labor - Creating toolkits, labeling, packaging	$116,000	Mailing house
02.B **Distribute toolkits**		
Materials and labeling/mailing materials to all 37,200 households, including reminder magnets, refrigerator thermometer, grocery list pad, recipes, and "use up" tape	$367,000	Residential Coordinator
03 **Support the city in planning for and implementing a food scrap collection program for single-family residences**		
03.A **Develop and issue an RFP for food waste collection services**	Included	City staff, Project Manager, Residential Coordinator
03.B **Review applications and select provider**	Included	City staff, Project Manager, Residential Coordinator
03.D **Purchase liners and set up sites for them to be purchased at cost**	Included	City staff, Project Manager, Residential Coordinator
04 **Food scrap collection for multi-family residences not served by city curbside services**		
03.B.1 Plan and execute pilot study to understand best practices for food scrap diversion		
Plan pilot (develop evaluation, reach out to residents to participate, collect baseline data)	$250,000	Evaluation team, Project Manager, Residential Coordinator
Execute pilot (enroll participants, provide training and technology to test, gather data)	Included	Evaluation team, Project Manager, Residential Coordinator
05 **Provide countertop caddies and liners to support residents in sorting food scraps**		
04.A **Print educational materials**	Included	Residential Coordinator
Labor - Purchase materials		
04.B **Procure caddies** (Sure-Close 1.9 Gal for $6.83 ea)	$63,519	Residential Coordinator
04.C **Procure liners** (50,000 liners per pallet at $3,800 per pallet; 10 liners per household)	$15,200	Residential Coordinator
04.D **Set up places in the city to purchase liners**	Included	Residential Coordinator, City Staff

TABLE 15. **Budgets: Residences, Year 1**

Strategy	Cost	Responsible Party
RESIDENCES		
07 **Support backyard and community composting**		
07.A **Backyard composting guide**		
06.A.1 Design guide		
Labor - Design guide	Included	Residential Coordinator, City Planning Staff
06.A.2 Share guide via social media, city newsletter, and online resource hub	Included	Residential Coordinator, City Communications
07.B **Demonstration sites**		
06.B.1 Identify, secure, and build demonstration sites		
Labor - Identify sites, secure permission, build demonstration sites	Included	Residential Coordinator
Purchase tumbler for 3 sites	$500	Residential Coordinator
Purchase tools	$200	Residential Coordinator

TABLE 16. **Budgets: Food-Based Businesses, Year 1**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
01 **Engage Oakland County health inspectors**		
01.A **Train Oakland County health inspectors about food rescue best practices, food donation liability, and co-develop materials**		
01.A.1 Train health inspectors	Included	Commercial Coordinator
01.A.2 Create materials for inspectors to use	Included	Commercial Coordinator
02 **Increase capacity of food rescue organizations and food pantries**		
02.A **Increase capacity of food rescue services**		
Refrigerated van	$81,115	Food Rescue Organization
Additional staff		
Drivers	$32,488	Food Rescue Organization
Volunteer Coordinator	$66,830	Food Rescue Organization
Project Manager/Logistics Coordinator - Part Time	$33,415	Food Rescue Organization
Gas for additional trips	$6,067	Food Rescue Organization
Maintenance	$5,000	Food Rescue Organization
Amortization (8 year life on van and truck)	$15,000	Food Rescue Organization
Administrative costs/Tracking/Accounting	$10,000	Food Rescue Organization
Insurance - workers compensation and vehicle insurance	$4,750	Food Rescue Organization
Software license for volunteer platform	$5,000	Food Rescue Organization
02.A.1 Increase capacity for planned rescues		
Costs distributed over planned rescues above	Included	Food Rescue Organization
02.A.2 Increase capacity for unplanned rescues and surges		
Labor - Assess sites, procure additional storage equipment	Included	Commercial Coordinator
Upgrades at existing pantries (shelving, refrigerators, freezers)	$60,000	Food Rescue Organization
Shipping container fridges for larger pantries (2 at $40,000 each)	$80,000	Food Rescue Organization

TABLE 16. **Budgets: Food-Based Businesses, Year 1**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
02.B **Create capacity for rescued food to be donated to existing community resource hubs**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.C **Share rescued food with existing community resource hubs**	Included	Food Rescue Organization
02.D **Share excess donated food at multi-family apartment buildings**	Included	Food Rescue Organization
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.E **Share excess donated food with sites outside of the city**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.F **Create a space to upcycle food rescued within the city**		
02.F.1 Identify potential spaces		
Labor - Identify possible spaces	Included	MFNW Executive Director, Program Manager
02.F.2 Create use agreement for space/contract		
Labor - Create use agreement for space/contract	Included	MFNW Executive Director, Program Manager
02.F.3 Install any needed equipment, cold storage		
Labor - Install any needed equipment, cold storage	$20,000	MFNW Executive Director, Program Manager
03 **Support businesses in managing food waste from prevention to diversion**		
03.A **Educate and train sites, programs, and strategies for managing food waste**		
Labor - Education and training on Leanpath	Included	Commercial Coordinator
Labor - Education and training on Toast's food waste module	Included	Commercial Coordinator
Labor - Education on and training MFNW technical assistance program	Included	Commercial Coordinator
Labor - Education and training on Too Good To Go	Included	Commercial Coordinator
Labor - Education and training on Flashfood	Included	Commercial Coordinator
Labor - Education and training on food rescue	Included	Commercial Coordinator
Labor - Education and training on food scrap collection program	Included	Commercial Coordinator
Labor - Education and training on contamination prevention	Included	Commercial Coordinator

TABLE 16. **Budgets: Food-Based Businesses, Year 1**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
03.B **Purchase supplies**		
Purchase supplies (5 gallon buckets, countertop caddies, liners, signs)	$10,000	Commercial Coordinator
03.C **Develop and test materials for food waste sorting at restaurants where people bus their own tables**	Included	Design Firm
04 Keep up the momentum		
04.A **Support training of Oakland County health inspectors**		
Labor - Support and assistance for Oakland County Health Division, as needed	Included	Commercial Coordinator
04.B **Continue support of food rescue and distribution operations**		
Labor - Support food rescue and distribution organizations	Included	Commercial Coordinator

TABLE 17. **Budgets: Schools and Institutions, Year 1**

Strategy	Cost	Responsible Party
SCHOOLS AND INSTITUTIONS		
01 **School commitment**		
01.A **Secure commitment from all schools**		
Labor - Secure commitments	Included	Schools Coordinator
02 **Food waste tracking portal for schools**		
02.A **Develop a food waste tracking portal for schools**		
Labor - Develop portal	$20,000	Web Designer/Schools Coordiantor
02.B **Train staff in how to use the tracking portal for schools**	Included	Schools Coordinator
02.B **Update the tracking portal for schools**	Included	Schools Coordinator
03 **Understand food waste in each school**		
03.A **Perform resource assessments**		
Labor - Conduct assessment	Included	Schools Coordinator
03.B **Conduct food waste audits**		
Labor - Conduct audit	Included	Schools Coordinator
Supplies for audit at all 30 schools (5 gal buckets for sorting, gloves, tarp, cleaning supplies, scales)	$300	Schools Coordinator
03.C **Conduct a food survey**		
Labor - Conduct survey	Included	Schools Coordinator
Labor - Analyze results	Included	Schools Coordinator
04 **Develop individualized school plans**		
Labor - Create plan for each school	Included	Schools Coordinator
06 **Keep up the momentum**		
06.A **Identify champions among staff, administrators, and food service providers**	Included	Schools Coordinator
06.B **Identify champions among students**	Included	Schools Coordinator
06.C **Tie food waste initiative into the curriculum**	Included	Schools Coordinator

TABLE 18. **Budgets: Other Places, Year 1**

Strategy	Cost	Responsible Party
OTHER PLACES		
01 **Technical assistance and infrastructure support for prevention and diversion in offices and small businesses**		
01.A MFNW Technical Assistance program	Included	Commercial Coordinator
01.B Engage employees	Included	Commercial Coordinator
01.C Provide countertop caddies and liners	$8,405	Commercial Coordinator

Year 2

TABLE 19. **Budgets: Supporting Strategies, Year 2**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
01 **Communication campaigns**		
01.A **Overall campaign: Creating a culture of zero food waste in Southfield**		
Design fee for all materials needed in Year 2 (Signs for organics recycling bins, countertop caddies, community food scrap collection sites, etc.)	$15,000	Creative Design Firm
01.A.2 Promote the campaign through the city newsletter		
Develop and share material	Included	Design Firm, Project Manager
01.A.3 Promote the campaign through social media		
Develop and share material	Included	Design Firm, Project Manager
01.A.4 Promote the campaign through the press		
Labor		Included
Southfield newspaper ad		$3,798
01.A.5 Promote local champions		
Identify local champions	Included	Residential Coordinator
Train local champions (pre-created social media toolkits, resources)	Included	Residential Coordinator
01.A.6 Create ways for people to make a public commitment to address food waste		
Promote pledge	Included	Residential Coordinator
Distribute signs	Included	Residential Coordinator

TABLE 19. **Budgets: Supporting Strategies, Year 2 (Continued)**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
01.A.7 Host a citywide food waste summit	Included	Residential Coordinator
Space rental at city site	$-	Project Manager
Labor - Promotional material and registration	Included - Year 1	Event Coordinator
Labor - Event organization	Included - Year 1	Event Coordinator
Labor - Event communication	Included - Year 1	Event Coordinator
Labor - Volunteer coordinator	Included - Year 1	Event Coordinator
Labor - Logistics/chef coordinator	Included - Year 1	Event Coordinator
Promotion	$750	Event Coordinator
Sound system	$3,000	Event Coordinator
01.B Household prevention communication campaign		
01.B.2 Promote the campaign through the city newsletter		
Develop and share material	Included	City Communications, Project Manager
01.B.3 Promote the campaign through social media		
Develop and share material	Included	City Communications, Project Manager
01.B.4 Promote the campaign through the press	Included	Project Manager
01.C Household diversion communication campaign		
01.C.1 Promote the diversion campaign via mailers		
Design materials	Included	Design Firm
Mail materials	$32,667	Mailing House
01.C.2 Promote the campaign through the city newsletter		
Develop and share material	Included	City Communications, Project Manager

TABLE 19. **Budgets: Supporting Strategies, Year 2 (Continued)**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
01.C.3 Promote the campaign through social media		
Develop and share material	Included	City Communications, Project Manager
01.C.4 Promote the campaign through the press	Included	City Communications, Project Manager
01.E Maintenance communication campaign		
01.E.1 Promote the campaign through the city newsletter		
Develop and share material	Included	City Communications, Project Manager
01.E.2 Promote the campaign through social media		
Develop and share material	Included	City Communications, Project Manager
01.E.3 Promote the campaign through the press		
01.E.4 Provide ongoing education via presentations, webinars, demos, and workshops		
Develop and share material	Included	City Communications, Project Manager
02 Online resource hub		
02.B Create content for the online resource hub	Included	Project Manager
02.C Promote the online resource hub	Included	Project Manager, City Communications
03 Food waste policy		
03.A Draft and adopt language for policy on using locally created compost in city projects	Included	City Planning staff, Project Manager
03.C Draft and adopt language for policies requiring that all city-sponsored programs and events donate excess food and have food scrap collection bins if food is served	Included	City Planning staff, Project Manager
03.D Require that all special events donate excess food and have food scrap collection bins if food is served	Included	City Planning staff, Project Manager

TABLE 19. **Budgets: Supporting Strategies, Year 2 (Continued)**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
04 **Continuous feedback and learning**		
04.A **Advisory committee**		
04.A.4 Quarterly meetings	Included	Project Manager
04.A.4 Quarterly meetings - Stipends for members	$800	Project Manager
04.B **Integrate learnings**	Included	MFNW
05 **Monitoring and evaluation**		
05.A **Measuring the 100% elimination goal**		
05.A.1 Register sites for audits	Included	Residentail Coordinator, Commercial Coordinator
05.A.2 Conduct audits	Included	Residential Coordinator, Commercial Coordinator
05.A.3 Report results	Included	Evaluation team
05.B **Measuring outcomes from prevention and rescue activities**		
05.B.3 Promote and distribute post-campaign survey	Included	Residential Coordinator, Commercial Coordinator
05.B.4 Analyze results	Included	Evaluation team
05.B.5 Report results	Included	Evaluation team
06 **Project implementation team**		
06.D **Project management and implementation work**		
Project Manager	$70,000	MFNW Executive Director
Commercial Coordinator	$60,000	MFNW Executive Director
Residential Coordinator	$60,000	MFNW Executive Director
Schools Coordinator	$60,000	MFNW Executive Director
Evaluation Team	$25,000	University Partner

TABLE 20. **Budgets: Residences, Year 2**

Strategy	Cost	Responsible Party
RESIDENCES		
01 **Engage residents on the issue of food waste**		
01.A **Speak to community groups on food waste reduction strategies**		
Labor	Included	Project Manager, Residential Coordinator
01.B **Provide pop-ups/demos at community partners and city and community events**		
Labor	Included	Project Manager
Print materials for events	$500	Project Manager
01.C **Train residents in ways to safely reduce food waste**		
Promotion of monthly workshops	Included	Residential Coordinator
Organization and communication of workshops	Included	Residential Coordinator, Project Manager
Speaker fees (chefs, health department)	$1,500	Residential Coordinator, Project Manager
Labor for hosting monthly workshops	Included	Residential Coordinator, Project Manager
Materials for workshops	$1,200	Residential Coordinator, Project Manager
01.D **Track food waste rates compared to other households**		
Labor - Develop quarterly survey	Included	Evaluator, Residential Coordinator
Labor - Distribute quarterly survey	Included	Residential Coordinator
Labor - Analyze results of quarterly survey	Included	Evaluator
01.E **Introduce a household food waste comparison metric**		
Labor - Report findings of quarterly survey via social media and city newsletter	Included	Residential Coordinator, City Communications
01.F **Host a food waste reduction competition among households**		
Labor - Promote competition	Included	Residential Coordinator
Labor - Facilitate competition	Included	Residential Coordinator
Labor - Report results of compettition	Included	Residential Coordinator
Incentives/prizes	$500	Residential Coordinator

TABLE 20. **Budgets: Residences, Year 2 (Continued)**

Strategy	Cost	Responsible Party
RESIDENCES		
03 **Support the city in planning for and implementing a food scrap collection program for single-family residences**		
03.C **Provide bins and education to households**	Included	City staff, Project Manager, Residential Coordinator, Hauling Provider
03.D **Purchase liners and set up sites for them to be purchased at cost**	Included	City staff, Project Manager, Residential Coordinator
03.E **Launch weekly curbside food scrap collection**		
Hauling cost*	$211,068	City staff, Project Manager, Residential Coordinator, Hauling Provider
Organics cart cost**	$2,638,350	City staff, Project Manager, Residential Coordinator, Hauling Provider
04 **Food scrap collection for multi-family residences not served by city curbside services**		
03.B.1 Plan and execute pilot study to understand best practices for food scrap diversion		
Plan pilot (develop evaluation, reach out to residents to participate, collect baseline data)	$250,000	Evaluation team, Project Manager, Residential Coordinator
Execute pilot (enroll participants, provide training and technology to test, gather data)	Included	Evaluation team, Project Manager, Residential Coordinator
03.B.2 Use results of pilot to determine best practices to implement citywide	Included	Evaluation team, Project Manager, Residential Coordinator
05 **Provide countertop caddies and liners to support residents in sorting food scraps**		
04.A **Print educational materials**	Included	Residential Coordinator
Labor - Purchase materials		
04.B **Procure caddies** (Sure-Close 1.9 Gal for $6.83 ea)	$63,519	Residential Coordinator
04.B **Procure liners** (50,000 liners per pallet at $3,800 per pallet; 10 liners per household)	$15,200	Residential Coordinator
04.B **Mail caddies and liners to homes**	$367,000	Residential Coordinator, Mailing House

*The cost is for six months of service in Year 2.

**Full cost of carts for all single-family households. There is an option to spread the cost out at a rate of $2.50 per household per month, which would lower this cost.

TABLE 20. **Budgets: Residences, Year 2 (Continued)**

Strategy	Cost	Responsible Party
RESIDENCES		
06 **Prevent contamination of household food scrap streams**		
06.A **Create clear signage on what can and cannot be composted**		
05.A.1 Create signage for countertop caddies	Included	Design Firm
05.A.2 Create signage for organics recycling carts	Included	Design Firm
05.A.3 Create signage for community food scrap collection sites	Included	Design Firm
06.B **Recognize those who are sorting food scraps well**		
05.B.1 Set up audit program registration	Included	Residential Coordinator
05.B.2 Promote and recruit for audit program	Included	Residential Coordinator
05.B.3 Conduct audits	Included	Residential Coordinator
05.B.4 Recognize those who are sorting well	Included	Residential Coordinator
07 **Support backyard and community composting**		
07.A **Backyard composting guide**		
06.A.2 Share guide via social media, city newsletter, and online resource hub	Included	Residential Coordinator, City Communications
07.B **Demonstration sites**		
06.B.1 Identify, secure, and build demonstration sites		
Labor - Identify sites, secure permission, build demonstration sites	Included	Residential Coordinator
Purchase tumbler for 3 sites	$500	Residential Coordinator
Purchase tools	$200	Residential Coordinator
06.B.3 Promote demonstration sites	Included	Residential Coordinator
06.B.4 Provide tours and demonstrations	Included	Residential Coordinator

TABLE 20. **Budgets: Residences, Year 2 (Continued)**

Strategy	Cost	Responsible Party
RESIDENCES		
07.C **Bulk purchase backyard composting supplies**		
06.C.1 Develop online form	Included	Residential Coordinator
06.C.2 Promote bulk purchasing option	Included	Residential Coordinator
06.C.3 Purchase supplies	Included	Residential Coordinator
06.C.4 Distribute supplies	Included	Residential Coordinator
08 **Evaluate effectiveness of prevention and diversion strategies**		
07.A **Conduct survey**		
07.A.1 Develop survey	Included	Evaluation team
07.B **Conduct audits**		
07.B.1 Conduct audits	Included	Evaluation team
07.B.2 Analyze audit results	Included	Evaluation team
09 **Keep up the momentum**		
09.A **Continue food scrap collection services**	Included	City Staff, Residential Coordinator
09.B **Help new residents integrate into a culture of zero food waste**	Included	Residential Coordinator

*Cost of $2.00 per month per household for year-round organics curbside pick up.

**Cost of $2.50 per month per household for 6 months for carts.

TABLE 21. **Budgets: Food-Based Businesses, Year 2**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
02 **Increase capacity of food rescue organizations and food pantries**		
02.A **Increase capacity of food rescue services**		
Refrigerated van	$81,115	Food Rescue Organization
Additional staff		
Drivers	$32,488	Food Rescue Organization
Volunteer Coordinator	$66,830	Food Rescue Organization
Project Manager/Logistics Coordinator - Part Time	$33,415	Food Rescue Organization
Gas for additional trips	$6,067	Food Rescue Organization
Maintenance	$5,000	Food Rescue Organization
Amortization (8 year life on van and truck)	$15,000	Food Rescue Organization
Administrative costs/Tracking/Accounting	$10,000	Food Rescue Organization
Insurance - workers compensation and vehicle insurance	$4,750	Food Rescue Organization
Software license for volunteer platform	$5,000	Food Rescue Organization
02.A.1 Increase capacity for planned rescues		
Costs distributed over planned rescues above	Included	Food Rescue Organization
02.A.2 Increase capacity for unplanned rescues and surges		
Labor - Assess sites, procure additional storage equipment	Included	Commercial Coordinator
Upgrades at existing pantries (shelving, refrigerators, freezers)	$60,000	Food Rescue Organization
Shipping container fridges for larger pantries (2 at $40,000 each)	$80,000	Food Rescue Organization
02.B **Create capacity for rescued food to be donated to existing community resource hubs**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.C **Share rescued food with existing community resource hubs**	Included	Food Rescue Organization
02.D **Share excess donated food at multi-family apartment buildings**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization

TABLE 21. **Budgets: Food-Based Businesses, Year 2 (Continued)**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
02.E **Share excess donated food with sites outside of the city**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.F **Create a space to upcycle food rescued within the city**		
02.F.3 Install any needed equipment, cold storage		
Labor - Install any needed equipment, cold storage	$20,000	MFNW Executive Director, Program Manager
02.F.4 Upcycle food	Included	MFNW
03 **Support businesses in managing food waste from prevention to diversion**		
03.A **Educate and train sites, programs, and strategies for managing food waste**		
Labor - Education and training on Leanpath	Included	Commercial Coordinator
Labor - Education and training on Toast's food waste module	Included	Commercial Coordinator
Labor - Education on and training MFNW technical assistance program	Included	Commercial Coordinator
Labor - Education and training on Too Good To Go	Included	Commercial Coordinator
Labor - Education and training on Flashfood	Included	Commercial Coordinator
Labor - Education and training on food rescue	Included	Commercial Coordinator
Labor - Education and training on food scrap collection program	Included	Commercial Coordinator
Labor - Education and training on contamination prevention	Included	Commercial Coordinator
03.B **Purchase supplies**		
Purchase supplies (5 gallon buckets, countertop caddies, liners, signs)	$10,000	Commercial Coordinator
04 Keep up the momentum		
04.A **Support training of Oakland County health inspectors**		
Labor - Support and assistance for Oakland County Health Division, as needed	Included	Commercial Coordinator
04.B **Continue support of food rescue and distribution operations**		
Labor - Support food rescue and distribution organizations	Included	Commercial Coordinator

TABLE 22. **Budgets: Schools and Institutions, Year 2**

Strategy	Cost	Responsible Party
SCHOOLS AND INSTITUTIONS		
02 **Food waste tracking portal for schools**		
02.B **Train staff in how to use the tracking portal for schools**	Included	Schools Coordinator
02.B **Update the tracking portal for schools**	Included	Schools Coordinator
03 **Understand food waste in each school**		
03.A **Perform resource assessments**		
Labor - Conduct assessment	Included	Schools Coordinator
03.B **Conduct food waste audits**		
Labor - Conduct audit	Included	Schools Coordinator
Supplies for audit at all 30 schools (5 gal buckets for sorting, gloves, tarp, cleaning supplies, scales)	$300	Schools Coordinator
03.C **Conduct a food survey**		
Labor - Conduct survey	Included	Schools Coordinator
Labor - Analyze results	Included	Schools Coordinator
04 **Develop individualized school plans**		
04.A **Develop individualized school plans**	Included	Schools Coordinator
04.B **Implement individualized school plans**	Included	Schools Coordinator
05 **Implement school food waste elimination plans**		
04.B **Implement individualized school plans**	Included	Schools Coordinator
Food scrap collection service	$63,000	Food Scrap Hauler
Additional materials	$15,000	Schools Coordinator
05.B **Reduce likelihood of contamination of food scrap streams**		
05.B.1 Color coding	$17,900	Schools Coordinator
05.B.2 Logos and labels	$500	Schools Coordinator
05.B.3 Zoning and wayfinding	$5,300	Schools Coordinator

TABLE 22. **Budgets: Schools and Institutions, Year 2 (Continued)**

Strategy	Cost	Responsible Party
SCHOOLS AND INSTITUTIONS		
05.B.4 Educational recycle wall	$2,850	Schools Coordinator
05.B.5 Identify champions to help sort waste	Included	Schools Coordinator
06 **Keep up the momentum**		
06.A **Identify champions among staff, adminsitrators, and food service providers**	Included	Schools Coordinator
06.B **Identify champions among students**	Included	Schools Coordinator
06.C **Tie food waste initiative into the curriculum**	Included	Schools Coordinator

TABLE 23. **Budgets: Other Places, Year 2**

Strategy	Cost	Responsible Party
OTHER PLACES		
01 **Technical assistance and infrastructure support for prevention and diversion in offices and small businesses**		
01.A MFNW Technical Assistance program	Included	Commercial Coordinator
01.B Engage employees	Included	Commercial Coordinator
01.C Provide countertop caddies and liners	$8,405	Commercial Coordinator
02 **Place food scrap collection bins in municipal facilities and public space**		
Labor - Place and empty bins	Included	DPW, Parks and Recreation
Cost of bins	Included	Project Manager

Year 3

TABLE 24. **Budgets: Supporting Strategies, Year 3**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
01 **Communication campaigns**		
01.A **Overall campaign: Creating a culture of zero food waste in Southfield**		
Design fee for all materials (mailers, signs, etc.)	$15,000	Design firm
01.A.2 **Promote the campaign through the city newsletter**		
Develop and share material	Included	Design Firm, Project Manager
01.A.3 **Promote the campaign through social media**		
Develop and share material	Included	Design Firm, Project Manager
01.A.4 **Promote the campaign through the press**		
Labor	Included	City Communications, Project Manager
Southfield newspaper ad	$3,798	Project Manager
01.A.5 **Promote local champions**		
Identify local champions	Included	Residential Coordinator
Train local champions (pre-created social media toolkits, resources)	Included	Residential Coordinator
01.A.6 **Create ways for people to make a public commitment to address food waste**		
Promote pledge	Included	Residential Coordinator
Distribute signs	Included	Residential Coordinator
01.B **Household prevention communication campaign**		
01.B.2 **Promote the campaign through the city newsletter**		
Develop and share material	Included	City Communications, Project Manager
01.B.3 **Promote the campaign through social media**		
Develop and share material	Included	City Communications, Project Manager
01.B.4 **Promote the campaign through the press**	Included	Project Manager

TABLE 24. **Budgets: Supporting Strategies, Year 3 (Continued)**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
01.C Household diversion communication campaign		
01.C.2 Promote the campaign through the city newsletter		
Develop and share material	Included	City Communications, Project Manager
01.C.3 Promote the campaign through social media		
Develop and share material	Included	City Communications, Project Manager
01.C.4 Promote the campaign through the press	Included	City Communications, Project Manager
01.E Maintenance communication campaign		
01.E.1 Promote the campaign through the city newsletter		
Develop and share material	Included	City Communications, Project Manager
01.E.2 Promote the campaign through social media		
Develop and share material	Included	City Communications, Project Manager
01.E.3 Promote the campaign through the press	Included	City Communications, Project Manager
01.E.4 Provide ongoing education via presentations, webinars, demos, and workshops	Included	Project Manager
02 Online resource hub		
02.B Create content for the online resource hub	Included	Project Manager
02.C Promote the online resource hub	Included	Project Manager, City Communications
03 Food waste policy		
03.A Draft and adopt language for policy on using locally created compost in city projects	Included	City Planning staff, Project Manager

TABLE 24. **Budgets: Supporting Strategies, Year 3 (Continued)**

Strategy	Cost	Responsible Party
SUPPORTING STRATEGIES		
04 **Continuous feedback and learning**		
04.A **Advisory committee**		
04.A.4 Quarterly meetings	Included	Project Manager
04.A.4 Quarterly meetings - stipends for members	Included	Project Manager
04.B **Integrate learnings**	Included	MFNW
05 **Monitoring and evaluation**		
05.A **Measuring the 100% elimination goal**		
05.A.1 Register sites for audits	Included	Residential Coordinator, Commercial Coordinator
05.A.2 Conduct audits	Included	Residential Coordinator, Commercial Coordinator
05.A.3 Report results	Included	Evaluation Team
06 **Project implementation team**		
06.D **Project management and implementation work**		
Project Manager	$70,000	MFNW Executive Director
Commercial Coordinator	$60,000	MFNW Executive Director
Residential Coordinator	$60,000	MFNW Executive Director
Schools Coordinator	$60,000	MFNW Executive Director
Evaluation Team	$25,000	University Partner

TABLE 25. **Budgets: Residences, Year 3**

Strategy	Cost	Responsible Party
RESIDENCES		
01 **Engage residents on the issue of food waste**		
01.A **Speak to community groups on food waste reduction strategies**		
Labor	Included	Project Manager, Residential Coordinator
01.B **Provide pop-ups/demos at community partners and city and community events**		
Labor	Included	Project Manager
Print materials for events	$500	Project Manager
01.C **Train residents in ways to safely reduce food waste**		
Promotion of monthly workshops	Included	Residential Coordinator
Organization and communication of workshops	Included	Residential Coordinator, Project Manager
Speaker fees (chefs, health department)	$1,500	Residential Coordinator, Project Manager
Labor for hosting monthly workshops	Included	Residential Coordinator, Project Manager
Materials for workshops	$1,200	Residential Coordinator, Project Manager
01.D **Track food waste rates compared to other households**		
Labor - Develop quarterly survey	Included	Evaluator, Residential Coordinator
Labor - Distribute quarterly survey	Included	Residential Coordinator
Labor - Analyze results of quarterly survey	Included	Evaluator
01.E **Introduce a household food waste comparison metric**		
Labor - Report findings of quarterly survey via social media and city newsletter	Included	Residential Coordinator, City Communications
01.F **Host a food waste reduction competition among households**		
Labor - Promote competition	Included	Residential Coordinator
Labor - Facilitate competition	Included	Residential Coordinator
Labor - Report results of compettition	Included	Residential Coordinator
Incentives/prizes	$500	Residential Coordinator

TABLE 25. **Budgets: Residences, Year 3 (Continued)**

Strategy	Cost	Responsible Party
RESIDENCES		
03 Support the city in planning for and implementing a food scrap collection program for single-family residences		
03.E Launch weekly curbside food scrap collection		
Hauling cost	$422,136	City Staff, Project Manager, Residential Coordinator
04 Food scrap collection for multi-family residences not served by city curbside services		
03.B.2 Use results of pilot to determine best practices to implement citywide	Included	City staff, Project Manager, Residential Coordinator
06 Prevent contamination of household food scrap streams		
06.B Recognize those who are sorting food scraps well		
05.B.2 Promote and recruit for audit program	Included	Residential Coordinator, City Planning Staff
05.B.3 Conduct audits	Included	Residential Coordinator, City Planning Staff
05.B.4 Recognize those who are sorting well	Included	Residential Coordinator, City Planning Staff
07 Support backyard and community composting		
07.A Backyard composting guide		
06.A.2 Share guide via social media, city newsletter, and online resource hub	Included	Residential Coordinator, City Communications
07.B Demonstration sites		
06.B.3 Promote demonstration sites	Included	Residential Coordinator
06.B.4 Provide tours and demonstrations	Included	Residential Coordinator
07.C Bulk purchase backyard composting supplies		
06.C.2 Promote bulk purchasing option	Included	Residential Coordinator
06.C.3 Purchase supplies	Included	Residential Coordinator
06.C.4 Distribute supplies	Included	Residential Coordinator

TABLE 25. **Budgets: Residences, Year 3 (Continued)**

Strategy	Cost	Responsible Party
RESIDENCES		
08 **Evaluate effectiveness of prevention and diversion strategies**		
08.A **Conduct survey**		
07.A.2 Distribute survey	Included	Residential Coordinator
07.A.3 Analyze survey	Included	Evaluation team
07.B **Conduct audits**		
07.B.1 Conduct audits	Included	Residential Coordinator
07.B.2 Analyze audit results	Included	Evaluation team
07.C **Report results**	Included	Evaluation team
09 **Keep up the momentum**		
09.A **Continue food scrap collection services**	TBD	City Staff, MFNW
09.B **Help new residents integrate into a culture of zero food waste**	Included	Residential Coordinator

TABLE 26. **Budgets: Food-Based Businesses, Year 3**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
02 **Increase capacity of food rescue organizations and food pantries**		
02.A **Increase capacity of food rescue services**		
Refrigerated van	$81,115	Food Rescue Organization
Additional staff		
Drivers	$32,488	Food Rescue Organization
Volunteer Coordinator	$66,830	Food Rescue Organization
Project Manager/Logistics Coordinator - Part Time	$33,415	Food Rescue Organization
Gas for additional trips	$6,067	Food Rescue Organization
Maintenance	$5,000	Food Rescue Organization
Amortization (8 year life on van and truck)	$15,000	Food Rescue Organization
Administrative costs/Tracking/Accounting	$10,000	Food Rescue Organization
Insurance - workers compensation and vehicle insurance	$4,750	Food Rescue Organization
Software license for volunteer platform	$5,000	Food Rescue Organization
02.A.1 Increase capacity for planned rescues		
Costs distributed over planned rescues above	Included	Food Rescue Organization
02.A.2 Increase capacity for unplanned rescues and surges		
Labor - Assess sites, procure additional storage equipment	Included	Commercial Coordinator
Upgrades at existing pantries (shelving, refrigerators, freezers)	$60,000	Food Rescue Organization
Shipping container fridges for larger pantries (2 at $40,000 each)	$80,000	Food Rescue Organization
02.B **Create capacity for rescued food to be donated to existing community resource hubs**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.C **Share rescued food with existing community resource hubs**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.D **Share excess donated food at multi-family apartment buildings**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization

TABLE 26. **Budgets: Food-Based Businesses, Year 3 (Continued)**

Strategy	Cost	Responsible Party
FOOD-BASED BUSINESSES		
02.E **Share excess donated food with sites outside of the city**		
Labor - Develop relationships for food donation at these sites	Included	Food Rescue Organization
02.F **Create a space to upcycle food rescued within the city**		
02.F.4 Upcycle food	Included	MFNW
03 **Support businesses in managing food waste from prevention to diversion**		
03.A **Educate and train sites, programs, and strategies for managing food waste**		
Labor - Education and training on Leanpath	Included	Commercial Coordinator
Labor - Education and training on Toast's food waste module	Included	Commercial Coordinator
Labor - Education on and training MFNW technical assistance program	Included	Commercial Coordinator
Labor - Education and training on Too Good To Go	Included	Commercial Coordinator
Labor - Education and training on Flashfood	Included	Commercial Coordinator
Labor - Education and training on food rescue	Included	Commercial Coordinator
Labor - Education and training on food scrap collection program	Included	Commercial Coordinator
Labor - Education and training on contamination prevention	Included	Commercial Coordinator
03.B **Purchase supplies**		
Purchase supplies (5 gallon buckets, countertop caddies, liners, signs)	$5,000	Commercial Coordinator
04 Keep up the momentum		
04.A **Support training of Oakland County health inspectors**		
Labor - Support and assistance for Oakland County Health Division, as needed	Included	Commercial Coordinator
04.B **Continue support of food rescue and distribution operations**		
Labor - Support food rescue and distribution organizations	Included	Commercial Coordinator

TABLE 27. **Budgets: Schools and Institutions, Year 3**

Strategy	Cost	Responsible Party
SCHOOLS AND INSTITUTIONS		
02 **Food waste tracking portal for schools**		
02.B Train staff in how to use the tracking portal for schools	Included	Schools Coordinator
02.B Update the tracking portal for schools	Included	Schools Coordinator
05 **Implement school food waste elimination plans**		
Supplies for implementation	$9,000	Schools Coordinator
Food scrap collection service	$94,500	Schools Coordinator
06 **Keep up the momentum**		
06.A Identify champions among staff, adminsitrators, and food service providers	Included	Schools Coordinator
06.B Identify champions among students	Included	Schools Coordinator
06.C Tie food waste initiative into the curriculum	Included	Schools Coordinator

TABLE 28. **Budgets: Other Places, Year 3**

Strategy	Cost	Responsible Party
OTHER PLACES		
01 **Technical assistance and infrastructure support for prevention and diversion in offices and small businesses**		
01.A MFNW Technical Assistance program	Included	Commercial Coordinator
01.B Engage employees	Included	Commercial Coordinator
01.C Provide countertop caddies and liners	$8,405	Commercial Coordinator
02 **Place food scrap collection bins in municipal facilities and public space**		
Labor - Place and empty bins	Included	DPW, Parks and Recreation
Cost of bins	Included	Project Manager

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APPENDIX C:

Key Performance Indicators

Appendix C: Key Performance Indicators

Introduction

Key Performance Indidcators (KPIs) are useful in tracking progress towards goals, particularly stretch or long-term goals. NRDC has developed a set of metrics that may also be used in addition or instead of those listed below that were developed specifically for implementation in Southfield. Those can be found at https://www.nrdc.org/sites/default/files/food-matters-metrics-assessing-food-waste-progress.pdf

Overall Project

TABLE 29. **Key Performance Indicators by Task: Overall Project**

Task	Key Performance Indicators (KPIs)
Overall Project: Zero Food Waste	Number of households and businesses reporting food waste prevented, Number of businesses reporting donations, Volume of food rescued by food rescue organizations, Volume of food received by food pantries and other community sites that was distributed, Number of trash bags households use, Change in the number of trash bags households have, Participation in food scrap diversion options, Cost

Supporting Strategies

TABLE 30. **Key Performance Indicators by Task: Supporting Strategies**

Task	Key Performance Indicators (KPIs)
01 **Communication campaigns**	
01.A **Overall campaign: Creating a culture of zero food waste in Southfield**	Development of communication plan and media campaign, Cost, Launch of communication campaign, Number of hits per week on the website and online resource hub, Number of people receiving the city newsletter, Number of social media posts, Number of people liking and sharing the social media posts, Number of grocery and retail stores with the campaign signage, Number of local champions sharing materials, Number of people attending the citywide summit, Number of people making a public commitment, Number of yard/door signs distributed, Evaluations from the summit and survey following the campaign launch showing an increase in awareness of food waste issues, willingness to act to address food waste, and sense of efficacy to act to address food waste
01.B **Household prevention communication campaign**	Development of household prevention communication plan and media campaign, Cost, Launch of prevention communication campaign, Number of hits per week on the website and online resource hub, Number of people receiving the city newsletter, Number of social media posts, Number of people liking and sharing the social media posts, Number of grocery and retail stores with the campaign signage, Number of local champions sharing materials, Number of people attending the citywide summit, Number of people making a public commitment, Number of yard/door signs distributed, Evaluations from the summit and survey following the campaign launch showing an increase in awareness of ways to prevent food waste, willingness to act to address food waste, and sense of efficacy to act to address food waste, Use of materials in food waste prevention kits, Self-reported food waste prevention
01.C **Household diversion communication campaign**	Development of household diversion communication plan and media campaign, Cost, Launch of diversion communication campaign, Number of hits per week on the website and online resource hub, Number of people receiving the city newsletter, Number of social media posts, Number of people liking and sharing the social media posts, Number of local champions sharing materials, Number of people making a public commitment, Number of yard/door signs distributed, Survey following the campaign launch showing an increase in awareness of ways to divert food waste, willingness to act to address food waste, and sense of efficacy to act to address food waste, Participation rates in curbside food scrap collection, Volume of food scrap collection
01.D **Prevention and diversion communication campaign for spaces where food is outside of homes**	Development of prevention and diversion communication campaign, Cost, Launch of prevention and diversion communication campaign, Number of places hosting lunch and learns/workshops for employees, Number of lunch and learns/workshops hosted, Reported costs savings in food purchasing by food-based businesses, Reported pounds of food diverted from landfills via composting
01.E **Maintenance communication campaign**	Number of times the campaign is refreshed, Cost, Launch of refreshed campaigns, Number of people receiving the city newsletter, Number of social media posts, Number of people liking and sharing the social media posts, Number of local champions sharing materials, Number of people making a public commitment, Number of yard/door signs distributed, Participation rates in curbside food scrap collection, Self-reported food waste prevention

TABLE 30. **Key Performance Indicators by Task: Supporting Strategies (Continued)**

Strategy	Key Performance Indicators (KPIs)
02 **Online resource hub**	
02.A **Develop the online resource hub**	Development of online resource hub, Cost
02.B **Create content for the online resource hub**	Development of content for the resource hub, Cost
02.C **Promote the online resource hub**	Number of times the online resource hub is mentioned in outreach via mail, social media, flyers, and events; Number of hits on the resource hub site
03 **Food waste policy**	
03.A **Draft and adopt language for policy on using locally created compost in city projects**	Adoption of city policies related to food waste
03.B **Create standards for backyard and community composting**	Adoption of city policies related to food waste
03.C **Draft and adopt language for policies requiring that all city-sponsored programs and events donate excess food and have food scrap collection bins if food is served**	Adoption of city policies related to food waste
03.D **Require that all special events donate excess food and have food scrap collection bins if food is served**	Adoption of city policies related to food waste
03.E **Update site development standards to include food waste management in plans**	Adoption of city policies related to food waste
04 **Continuous feedback and learning**	
04.A **Advisory committee**	Creation of advisory committee, Cost, Number of advisors, Number of meetings, Suggested changes, Suggested changes that were implemented
04.B **Integrate learnings**	Number of surveys and trash audits, Number of reports on findings, Number of households participating in surveys and audits
05 **Monitoring and evaluation**	
05.A **Measuring the 100% elimination goal**	Measurement and audits aligned with evaluation plan, including bin audits and surveying to understand degree that food scraps are being diverted
05.B **Measuring outcomes from prevention and rescue activities**	Measurement and audits aligned with evaluation plan, including bin audits, surveying to understand adopted prevention methods, success of prevention methods, cost savings in food purchasing, volume of food scraps are being diverted

TABLE 30. **Key Performance Indicators by Task: Supporting Strategies (Continued)**

Strategy	Key Performance Indicators (KPIs)
06 **Project implementation team**	
06.A **Post job positions**	Job positions posted
06.B **Interview and select candidates**	Interviews conducted and candidates hired
06.C **Onboarding**	Project team members oriented and onboarded
06.C **Project management and implementation work**	Project team follows the blueprint; Project team implements learnings and pivots as needed; Progress towards overall goal of 100% food waste diversion is made

Residences

TABLE 31. **Key Performance Indicators by Task: Residences**

Task	Key Performance Indicators (KPIs)
01 **Engage residents on the issue of food waste**	
01.A **Speak to community groups on food waste reduction strategies**	Number of community groups hosting talks on food waste reduction strategies; Number of attendees at each talk
01.B **Provide pop-ups/demos at community partners and city and community events**	Number of pop-ups/demos hosted, Number of people engaged with the pop-up
01.C **Train residents in ways to safely reduce food waste**	Number of workshops held, Number of attendees at workshops, Percent of attendees indicating increased awareness of food waste issues, willingness to reduce their own food waste, and efficacy in reducing food waste, Cost
01.D **Track food waste rates compared to other households**	Development of quarterly survey, Number of survey respondents, Number of bags of trash produced each week at baseline, Number of bags of trash produced following interventions
01.E **Introduce a household food waste comparison metric**	Development of food waste comparison metric, Reporting of metric, Number of views of the metric
01.F **Host a food waste reduction competition among households**	Number of competitions hosted, Number of households participating in the competition, Amount of food waste prevented on average per household, Amount of food waste diverted on average per household, Cost
02 **Household food waste prevention toolkits**	
02.A **Create toolkits**	Number of toolkits created, Items in the toolkits, Cost
02.B **Distribute toolkits**	Number of toolkits distributed, Cost
03 **Support the city in planning for and implementing a food scrap collection program for single-family residences**	
03.A **Develop and issue an RFP for food waste collection services**	Food scrap collection service provided, Time to implement, Cost
04 **Food scrap collection for multi-family residences not served by city curbside services**	Food scrap collection service provided, Time to implement, Cost
05 **Provide countertop caddies and liners to support residents in sorting food scraps**	
04.A **Print educational materials**	Materials made and printed, Cost
04.B **Procure caddies**	Purchase of caddies, Cost
04.B **Procure liners**	Purchase of liners, Cost

TABLE 31. **Key Performance Indicators by Task: Residences (Continued)**

Strategy	Key Performance Indicators (KPIs)
04.B **Mail caddies and liners to homes**	Number of caddies and liners distributed, Cost
04.B **Set up places in the city to purchase liners**	Number of places to purchase liners, Cost, Number of liners sold per month at these sites
06 **Prevent contamination of household food scrap streams**	
06.A **Create clear signage on what can and cannot be composted**	Creation of clear signage, Number of bin audits, Number/percent of households recognized for proper sorting of food scraps, Number of bins not collected due to contamination, Cost
06.B **Recognize those who are sorting food scraps well**	Number of audits, Number of households sorting food scraps well with little or no contamination, Number of social media posts, articles, and other recognition options made
07 **Support backyard and community composting**	
07.A **Backyard composting guide**	Creation of a backyard composting guide, Number of times the backyard composting guide was shared on social media and via the city newsletter
07.B **Demonstration sites**	Number of demonstration sites, Cost of demonstration sites
07.C **Bulk purchase backyard composting supplies**	Number of people participating in bulk purchasing of composting tools and supplies
08 **Evaluate effectiveness of prevention and diversion strategies**	
07.A **Conduct survey**	Number of households reporting use of each item in the toolkit, Number of households and businesses reporting food waste prevented, Number of businesses reporting donations, Number of trash bags households have, Change in the number of trash bags households have, Participation in food scrap diversion options, Food insecurity rate, Poverty rate, Cost
07.B **Conduct audits**	Number of audits conducted, Number of households with little/no contamination in food scraps, Amount of food waste diverted
07.C **Report results**	Results of evaluation posted online on city dashboard
09 **Keep up the momentum**	
09.A **Continue food scrap collection services**	Number of years food scrap collection occurs, Value of service to residents, Cost
09.B **Help new residents integrate into a culture of zero food waste**	Number of new residents that receive food waste prevention toolkits

Food-Based Businesses

TABLE 32. **Key Performance Indicators by Task: Food-Based Businesses**

Task	Key Performance Indicators (KPIs)
01 **Engage Oakland County health inspectors**	
01.A **Train Oakland County health inspectors about food rescue best practices, food donation liability, and co-develop materials**	Development of training materials for health inspectors on food donation liability, Number and percent of health inspectors trained
02 **Increase capacity of food rescue organizations and food pantries**	
02.A **Increase capacity of food rescue services**	Number of pounds of food being rescued, Change in number of pounds of food being rescued, Number of food rescue staff, Number of food rescue trucks
02.B **Create capacity for rescued food to be donated to existing community resource hubs**	Number of people served at food pantries receiving food from Southfield, Change in the number of people served at food pantries receiving food from Southfield, Number of places receiving food from Southfield, Food insecurity rate, Poverty rate, Number of places receiving food from Southfield, Cost
02.C **Share rescued food with existing community resource hubs**	Number of places receiving food from Southfield, Number of pounds distributed through these sites, Number of people served, Cost
02.D **Share excess donated food at multi-family apartment buildings**	Number of apartment buildings receiving food from Southfield, Number of pounds distributed through these sites, Number of people served, Cost
02.E **Share excess donated food with sites outside of the city**	Number of sites receiving food from Southfield, Number of pounds distributed through these sites, Number of people served, Cost
02.F **Create a space to upcycle food rescued within the city**	Number of sites, Pounds of food received, Number of meals or other outputs made, Number of people/organizations served, Cost
03 **Support businesses in managing food waste from prevention to diversion**	
03.A **Educate and train sites, programs, and strategies for managing food waste**	Number of businesses and employees that participate in food waste reduction technical assistance, Volume of food waste prevented, Change in food costs, Volume of food donated, Volume of food waste diverted, Number of times that bins are not picked up due to contamination, Cost of training
03.B **Purchase supplies**	Supplies purchased, Cost
03.C **Develop and test materials for food waste sorting at restaurants where people bus their own tables**	New materials support food waste sorting at these establishments
04 Keep up the momentum	
04.A **Support training of Oakland County health inspectors**	Number of county health inspectors trained per year, Number of county health inspectors indicating they shared information about food waste prevention and diversion
04.B **Continue support of food rescue and distribution operations**	Partnerships with food rescue and distribution operations, Funds available to support these operations

Schools and Institutions

TABLE 33. **Key Performance Indicators by Task: Schools and Institutions**

Task	Key Performance Indicators (KPIs)
01 **School commitment**	
01.A **Secure commitment from all schools**	Commitment from all schools to participate in food waste elimination
02 **Food waste tracking portal for schools**	
02.A **Develop a food waste tracking portal for schools**	Development of a food waste tracking portal, Number of schools testing the portal, Survey results indicating the value of the portal
02.B **Train staff in how to use the tracking portal for schools**	Number of staff trained in using the portal, Number of schools using the portal
02.B **Update the tracking portal for schools**	Number of schools testing the portal, Survey results indicating the value of the portal
03 **Understand food waste in each school**	
03.A **Perform resource assessments**	Number of schools that complete a resource assessment
03.B **Conduct food waste audits**	Number of schools that complete a food waste audit, Pounds of food thrown away at baseline
03.C **Conduct a food survey**	Number of schools that complete a food survey
04 **Develop individualized school plans**	
04.A **Develop individualized school plans**	Number of schools with a food waste elimination plan
05 **Implement school food waste elimination plans**	Percent of strategies implemented by schools, Amount (pounds) and percent of food waste diverted from landfill, Amount (pounds) and percent of food waste donated, Percent of students who are aware of the issue of food waste and what they can do to address it, Number of lessons taught on food waste per class
05.B **Reduce likelihood of contamination of food scrap streams**	Creation of clear signage, wayfinding, zoning, and use of color coding; Number of bin audits, Number of bins not collected due to contamination, Cost
06 **Keep up the momentum**	
06.A **Identify champions among staff, adminsitrators, and food service providers**	Champions identified for each school
06.B **Identify champions among students**	Champions identified for each school
06.C **Tie food waste initiative into the curriculum**	Number of lessons taught that tie in the issue of food waste in each grade

Other Places

TABLE 34. **Key Performance Indicators by Task: Other Places**

Task	Key Performance Indicators (KPIs)
01 **Technical assistance and infrastructure support for prevention and diversion in offices and small businesses**	
01.A MFNW Technical Assistance program	Number and percent of employees that attend food waste-related events and workshops,
01.B Engage employees	Number and percent of employees who are aware of food waste issues, Number of employees/departments competing in a food waste reduction competition, Cost
01.C Provide countertop caddies and liners	Number of countertop caddies and liners provided, Cost
02 **Place food scrap collection bins in municipal facilities and public space**	Number of countertop caddies distributed, Number of organics recycling bins added to municipal sites, Cost

APPENDIX D:

Supporting Documents

Appendix D: Supporting Documents

Template Plans to Support County Materials Management Plans

Managing Food Waste - Materials Management Plans (MMPs)

The template that follows is intended to support cities, villages, and townships (CVTs) in developing a plan to manage food waste as part of the required materials management plans (MMPs) that all Michigan counties must create. Reaching the county's MMP goals will require CVTs to develop and implement food waste reduction strategies, therefore, this template supports implementation of the county's goals.

The template is intended to walk municipalities through the process of creating a food waste management plan. The first section, determining baseline waste and costs, is a critical focus area to complete so that tracking and measuring can be done. The strategies in the remaining focus areas can be picked and chosen from, however, it will likely be very difficult to reach the county's goal for food waste reduction if some sort of diversion program is not in place. CVTs should create their own food waste reduction plans based on the county's MMP and commit to specific actions that will support the county's goals. Which actions to take should be considered using the information in the first (description), second (cost), and last (resources) column as well as the resources available in the community and compatibility between the strategy and community character, values, and experience. Strategies highlighted in green are those that are easiest to implement while also being effective in reducing food waste.

Once strategies have been identified, more specific objectives (targets, goals) for the strategy and who's responsible for implementing the strategy and measuring/reporting on it should be noted in the middle columns.

The Data Tracker on page 181 provides an outline of how a more detailed action plan could be structured.

Food Waste Reduction Action Template: Municipalities

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Determine community's baseline of waste and costs								
Identify the baseline of overall food waste, amount of food waste per sector, and food rescue opportunities	$						NRDC Residential Food Waste Assessment - Survey, Kitchen Diary, and Bin Audits - see pages 139-169 for the survey and diary information and pages 4-6 for bin audit details	New York State Pollution Prevention Institute Food Waste Calculator
Identify large food waste generators-those generating more than 2T of food waste weekly	$						NRDC Toolkit for Tackling Food Waste in Cities - See Strategy 10, Findacom-poster.com	
Calculate GHG reduction opportunities moving food waste from landfills (MTCO2e) to prevention or compost or anaerobic digestion	$						EPA WARM Model	
Calculate the social cost of carbon from food waste	$						Formula: MTCO2e from WARM model * $190 (Biden Administration Social Cost of Carbon)	
Calculate household spending on food that is uneaten	$						Formula: $759/resident/year	
Calculate amount of potential savings for restaurants	$						Formula: average annual savings potential per restaurant ($23,000) * # of restaurants	

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Understand current food rescue landscape of food rescue organizations, food banks, food pantries, farms, and community gardens, and work to increase capacity among these outlets								
Compile list of local food system players	$						Contact your nearest Feeding America organization, EPA Excess Food Opportunities Map	
Assess ability to rescue and store more food, and demand to distribute/use more food, and what types (for example, a pantry may be able to take nonperishables that don't need to be refrigerated, but can't take anything that needs refrigeration unless they get additional cool storage space)	$						NRDC Toolkit for Tackling Food Waste in Cities - See Strategy 8	
Identify needs to be able to rescue and redistribute more food (staff, infrastructure, funding, demand)	$						NRDC Toolkit for Tackling Food Waste in Cities - See Strategy 8	
Facilitate connections between organizations and networks to address gaps and increase partnerships and collaboration	$						NRDC Toolkit for Tackling Food Waste in Cities - See Strategy 8	
Help fund rescue-related infrastructure and needs via grants and other funding sources	$$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: List organics recycling resources								
Locate nearby yard waste collection sites that will accept food scraps and/or can be modified easily to accept food scraps	$						Map of Sites	
If food scrap collection is happening (curbside and drop off) in the community, gather information about where it occurs, how it is run, participation levels, and its capacity	$							
Calculate number of compost sites needed	$						Formula: [(Number of pounds of residential food waste)(.5) + (Number of pounds of commercial food waste)(.25)]/4,400,000 (see county)	

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality					
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**
Focus Area: Support existing programming							
Understand community's waste management contract regarding food scrap collection opportunities, including contract dates, ability to change the contract, ability to negotiate for lowered rates if diversion occurs, etc.	$						
Identify culinary programs, economic development programs, DDAs and other business resources that exist to support organizations in training workers on food waste reduction practices, developing food diversion and rescue programs, etc.	$$						

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Outline trackable metrics								
Residential	$						Recommended: 10% reduction via prevention and a 50% participation in food scrap collection	
Commercial	$						Recommended: 10% reduction in prevention, a 15% reduction through donation, and a 25% participation in food scrap collection	
Community	$						Reduce overall food waste by 50% at City/Township properties through prevention, donation, and composting	
Waste Diversion Rate	$						Percentage of food waste diverted from landfills to recycling, composting, or anaerobic digestion with composting of the remaining digestate	
Tonnage of Food Waste Collected	$						Total amount (in tons) of food waste diverted from the waste stream over a specific time period	

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Greenhouse Gas (GHG) Emissions Reductions: Amount of GHG emissions reduced by diverting food waste from landfill	$						(WARM)	
Cost Savings	$						Amount of money saved due to reduced landfill waste hauling fees	
Food Recovery Metrics	$						Amount of food rescued and redistributed to those in need (measured in pounds or meals)	
Composting Outputs	$						Volume of compost produced from diverted food waste	

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Lead by example								
Ensure that existing information and direction is clearly available on Community website, and promote the website (i.e. composting guidelines, share tables, food donation guidelines and liability protection, any available financial programs, etc)	$						Liability protection State guidance on share tables	
Require use of compost on Community properties for landscaping and with new government facility construction	$$						Compost Procurement Policy	
Require Community-sponsored and hosted public events to be zero waste or adopt waste reduction strategies; include educational signage	$						Examples: Ferndale Special Events; Rockefeller Waste Free Events	
Alter Community procurement policies to encourage or require vendor action on food waste, including preventive strategies and food donation	$$							
Communicate Community's food waste reduction efforts to the public via an online dashboard	$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Collect food scraps at Community-owned properties	$$$							
Facilitate best practice sharing within the region by attending a County-wide summit for municipalities and food waste management entities to gather and share information	$$							
Have the City Mayor or Township Supervisor make a public commitment	$						Guide to making a public commitment	
Update site development standards to include food waste management in plans	$							
Permit food upcycling facilities, including soup kitchens, in more areas throughout the city to process surplus food	$							
Advocate for adding capacity or retrofitting anaerobic digesters at wastewater treatment facilities to accept food waste, where applicable	$$$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Address food waste in residential settings								
Speak to community groups on food waste reduction strategies for households, including understanding date labels, properly storing food, preservation techniques, etc.	$							
Provide pop-ups/demos at community partners and community events on ways to reduce food waste at home	$-$$							
Train residents in ways to safely reduce food waste at home	$-$$						Composting Food Scraps in Your Community: A Social Marketing Toolkit | US EPA	
Introduce a food waste comparison metric for benchmarking households of various sizes	$							
Host a food waste reduction competition among households	$$							
Create household food waste prevention toolkits that include low tech tools to prevent food waste including reminder magnets/stickers, a refrigerator thermometer, grocery list pad, recipes, and “use up” tape	$$						Report on items for food waste reduction in households	

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Provide countertop caddies with signage/educational materials and liners to all households	$$							
Implement a food scrap collection program	$$$							
Provide curbside food scrap pick up comingled with yard waste for single family residents	$$$						Composting Council's Curb to Compost Toolkit	
Provide curbside food scrap pick up with carts for all single family residences	$$$						Curbside pick up, particularly that with rolling carts, has been found to have the highest participation rates.	
Provide food scrap collection sites on city property for all residents to drop off food scraps.	$$						Food Waste Drop-Off Program Best Practices | BioCycle	
Create a recognition program for households who are properly sorting food scraps	$						Gold Star Program for Residences in Australia	Rewards programs for recycling

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Develop clear guidelines for backyard and community composting	$						Minnesota Composting Council and Association of Recycling Managers Model Composting Ordinance for backyard and small compost sites, NRDC and the Environmetnal Law Institute (ELI) Model Municipal Zoning Ordinance on Community Composting with Commentary	
Create a demonstration composting site to educate residents on how to compost	$$							
Create a program to bulk purchase home composting supplies	$							
Consider moving to a Pay As You Throw (PAYT) model for trash collection fees to incentivize diversion	$						NRDC Model Ordinance Establishing a Pay-As-You-Throw Program for Residenetial Municipal Solid Waste,	Northeast Resource Recovery Association Pay As You Throw (PAYT) Toolkit
Unbundle waste collection service fees and reduce fees for those who compost	$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Increase frequency of food scrap collection and decrease frequency of landfill collection	$							
Promote food scrap collection programs	$-$$						Best practices for drop off sites (BioCycle)	

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Address food waste in commercial settings								
Partner with local businesses (e.g., restaurants, grocery stores) to adopt food waste reduction measures by offering technical assistance such as waste audits	$$-$$$						How to conduct a food waste audit	
Recognize businesses who adopt food waste reduction practices; consider a competition	$						Guide to restaurant challenge	
Promote and encourage the use of apps and technologies that connect surplus food to interested people	$							
Facilitate conversations among business owners in close proximity about shared food scrap collection services or aerobic digesters	$							
Adopt a community-wide color/ shape/signage scheme for all waste management	$$-$$$							
Create a voluntary or compulsory program for large food waste generators to track, report, and divert food scraps	$$-$$$						NRDC Model Ordinance on Mandatory Reporting for Large Food Waste Generators: With and Without Commentaries,	New York State Pollution Prevention Institute Food Waste Calculator

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Promote food scrap collection programs	$						Best practices for drop off sites (BioCycle)	
Provide countertop caddies and liners	$$						City of Boston curbside collection program	
Focus Area: Increase capacity of food rescue organizations and food pantries								
Promote food rescue organizations	$						Forthcoming from Michigan Sustainable Business Forum	
Work with food rescue organizations and pantries to apply for funding for operations and capacity building	$$							
Support opportunities and spaces to upcycle food	$-$$$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Decrease food waste in schools								
Encourage schools to commit to reducing food waste	$							
Encourage schools to incorporate food waste reduction into curriculum	$						WWF: Offer-v-serve, Share tables, composting	
Encourage schools to offer food scrap collection	$						Model policies	
Encourage schools to implement share tables	$						Share Tables for Schools guidance from State of Michigan	
Encourage schools to participate in offer v. serve	$							
Encourage schools to perform a resource assessment of cooking equipment, kitchen space, staff skills, etc.	$						Food Service Resource Checklist	
Encourage schools to conduct a food waste audit	$						Guide to Conducting Food Waste Audits: A Resource for Schools, Food Waste Audit for Schools - Sustainable New Jersey	
Encourage schools to conduct food preference surveys	$							
Encourage schools to track food waste in their school wellness portal	$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Encourage schools to donate leftover food	$							
Encourage schools to participate in 10 Cents a Meal	$						Teaching resources (WWF)	
Encourage schools to do as much scratch cooking as possible	$							
Encourage schools to adopt county color/shape/signage scheme for waste management	$							
Encourage schools to have student and/or teacher/parent champions (Green Team)	$							
Encourage schools to submit action items to Michigan Green Schools certification	$							
							Additional best practices (USDA)	
Focus Area: Increase food scrap processing								
Initiate the development of additional composting and A/D sites, if needed	$$$						EGLE; Model policies, NRDC Toolkit for Tackling Food Waste in Cities - See Strategy 10	
Create a workforce development program in circular waste management	$$$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality						
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**	
Focus Area: Engage the community								
Promote the food waste initiative through Community communications such as newsletters, social media, and the press	$							
Identify, train, and promote local champions	$							
Create advisory committees provide feedback on how food waste initiatives are going for businesses and residents	$							
Conduct a public education campaign related to prevention and composting	$$-$$$						(Link to MFNW forthcoming)	
Create ways for people to make a public commitment to address food waste such as yard signs, flags, and door signs, online pledges, etc.	$$							
Organize events, workshops, and social media outreach to encourage participation among households, businesses, schools, and community groups	$$							

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality					
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**
Focus Area: Increase partnerships and regional collaboration							
Provide pass through funding to local businesses, nonprofits and community stakeholders to support efforts	$-$$						Federal Grants Database
Explore joint compost facility infrastructure with neighboring communities to reduce costs	$						
Focus Area: Ensure food waste management services are available to all communities within the County							
Provide targeted outreach and financial assistance for residents and food pantries who may face barriers to participation	$-$$$						
Focus Area: Provide for financial sustainability of food waste management							
Apply for State and federal grants open to government entities on behalf of groups based in the Community	$-$$$						

Food Waste Reduction Action Template: Municipalities (Continued)

		To Be Completed by Municipality					
Strategies	**Project Cost Range ($=low, $$=med, $$$=high)**	**Objectives**	**Timeline**	**Method of Measurement (See NRDC resource)**	**Responsibility**	**Notes**	**Helpful Resources**
Focus Area: Support innovative technologies							
Consider the adoption of or pilots to test technological approaches including: apps and digital marketplaces, composting and aerobic digestion machines, upcycling into value-added food or non-food products, smart bins, and robotic food sorting/ transporting systems	$-$$$						Too Good To Go, Flashfood, HARP aerobic digestion, BigBelly compost bins, Home bins: Reencle, Mill, Orange Sparkle Ball, Michigan Materials Marketplace
Focus Area: Measure results							
Conduct a waste characterization study	$$						Guide to Methods (NRDC)

Data Tracker

Example					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
	Strategy - Residential Food Waste Management				
	Goal: 10% reduction via prevention and a 50% participation in food scrap collection				
Action Steps	Collect baseline data to understand existing prevention and diversion habits	Implement and promote food scrap collection program	Monitor/evaluate food scrap collection program success; measure participation rate and adjust promotional methods/training/location of bins/etc. to increase participation as need to reach goal	Monitor/evaluate food scrap collection program success; measure participation rate and adjust promotional methods/training/location of bins/etc. to increase participation as need to reach goal	Monitor/evaluate food scrap collection program success; measure participation rate and adjust promotional methods/training/location of bins/etc. to increase participation as need to reach goal
Measurement	Resident survey with questions about current practices for managing food waste	Implementation and promotion of food scrap collection program	Resident survey with questions about current practices for managing food waste	Resident survey with questions about current practices for managing food waste	Resident survey with questions about current practices for managing food waste
Tracking Data	Survey developed and launched; received 503 responses that indicate that....	Whether or not the food scrap collection was implemented, how many households it services, number of people participating, pounds of food scraps collected, etc.	Number of households served with food scrap collection program, number of people participating, pounds of food scraps collected, etc.	Number of households served with food scrap collection program, number of people participating, pounds of food scraps collected, etc.	Number of households served with food scrap collection program, number of people participating, pounds of food scraps collected, etc.
	Strategy -				
	Goal:				
Action Steps					
Measurement					
Tracking Data					

Data Tracker (Continued)

Example					
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
	Strategy -				
	Goal:				
Action Steps					
Measurement					
Tracking Data					
	Strategy -				
	Goal:				
Action Steps					
Measurement					
Tracking Data					

Model Ordinance on Backyard Composting

The following language is an example ordinance that could be added to Southfield's Code of Ordinances to promote backyard composting while protecting neighbors from nuisances. This language is based on language used in Farmington Hills, Michigan. It should be reviewed by City Council and refined as needed. These standards related to composting could be placed in a new article, Article XI, of Chapter 111 - Nuisances of Title XI - Police Regulations of the city's code or elsewhere as staff and City Council see fit.

Draft Language:

(1) Purpose. This ordinance is intended to:
- (a) Protect environmental and public health, safety, comfort, convenience, and the general welfare of citizens of Southfield;
- (b) Establish powers, duties, rules, regulations, and standards for the location and operation of backyard and small compost sites in residential areas;
- (c) Promote a program of waste reduction through source separation of organic materials from mixed municipal solid waste;
- (d) Provide for the administration and enforcement of this ordinance.

(2) Definitions.
- (a) "Backyard compost site" means a site no greater than four cubic yards used to compost food scraps, garden wastes, weeds, lawn cuttings, leaves, and prunings from a single family or household
- (b) "Composting" means the controlled microbial degradation of source separated compostable material to yield a humus-like product or mulch to be used as a soil amendment
- (c) "Mixed municipal solid waste" means garbage, refuse, and other solid waste from residential, commercial and community activities that the generator of the waste aggregates for collection
- (d) "Food scraps" means organic material resulting from the handling, preparation, cooking, and consumption of food.
- (e) "Organic material" means yard waste, food scraps, and compostable material
- (f) "Yard waste" means garden wastes, leaves, lawn cuttings, non-regulated weeds, shrub and tree waste, prunings, and twigs

(3) Standards for compost piles in residential areas:
- (a) Backyard compost sites may accept a combination of yard waste and food scraps that are not meat or dairy.
  - (i) Specifically prohibited items: uncooked meat, fats, oils, grease, bones, whole eggs, milk or other liquid dairy product, human or pet wastes, hazardous waste, herbicides, noxious weeds, and any other mixed municipal solid waste that may cause a public health risk or create nuisance conditions.
- (b) Location:
  - (i) Compost piles shall not be located within any storm sewer, drainage easement, or water retention basin. Compost piles shall not be located in any front or side yard, or closer than ten (10) feet to any property line.
  - (ii) No compost site shall be located closer than twenty (20) feet to any residential dwelling, except the dwelling on the property on which the site is located.
  - (iii) No compost site may be placed within twenty (20) feet of any body of water or area designated as a 100-year floodplain or state protected wetland.

(c) Size: Compost piles shall not exceed four feet by eight feet (4'×8') or six (6) feet in diameter and shall not exceed four (4) feet in height. Double compost piles may be utilized, provided the total size does not exceed the above.

(d) Maintenance: Compost piles shall be maintained so that there are no readily apparent odors emanating onto adjacent property.

(4) Enforcement. In addition to any costs which may be assessed pursuant to subsection (3) below, any violation of this article shall subject the violator to a civil fine of not more than one hundred dollars ($100.00).

Other resources for ordinances for backyard and small scale composting:

Minnesota Composting Council and Association of Recycling Managers and the Association of Recycling Managers, Inc. (ARM), "Model Composting Ordinance for backyard and small compost sites," August 2018, https://www.mn-swaa.org/wp-content/uploads/2018/08/model_composting_ordinance.pdf.

Other resources for ordinances on community and larger scale composting sites:

NRDC and the Environmental Law Institute (ELI), "Model Municipal Zoning Ordinance on Community Composting," June 2024, https://www.nrdc.org/sites/default/files/2024-05/model-municipal-zoning-ordinance-community-composting.pdf.

NRDC and the Environmental Law Institute (ELI), "Model Municipal Zoning Ordinance on Community Composting, With Commentaries," June 2024, https://www.nrdc.org/sites/default/files/2024-05/model-municipal-zoning-ordinance-community-composting-commentaries.pdf.

NRDC and the Environmental Law Institute (ELI), "Model Municipal Zoning Ordinance on Community Composting: Background Memorandum," May 2024, https://www.nrdc.org/sites/default/files/2024-05/model-municipal-zoning-ordinance-community-composting-background.pdf.

US Composting Council, "Model Zoning Text Amendment for Composting Facilities," January 2022, https://cdn.ymaws.com/www.compostingcouncil.org/resource/resmgr/documents/USCC_Model_Compost_Zoning_Or.pdf.

Model Ordinance on Food at Events

The following language is an example ordinance that could be added to Southfield's codes to promote sorting and diversion of food waste during events held within the city. This language is based on language used in Ferndale, Michigan. It should be reviewed by City Council and refined as needed, with the parts that do not pertain to food waste either completed or removed. These standards related to special events could be placed in a new chapter, Chapter 31, of Title III - Parks and Public Grounds, or elsewhere as staff and City Council see fit. The city may also consider making a special event applicant guide and/or waste reduction guidebook to aid event planners in meeting the standards for events in Southfield.

Draft Language:

Chapter 31 - Special Events

(1) Purpose. This ordinance is intended to:
- (a) Ensure events held in the city are done so in a way that is safe and returns the space used to its previous state or better
- (b)

(2) Definitions
- (a) Class 1 Event: Events with a low hazard risk, including meetings, seminars, social gatherings, and auctions.
- (b) Class 2 Event: Events with a moderate hazard risk, including dances, flea markets, picnics, and parades without floats
- (c) Class 3 Event: Events with a high hazard risk, including parades with floats, marathons, circuses, and carnivals
- (d) Class 4 Event: Events with a severe hazard risk, including concerts and festivals and events with alcohol sales and fireworks

(3) Standards for waste management at events
- (a) Restrooms [to be drafted by City staff as deemed necessary]
- (b) Recycling, food, and waste management
  - (i) Events classified as class 1 and 2 and serving food require organic diversion bins. If no food is served, this requirement is waived.
  - (ii) Events classified as class 3 and 4 will require a waste management plan that includes details about access to trash, recycling and organic diversion in all event areas and surrounding areas within 300 ft. of the event from event set up until post event cleaning associated with the event is completed.
  - (iii) The location of all waste containers and roll-off dumpsters must be identified on the event site plan and approved by the City Sustainability Planner.
  - (iv) Event organizers must ensure that the following are met, unless managed by the City:
    1) All containers must be clearly labeled to indicate whether they are dedicated for landfill trash, recycling, or organics diversion;
    2) Landfill trash, recycling, and organics diversion containers should be grouped in common collection areas to ensure access for employees, vendors, volunteers, and attendees.
    3) No third-party service provider of waste removal and recycling shall be permissible without pre-approval by the Ferndale Sustainability Planner.
  - (v) Container maintenance. Create common waste collection areas by grouping landfill trash, recycling, and organics diversion containers adjacent to one another. Use clear liners for recycling, black liners for landfill trash, and green liners for organics.
  - (vi) When appropriate, donation of leftover food is encouraged.
- (c) Solid waste [to be drafted by City staff as deemed necessary]
- (d) Recyclables [to be drafted by City staff as deemed necessary]

(4) Application process [to be drafted by City staff as deemed necessary]
(5) Application requirements [to be drafted by City staff as deemed necessary]
    (a) Name, date, time and type of event
    (b) Contact information
    (c) Logistics (timeline for set up and breakdown)
    (d) Special requests (use of city services, sidewalk and road closures, parking lot use and closure, etc.)
    (e) Food related requirements (health and safety, temporary alcohol license, etc.)
    (f) Public safety plan
    (g) Restroom, waste, and recycling plan
        (i) Restrooms [to be drafted by City staff as deemed necessary]
        (ii) Food waste at events.
            1) For events where food will be served, the following must be included in the application for the special event:
        (iii) Solid waste [to be drafted by City staff as deemed necessary]
        (iv) Recyclables [to be drafted by City staff as deemed necessary]
    (h) Insurance
    (i) An event site map and/or route and supporting documentation
    (j) Application materials must be submitted at least XX days prior to the event.
(6) Enforcement. This special events policy will be enforced by the special event facilitator, Code Enforcement, and the Police Department. Special events found to be violating this code may be subject to penalties or fines of up to $XXX.

Resources

City of Ferndale, "Special Events Policy," https://drive.google.com/file/d/1B8O3MsWfVLJ1F-Q4RKcVmjxgQM2CLUJQ/view.

City of Detroit, Office of External Affairs, "Special Event Applicant Guide," https://detroitmi.gov/sites/detroitmi.localhost/files/2024-01/Special%20Events%20Applicant%20Guide%202024.pdf.

City of Detroit, "Event Recycling and Waste Reduction Guidebook," https://detroitmi.gov/sites/detroitmi.localhost/files/2022-03/City%20of%20Detroit%20Event%20Guidebook%20City%20Final%20Edit.pdf.

List of Community Groups in Southfield

Living Water Seventh Day Adventist
Detroit Mar Thoma Church
St. John Armenian Church
First Baptist Church of Detroit
Highland Park Baptist Church
New Hope Missionary Baptist Church
Church of the Transfiguration
Divine Providence
Mother of God Chaldean Catholic Church
Our Lady of Albanians Parish
St. Thomas Syro-Malabar Catholic Church
New Direction Church International
The Voice of One Ministry
Remnant Christian Assembly
Oakland Church of Christ
Faith Tabernacle Church of God in Christ
Community Congregational Church
Church of the Redeemer
St. David Episcopal Church
Kingdom Hall of Jehovah's Witnesses
Jehovah's Witness (Oak Park Unit)
Church of Jesus Christ of Latter-day Saints
Emmanuel Lutheran Church
Peace Lutheran Church
Full Gospel AME Zion Church
John Wesley AME Zion Church
St. George Romanian Orthodox Cathedral
St. Mary the Protectreess Ukrainian Orthodox Cathedral
St. Peter & Paul Syriac Orthodox Church
Covenant Presbyterian Church
Korean Presbyterian Church of Metro Detroit
Southfield Reformed Presbyterian Church
Providence Orthodox Presbyterian Church
Armenian Congregational Church
Hope United Methodist Church
Abyssina Christ Centered Ministries
Christian Tabernacle Church
Empowerment Church
Family Victory Fellowship Church
International Gospel Deliverance Center
Praise Center Church
Revolution Church
Southfield Community Church
Word of Faith International Christian Center
Congregation Beth Tefilo Emanuel Tikvah (Orthodox)
Congregation Shaarey Zedek (Conserative)
Congregation Shomrey Emunah (Orthodox)
Cong. Yagdil Torah
Temple Emanu-El (Reform)
Young Israel of Southfield (Orthodox)
Ismaili Community Center
Northwest Unitarian Universalist Church
Southfield Garden Club
Buy Nothing Give Freely
Southfield Cruisers

Community Resource Hubs

TABLE 35. Community Hubs: Southfield

Community Hub	Resources and Programming Provided	Residents served
Southfield Municipal Campus - Pavilion, Parks and Recreation, Human Services, Southfield Sports Arena - 26000 Evergreen Road	Parks and Recreation provides recreational opportunities at the Pavillion and Southfield Sports Arena; Human Services provides support for residents such as senior services, emergency food and prescription assistance, and legal aid	All residents eligible for services
Southfield Public Library - 26000 Evergreen Road	Book and audiovisual material for loan, computer and technology use and classes, various other classes, book clubs,	All residents eligible for services
PACE - 24463 W. 10 Mile Road	Program of All-Inclusive Care for the Elderly (PACE) provides day programming, classes, and medical, social, rehabilitation, and nutritional services	55 years or older living in the PACE location's service area
Oakland County Health Division: South Oakland Health Center - 27725 Greenfield Road	Clinic and immunization services, senior resources and support, WIC, Classes	All Oakland County residents and businesses
Oakland County Michigan Works! - 21415 Civic Center Drive, Suite 116	Job training, workforce development, and placement support	All Oakland County residents
Beech Woods Recreation Center - 22200 Beech Road	Recreation space and programming	Southfield residents
Champions at Magnolia Center - 17050 Dorset Avenue	Child care support and enrichment opportunities for after school and during school breaks	K-6th grade students in their service area
The Salvation Army Family Store and Donation Center - 26175 Greenfield Road*	Sells second-hand clothing, toys, furniture, appliances, and other household items at less than market prices	Anyone
World Medical Relief Center - 21725 Melrose Avenue*	Provides affordable prescriptions, household medical supplies, blankets, and diabetes education, supplies, prescriptions and more.	Low-income persons in Michigan; must apply
Michigan Department of Human Services - 25620 Eight Mile Road	MI Bridges, Medicaid assistance, food assistance, child welfare resourced, health education	Michigan residents
Crossroads Office Center - Spaulding for Children - 16250 Northland Drive, Suite 120	Foster care and adoption organization	Michigan residents
Crossroads Office Center - Lakeshore Legal Aid for Low-Income Households - 16250 Northland Drive, Suite 363	Free civil legal services, including civil services, older adult services, family law, and domestic violence	Low-income persons, older adults, survivors of domestic violence and sexual assault
* Located in an EJ census tract community		

Community Hub	Resources and Programming Provided	Residents served
Closet of Hope Food Pantry - Hope United Methodist Church - 26275 Northwestern Highway	Food and clothing ssistance	Anyone
Family Victory Outreach - Family Victory Fellowship Church - 19421 W. 10 Mile Road	Food pantry	Anyone
Oakland Church of Christ - 23333 W. 10 Mile Road	Food pantry	Anyone
Transfiguration Parish - Franciscan	Holiday food boxes and financial aid	Parishioners
Lighthouse of Oakand County - 16200 Twelve Mile Road		
* Located in an EJ census tract community		

Job Descriptions

Job Title: Project manager

Location: Detroit, MI

Organization: Make Food Not Waste

Type: Full Time, Paid

About Make Food Not Waste:
Make Food Not Waste is an environmental non-profit organization committed to reducing food waste. Its mission is to keep food out of landfills and slow climate change by creating lasting solutions to food waste through education, food upcycling and advocacy.

Job Description:
Make Food Not Waste is seeking an experienced and motivated individual to lead and oversee our 2030 Project, a bold plan to halve Michigan's food waste by 2030 by working to completely eliminate food waste in the 15 most populous communities in Southeast Michigan. The ideal candidate will have a strong background in project management, excellent organizational skills, public policy, planning, or legal experience, and the ability to work effectively with the public, city staff, expert advisors, and the implementation teams. In addition to supporting the implementation team in each community, the Project Manager will also work with the city or township staff to implement the overarching governmental and policy strategies in each community. This role requires a strategic and creative thinker who can complete projects while managing resources, timelines, and stakeholder expectations. The Project Manager will report to the Executive Director.

Key Responsibilities:

- Execute the Blueprint documents to achieve zero food waste in multiple communities in Southeast Michigan.
- Coordinate internal resources and assist implementation teams in coordinating third parties/vendors for strategy implementation.
- Ensure resource availability and allocation.
- Monitor and manage project progress, identifying and addressing any issues or risks.
- Prepare and deliver regular project reports, presentations, and documentation, as needed.
- Facilitate communication and collaboration among team members and stakeholders.
- Ensure adherence to project management best practices and standards.
- Support the community in adopting policies and practices that support elimination of food waste.
- Manage grants used for implementation, including any required reporting, tracking and documenting expenditures, and communicating with grantors as needed.

Qualifications:

- Bachelor's degree in Project Management, Business Administration, or a related field. PMP, PRINCE2, or similar project management certification preferred.
- Proven experience as a Project Manager or similar role.
- Strong organizational and multitasking skills.
- Exceptional communication and interpersonal skills.
- Ability to work under pressure and meet tight deadlines.
- Experience with Google docs is helpful.

- An opportunity to be part of a transformative project for Southeast Michigan and the state.

What We Offer:

- Competitive salary
- Paid vacation and holidays off
- Health, dental, and vision insurance
- Opportunities for professional development and career growth
- A collaborative and supportive work environment
- Flexible work hours and opportunities to work remotely
- An opportunity to be part of a transformative project for Southeast Michigan and the state.

How to Apply:
Interested candidates are invited to submit their resume and a cover letter detailing their qualifications and experience to danielle@makefoodnotwaste.org. Please include "Project Manager Application - [Your Name]" in the subject line.

Application Deadline:

Make Food Not Waste is an Equal Opportunity Employer. We celebrate diversity and are committed to creating an inclusive environment for all employees.

Job Title: Residential Food Waste Elimination Coordinator

Location: Detroit, MI

Organization: Make Food Not Waste

Type: Full Time, Paid

About Make Food Not Waste:
Make Food Not Waste is an environmental non-profit organization committed to reducing food waste. Its mission is to keep food out of landfills and slow climate change by creating lasting solutions to food waste through education, food upcycling and advocacy.

Job Description:
Make Food Not Waste is seeking a dedicated and motivated individual to join the Southfield implementation team as part of the 2030 Project, a bold plan to halve Michigan's food waste by 2030 by working to completely eliminate food waste in the 15 most populous communities in Southeast Michigan. The Residential Food Waste Elimination Coordinator will work primarily with all residences in Southfield, and possibly residents in other communities in Southeast Michigan, to prevent food waste from occurring and divert the food waste that is inevitable. The ideal candidate will have a strong background in communications and community outreach and/or creating behavior change. This role requires a creative thinker who can meet residents where they are in their understanding of the importance of food waste and support them in making changes that reduce and divert food waste. The Residential Food Waste Elimination Coordinator will work with the School Food Waste Elimination Coordinator and Commercial Food Waste Elimination Coordinator,

as there will likely be overlap in strategies and outreach opportunities. The Residential Food Waste Elimination Coordinator will report to the Project Manager.

Key Responsibilities:

- Work with the Project Manager and the rest of the implementation team to execute the Blueprint documents to achieve zero food waste in in Southfield, specifically among residents.
- Engage residents on the importance of food waste for their household and the community through a variety of platforms, including social media and press, events, workshops, demos, training, competitions, surveys, and other means.
- Help develop informational and teaching materials, events, and other support for residents.
- Coordinate workshops, demos, pop-up events, presentations and other opportunities to teach residents ways to prevent food waste.
- Teach residents how to properly sort food scraps and divert via either hauling services or community collection sites.
- Help monitor food waste diversion rates and troubleshoot as needed.
- Provide any reports or other information needed for the grant funding of this position and related activities.
- Other duties as needed to support implementation of the Blueprints.

Qualifications:

- Bachelor's degree in communications, community leadership or organizing, teaching, psychology, or a related field.
- Proven experience in community engagement and organizing, writing, social media outreach, and supporting behavior change.

Job Title: Commercial Food Waste Elimination Coordinator

Location: Detroit, MI

Organization: Make Food Not Waste

Type: Full Time, Paid

About Make Food Not Waste:
Make Food Not Waste is an environmental non-profit organization committed to reducing food waste. Its mission is to keep food out of landfills and slow climate change by creating lasting solutions to food waste through education, food upcycling and advocacy.

Job Description:
Make Food Not Waste is seeking a dedicated and motivated individual to join the Southfield implementation team as part of the 2030 Project, a bold plan to halve Michigan's food waste by 2030 by working to completely eliminate food waste in the 15 most populous communities in Southeast Michigan. The Commercial Food Waste Elimination Coordinator will work primarily with businesses in Southfield, and possibly businesses in other communities in Southeast Michigan, to prevent food waste from occurring, rescue what can be, and divert the food waste that is inevitable. The ideal candidate will have a strong background in hospitality, food and beverage services, grocery, catering, and/or food rescue. This role requires a creative thinker who can meet business owners and their employees where they are at and support them in making changes that reduce and divert food waste. The Commercial Food Waste Elimination Coordinator will likely work closely with the Residential Food Waste Elimination Coordinator and School Food Waste

Elimination Coordinator, as there will likely be overlap in strategies and outreach opportunities.The Commercial Food Waste Elimination Coordinator will report to the Project Manager.

Key Responsibilities:

- Work with the Project Manager and the rest of the implementation team to execute the Blueprint documents to achieve zero food waste in multiple communities in Southfield and other Southeast Michigan, specifically in businesses.
- Establish relationships with businesses, sharing how they can benefit from reducing food waste
- Train owners and employees on how to reduce food waste.
- Help develop teaching materials for businesses that are and are not food-based.
- Teach business owners and employees ways to prevent food waste.
- Connect businesses to food rescue organizations as appropriate.
- Assist businesses in setting up third party food scrap hauling services.
- Provide any reports or other information needed for the grant funding of this position and related activities.
- Other duties as needed to support implementation of the Blueprints.

Qualifications:

- Bachelor's degree in Hospitality, Culinary, Education, or a related field.
- Proven experience in hospitality, food and beverage service, grocery, catering, food rescue, and/or safe food handling.
- Exceptional communication and interpersonal skills, including teaching skills.
- Experience with Google docs is helpful.

What We Offer:

- Competitive salary
- Paid vacation and holidays off
- Health, dental, and vision insurance
- Opportunities for professional development and career growth
- A collaborative and supportive work environment
- Flexible work hours and opportunities to work remotely
- An opportunity to be part of a transformative project for Southeast Michigan and the state.

How to Apply:
Interested candidates are invited to submit their resume and a cover letter detailing their qualifications and experience to danielle@makefoodnotwaste.org. Please include "Commercial Coordinator Application - [Your Name]" in the subject line.

Application Deadline:

Make Food Not Waste is an Equal Opportunity Employer. We celebrate diversity and are committed to creating an inclusive environment for all employees.

Job Title: School Food Waste Elimination Coordinator

Location: Detroit, MI

Organization: Make Food Not Waste

Type: Full Time, Paid

About Make Food Not Waste:
Make Food Not Waste is an environmental non-profit organization committed to reducing food waste. Its mission is to keep food out of landfills and slow climate change by creating lasting solutions to food waste through education, food upcycling and advocacy.

Job Description:
Make Food Not Waste is seeking a dedicated and motivated individual to join the Southfield implementation team as part of the 2030 Project, a bold plan to halve Michigan's food waste by 2030 by working to completely eliminate food waste in the 15 most populous communities in Southeast Michigan. The School Food Waste Elimination Coordinator will work in each of the thirty schools in Southfield, and possibly schools in other communities in Southeast Michigan, to prevent food waste from occurring, rescue what is rescuable, and divert the food waste that is inevitable. The ideal candidate will have a strong background in food service, working in schools and/or working with school-aged children. This role requires a creative thinker who can show schools that the changes needed to reduce and divert food waste are easy and can fit seamlessly into their existing day. The School Food Waste Elimination Coordinator will likely work closely with the Residential Food Waste Elimination Coordinator and Commercial Food Waste Elimination Coordinator, as there

will likely be overlap in strategies and outreach opportunities. The School Food Waste Elimination Coordinator will report to the Project Manager.

Key Responsibilities:

- Work with the Project Manager and the rest of the implementation team to execute the Blueprint documents to achieve zero food waste in multiple communities in Southfield and other Southeast Michigan, specifically within the public and private schools.
- Measure and document baseline information about each school, including demographics, kitchen assets, mealtime procedures, and amount of food wasted.
- Engage students, teachers, staff, and administrators on the importance of addressing food waste through a variety of platforms, including providing resources for lessons, events, workshops, demos, training, competitions, surveys, and other means.
- Develop an online food waste portal for schools.
- Develop and implement a zero food waste plan for each school.
- Teach food service staff and administrators ways to prevent food waste.
- Set up food scrap hauling services or onsite composting for each school.
- Teach students, administrators, and staff how to properly sort food scraps and divert via either hauling services or onsite composting.
- Help monitor food waste diversion rates and troubleshoot as needed.
- Provide any reports or other information needed for the grant funding of this position and related activities.
- Other duties as needed to support implementation of the Blueprint.

Required Qualifications:

- Bachelor's degree in education, school administration, nutrition, or food science or 2 years proven experience in teaching, writing, and tracking and monitoring information.Must be able to work on multiple projects at the same time.
- Exceptional communication and interpersonal skills, including teaching skills.
- Experience working with school-aged children.

Desired Qualifications:

- Experience with Google docs.

What We Offer:

- Competitive salary
- Paid vacation and holidays off
- Health, dental, and vision insurance
- Opportunities for professional development and career growth
- A collaborative and supportive work environment
- Flexible work hours and opportunities to work remotely
- An opportunity to be part of a transformative project for Southeast Michigan and the state.

How to Apply:
Interested candidates are invited to submit their resume and a cover letter detailing their qualifications and experience to danielle@makefoodnotwaste.org. Please include "School Coordinator Application - [Your Name]" in the subject line.

Application Deadline:

Make Food Not Waste is an Equal Opportunity Employer. We celebrate diversity and are committed to creating an inclusive environment for all employees.

Bill Emerson Good Samaritan Food Donation Act

42 U.S.C.
United States Code, 2022 Edition

§ 1791 - Bill Emerson Good Samaritan Food Donation Act

(a) Short title

This section may be cited as the "Bill Emerson Good Samaritan Food Donation Act".

(b) Definitions

As used in this section:

(1) Apparently fit grocery product

The term "apparently fit grocery product" means a grocery product that meets all quality and labeling standards imposed by Federal, State, and local laws and regulations even though the product may not be readily marketable due to appearance, age, freshness, grade, size, surplus, or other conditions.

(2) Apparently wholesome food

The term "apparently wholesome food" means food that meets all quality and labeling standards imposed by Federal, State, and local laws and regulations even though the food may not be readily marketable due to appearance, age, freshness, grade, size, surplus, or other conditions.

(3) Donate

The term "donate" means to give without requiring anything of monetary value from the recipient, except that the term shall include giving by a nonprofit organization to another nonprofit organization, notwithstanding that the donor organization has charged a nominal fee to the donee organization, if the ultimate recipient or user is not required to give anything of monetary value or is charged a good Samaritan reduced price.

(4) Food

The term "food" means any raw, cooked, processed, or prepared edible substance, ice, beverage, or ingredient used or intended for use in whole or in part for human consumption.

(5) Gleaner

The term "gleaner" means a person who harvests for free distribution to the needy, or for donation to a nonprofit organization for ultimate distribution to the needy, an agricultural crop that has been donated by the owner.

(6) Good Samaritan reduced price

The term "good Samaritan reduced price" means, with respect to the price of an apparently wholesome food or apparently fit grocery product, a price that is an amount not greater than the cost of handling, administering, harvesting, processing, packaging, transporting, and distributing the apparently wholesome food or apparently fit grocery product.

(7) Grocery product

The term "grocery product" means a nonfood grocery product, including a disposable paper or plastic product, household cleaning product, laundry detergent, cleaning product, or miscellaneous household item.

(8) Gross negligence

The term "gross negligence" means voluntary and conscious conduct (including a failure to act) by a person who, at the time of the conduct, knew that the conduct was likely to be harmful to the health or well-being of another person.

(9) Intentional misconduct

The term "intentional misconduct" means conduct by a person with knowledge (at the time of the conduct) that the conduct is harmful to the health or well-being of another person.

(10) Nonprofit organization

The term "nonprofit organization" means an incorporated or unincorporated entity that—

(A) is operating for religious, charitable, or educational purposes; and

(B) does not provide net earnings to, or operate in any other manner that inures to the benefit of, any officer, employee, or shareholder of the entity.

(11) Person

The term "person" means an individual, corporation, partnership, organization, association, or governmental entity, including a retail grocer, wholesaler, hotel, motel, manufacturer, restaurant, caterer, farmer, and nonprofit food distributor or hospital. In the case of a corporation, partnership, organization, association, or governmental entity, the term includes an officer, director, partner, deacon, trustee, council member, or other elected or appointed individual responsible for the governance of the entity.

(12) Qualified direct donor

The term "qualified direct donor" means a retail grocer, wholesaler, agricultural producer, agricultural processor, agricultural distributor, restaurant, caterer, school food authority, or institution of higher education (as defined in section 1002 of title 20).

(c) Liability for damages from donated food and grocery products

(1) Liability of person or gleaner

A person or gleaner shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the person or gleaner donates in good faith to a nonprofit organization for ultimate distribution to needy individuals at zero cost or at a good Samaritan reduced price.

(2) Liability of nonprofit organization

A nonprofit organization shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the nonprofit organization received as a donation in good faith from a person or gleaner for ultimate distribution to needy individuals at zero cost or at a good Samaritan reduced price.

(3) Direct donations to needy individuals

A qualified direct donor shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the qualified direct donor donates in good faith to a needy individual at zero cost.

(4) Exception

Paragraphs (1), (2), and (3) shall not apply to an injury to or death of an ultimate user or recipient of the food or grocery product that results from an act or omission of the person, gleaner, or nonprofit organization, as applicable, constituting gross negligence or intentional misconduct.

(d) Collection or gleaning of donations

A person who allows the collection or gleaning of donations on property owned or occupied by the person by gleaners, or paid or unpaid representatives of a nonprofit organization, for ultimate distribution to needy individuals shall not be subject to civil or criminal liability that arises due to the injury or death of the gleaner or representative, except that this paragraph shall not apply to an injury or death that results from an act or omission of the person constituting gross negligence or intentional misconduct.

(e) Partial compliance

If some or all of the donated food and grocery products do not meet all quality and labeling standards imposed by Federal, State, and local laws and regulations, the person or gleaner who donates the food and grocery products shall not be subject to civil or criminal liability in accordance with this section if the nonprofit organization that receives the donated food or grocery products—

(1) is informed by the donor of the distressed or defective condition of the donated food or grocery products;

(2) agrees to recondition the donated food or grocery products to comply with all the quality and labeling standards prior to distribution; and

(3) is knowledgeable of the standards to properly recondition the donated food or grocery product.

(f) Construction

This section shall not be construed to create any liability. Nothing in this section shall be construed to supercede State or local health regulations.

(Pub. L. 89–642, §22, formerly Pub. L. 101–610, title IV, §402, Nov. 16, 1990, 104 Stat. 3183; renumbered §22 and amended Pub. L. 104–210, §1(a)(2), (b), Oct. 1, 1996, 110 Stat. 3011, 3012; Pub. L. 117–362, §1, Jan. 5, 2023, 136 Stat. 6295.)

Editorial Notes

Codification

Section was formerly classified to section 12672 of this title prior to renumbering by Pub. L. 104–210.

Amendments

2023—Subsec. (b)(3). Pub. L. 117–362, §1(1)(A), inserted “or is charged a good Samaritan reduced price” before period at end.

Subsec. (b)(6) to (11). Pub. L. 117–362, §1(1)(B), (C), added par. (6) and redesignated former pars. (6) to (10) as (7) to (11), respectively.

Subsec. (b)(12). Pub. L. 117–362, §1(1)(D), added par. (12).

Subsec. (c)(1), (2). Pub. L. 117–362, §1(2)(A), inserted "at zero cost or at a good Samaritan reduced price" after "needy individuals".

Subsec. (c)(3). Pub. L. 117–362, §1(2)(C), added par. (3). Former par. (3) redesignated (4).

Subsec. (c)(4). Pub. L. 117–362, §1(2)(B), (D), redesignated par. (3) as (4) and substituted ", (2), and (3)" for "and (2)".

1996—Pub. L. 104–210, §1(a)(2)(A), substituted "Bill Emerson" for "Model" in section catchline.

Subsec. (a). Pub. L. 104–210, §1(a)(2)(B), inserted "Bill Emerson" before "Good".

Subsec. (b)(7). Pub. L. 104–210, §1(a)(2)(C), reenacted heading without change and amended text generally. Prior to amendment, text read as follows: "The term 'gross negligence' means voluntary and conscious conduct by a person with knowledge (at the time of the conduct) that the conduct is likely to be harmful to the health or well-being of another person."

Subsec. (c). Pub. L. 104–210, §1(a)(2)(D), added subsec. (c) and struck out heading and text of former subsec. (c). Text read as follows: "A person or gleaner shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the person or gleaner donates in good faith to a nonprofit organization for ultimate distribution to needy individuals, except that this paragraph shall not apply to an injury to or death of an ultimate user or recipient of the food or grocery product that results from an act or omission of the donor constituting gross negligence or intentional misconduct."

Subsec. (f). Pub. L. 104–210, §1(a)(2)(E), inserted at end "Nothing in this section shall be construed to supercede State or local health regulations."

Food Donation Improvement Act

Public Law 117-362
117th Congress

An Act

To amend the Bill Emerson Good Samaritan Food Donation Act to improve the program, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. BILL EMERSON GOOD SAMARITAN FOOD DONATION ACT.

The Bill Emerson Good Samaritan Food Donation Act (42 U.S.C. 1791) is amended—

(1) in subsection (b)—

(A) in paragraph (3), by inserting "or is charged a good Samaritan reduced price" before the period at the end;

(B) by redesignating paragraphs (6) through (10) as paragraphs (7) through (11), respectively;

(C) by inserting after paragraph (5) the following:

"(6) GOOD SAMARITAN REDUCED PRICE.—The term 'good Samaritan reduced price' means, with respect to the price of an apparently wholesome food or apparently fit grocery product, a price that is an amount not greater than the cost of handling, administering, harvesting, processing, packaging, transporting, and distributing the apparently wholesome food or apparently fit grocery product."; and

(D) by adding at the end the following:

"(12) QUALIFIED DIRECT DONOR.—The term 'qualified direct donor' means a retail grocer, wholesaler, agricultural producer, agricultural processor, agricultural distributor, restaurant, caterer, school food authority, or institution of higher education (as defined in section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002))."; and

(2) in subsection (c)—

(A) in paragraphs (1) and (2), by inserting "at zero cost or at a good Samaritan reduced price" after "needy individuals" each place it appears;

(B) by redesignating paragraph (3) as paragraph (4);

(C) by inserting after paragraph (2) the following:

"(3) DIRECT DONATIONS TO NEEDY INDIVIDUALS.—A qualified direct donor shall not be subject to civil or criminal liability arising from the nature, age, packaging, or condition of apparently wholesome food or an apparently fit grocery product that the qualified direct donor donates in good faith to a needy individual at zero cost."; and

(D) in paragraph (4) (as so redesignated), by striking "and (2)" and inserting ", (2), and (3)".

Approved January 5, 2023.

Guide on Food Donations for Individuals

Why Donate?

Donating food is a safe and legal way to protect our resources, prevent harmful greenhouse gas emissions, and provide support to people who are in need in the local community.

What Can You Donate?

All food donations must be handled and stored properly to maintain safety and quality. Donated foods should be in its original packing or properly sealed containers to ensure it remains safe and uncontaminated. Food past its labeled dates are safe to donate as long as the food has been inspected for spoilage. Donors should follow food safety guidelines to ensure food remains safe for consumption. Types of food you can donate include:

- Canned goods, boxed meals, and dry foods
- Bottled drinks such as water, juice, and milk
- Fruit and vegetables

Leftover food from meals or parties are not able to be donated.

How to Donate?

Contact your local food bank or food pantry to either coordinate a time to bring your donation.

Guide on Food Donations for Businesses, Schools, and Institutions

Why Donate?

Donating food is a safe and legally protected way to support your community and reduce food waste. Donating food can:

- Strengthen community ties and enhance your business's reputation while providing people in need with food
- Benefit your business by taking advantage of tax deductions from donating food from overproduction or unsold inventory. They can also save money on waste removal associated with throwing away surplus foods.
- Divert food from landfills, reducing methane emission and the overall impacts of food waste. Engaging in food donations showcases a commitment to reducing methane emissions.
- Build a positive culture of giving back and by boosting morale and the work environment. Employees are often proud to work for companies that give back to communities.

What Can You Donate?

All food donations must be handled and stored properly to maintain safety and quality. Donated foods should be in its original packing or properly sealed containers to ensure it remains safe and uncontaminated. Food past its labeled dates are safe to donate as long as the food has been inspected for spoilage. Donors should follow ServSafe food safety guidelines to ensure food remains safe for consumption. Types of food you can donate include:

- Perishable items including fresh fruits and vegetables, dairy products, meat, and baked goods.
- Prepared items such as surplus meals from events, catered functions or other food service.
- Canned goods, boxed meals, and dry foods
- Frozen food (without freezer burn)
- Bottled drinks such as water, juice, and milk

How to Donate?

Partner with local food banks and food rescue organizations that work with business and organizations to facilitate donations. Coordinate regular pickups to donate surplus food on a consistent basis. (Source: The Center for EcoTechnology)

Liability Protection:

You are protected when you donate food under the 1996 Bill Emerson Good Samaritan Food Donation Act and the 2023 Food Donation Improvement Act. Businesses and organizations that donate or distribute food or grocery products are protected from liability when donating food in good faith. Good faith is defined as donating food that has been treated the same as food served to guests. As long as you have followed the same food safety protocols, and believe the donated food to be safe for consumption, you will not be held liable if the food later causes harm. Understanding these protections can give you peace of mind as you contribute to helping those in need.

Michigan law further strengthens these protections. Under the Michigan State Liability Protection Law, not only are food donors protected, but also those who harvest surplus crops for donation are also covered. This law extends liability protection to nonprofit organizations that distribute donated food, ensuring that those who contribute to fighting hunger are fully supported by the legal system. (Sources: Food Law and Policy Clinic - Emerson Act; Food Law and Policy Clinic - Michigan Law)

Federal Tax Incentive:

The federal government offers a tax deduction to businesses donating food in order to support businesses in diverting food to the community. See the following for detail on calculating your tax deduction, or consult an accounting professional: NRDC - Tax Deduction Food Donation; Food Law and Policy Clinic - Food Donation Tax Guide.

Food Waste Recycling Proposal for Southfield MI School District

Overview

This proposal outlines a comprehensive food waste recycling program for the Southfield MI School District, aimed at promoting sustainability and environmental responsibility among students. With thirty schools in the district, this initiative will not only reduce the environmental impact of food waste but also serve as an educational tool for students, teaching them about the importance of recycling and sustainability.

Benefits of Recycling for School Children and Their Environment

1. Environmental Awareness: Introducing recycling programs in schools helps foster a culture of environmental consciousness among students. Children learn the importance of reducing waste, reusing resources, and recycling, which can lead to lifelong sustainable habits.
2. Reduction of Landfill Waste: By recycling food waste, the district can significantly reduce the amount of waste sent to landfills. This decrease in waste helps lower greenhouse gas emissions, particularly methane, which is a potent contributor to climate change.
3. Soil Enrichment: Recycled food waste can be converted into compost, which enriches the soil and reduces the need for chemical fertilizers. This not only benefits the local environment but can also be used in school gardens, providing a practical application for students.
4. Cost Savings: Over time, reducing the amount of waste sent to landfills can lead to lower waste disposal costs for the district. Additionally, the compost produced can reduce the need for purchasing commercial soil amendments.

Implementation Plan

- Initial Setup: CO Sustainability suggests starting with 5 64-gallon bins at each of the thirty schools in the district. The number of bins can be adjusted to meet the specific needs of each school.
- Cost Breakdown:
  - The first bin at each school will cost $150.00.
  - Each additional 64-gallon bin will cost $50.00.
  - The total monthly cost per school for the bins is $350.00.
  - With thirty schools participating, the total estimated monthly cost for the district is approximately $10,500.00.
- Additional Services:
  - Bin Cleaning Service: CO Sustainability offers a monthly bin cleaning service at $10.00 per bin. If the district opts for this service, it will add an additional $1,500.00 per month to the total cost.
- Total Estimated Cost:
  - Without Bin Cleaning Service: $10,500.00 per month.
  - With Bin Cleaning Service: $12,000.00 per month.

Conclusion

This food waste recycling program offers Southfield MI School District an opportunity to lead by example in the community, demonstrating a commitment to environmental stewardship. By involving students in the process, the district can help cultivate a new generation of environmentally conscious individuals who understand the importance of sustainability. The investment in this program will not only benefit the environment but also provide long-term educational and financial advantages for the district.

APPENDIX E:

Reports

Appendix E: Reports

List of Reports

The following reports were created by partners in the project to explore various sectors and strategies. Not all strategies and timelines suggested in these reports are in the blueprint, but they served as the foundation for making the blueprint specific to Southfield.

RRS memo

TO: MAKE FOOD NOT WASTE

FROM: RRS

DATE: AUGUST 2024

RE: CITY OF SOUTHFIELD FOOD WASTE STRATEGIES AND EVALUATION

EXECUTIVE SUMMARY

Project Background: Michigan has set a state goal of halving food waste disposal by 2030. To support this objective, Make Food Not Waste ("MFNW") is leading a team to evaluate resources and pathways for eliminating food waste in the City of Southfield. The result of the project includes a detailed city-wide food waste reduction plan that can be implemented in Southfield. This plan can be referenced as a model and scaled to other Michigan cities to reduce food waste across Michigan municipalities. With the goal of implementing food waste reduction strategies in Southfield by end of 2024, MFNW has commissioned this study to obtain insights on existing food waste generation and evaluate cost and climate impact implications of various strategies proposed by stakeholders in the community.

Data Team Focus: Resource Recycling Systems ("RRS") has supported this project with unique expertise in food waste data analysis and model design. The RRS Project Team, as part of this effort, focused on evaluating the City's current food waste generation data across various sectors and providing quantitative insights on food waste reduction strategies proposed by relevant stakeholders. This evaluation considers both cost and climate impact perspectives to help prioritize feasible strategies for inclusion in the final plan.

Methodologies: The RRS Project Team first evaluated the City of Southfield's existing food waste generation through a multi-step process and verified generation data provided by the Natural Resources Defense Council ("NRDC") across residential, commercial, and institutional sectors. Based on the verified generation data, the Team then designed a quantitative model to evaluate strategies across various food waste reduction solutions including Prevention/Generation Education, Donate/Recover/Rescue, Local Recycling, and Centralized Composting, through outlining the associated cost and greenhouse gas emissions respectively to each strategy.[1] The model was designed with the overall assumptions that 75% of the total food waste generated would be diverted via Centralized Composting related strategies, while 25% would be reduced, recovered and locally recycled. The model assumed that all Commercial and Institutional entities will be provided curbside collection via subscription services.

For the Residential sector, it includes three collection scenarios:

- Scenario #1: 100% of single-family and multifamily households will participate in drop off composting.
- Scenario #2: 100% of single-family households will have curbside collection via carts, and 100% of multi-family households will participate in commercial curbside collection services.

[1] RRS: For the purposes of this assessment, Local Recycling is defined as processing food scraps within households, communities, or other solutions not related to centralized composting.

416 LONGSHORE DRIVE, ANN ARBOR, MI 48105 recycle.com

- Scenario #3: Same as Scenario 2, except that single-family households will not be provided with carts, but instead they will use self-provided bins or paper bags.

Key Findings: The findings of this research represent the best estimates and are intended to provide guidance to stakeholders on strategies that should be prioritized based on considerations across generation, cost, and climate impacts.

- Food Waste Generation: Approximately 13,780 tons of food waste are generated annually in the City of Southfield.
- Sector Contributions: The Residential (42.5%) and Food Service (41.5%) sectors are the predominant contributors, collectively accounting for 85% of the total food waste.
- Centralized Composting Scenarios: Among the three scenarios for Centralized Composting, Scenario #1 (100% residential participation in drop-off) would avoid the least amount of GHG emissions at around 14,699 tons per year, primarily due to the emissions generated from transportation.
- Scenarios #2 and #3 have the most substantial positive climate impact, each reducing CO2 emissions by 20,178 tons annually.
- Scenario #1 incurs the lowest annual cost among all scenarios, with more than 75% of savings[2] compared to the others and a total annual cost of $2.3 million.
- While both Scenarios #2 and #3 yield similar climate benefits, Scenario #2 is more convenient and practical because residents will be provided carts for curbside collection. This will increase participation rates due to the ease of collection and reduced barriers for transportation, making it simpler for residents to participate in the food waste collection program.

[2] Subject to be updated if contract cost from Priority Waste is provided.

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MODELING

Food Waste Diversion Potential by Strategy

The model assigned approximate ratios of waste diversion potential to each of the strategies based on various sources including ReFED Insight Engine and previous studies conducted by RRS for other cities and regions. Estimated waste diversion from each categorized strategy by RRS is included in tables below. 100% of participation rate is assumed across all strategies.[3]

Table 1. Overall Food Waste Generation by Sector Tons Per Year (TPY)

Overall Food Waste Generation by Sector (TPY)	
Single Family Residential	2,902
Multi-Family Residential	3,102
Commercial/Institutional	7,867
Total	**13,870**

Table 2. Food Waste Diversion Potential Through Prevention

Prevention			
	Consumer Education Campaigns	Waste Tracking & Analytics	Total
Diversion Potential (%)	8.2%	4.3%	12.5%
SF Residential FW (TPY)	238	125	363
MF Residential FW (TPY)	254	133	388
Commercial FW (TPY)	645	665[4]	1,310
Total (TPY)	**1,137**	**923**	**2,060**

Table 3. Food Waste Diversion Potential Through Donation/Recovery/Rescue

Donation/Recovery/Rescue					
	Standardized Donation Regulation	Donation Matching Software	Donation Transportation	Donation Storage & Handling	Total
Diversion Potential (%)	1.5%	1.1%	0.8%	0.8%	4.2%
SF Residential FW (TPY)	44	32	23	23	122
MF Residential FW (TPY)	47	34	25	25	130

[3] While a 100% participation rate is assumed in this model to create a blue-sky vision for ideal food waste management, it is recognized that achieving such a rate may not be realistic in practical scenarios. This assumption is intended to provide a comprehensive framework for understanding the potential impact and benefits of full participation.

[4] The model assumes that Commercial sector will not participate in local recycling activities such as Home Composting or Community composting. Instead, the 25% of the sector's food waste will be diverted from Prevention and Rescue/Recovery/Donation Strategies. The Diversion Potential (%) for the Commercial Sector can be different from other sectors.

Commercial FW (TPY)	118	413[5]	63	63	657
Total (TPY)	**208**	**479**	**111**	**111**	**909**

Table 4. Food Waste Diversion Potential Through Local Recycling

Local Recycling			
	Home Composting	Community Composting	Total
Diversion Potential (%)	6.5%	1.8%	8.3%
SF Residential FW (TPY)	189	52	241
MF Residential FW (TPY)	-	257[6]	257
Commercial FW (TPY)	-	-	-
Total (TPY)	**189**	**310**	**498**

Table 5. Food Waste Diversion Potential Through Centralized Composting

	Total Centralized Composting
Diversion Potential (%)	75%
SF Residential FW (TPY)	2,176
MF Residential FW (TPY)	2,326
Commercial FW (TPY)	5,900
Total (TPY)	**10,403**

Cost Considerations

Due to numerous pending considerations for the Prevention, Donation/Recovery/Rescue, and Local Recycling strategies, associated costs – such as staffing, educational materials, surveying, and equipment, cost savings from landfill avoidance, etc. – are currently excluded from the model. The cost calculation model primarily focuses on Centralized Composting, especially concerning various scenarios for residential collection.

The RRS Project Team, in collaboration with subgroup partners, has incorporated cost considerations below into the model:

- Hauling costs based on contract terms provided by service providers or the city (GFL, My Green Michigan, and CO Sustainability)
- Costs for new trucks needed and truck operation for service providers to transport the food waste.
- Composting tipping fee at composting facilities including Spurt Industries in Wixom, MI and Country Oaks in Burton, MI.
- Landfill tipping fee at Arbor Hills Landfill.

[5] The model assumes that Commercial sector will not participate in local recycling activities such as Home Composting or Community composting. Instead, the 25% of the sector's food waste will be diverted from Prevention and Rescue/Recovery/Donation Strategies. The Diversion Potential (%) for the Commercial Sector can be different from other sectors.
[6] The model assumes that for Local Recycling strategies, multi-family sector will participate in community composting and not home composting efforts.

Across scenarios, the model is not incorporating savings associated with reduced frequency of commercial trash service, or household savings associated with reduced landfill fees. Several other categories of costs were not incorporated due to complexity and uncertainty at the time this report was developed:

- Scenario #1: Does not include cost of city labor, staff, or tools. The cost of carts at drop-off sites is already incorporated into the service providers' contract and thus wouldn't be double counted in the model.
- Scenario #2: Does not include cost of city labor or staff. Initial cart investment for single-family residential curbside collection is included as a reference, as it may not be relevant if the cost of cart is included in collection provider's contract.
- Scenario #3: Does not include cost of city labor or staff. Carts are not needed for this scenario.

Climate Impact Considerations

The model primarily utilizes greenhouse gas emissions (CO_2e) as the main metric to reflect the environmental impact of each strategy, particularly focusing on the avoided emissions from diverting food waste from landfills. For Centralized Composting, the model also accounts for emissions generated by residents transporting food waste, and by service providers collecting food waste from curbside and drop-off sites, as well as emissions associated with transporting it to the centralized composting facility. These emissions are included and offset the avoided emissions from potential landfill diversion. The model employs the EPA WARM Model as the main source for calculating CO_2e for these strategies.

Key Model Insights

- Most Cost-Effective Scenario:
  - Scenario #1 incurs the lowest annual cost among all scenarios with a total annual cost of $2.3 million.
    - If the infrastructure investments, such as upfront cost for carts and trucks, and ongoing cost of maintenance and operation for trucks, are to be considered in the city's budget, then the Scenarios involving 100% curbside pick-up collection will incur a much higher annual cost than Scenario #1; annually around $9.8 million for Scenario #2, and $9.2 million for Scenario #3.
    - In comparison, Scenarios #2 and #3 will incur an annual cost of $6.5 million if the infrastructure costs are excluded.
    - It should be recognized that the hauling cost for single-family curbside collection is currently based on the previous GFL contract that City of Southfield signed and executed in 2024, which included solid waste, yard waste, and recycling collection. If a more updated cost for food waste collection is provided, the model can be adjusted to reflect a more accurate cost evaluation across these Scenarios.
- Significant Climate Impact:
  - Scenarios #2 and #3 drive the most substantial positive climate impact, each reducing CO_2 emissions by 20,178 tons annually, which is 37% more reduction than achieved in Scenario #1, where all residential households participate in drop-off collection.
- Overall Best Scenario:[7]
  - Scenario #2 is considered the best overall option considering climate impact and provided convenience to achieve the 100% participation rate.

[7] Subject to be updated once contract cost from Priority Waste is provided.

  - Compared to Scenario #3, Scenario #2 yields similar climate benefits and incurs the same amount of collection cost (without considerations for infrastructure). However, Scenario #2 is more convenient and practical due to the reason that carts will be provided to the residents for curbside collection, which provides a stronger incentive for residential participation in food waste collection. In contrast, Scenario #3 requires residents to supply their own paper bags or containers, which may become a hindrance for residents.
  - If cost of infrastructure such as carts and trucks are included as City's budget considerations, Scenario #2 will incur an additional $687,000 upfront cost for cart investment and $2.6 million ongoing cost for truck investment. However, it may still be worth the investment if the city aims to achieve 100% participation as the top priority.
- Strategy Implementation
  - Strategies should be implemented across the EPA Food Recovery Hierarchy with priorities of food waste prevention, donation/recovery/rescue, recycling, and composting. Consistent and routine actions should be designed and deployed to support these strategies, including:
    - Sending informative mailers to residents and businesses about the program detail and how they can participate.
    - Offering regular educational programs such as workshops and webinars to educate community members on program impact.
    - Leveraging media outlets and community events to raise awareness and encourage widespread participation.
    - Tracking participation rates through surveys and software solutions and providing feedback to participants to maintain engagement.
- Model Feasibility:
  - The RRS Project Team developed various scenarios in the model based on the overall assumption of 100% participation from the residential, commercial, and institutional sectors, as requested by the Make Food Not Waste project team. This visionary plan aims to provide guidance for the City of Southfield in understanding and evaluating pathways to eliminate food waste citywide. However, it is important for users of the model to recognize that the feasibility and practicality of some of the scenarios is not guaranteed in real life.

Below is a summary table for detailed cost and impact breakdown for centralized composting collection by scenario, demographic, and collection model.

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Table 6: Detailed cost and impact breakdown for centralized composting.

Centralized Composting Collection			Curbside Collection					Drop Off Collection				Total Hauling Cost ($/Year)	Total Infrastructure Cost (Cart+Truck) ($/Year)	Total Collection Cost (Infrastructure + Hauling) ($/Year)	Total Annual CO2e (Ton/Year)
Scenario	Type	Collected By	Collection %	Collection Tons/Year	Hauling Cost $/Year	Total Collection Cost (Infrastructure + Hauling Costs)	Total CO2e from Curbside Collection (Ton/Year)	Collection %	Collection Tons/Year	Total Drop-off Hauling Cost $/Year	Annual CO2e from Drop-off Collection (Ton/Year)				
Scenario #1 100% SF+MF for Drop-Off 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950	$ 611,433	$ 1,622,866	732					$ 2,391,332	-	$ 2,391,332	6,774
		My Green Michigan	50%	2,950	$ 1,011,433										
		Total Commercial	100%	5,900	$ 1,622,866	$ 1,622,866	732								
	Single Family	My Green Michigan						100%	2,176	$ 371,420	3,938				
	Multifamily	My Green Michigan						100%	2,326	$ 397,046	2,105				
	Total (Curbside or Drop-off)		100%	5,900	$ 1,622,866	$ 1,622,866	732	100%	4,503	$ 768,466	6,043				
	Total Scenario 1 (Curbside AND Drop-off)		**100%**	**10,403**											
Scenario #2 100% SF Curbside by City Contracted Hauler, with Carts 100% MF Curbside by Subscription 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950	$ 976,833	$ 1,988,266	732					$ 6,507,064	$ 3,340,800	$ 9,847,864	1,295
		My Green Michigan	50%	2,950	$ 1,011,433										
		Total Commercial	100%	5,900	$ 1,988,266										
	Single Family	Priority Waste	100%	2,176	$ 3,490,905	$ 6,831,705	407								
	Multifamily	CO Sustainability	50%	1,163	$ 629,075	$ 1,027,893	157								
		My Green Michigan	50%	1,163	$ 398,819										
		Total Multifamily	100%	2,326	$ 1,027,893										
	Total Scenario 2		**100%**	**10,403**	**$ 6,507,064**	**$ 9,847,864**	**1,295**								
Scenario #3 100% SF Curbside by City, no Carts 100% MF Curbside by Subscription 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950	$ 976,833	$ 1,988,266	732					$ 6,507,064	$ 2,653,800	$ 9,160,864	1,295
		My Green Michigan	50%	2,950	$ 1,011,433										
		Total Commercial	100%	5,900	$ 1,988,266										
	Single Family	Priority Waste	100%	2,176	$ 3,490,905	$ 6,144,705	407								
	Multifamily	CO Sustainability	50%	1,163	$ 629,075	$ 1,027,893	157								
		My Green Michigan	50%	1,163	$ 398,819										
		Total Multifamily	100%	2,326	$ 1,027,893										
	Total Scenario 3		**100%**	**10,403**	**$ 6,507,064**	**$ 9,160,864**	**1,295**								

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Scenario #1 Insights

- Assumptions: This scenario assumes 100% participation from single-family and multi-family households in drop-off composting at three (3) selected sites in Southfield. These sites will be managed and serviced by My Green Michigan. Additionally, it assumes 100% participation from the commercial and institutional sectors in curbside collection through CO Sustainability and My Green Michigan's subscription services, with a 50/50 split between the two service providers.
- Cost Impact: The total annual cost under this scenario is approximately $2.3 million.
    - This estimate includes composting tip fees, savings from landfill tip fees, and hauling cost by the service providers. It does not account for the costs of labor, staff, tools for the Prevention, Rescue/Recovery/Donation, or Local Recycling strategies, or cost of carts at drop-off sites. Among all scenarios, this one incurs the lowest cost.
    - Note that the Total Annual Cost for Prevention, Rescue/Recovery/Donation strategies are shown as negative in the table below, since the main cost modeled is cost savings from the avoided landfill tip fees.
- Climate Impact: This scenario results in an annual reduction of CO2 emissions by 14,699 tons. It has the least positive climate impact due to the significant carbon emissions generated by weekly trips of residential households to drop-off sites. However, potential efficiencies could be realized by integrating regular commuting or shopping trips, such as shopping for groceries, into trips to drop-off sites, to minimize redundant emissions.

Table 7 – Detailed modeled cost and impact for scenario #1: 100% of single family and multifamily households will participate in drop off composting; 100% of commercial and institutional entities have curbside pickup collection.

Diversion Strategy	Diversion Solutions	Total Tons Diverted	Total Annual Cost ($/year)	Total Annual Avoided CO2e (Ton/year)
Prevention	Consumer Education Campaigns	1,137	$(20,473)	(5,215)
	Waste Tracking & Analytics	923	$(16,612)	(4,234)
	Total Prevention	**2,060**	**$(37,085)**	**(9,449)**
Rescue/Recovery/ Donation (RRD)	Standardized Donation Regulation	208	$(3,745)	(954)
	Donation Matching Software	479	$(8,623)	(2,197)
	Donation Transportation	111	$(1,997)	(509)
	Donation Storage & Handling	111	$(1,997)	(509)
	Total RRD	**909**	**$(16,362)**	**(4,170)**
Local Recycling	Home Composting	189	$(3,395)	(136)
	Community Composting	310	$(5,574)	(223)
	Total Local Recycling	**498**	**$(8,969)**	**(360)**
Centralized Composting	100% SF +MF Drop-off & 100% Commercial Curbside	10,403	$2,400,571	(721)
	Total Centralized Composting	10,403	$2,400,571	(721)
Total		**13,870**	**$2,338,154**	**(14,699)**

Below is a more detailed cost and impact breakdown for the centralized composting collection by demographic and collection mode in Scenario #1. This cost does not include the cost savings from prevention and donation measures/strategies/etc. The total

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collection cost for centralized composting in Scenario #1 mainly includes hauling cost, which is about $2.4 million/year. However, this number is higher than the total annual cost of $2.3 million/year as indicated in Table 7, as that figure also accounts for cost savings from landfill tipping fees and incurred composting fees.

Table 8: Scenario #1 cost and impact breakdown for centralized composting.

Centralized Composting Collection			Curbside Collection					Drop Off Collection				Total Hauling Cost ($/Year)	Total Infrastructure Cost (Cart+Truck) ($/Year)	Total Collection Cost (Infrastructure + Hauling) ($/Year)	Total Annual CO2e (Ton/Year)
Scenario	Type	Collected By	Collection %	Collection Tons/Year	Hauling Cost $/Year	Total Collection Cost (Infrastructure + Hauling Costs)	Total CO2e from Curbside Collection (Ton/Year)	Collection %	Collection Tons/Year	Total Drop-off Hauling Cost $/Year	Annual CO2e from Drop-off Collection (Ton/Year)				
Scenario #1 100% SF+MF for Drop-Off 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950	$ 611,433	$ 1,622,866	732					$ 2,391,332	-	$2,391,332	6,774
		My Green Michigan	50%	2,950	$ 1,011,433										
		Total Commercial	100%	5,900	$ 1,622,866	$ 1,622,866	732								
	Single Family	My Green Michigan						100%	2,176	$ 371,420	3,938				
	Multifamily	My Green Michigan						100%	2,326	$ 397,046	2,105				
	Total (Curbside or Drop-off)		100%	5,900	$ 1,622,866	$ 1,622,866	732	100%	4,503	$ 768,466	6,043				
	Total Scenario 1 (Curbside AND Drop-off)		**100%**	**10,403**											

Scenario #2 Insights

- Assumptions: This scenario assumes 100% participation from single-family in curbside collection via a city's contracted service, where residents will comingle yard waste and food waste using 32-gallon bins provided by the city. It also assumes 100% participation from multi-family in curbside collection via subscription services by My Green Michigan or CO Sustainability. Additionally, it includes 100% participation from the commercial and institutional sectors in curbside collection through CO Sustainability and My Green Michigan's subscription services, with a 50/50 split between the two service providers.
- Cost Impact: The total annual cost with associated infrastructure cost (upfront cart investment, upfront truck investment, and annual truck maintenance and operation) under this scenario is approximately $9.8 million.[8] If infrastructure related costs are excluded from consideration, the total annual cost is about $6.5 million.
    - This estimate includes composting fees, savings from landfill tip fees, and hauling cost by the service providers. It does not account for the costs of labor, staff, tools for the Prevention, Rescue/Recovery/Donation, or Local Recycling strategies.
    - Compared to Scenario #1, the total annual cost (without infrastructure costs) is more than tripled due to the contract costs with multiple service providers.
    - Additionally, if the costs of carts and trucks for residential curbside collection are not included in the contract and will need to be covered by the City, it will become another impacting factor for the City's planning budget, as it will incur an additional $3.3 million for the infrastructure investment, with about $687,000 upfront cost for cart investment and $2.6 million ongoing cost for truck investment.
    - Note that the Total Annual Cost for Prevention, Rescue/Recovery/Donation strategies are shown as negative in the table, since the main cost modeled for those strategies is cost savings from the avoided landfill tip fees.

[8] Scenario #2 contract cost is currently a placeholder and will need to be adjusted once a service provider provides a proposal for collecting curbside food waste from single-family households in Southfield. The current cost incorporated the previous GFL contract for single-family recycling and trash services of $203/household/year (average of 8 years) in Southfield.

- Note that the City of Southfield was paying $3 million annually for recycling, yard waste, and solid waste collection from single-family households under the previous GFL contract.

- Climate Impact: This scenario results in an annual reduction of CO2 emissions by 20,178 tons annually, which is 37% more reduction than achieved in Scenario #1, where all residential households participate in drop-off collection.

Table 9 – Cost and climate impact for Scenario #2

Diversion Strategy	Diversion Solution	Total Tons Diverted	Total Annual Cost with Infrastructure ($/year)	Total Annual Cost Without Infrastructure ($/year)	Total Annual CO2e (Ton/year)
Prevention	Consumer Education Campaigns	1,137	$ (20,473)	$ (20,473)	(5,215)
	Waste Tracking & Analytics	923	$ (16,612)	$ (16,612)	(4,234)
	Total Prevention	**2,060**	**$ (37,085)**	**$ (37,085)**	**(9,449)**
Rescue/Recovery/ Donation (RRD)	Standardized Donation Regulation	208	$ (3,745)	$ (3,745)	(954)
	Donation Matching Software	479	$ (8,623)	$ (8,623)	(2,197)
	Donation Transportation	111	$ (1,997)	$ (1,997)	(509)
	Donation Storage & Handling	111	$ (1,997)	$ (1,997)	(509)
	Total RRD	**909**	**$ (16,362)**	**$ (16,362)**	**(4,170)**
Local Recycling	Home Composting	189	$ (3,395)	$ (3,395)	(136)
	Community Composting	310	$ (5,574)	$ (5,574)	(223)
	Total Local Recycling	**498**	**$ (8,969)**	**$ (8,969)**	**(360)**
Centralized Composting	100% SF Curbside via city w/ carts & 100% MF/Commercial Curbside via subscription	10,403	$9,902,248	$6,561,448	(6,200)
	Total Centralized Composting	**10,403**	**$9,902,248**	**$6,561,448**	**(6,200)**
Total		**13,870**	**$9,839,832[9]**	**$6,499,032**	**(20,178)**

Below is a more detailed cost and impact breakdown for the centralized composting collection by demographic and collection mode in Scenario #2. This cost does not include the cost savings from prevention and donation measures/strategies/etc. The total collection cost for centralized composting in Scenario #2 ($9,847,864/year) includes hauling cost ($6.5 million/year), upfront cost for cart investment ($687,000), and ongoing cost for truck ($2.6 million). However, this collection cost may be higher than the total annual cost of $9,839,832/year as indicated in Table 9, as that figure also accounts for cost savings from landfill tipping fees and incurred composting fees.

[9] The Total Annual Cost here is lower than the Total Collection Cost shown in table 10 because it also included the annual composting fee as well as the avoided landfill tip fee.

Table 10: Scenario #2 cost and impact breakdown for centralized composting.

Centralized Composting Collection			Curbside Collection					
			Collection	Collection	Infrastructure Cost	Hauling Cost	Total Collection Cost (Infrastructure + Hauling Costs)	Total CO2e from Curbside Collection (Ton/Year)
Scenario	Type	Collected By	%	Tons/Year	Total Infrastructure Cost	$/Year		
Scenario #2 100% SF Curbside by City Contracted Hauler, with Carts 100% MF Curbside by Subscription 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950		$ 976,833		
		My Green Michigan	50%	2,950		$ 1,011,433	$ 1,988,266	732
		Total Commercial	100%	5,900		$ 1,988,266		
	Single Family	Priority Waste	100%	2,176	$ 3,340,800	$ 3,490,905	$ 6,831,705	407
	Multifamily	CO Sustainability	50%	1,163		$ 629,075		
		My Green Michigan	50%	1,163		$ 398,819	$ 1,027,893	157
		Total Multifamily	100%	2,326		$ 1,027,893		
	Total Scenario 2		**100%**	**10,403**	**$ 3,340,800**	**$ 6,507,064**	**$ 9,847,864**	**1,295**

Scenario #3 Insights

- Assumptions: This scenario assumes 100% participation from single-family in curbside collection via city's contracted service, where residents will comingle yard waste and food waste using self-provided paper bags or containers. It also assumes 100% participation from multi-family in curbside collection via subscription services by My Green Michigan or CO Sustainability. Additionally, it includes 100% participation from the commercial and institutional sectors in curbside collection through CO Sustainability and My Green Michigan's subscription services, with a 50/50 split between the two service providers.
- Cost Impact: The total annual cost with associated infrastructure cost (upfront truck investment, annual truck maintenance and operation) under this scenario is approximately $9.2 million.[10] If infrastructure related costs are excluded from consideration, the total annual cost is about $6.5 million.
    - This estimate includes composting tip fees, savings from landfill tip fees, and hauling cost by the service providers. It does not account for the costs of labor, staff, tools for the Prevention, Rescue/Recovery/Donation, or Local Recycling strategies, or cost of carts at drop-off sites. Compared to scenario #1, the total annual cost is more than doubled due to the contract costs with multiple service providers.
    - Note that the Total Annual Cost for Prevention, Rescue/Recovery/Donation strategies are shown as negative in the table, since the main cost modeled for those strategies is cost savings from the avoided landfill tip fees.
- Climate Impact: This scenario results in an annual reduction of CO2 emissions by 20,178 tons annually, which is 37% more reduction achieved than in Scenario #1, where all residential households participate in drop-off collection.

[10] Scenario #2 contract cost is currently a placeholder and will need to be adjusted once a contractor is able to provide a proposal for collecting curbside food waste from single-family households in Southfield. The cost incorporated the previous GFL contract for single-family recycling and trash services of $203/household/year (average of 8 years) in Southfield.

Table 11 – Cost and climate impact for scenario #3

Diversion Strategy	Diversion Solution	Total Tons Diverted	Total Annual Cost With Infrastructure ($/year)	Total Annual Cost Without Infrastructure ($/year)	Total Annual CO2e (Ton/year)
Prevention	Consumer Education Campaigns	1,137	$ (20,473)	$ (20,473)	(5,215)
	Waste Tracking & Analytics	923	$ (16,612)	$ (16,612)	(4,234)
	Total Prevention	**2,060**	**$ (37,085)**	**$ (37,085)**	**(9,449)**
Rescue/Recovery/Donation (RRD)	Standardized Donation Regulation	208	$ (3,745)	$ (3,745)	(954)
	Donation Matching Software	479	$ (8,623)	$ (8,623)	(2,197)
	Donation Transportation	111	$ (1,997)	$ (1,997)	(509)
	Donation Storage & Handling	111	$ (1,997)	$ (1,997)	(509)
	Total RRD	**909**	**$ (16,362)**	**$ (16,362)**	**(4,170)**
Local Recycling	Home Composting	189	$ (3,395)	$ (3,395)	(136)
	Community Composting	310	$ (5,574)	$ (5,574)	(223)
	Total Local Recycling	**498**	**$ (8,969)**	**$ (8,969)**	**(360)**
Centralized Composting	100% SF +MF Drop-off & 100% Commercial Curbside	10,403	$9,215,248	$6,561,448	(6,200)
	Total Centralized Composting	**10,403**	$9,215,248	$6,561,448	**(6,200)**
Total		**13,870**	**$9,152,832**	**$6,499,032**	**(20,178)**

Below is a more detailed cost and impact breakdown for the centralized composting collection by demographic and collection mode in Scenario #3. This table below does not include the cost savings from prevention and donation measures/strategies/etc. The total collection cost for centralized composting in Scenario #3 ($9,160,864/year) includes hauling cost and infrastructure costs (trucks), which are roughly $6.5 million/year and $2.6 million/year respectively. However, this collection cost may appear to be higher than the total annual cost of $9,152,832/year as indicated in Table 11, as that figure also accounts for cost savings from landfill tipping fees and incurred composting fees.

Table 12: Scenario #3 cost and impact breakdown for centralized composting.

Centralized Composting Collection			Curbside Collection					
			Collection	Collection	Infrastructure Cost	Hauling Cost	Total Collection Cost (Infrastructure + Hauling Costs)	Total CO2e from Curbside Collection (Ton/Year)
Scenario	Type	Collected By	%	Tons/Year	Total Infrastructure Cost	$/Year		
Scenario #3 100% SF Curbside by City, no Carts 100% MF Curbside by Subscription 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950		$ 976,833		
		My Green Michigan	50%	2,950		$ 1,011,433	$ 1,988,266	732
		Total Commercial	100%	5,900		$ 1,988,266		
	Single Family	GFL/Priority Waste	100%	2,176	**$ 2,653,800**	$ 3,490,905	$ 6,144,705	407
	Multifamily	CO Sustainability	50%	1,163		$ 629,075		
		My Green Michigan	50%	1,163		$ 398,819	$ 1,027,893	157
		Total Multifamily	100%	2,326		$ 1,027,893		
	Total Scenario 3		**100%**	**10,403**	**$ 2,653,800**	**$ 6,507,064**	**$ 9,160,864**	**1,295**

Below are different presentations of the data to visualize cost and climate impacts among all three scenarios. These tables also includes landfill disposal tip fee savings, and the tip fees from compost sites.

Table 13. Comparison among all three scenarios on cost and impact, based on the previously executed GFL contract cost (which includes recycling, yard waste, and municipal solid waste).

		Total Annual Cost ($/year) With Infrastructure Cost			Total Annual Avoided CO2e (Ton/year)		
Diversion Strategy	Scenario / Tons	#1	#2	#3	#1	#2	#3
Prevention	2,060	$ (37,085)	$ (37,085)	$ (37,085)	(9,449)	(9,449)	(9,449)
Rescue/Recovery /Donation (RRD)	909	$ (16,362)	$ (16,362)	$ (16,362)	(4,170)	(4,170)	(4,170)
Local Recycling	498	$ (8,969)	$ (8,969)	$ (8,969)	(360)	(360)	(360)
Centralized Composting	10,403	$ 2,400,571	$9,902,248	$9,215,248	(721)	(6,200)	(6,200)
Total	13,870	$ 2,338,154	$9,839,832	$9,152,832	(14,699)	(20,178)	(20,178)

Table 14. Comparison among all three scenarios on cost and impact, excluding the previously executed GFL contract hauling cost (which includes recycling, yard waste, and municipal solid waste).

		Total Annual Cost ($/year) With Infrastructure Cost Excluding SF Residential Hauling Cost			Total Annual Avoided CO2e (Ton/year)		
Diversion Strategy	Scenario / Tons	#1	#2	#3	#1	#2	#3
Prevention	2,060	$ (37,085)	$ (37,085)	$ (37,085)	(9,449)	(9,449)	(9,449)
Rescue/Recovery /Donation (RRD)	909	$ (16,362)	$ (16,362)	$ (16,362)	(4,170)	(4,170)	(4,170)
Local Recycling	498	$ (8,969)	$ (8,969)	$ (8,969)	(360)	(360)	(360)
Centralized Composting	10,403	$ 2,400,571	$ 6,411,344	$ 5,724,344	(721)	(6,200)	(6,200)
Total	13,870	$ 2,338,154	$ 6,348,927	$ 5,661,927	(14,699)	(20,178)	(20,178)

Figure 1. Visual comparison among all three scenarios on cost and impact.

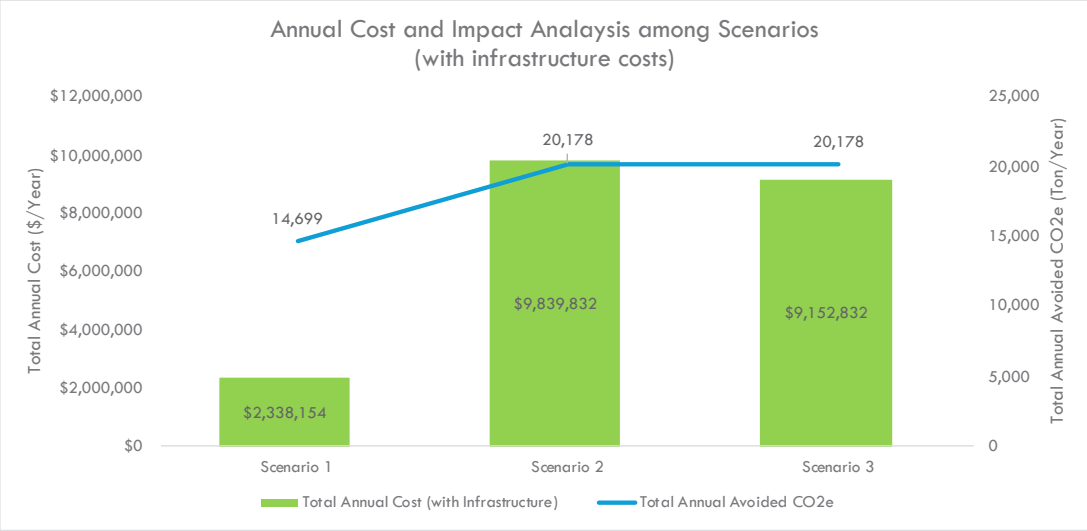
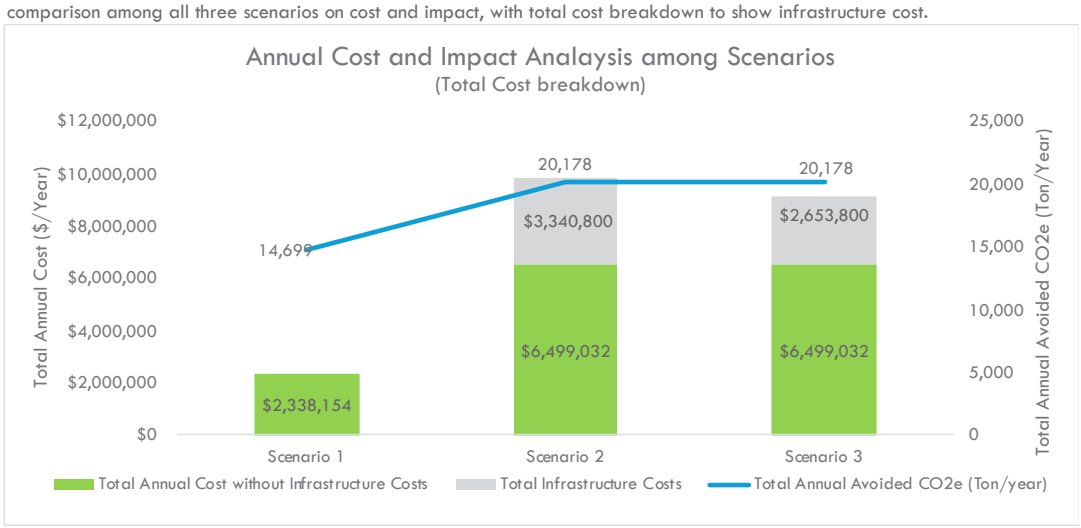


Figure 2. Visual comparison among all three scenarios on cost and impact, with total cost breakdown to show infrastructure cost.



APPROACH

Food Waste Reduction Strategy Categorization

Based on the strategies proposed by the Southfield Project Subgroups ranging from Governmental Actions, Food Rescue, and Organics Recycling and Composting, RRS Project Team organized them into four categories: Prevention, Donate/Recovery/Rescue, Local Recycling, and Centralized Composting.

It is assumed that of the total food waste diverted from the landfill for the City of Southfield, about 75% of the food waste will go to Centralized Composting strategies, and 25% will go to Prevention, Donate/Recovery/Rescue, and Local Recycling strategies.[11] Detailed strategy categorical breakdown and assumptions are listed below.

Strategies proposed by subgroups are color-coded by Governmental Actions, Food Rescue, and Organics Recycling and Composting. These proposed strategies fall under the larger 'buckets' defined by RRS and will be modeled. As such, RRS will not individually model the subgroup proposed strategies, but provide a model depicting the cost and environmental impact strategies across the buckets of prevention, donation, local recycling, and centralized composting.

RRS Proposed Strategies		Southfield Project Subgroups Proposed Strategies
Prevention	1. Consumer Education Campaigns 2. Waste Tracking & Analytics	County health inspectors share donation laws/protections during kitchen inspections
		Create city policy on food waste at events
		Require food waste reporting for major food sites
		Public outreach and education
		Food waste contamination reduction

RRS Proposed Strategies		Southfield Project Subgroups Proposed Strategies
Donate/Recovery/Rescue	1. Standardized Donation 2. Regulation 3. Donation Coordination & Matching (Software) 4. Donation Transportation 5. Donation Storage & Handling	Connect food rescue organizations and businesses via the DDA, Economic Development Department, Health Department, and Chamber of Commerce
		Person-to-person rescue/food sharing; Rescue of catered food
		Make B2B connections between businesses, haulers, composters, etc.
		Create a clearinghouse platform for small- and large-scale food donation
		Volunteer/small-scale pickups; Staff/large-scale pick ups
		Supporting pantries to handle an influx of donations

[11] Source: MFNW

RRS Proposed Strategies		Southfield Project Subgroups Proposed Strategies
Local Recycling	1. Home Composting 2. Community Composting 3. Animal Feed [Not modeled] 4. On-site Aerobic Digestion (with digestate going to farms or onsite landscapes – Pre-processing, not composted) [Not modeled]	Explore the possibility of community composting at locations such as schools and central facilities.
		Place compost bins in all city facilities and sites
		Create programming and partnerships to support composting at all scales, and identify potential funding mechanisms
		Use local compost for city projects

RRS Proposed Strategies		Southfield Project Subgroups Proposed Strategies
Centralized Composting	1. Centralized Composting (including drop off and curbside collection) 2. *Aerobic Digestion to Centralized Composting [Not modeled]*	Food waste pick-up with yard waste (curbside, 9 month/year)
		Year-round curbside food waste collection
		Create drop-off sites for food scraps
		Provide financial support for composting services and/or technical assistance to address food waste at large food generators

Model Assumptions

The model is designed with various assumptions to outline a hypothetical overview of the potential impact and cost implications associated with the proposed strategies. The assumption list below is meant to provide the modeling process with reasonable boundaries and curb excessive expectations from complex situations in real life.

Overall model assumptions include:

- The total number of residential households in Southfield is 35,535, with 17,175 single-family homes.[12]
- It is assumed that 25% of total food waste of the City of Southfield can be diverted from the Prevention, Donate/Recovery/Rescue, and Local Recycling strategies, and 75% from Centralized Composting strategies.
    - 100% commercial food waste will have curbside collection.
        - 50% of it would be collected by CO Sustainability and transported to Country Oaks and the other 50% would be collected by My Green Michigan and transported to Spurt.
        - It is assumed that My Green Michigan or CO Sustainability will service all residential drop-off collection points, and Priority Waste will service all single-family residential curbside collection services.[13]
    - 100% of residential food waste will be collected via curbside collection or drop off sites. See Scenarios described below.
- Equipment, staffing and printing costs for Prevention and Donation/Recovery/Rescue Strategies are not included. This applies to strategies such as health inspector outreach and educational campaigns.

[12] Number of households provided by RRRASOC and utilized for prior GFL contracted services.

[13] As of June 2024, Priority Waste was in the process of acquiring GFL's municipal accounts in the metro Detroit area, including Southfield. This model was based on assumptions of GFL's prior services and interest in collecting organics. Conversations with Priority Waste will need to be conducted to verify assumptions and confirm hauling costs, once able to do so. For the purposes of this model, GFL was incorporated as a potential residential food scraps collection service.

- Institutional sector is grouped with commercial in this model. However, it is recognized that Institutional entities may present distinct needs and challenges in real life scenarios. For example, schools and universities, government buildings, and hospitals and healthcare facilities have unique waste generation patterns and might need different collection and handling schedules and methods.
- As an assumption for the modeling process, 100% participation is assumed to handle and process 75% of the food waste generation (25% is diverted through prevention, donation, and local recycling) through Centralized Composting strategies. However, it is acknowledged that other factors, such as bin set out rate for the curbside collection and the actual frequency of dropping off food waste by residents, may impact the realistic capture rate of food waste.
- Residential Food Waste will have several scenarios.
    - Scenario 1: 100% of single-family and multifamily households will participate in drop off composting.
    - Scenario 2: 100% of single-family households will have curbside collection of comingled food waste and yard waste via carts, and 100% of multi-family households will participate in commercial curbside collection services. Collections will happen 52 weeks per year.
    - *Scenario 3 (Based on Wixom Pilot):* 100% of single-family households will have curbside collection of comingled food waste and yard waste without provided carts, and 100% of multi-family households will participate in commercial curbside collection services. Households will provide their own bins or utilize paper bags, while multi-family and commercial sites will have carts provided by curbside collection services. Collections will happen 52 weeks per year.
- Households
    - Modeling for residential food waste and collection/drop off services is assumed to include 100% of single-family and multi-family households. RRS acknowledges there might be exceptions. For instance, homeowners' associations often have waste contracted services that would be separate from the city-provided waste services.
- City-contracted hauling provider
    - It is assumed that Priority Waste will be able to service customers within GFL's previous routes and will be able to meet the demand for 100% participation by single-family residences.
    - Additional conversations with Priority Waste will be needed to identify the capacity/ability of collection services, and costs of operation.
    - The model temperately accounts for the hauling cost based on the previous GFL contract which was executed in early 2024 specific to trash, recycling, and yard waste collection. Updated hauling costs by Priority Waste can be updated in the model if provided later.
- Digestion
    - Commercial businesses or institutions may be able to utilize an on-site digester to reduce their food waste volume, leading to potentially reduced pickups or on-site composting. However, this scenario is not included in the model.
    - Capital and operating costs would need to be considered when implementing this strategy.

Assumptions for centralized composting include:

- Information from existing composting facilities (Spurt or Country Oaks) was utilized. The locations were provided by the Make Food Not Waste project team.
- The model will capture GHG impact generated from transportation from residents to drop-off stations as well as collection providers' transportation to centralized composting sites. GHG savings will also account for emissions reduction from composting.

Assumptions for curbside collection include:

- Both Residential and Commercial/Institutional sectors are assumed to participate in curbside collections.
- Curbside trucks will be used to collect and transport all food waste in carts. Modifications to trucks, such as cart tippers, will be led by the hauler and are not included in the model.

  - Some commercial businesses may share trash and recycling collection containers; as such, it's recognized that these businesses may share food scrap collection containers onsite. However, this model assumes each entity will be provided with carts by the contracted service providers.
  - For Scenario #2, households will need to be provided with carts for curbside collection.
- Commercial food scraps and residential compost will be collected weekly via carts.
- If a residential curbside scenario (#2 or #3) is selected, a curbside truck will be used to collect food waste along with yard waste.
- For Scenario #2, either the City or Priority Waste will provide the appropriate carts for collection. It is assumed food waste will be co-collected with yard waste in these carts.
- Priority Waste food waste collection cost is to be determined or provided by subgroup partners.
  - Scenario #2 and #3 contract costs included in this model will need to be adjusted once Priority Waste is able to provide a proposal for collecting curbside food waste from single-family households in Southfield. The current model incorporated the previous GFL contract for single-family recycling and trash services of $203/household/year (average of 8 years) in Southfield.

Figure 1 Tip Fee Costs

Site	Materials	Cost	Calculated Costs
Arbor Hill Landfill	Trash	$18/ton	
Spurt	Organics	$6.4/cubic yard	$12.80 per ton from drop-off $22.07 per ton from curbside collection
Country Oaks	Organics	$25/ton	

- For single-family curbside collection, upfront capital investment for the first year will be accounted for in certain scenarios of the model, including:
  - A total of 5 new trucks equipped with food waste collection/dumping tippers will be needed to collect and handle all the food waste generated by 100% of the single-family households in Southfield.
  - A total of 17,175 32-gallon food waste carts will be purchased by either the City of Southfield or the contracted service provider. The cost of a cart is currently assumed to be around $40.[14]

Assumptions for drop-off collection include:

- Commercial/Institutional entities will not self-transport food waste to compost sites and will be included in the curbside collection model.
- Numbers and locations of the current drop-off sites (within or near the city) are listed below and within 5 miles or 15 minutes' drive time for any resident.
  - Location 1 – RRRASOC Facility, 20000 W. Eight Mile Rd
  - Location 2 – DPW Yard, 25501 Clara Lane
  - Location 3 – Mary Thompson Farm, 25630 Evergreen Rd.
- 64-gallon carts will be used for food waste at the drop-off sites and emptied weekly by My Green Michigan or CO Sustainability and taken to the selected centralized compost site. Bin liners will be provided by service providers.
- The cost calculation for drop-off collection will be based upon the proposed contracts provided by My Green Michigan or CO Sustainability, which include the cost of carts, services, and liners.

[14] RRRASOC provided estimated number of single-family homes, also utilized in GFL contract.

BENCHMARKING SUCCESS

While setting an ambitious goal for 100% food waste elimination is commendable, it requires both aggressive short-term targets and strategic long-term visions to achieve optimal results. The strategies highlighted below can help ensure success:

- Catalog Food Waste Baseline Beyond Estimates: Design and conduct baseline surveys based on insights from the estimates provided by the RRS project team, to further understand a realistic level of total amount of food waste currently generated in the city. These surveys should be broken out by sectors, types of food wasted, portion of food waste as edible or inedible, end of life channels for these food wastes, and opportunities for prevention, rescuing/recovery/donation, recycling, and centralized composting.[15] RRS has provided a sample survey that can be adjusted, utilized, and reevaluated regularly to observe behavioral changes and track progress over time.
- Service Provider Data Collection: Engage in conversations and partnerships with haulers, composters, landfills, and food recovery organizations to develop plans for accessing food waste and diversion data on a regular basis, to help benchmark success against the 100% diversion goal. For example, food rescue organizations can provide total tons of food recovered and redistributed to feed hungry people and animals, haulers can provide numbers of participating customers and total tons of food waste collected, and composters can provide data on the tons of food waste processed and converted to compost annually.
- Ongoing Tracking and Measurement: Regularly monitor the progress towards the zero-food waste goal through full waste categorization studies, repeated every five years. This will help assess progress and identify areas for improvement.
- Engagement and Support to Businesses and Institutions: Provide ongoing technical assistance for commercial and institutional food waste generators to conduct food waste audits and monitor food waste reduction progress on an ongoing basis.

MODEL FEASIBILITY

The RRS Project Team developed various scenarios in the model based on the overall assumption of 100% participation from the residential, commercial, and institutional sectors, as requested by the Make Food Not Waste project team. This visionary plan aims to provide guidance for the City of Southfield in understanding and evaluating pathways to eliminate food waste citywide. However, it is important for users of the model to recognize that the feasibility and practicality of some of the scenarios is not guaranteed in real life.

[15] NRDC: Tackling Food Waste in Cities - A Policy and Program Toolkit https://www.nrdc.org/sites/default/files/food-waste-cities-policy-toolkit-report.pdf

APPENDIX

RRS recognizes there is limitation to the modeled cost in this report given uncertainty around single-family residential hauling services for organics. The model above was developed based on the prior contract with GFL for trash, recycling, and yard waste collection services. To provide a hypothetical preview of what organic waste collection cost may entail, RRS has included a cost breakdown for Southfield based on an existing community contract with Waste Management in Arlington County, VA (2023-2024), where organic waste and yard waste are both collected for single-family residents. This table below incorporated organic waste collection cost of $4.81 per household per month. Infrastructure, detailed below, includes annual upfront cost for trucks and ongoing maintenance, Scenario #2 and #3 differ in which carts may be provided or not.

Table A: Detailed cost and impact breakdown for centralized composting for Scenario #2 and #3 based on the organic waste collection cost from the Arlington County, VA contract (2023-2024)

Centralized Composting Collection			Curbside Collection				
			Collection	Collection	Hauling Cost (with sample organic collection)	Total Collection Cost (Infrastructure + Organic Hauling Costs Based on Arlington County, VA	Total CO2e from Curbside Collection (Ton/Year)
Scenario	Type	Collected By	%	Tons/Year	Based on Arlington County, VA Organic Collection contract		
Scenario #2 100% SF Curbside by City Contracted Hauler, with Carts 100% MF Curbside by Subscription 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950	$ 976,833	$ 1,988,266	732
		My Green Michigan	50%	2,950	$ 1,011,433		
		Total Commercial	100%	5,900	$ 1,988,266		
	Single Family	Sample Model	100%	2,176	$ 991,341	$ 4,332,141	407
	Multifamily	CO Sustainability	50%	1,163	$ 629,075	$ 1,027,893	157
		My Green Michigan	50%	1,163	$ 398,819		
		Total Multifamily	100%	2,326	$ 1,027,893		
	Total Scenario 2		**100%**	**10,403**	**$ 4,007,500**	**$ 7,348,300**	**1,295**
Scenario #3 100% SF Curbside by City, no Carts 100% MF Curbside by Subscription 100% Commercial Curbside by Subscription	Commercial	CO Sustainability	50%	2,950	$ 976,833	$ 1,988,266	732
		My Green Michigan	50%	2,950	$ 1,011,433		
		Total Commercial	100%	5,900	$ 1,988,266		
	Single Family	Sample Model	100%	2,176	$ 991,341	$ 3,645,141	407
	Multifamily	CO Sustainability	50%	1,163	$ 629,075	$ 1,027,893	157
		My Green Michigan	50%	1,163	$ 398,819		
		Total Multifamily	100%	2,326	$ 1,027,893		
	Total Scenario 3		**100%**	**10,403**	**$ 4,007,500**	**$ 6,661,300**	**1,295**

Below is another presentation of the data to visualize cost and climate impacts among all three scenarios across all strategies with financial and environmental impacts of other diversion strategies (prevention, recovery, and local recycling) incorporated. This table also includes landfill disposal tip fee savings, and the tip fees from local compost sites.

Table B. Comparison among all three scenarios on cost and impact, based on the organic waste collection cost from Arlington County, VA contract (2023-2024).

		Total Annual Cost ($/year) With Infrastructure Cost			Total Annual Avoided CO2e (Ton/year)		
Diversion Strategy	**Scenario / Tons**	#1	#2	#3	#1	#2	#3
Prevention	2,060	$ (37,085)	$ (37,085)	$ (37,085)	(9,449)	(9,449)	(9,449)
Rescue/Recovery /Donation (RRD)	909	$ (16,362)	$ (16,362)	$ (16,362)	(4,170)	(4,170)	(4,170)
Local Recycling	498	$ (8,969)	$ (8,969)	$ (8,969)	(360)	(360)	(360)
Centralized Composting	10,403	$ 2,400,571	$ 7,402,685	$ 6,715,685	(721)	(6,200)	(6,200)
Total	13,870	$ 2,338,154	$ 7,340,268	$ 6,653,268	(14,699)	(20,178)	(20,178)

Communications Plan for the Southfield 2030 Project

Prepared by: The Work Department, May 2024

About this Plan

This plan is in service to the Southfield 2030 project's goal to eliminate food waste in Southfield. In order to achieve this goal, a significant effort is needed to affect behavior change across all sectors of this small but diverse city. The primary strategy outlined below is a broad ranging education and awareness campaign aimed at changing household habits to prevent food waste. Messaging about food waste diversion/organics recycling strategies such as city-wide composting or targeting change within food service kitchens may happen simultaneously, but will be less effective if there isn't prior awareness of the need for and impact of eliminating food waste. The campaign must spark curiosity, spread knowledge, and inspire action. Most importantly, it must be an ongoing, multi-year effort that residents see all the time, everywhere.

This plan is informed by precedent research of similar campaigns in other cities, listening sessions with residents, and interviews with project stakeholders and partners.

Strategy Overview

Strategy	Audience	Outcomes
Awareness Campaign	Everyone	Southfield residents and food service providers understand the environmental and economic impacts of food waste. Southfield residents increase prevention of food waste at home. Southfield residents participate in city-wide food waste diversion/organics recycling strategies.
Food Service Outreach & Education	Food Service	Southfield food service providers understand the environmental and economic impacts of food waste. Southfield food service providers implement waste prevention and diversion/organics recycling measures in their facilities.
Promote Diversion and Recycling Opportunities	Residents	Southfield residents participate in city-wide food waste diversion/organics recycling strategies.

Audiences

This plan addresses two audiences: Southfield residents and Southfield food service providers.

Southfield Residents

The Southfield residents audience group is inclusive of all households in the city, including single and multi-family homes. Although some food waste diversion/organics recycling strategies may require more targeted messaging for multi-family household residents, the prevention focus of this campaign targets both household types.

In developing this plan, we convened a small group of 7 Southfield residents to better understand their feelings and practices around food waste reduction. It is important to note that the group was not fully representative of Southfield's diversity. Additional outreach is recommended to fully understand the breadth of this audience's habits and motivations.

Current Household Food Waste Habits

- **How often do you create meal plans?** Members of the group rarely or never create meal plans. If they do, it is in an informal and unstructured way to ensure everyone in the household is accommodated. Some have tried to use them, but never ended up sticking to them so they gave up.
- **How often do you shop with a list?** Everyone in the group uses a list on occasion, primarily to accommodate household food preferences or when cooking a specific or new recipe.
- **How often do you follow expiration dates?** Most of the group trusts their senses rather than following sell/use by dates.
- **How often do you throw away leftovers?** Everyone throws away leftovers on occasion, but most do find ways to use them before they go bad, either by eating them as is, freezing them, or remaking them into new recipes.
- **Do you can or preserve food?** 2 people do, and the rest of the group was interested in learning how.
- **Do you compost?** 1 person does, but everyone in the group has a garden and could benefit from using compost.
- **Do you donate food?** A few people donate during annual food drives.
- **Do you share excess food with others?** A few people who are close with their neighbors or have family nearby frequently share food.
- **Do you feed food scraps to pets?** 1 person does, and a few others feed scraps to deer and other wildlife in their yards.

Barriers to Reducing Food Waste

- I need more information on how to reduce food waste. All members of the group want tips and information, including on how to compost, canning and preservation, proper food storage, zero waste recipes, and shopping tips. A particular area of concern was managing household food preferences, especially with young kids with changing tastes and sensitivities.
- I need additional tools/equipment: All members of the group are looking for tools and equipment to make reducing food waste easier.
- It's inconvenient: A few people feel it is inconvenient and overwhelming. They need easy, simple solutions that don't add additional chores to their list.
    - » A city-wide composting solution: Everyone said they would participate in a food scrap pick up program, for example. Discussion on a community drop off site was mixed. Some said they would want to participate but didn't want to add another chore to their list. Others said they were more likely to participate if going to a drop off site were integrated into their routine. They also thought contamination would be lower since this method requires more commitment.

Key Messages

Encouraging residents to participate in food waste reduction efforts involves a thoughtful approach that addresses both the "why" and the "how" in a manner that resonates with their values, concerns, and lifestyle.

- **Hopeful Messaging:** Communicate a positive vision of achievable change, emphasizing the potential for a better future through collective action.
- **Humorous and Playful Approach:** Use light-hearted messaging, especially on social media platforms, to engage younger audiences and make the topic of food waste reduction more approachable and appealing.
- **Collective Effort:** Stress the importance of collective action across the community, and encourage residents to see themselves as part of a larger movement towards sustainability.
- **Avoid Guilt and Shame:** Instead of relying on guilt and shame as motivators, opt for empowering messages that celebrate the positive impact of individual actions. Highlight the pride and sense of accomplishment that comes from being part of the solution.
- **Foster Southfield Pride:** Rally community spirit by showcasing Southfield as a pioneering city in Michigan, leading the charge to eliminate food waste. Encourage residents to take pride in their city's commitment to sustainability.
- **Make it Sound Easy:** Use practical tips and easy-to-follow guidelines to demonstrate how simple it is to reduce food waste at home. Give residents actionable steps that can fit seamlessly into their daily routines.
- **Strategy Specific Messages:** Address specific initiatives such as composting, contamination prevention, and food rescue with content specific messages. Highlight the benefits, logistics, and impact of each strategy, while providing clear instructions on how residents can participate.

Recommendations

- **Develop Further Understanding of Community:** Engage in further outreach and engagement to gain a deeper understanding of the community's needs and preferences. Conduct a community-wide survey to create awareness of the initiative and benchmark food waste reduction activities. Utilize strategies such as in-person surveys, QR codes for data collection, and public presentations to gather insights and tailor communications accordingly. We recommend these activities happen in summer/fall 2024 leading up to and during the campaign launch:
  - » Conduct pre survey
  - » Attend existing community events and meetings to introduce the initiative and learn about food waste reduction habits and motivations.
- **Ensure Inclusivity and Equity in Messaging:** This recommendation is informed by Building a Health System that Works for Everyone, a report published by ReFed.
  - » **Tailor Campaign Strategies:** Residents are more likely to participate when campaign strategies are tailored to their specific needs and preferences. Developing explicit campaign strategies aimed at reaching diverse audiences to ensure that messaging and interventions are relevant and culturally sensitive. Campaign topics could include proper food storage, menu planning, repurposing leftovers, and information about food waste and its impacts. Share practical hints on using affordable and culturally relevant ingredients.
  - » **Accessible Messaging:** Ensure that campaign resources are available in various formats such as audio, visual, written text, and different languages (Spanish, Arabic, and Bangla). Distributing these resources through channels that are already part of people's daily routines enhances accessibility. Word choices should also be specific to different target audiences.

- **Utilize Effective Communication Channels:** Disseminate information through diverse channels such as social media, community events, and partnerships with local organizations to maximize engagement. Engage residents through interactive campaigns, challenges, and contests to foster participation and awareness.
- **Promote Convenience and Easy Participation:** Integrate food waste prevention messaging at grocery stores' point of sale systems. Prompt shoppers about proper food storage, expiration dates, and portion control, encouraging mindful purchasing habits. Provide convenient food waste drop-off locations accompanied by clear instructions and signage to minimize confusion. Ensure streamlined processes for food waste collection and disposal, utilizing technology like QR codes to provide access to information without generating additional waste.
- **Further Understanding of the Process:** Educate residents about what happens to their food waste after collection, emphasizing the tangible impact of their actions. Use visuals and storytelling to illustrate the journey from collection to composting or recycling, and highlight the environmental benefits of proper food waste management.
- **Create Long-lasting Campaigns:** Develop comprehensive campaigns designed to last, ensuring they are ubiquitous and persistent. Develop branding for recognition and engagement over time. Tailor messages to different audiences and leverage diverse communication channels, involving community stakeholders to maximize engagement and participation.
- **Communicate Early and Often:** Maintain momentum by communicating about upcoming initiatives aimed at reducing food waste early and frequently, using City and partners' channels.
- **Engage with Partners and Stakeholders:** Collaborate with local businesses, schools, nonprofits, and government agencies to amplify messaging and reach broader audiences on a continual basis.

Local lessons and insights:

- Physical presence at community events, like farmer's markets, can significantly boost engagement. Having direct interactions with residents fosters trust and builds a sense of community around the cause. (City of Royal Oak)
- Successful communication strategies included using visuals over text-heavy materials and incorporating QR codes for easy access to information. (City of Royal Oak)
- Strategies such as distributing 5-gallon buckets, fridge posters, and hosting kick-off events helped bring the community together and create awareness. (What's worked in Ferndale and Canton)
- Continuous engagement through social media, word of mouth, and in-person outreach at events like farmer's markets contributed to sustained participation. (What's worked in Ferndale and Canton)
- Leverage photos and videos to illustrate the waste management process and provide residents with easy-to-follow instructions for food waste disposal to overcome barriers and encourage active participation. (Iris Waste Diversion Specialists)
- Tailor messages to different audiences and leverage diverse communication channels. By crafting messages that resonate with residents' values and interests, utilizing social media platforms, and involving community stakeholders, engagement and participation in food waste reduction initiatives can be maximized. (Insights from My Green MI, PACE, RRRASOC)
- Though billboards and permanent signage can be an effective way to communicate to a population at large, they are not allowed in Southfield.
- Though TV and radio are common channels for communication, no one mentioned these as ways they receive local information.

Southfield Food Service Providers

This audience includes restaurants, hospitality, hotels, health care facilities, and grocery stores. Although the sectors within this group have different levels of contribution to food waste and very different processes for reducing it internally, the messaging and activities required to reach them are aligned. Note: this plan does not address K-12 schools.

A marker of an effective communications plan is how well it is informed by the audiences you want to reach. In the development of this plan, we attempted to convene a group of food service representatives, but did not get enough respondents to do so. Our recommendations are informed by a brief interview with a representative from PACE Southeast Michigan, a medical and social services provider for seniors with two facilities in Southfield; insights from project partners who have supported businesses in reducing food waste; and insights from a scan of similar efforts nation-wide. An intensive outreach effort is needed to inform this audience about the Southfield food waste initiative and better understand uniquely local barriers and motivations to food waste reduction in their facilities.

Barriers to Reducing Food Waste

- **Lack of Awareness:** Some businesses may not be fully aware of the extent of their food waste or the potential benefits of reducing it. Without understanding the problem or the available solutions, they may be less inclined to participate in initiatives.
- **Resource Constraints:** Businesses, especially smaller ones, may face challenges in allocating the necessary resources, such as time, money, and staff, to implement food waste reduction strategies effectively.
- **Operational Challenges:** Implementing changes to reduce food waste may require adjustments to existing operational processes, which could disrupt workflow or incur additional costs. Businesses may be hesitant to undertake such changes without assurance of their effectiveness or return on investment.
- **Perceived Complexity:** Food waste reduction initiatives may seem complex or daunting to businesses, particularly if they lack guidance or support on how to implement them. Concerns about the practicality or feasibility of implementing new strategies may deter businesses from participating.
- **Competing Priorities:** Businesses may have competing priorities or limited bandwidth to focus on food waste reduction alongside other operational challenges or initiatives. Without clear incentives or alignment with broader business objectives, food waste reduction may not receive sufficient attention.
- **Regulatory Uncertainty:** Uncertainty about regulations or compliance requirements related to food waste management may discourage businesses from taking proactive steps to address the issue, especially if they fear potential penalties or liabilities.
- **Perception of Cost:** Businesses may perceive food waste reduction initiatives as costly or financially burdensome, particularly if they anticipate upfront investments in infrastructure, technology, or staff training without guaranteed returns.
- **Liability Concerns:** Despite federal laws like the Bill Emerson Good Samaritan Food Donation Act, which provide extensive liability protection for food donations, concerns about potential liability for businesses and nonprofits may persist, hindering their engagement in food waste reduction efforts.

Key Messages

- **Save Money While Enhancing Productivity:** Participating in food waste reduction programs can help food service providers minimize waste, optimize ingredient utilization, and streamline kitchen operations, leading to significant cost savings, improved productivity, and enhanced operational efficiency. Engaging and training employees can be one of the most effective ways to reduce food waste.
- **Environmental Stewardship:** By diverting organic waste from landfills and conserving resources, food service providers are able to demonstrate environmental responsibility and contribute to long-term sustainability. This helps foster stronger connections with environmentally-conscious customers and stakeholders.
- **Give Back to Your Local Community:** Food donation initiatives can allow food service providers to actively engage with their local community, and demonstrate their commitment to their neighbors and the environment.
- **Sustainability Leaders:** Achieving certification in food waste reduction programs can elevate businesses' status within their industries, promote their reputation as leaders in sustainability, and enhance their credibility with consumers and stakeholders. Food waste reduction programs also provide businesses with tailored guidance, training, and resources on innovative techniques, and can empower them to enhance their knowledge and skills in sustainable management.
- **Maximize Benefits and Stay Compliant:** By participating in food waste reduction programs, food service providers are able to take advantage of financial incentives such as enhanced tax deductions and ensure compliance with local regulations.

Recommendations

- **Business Roundtable Discussions:** Organize and facilitate business roundtable discussions where industry stakeholders, including business owners and nonprofit leaders, can convene to share experiences, discuss challenges, and brainstorm innovative, localized solutions for implementing food waste reduction initiatives. These discussions help foster collaboration and create a supportive network for eliminating food waste.
- **Engage with Local Ecosystem:** Collaborate with the Chamber of Commerce and Downtown Development Authority to connect with restaurant owners and food service providers in Southfield. Build on existing relationships to facilitate introductions, provide resources, and offer support to encourage wide-spread participation in the Southfield 2030 Project.
- **Continuous Training and Support:** Offer ongoing training sessions and make educational materials readily available to accommodate employee turnover and ensure that all staff members are equipped with the knowledge and resources needed to actively participate.
- **Utilize Case Studies:** Incorporate real-life case studies and success stories into training materials to illustrate practical examples of effective waste reduction strategies in action. These case studies offer valuable insights, inspire engagement, and provide tangible examples of how similar businesses in the area have successfully implemented food waste reduction practices.
- **Consistent Branding:** Ensure a unified look and feel across all materials to maintain consistency and strengthen the message's impact. Content specific to food service providers should be designed in alignment with the overarching campaign branding.

Strategies and Activities

The following charts outline recommended strategies to deploy the messaging outlined above.

Strategy 1: Awareness Campaign	
Audience	Everyone: Residents and Food Service Providers
Outcome	• Everyone understands the environmental and economic impacts of food waste. • Southfield residents increase prevention of food waste at home.
Opportunity	15% of household food waste in Southfield can be prevented. There is a need for a wide-spread awareness campaign that includes education about the impacts of food waste and tips and tools for preventing food waste at home.
Channels	• Social media • Direct mail • Email • The Southfield Sun • City website • Targeted web ads • Word of mouth • Community groups, including HOA listserves • Community partners (i.e. library, schools) • City events • Grocery store signage • Restaurant and food service signage (e.g. menus, point of sale) • Trained food services providers
Activities	• Develop campaign. This should be used for all materials created across all activities and audiences in this strategy. Include digital and print materials that are unified. Include a toolkit of templates and assets that can easily be shared or printed for wider distribution. Build digital content that includes testimonials, photos, and videos that enthusiasts can share in order to show their support and encourage others to take action. • Provide materials with tips and free or low-cost tools on ways to prevent food waste at home. Examples include: o Fridge magnet with tips on repackaging food for longer keeping o Pamphlet with guidance on composting at home o Recipe book with creative uses for leftovers o Free countertop compost bin o Website with comprehensive information o Flier or Sticker about what can be composted at home • Host food waste/prevention related events such as: o Partner with the Southfield Public Library to host a food waste art competition with youth. Winners are featured in a calendar that is mailed to every household. o Public demonstrations on freezing, canning, and preserving techniques
Measures	• Number of households reached • Number of impressions on email, web and social media posts • Perceptions and understanding about food waste • Amount of food waste reduced or diverted

Draft Campaign Language

- Zero Waste, Infinite Impact
  - » We redistribute good surplus food to neighbors who are hungry
  - » We go grocery shopping in our own fridges first
  - » We compost to enrich our soil
  - » We grow fresh, sustainable produce in our home and community gardens.
  - » We trust our senses, not date labels
  - » We get creative with leftovers and freezing techniques
  - » Together, we can rescue $3.8 million worth of food in Southfield
  - » Together, we can prevent 30,000,000 pounds of food waste annually in Southfield
  - » Together, we can lower the 9% food insecurity faced by our neighbors in Southfield
- Food Waste Stops Here. Every Bite Counts

Campaign features quotes and images of Southfield residents and businesses. Sample quotes provided here.

- » Food is life. Make the most of it.
  - o "Food is life. I make the most of it by enjoying every meal and finding creative ways to use up leftovers." - Jamal, Southfield Resident, Dad
- » Food is health. Take care of it.
  - o "Food is health. Living in Southfield, I take care of it by exploring the vibrant food scene, opting for wholesome ingredients to nourish myself and my family." - Emily, Southfield Resident, Teacher
- » Food is comfort. Indulge in it.
  - o "Food is comfort. I indulge in it by cooking family recipes that bring back fond memories and sharing meals with loved ones." - Malik, Southfield Resident, Healthcare Worker
- » Food is gold. Treasure it.
  - o "Food is gold. I treasure it by meal planning and using up all the groceries I buy to save money and reduce waste." - Rashida, Southfield Resident, Mom
- » Food is joy. Savor it.
  - o "Food is joy. I savor it by trying new recipes and exploring different cuisines, making every meal an adventure." - David, Southfield Resident, Realtor
- » Food is energy. Consume it.
  - o "Food is energy. I consume it mindfully, focusing on nutritious options to keep me fueled throughout the day." - Darnell, Southfield Resident, Student
- » Food is power. Utilize it.
  - o "Food is power. Living in Southfield, I utilize it by advocating for food justice and access to nutritious options for all members of our community." - Jamal, Southfield Resident, Community Organizer

Strategy 3: Promote Diversion and Recycling Opportunities	
Audience	Residents
Outcome	Southfield residents participate in city-wide diversion/organics recycling strategies
Opportunity	As city-wide food waste diversion and recycling strategies are rolled out, campaign materials will need to be created that promote and explain how to participate in these strategies.
Channels	• Direct mail • Email • Social media • City website • Site specific (i.e. at drop off sites, on collection bins)
Activities	• Work strategy specific messaging into awareness campaign • Host workshops & demonstrations
Measures	Measures will be specific to the strategy promoted, for example, compost program participation or sharing related metrics.

Evaluation

A multifaceted evaluation plan can help comprehensively assess the effectiveness, reach, and sustainability of communication efforts across diverse audiences, channels, and contexts, ensuring continuous learning and adaptation to maximize the impact of Southfield's zero food waste reduction efforts.

Areas of evaluation should include:

- **Overall awareness and engagement levels of Southfield residents and food service providers regarding food waste reduction initiatives.**
  - » Methods
    - o Conduct pre- and post-campaign surveys to assess changes in awareness, knowledge, and attitudes towards food waste reduction.
    - o Implement focus groups or interviews with community members and food service providers at regular intervals to gather qualitative insights on communication effectiveness and evolving perceptions.
    - o Utilize participatory evaluation methods such as community forums or advisory groups to involve stakeholders in assessing communication strategies and identifying areas for improvement.

- **Impact of communication efforts on desired outcomes for Southfield residents and food service providers.**
  - » Methods:
    - o Administer surveys and conduct interviews/focus groups periodically to measure changes in behavior related to food waste prevention, composting, food donation, and food service waste reduction practices. Recommended timeline:
      - Before launch
      - 3 months after launch
      - h1 year after launch
    - o Track participation rates in city-wide reduction strategies among residents and food service providers over time to assess sustained engagement.
    - o Implement feedback loops within communication channels to continuously gather input from audiences and adapt messaging or strategies based on their evolving needs and preferences.
- **Effectiveness of different communication channels in reaching and engaging target audiences.**
  - » Methods:
    - o Continuously monitor and analyze metrics for each communication channel, including reach, engagement, and conversion rates, using digital analytics tools and regular performance reviews.
    - o Conduct A/B testing to experiment with different messaging, content formats, and channel combinations, improving based on audience response and feedback.
    - o Implement real-time feedback mechanisms such as online polls, comment sections, or community feedback forums to gather input on communication channel preferences and effectiveness.
- **Effectiveness of partnerships and collaborations in amplifying communication efforts and sustaining engagement.**
  - » Method:
    - o Establish regular communication channels and coordination mechanisms with partners, including scheduled meetings, progress updates, and shared reporting tools, such as a data dashboard.
    - o Conduct periodic partner surveys or feedback sessions to assess satisfaction levels, partnership effectiveness, and alignment with communication goals.
    - o Facilitate ongoing engagement and collaboration through joint planning, resource sharing, and co-creation of communication materials to maximize reach and impact.
- **Long-term impact and sustainability of communication efforts beyond the initial campaign period.**
  - » Method:
    - o Implement longitudinal studies or follow-up surveys at regular intervals to track sustained changes in behavior, attitudes, and community norms related to food waste reduction.
    - o Conduct periodic reviews of policy changes, institutional practices, and community initiatives to assess the integration of food waste reduction messaging and its influence on long-term outcomes.
    - o Continuously evaluate the scalability and replicability of successful communication strategies to expand their impact across different sectors, communities, and geographic areas.

- **Equity and inclusivity of communication strategies in reaching Southfield's diverse communities and addressing barriers to participation.**
  - » Method:
    - o Conduct regular equity assessments to identify gaps in representation, accessibility, and responsiveness within communication channels and materials.
    - o Engage directly through targeted outreach, culturally sensitive messaging, and tailored engagement strategies to ensure Southfield voices are heard and valued.
    - o Establish feedback mechanisms specifically designed to capture input from diverse groups, including language accessibility, community liaisons, and inclusive participatory platforms.

Annual Costs

Design & Outreach

Audience Surveys + Engagement: $60,000 - $80,000 for consultant

Graphic Design

- Look and feel of campaign, and assets for all 3 strategies: $30,000 for consultant (printing costs are additional and estimated inline)

Translation

- $5,000-$10,000 for text to be translated into 3 languages: Spanish, Arabic, and Bangla

Subtotal Design & Outreach: $95,000 - $120,000

Printing & Product Expenses Per Strategy

Strategy 1: Awareness Campaign

Multichannel Campaign (estimates based on 35,000 households in Southfield)

- Direct mail:
  - » Postage: 50¢/piece postage: $17,500
  - » Printing: $5,000
- Signage at public events and on City property where allowed: $1,000 printing
- Editorials and ads in the Southfield Sun: $1,000 - $2,000 per paper (half/full page)
- Targeted web ads: Starting with a budget of $20 per day and running about 15 ad sets for a week. This setup means that you'll spend around $1,000 total.
- Consumer signage at grocery stores and restaurants points of sale: $2,000 printing

Tools

- Fridge magnets at 50¢/per: $17,500
- Pamphlets at $1/per: $35,000
- Recipe books at $3 per: $105,000
- Free countertop compost bin at $3-5/per: $105,000 - $175,000
- Website with comprehensive information: $10,000 -$15,000
- Flier about what can be composted at home: $1,500

Host food waste related events:

- Assuming staff produces events, budget for refreshments and printing costs: $200 per event

Subtotal Strategy 1: $ $301,500 - $377,500

Strategy 2: Food Service Outreach and Education

Direct outreach to leadership including:

- One-on-one meetings: staff time
- Pamphlets: $1,000 - $3,000

Printed tools and resources for BOH: $1,000 - $3,000

- Signage
- At kitchen prep tables
- Point of sale
- On waste/recycling/compost bins

The Pledge or other curriculum: TBD

Subtotal Strategy 2: $2,000 minimum

Strategy 3: Promote Diversion and Recycling Opportunities

- Direct mail (estimates based on 35,000 households in Southfield)
  - » Postage: 50¢/piece postage: $17,500
  - » Printing: $5,000
- Site specific (i.e. at drop off sites, on collection bins): $1,000-$3,000 for printing

Subtotal Strategy 3: $25,500

TOTAL ESTIMATED ANNUAL BUDGET: $424,000,000 - $5257,000+

Summary of Results from Southfield Resident Survey

To better understand the level of awareness and knowledge about the issue of food waste, how food waste is currently handled, and their interest in various other methods to reduce and divert food waste from landfills, a survey was undertaken during summer 2024. It was promoted via the city newsletter, website, e-mail, flyers, and social media for three weeks. At the close of the survey there were 490 unique and completed surveys. Most respondents (77%) live in Southfield, while another 34% work in the city. The graphs below show the household size of respondents and the ages of those they live with.

FIGURE 5. Household size of survey respondents

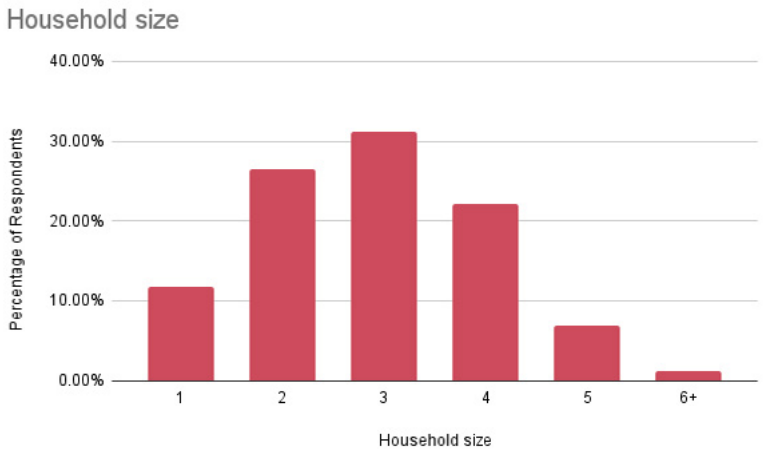
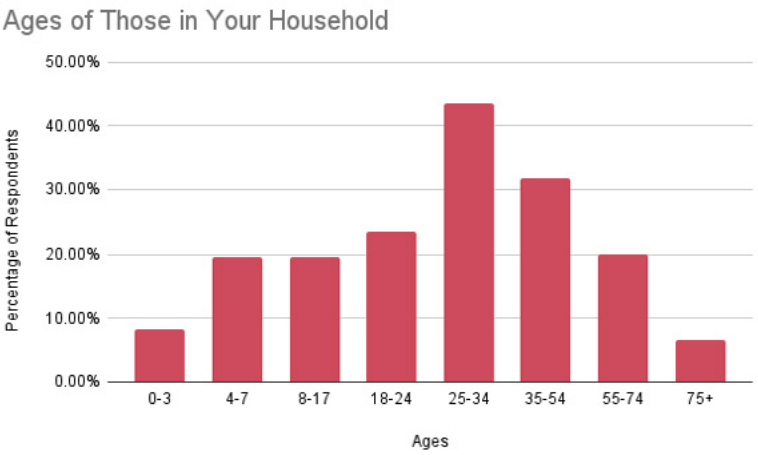


FIGURE 6. Household age composition

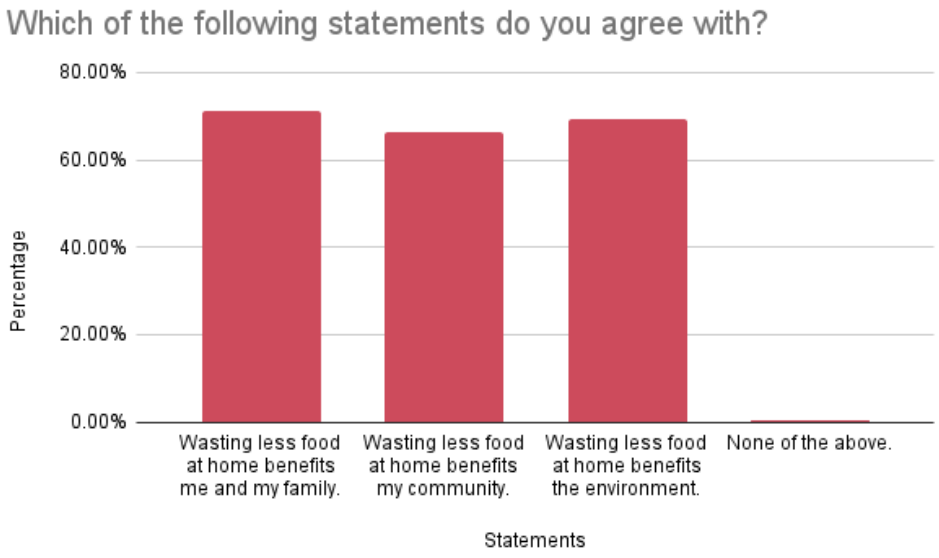


Food Waste in Households

When asked about how many cups of food scraps their household creates each week, households reported a wide range, from none to 30 cups per week, with the most common amount being 8 cups per week and the majority of residents reporting that they produce 7-10 cups of food scraps each week. About half of the respondents felt that they threw away less food than other households. The main reasons for throwing food away included the food being spoiled or stale (360 respondents), the best by/sell by/expiration date passing (268 respondents), and cleaning the refrigerator/pantry (253 respondents). Forgetting about leftovers and buying more food than the household can consume before it spoils were also noted as reasons that food gets thrown away.

Respondents were generally very positive about the importance of food waste and the benefits reducing it could have on them, their family, community, and environment. Many (70%) indicated that they had seen or heard something about the issue of food waste within the last year which made them more concerned about the issue and led to action on it, with 70% of respondents sharing that they had already taken steps at home to not throw away food that could be eaten, including meal planning, portion control, changing their cooking practices to include preservation techniques, properly storing food, and sharing or upcycling leftovers. When asked to rank what interests them about the impacts of reducing food waste, 75% of respondents ranked wanting to make an environmental impact as either first or second. Saving money was ranked either first or second by 64% of respondents.

FIGURE 7. Agreement with statements about benefits of reducing food waste



Current Ways of Reducing Food Waste

The top five ways survey respondents reduce food waste are:

- Storing food in ways to slow spoiling (57% of respondents)
- Keeping an organized pantry/refrigerator (50% of respondents)
- Making a grocery list (47% of respondents)
- Sharing food with friends or family (38% of respondents)
- Meal planning (36% of respondents)

Current Ways of Managing Food Waste

Only slightly more than half of respondents (57%) indicated that they were somewhat or very familiar with composting, and 39% said that they compost yard waste in their backyard and another 33% said they compost yard waste via drop off or curbside collection. One-fifth of respondents compost food scraps in their backyard, 16% via curbside collection from local businesses, and12% drop off scraps at a collection point. Almost half (44%) of respondents landfill their food scraps.

Food Scrap Diversion Options

Drop-off Program

Most respondents (82%, 422 respondents) indicated that they would participate in a free food scrap drop off program. Of those that said they would not participate, the following were cited as barriers:

- Not having enough time (42%)
- Not knowing what can be composted (24%)
- Not having transportation (19%)
- Not knowing how to separate food scraps (18%)
- Other challenges, such as concerns about convenience and accessibility, storage in the home, and challenges associated with physical disabilities were cited (34%)

When asked what would be needed to participate in a food drop off program, the top three items were that the program be free (53% of respondents), having a countertop bin for the kitchen (50%), and that there be information on how compost helps the local community (43% of respondents). Many respondents (73%) indicated that they go to the municipal center frequently, but very few indicated that for Mary Thompson Farm, the RRRASOC facility, or the Department of Public Works yard, making these sites less likely to be successful as drop-off sites. Other suggestions for drop-off sites included Inglenook Park, Beach Woods Park, Kroger, Stevenson Elementary School, the post office, Tiger Market, and Walgreens.

The graphs below shows the maximum that someone would pay each month and distance they would travel to drop off food scraps for composting.

FIGURE 8. Maximum fee for food scrap drop-off service

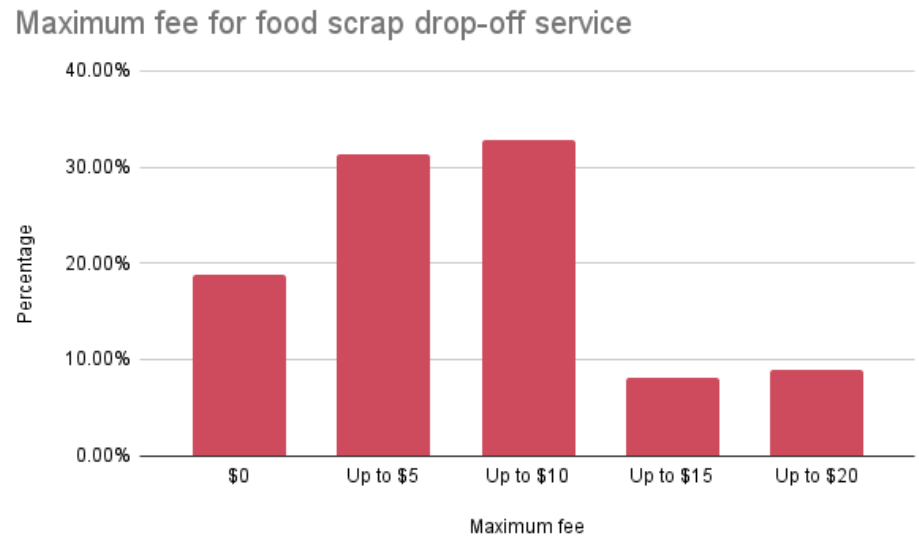
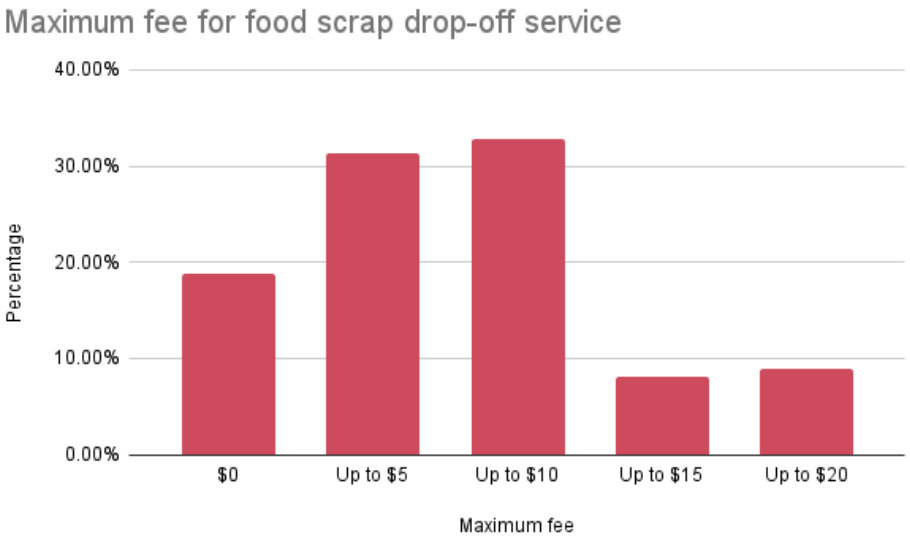


FIGURE 9. Maximum distance to drop off food scraps

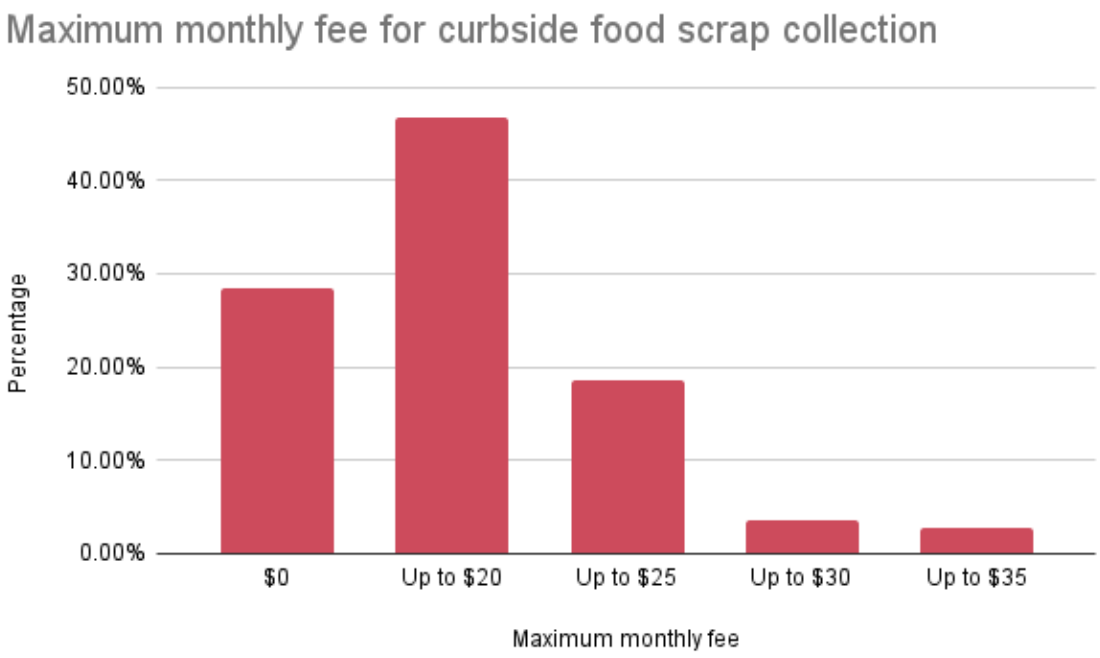


Curbside Food Scrap Collection Program

If there were no cost to participate, 86% of respondents said they would participate in a curbside food scrap collection program. For those said they would not participate, the two most common reasons were a lack of time (46%) and not knowing what is compostable (42%). When asked what would be needed to participate in a food drop off program, the top three items were having a curbside bin only for food scraps (58% of respondents), being free to participate (51%), and having a countertop bin for the kitchen (51%). Signage on a food scrap bin, an email tutorial, and an instructional video were noted as the best resourcces to help residents learn how to participate in a curbside food scrap collection program. Respondents also indicated that the best ways for them to receive information was through email, Facebook, and community meetings.

The graphs below show the maximum monthly fee that respondents would pay for curbside collection of food scraps.

FIGURE 10. Maximum monthly fee for curbside food scrap collection



Food Waste Among Commercial Food Businesses in Southfield

The city of Southfield, Michigan generates over 15,000 tons (over 33 million pounds) of food waste annually, most of which ends up in landfills. Make Food Not Waste is collaborating with the city of Southfield to interrupt and redirect this waste. Given that food businesses account for over 40% of Southfield's good waste, interviews have been conducted to survey Southfield's commercial food businesses to learn more about the sources of food waste, challenges to redirecting that waste, and solutions for food waste reduction.

Over the course of two months in 2024, sixty commercial food businesses were surveyed, with the sample size of each category based on the number of businesses within each category in Southfield. Most surveys were conducted in person, with additional interviews over the phone and via online form. Commercial food businesses were asked about their trash collection service providers, data on the size of their business and service details, as well as about the types of food they throw away and any mitigation already in place. Finally, the businesses were asked about what would motivate them to make systemic changes, and any challenges or roadblocks to doing so.

Commercial food businesses surveyed ranged from small locally-owned businesses with $150,000 in annual revenue to larger operations of $4,000,000 in sales. The majority of commercial food businesses implement menu planning and staff training to prevent food waste in order to reduce the cost of goods sold. The largest opportunities to divert more food waste occur after the food is prepared via food rescue and composting. As many restaurants within the city of Southfield operate in shared buildings or strip malls, there is a major opportunity to add composting bins to the already existing shared dumpster infrastructure.

Restaurants

30	**28,000**	**1,750**	**225,000 lbs**	**225,000 lbs**
Total Number of Restaurants Surveyed	Meals Served per Week*	Restaurant Seats Total	Weight of Wasted Food Annually*	Weight that could be diverted by composting/food rescue*

*as reported

About Restaurants in Southfield

- They produce a lot of takeout compared to restaurants in other cities.
- They often operate in shared plazas or stripmalls.
- They are serving more lunch over breakfast or dinner.
- They are multi-unit restaurants, belonging to chains or franchises with corporate offices, and often use commissary kitchens in other cities.

Food Waste Habits

All restaurants surveyed train their kitchen staff and plan their menus and inventory accordingly to mitigate food waste before the waste is made to decrease the cost of goods sold. Food waste sources include plate waste, takeout orders that were not picked up, incorrect meals prepared, scraps from preparation such as egg shells and fresh produce, leftover pastries or bread, and prepared food that was held to its maximum safe holding time as on a prep line for quick service. Most establishments do not track food waste, with a few restaurants recycling or reusing what would otherwise be waste in a different menu item. Other food waste diversion efforts include freezing excess, using proper storage and labeling techniques, using wasted food for staff meals, preparing or cooking food to order at low-traffic times, and training service staff to ask questions to reduce incorrectly prepared meals. No restaurants interviewed in Southfield are currently diverting food waste after it has been prepared via food rescue, animal feed, or compost.

Opportunities & Motivation

With the prevalence of shared dumpster spaces, the largest opportunity for waste diversion is shared composting service. The majority of restaurants surveyed reported they would use the composting bins if they were available as part of their shared trash disposal. Standalone restaurants were more hesitant as they would shoulder the cost alone. Other motivating factors for restaurants to utilize composting is whether it matters to customers, seeing the final compost or farm, and whether other restaurants are participating.

Challenges

Challenges to utilizing compost bins were costs in addition to existing trash removal fees, a lack of infrastructure, training, or systems within their establishment such as separate bins and bags, and their corporate offices as ultimate decision makers. The cost of the time to train employees as well as the time to sort their waste is a further concern. Fast casual and fast food restaurants where customers throw their own trash away was also a concern over whether customers were trainable to sort their own waste.

Grocery

3	$20M	300,000 lbs	300,000 lbs
Total Number of Grocery Stores Surveyed	Average Estimated Annual Revenue	Weight of Wasted Food Annually*	Weight that could be diverted by composting/food rescue*

*as reported

About Grocery Stores in Southfield

- The size, revenue, and ownership greatly varies.
- Many contain food preparation kitchens to sell ready-to-eat items.
- Most have a basic understanding of food rescue organizations but do not utilize them to their full capacity.

Food Waste Habits

All grocery stores surveyed train their kitchen staff and use sales information to order accordingly to mitigate food waste before the waste is made to decrease the cost of goods sold. Food waste sources include scraps of prepared food made for their deli cases, spoiled and expired meat, eggs, cheese, and dairy, as well as bread and produce that cannot be utilized in their kitchens. Unsold shelf-stable packaged and refrigerated prepared food goes to waste as well. The grocery stores reported waste in relation to inventory, but did not have separate food tracking logs. One grocery store surveyed used the app Flashfood, but reported it under-utilized, as were efforts to have food waste picked up by a rescue organization. Currently no grocery stores in Southfield are diverting inedible food waste through methods such as animal feed or composting.

Opportunities & Motivation

Grocery stores surveyed felt they could benefit from a quick guide to food donation with what is allowed and not allowed, as well as who to call when they had excess product to donate. They were also interested in composting, donating to feed animals, and other rescue options such as apps. Grocery store managers reported that they would likely adopt composting at their store if the service were free or subsidized. One store mentioned that with larger chains, corporate offices might encourage participation via a contest between stores to divert as much food waste as possible. All stores agreed that food waste was an important topic to examine.

Challenges

Grocery store managers were concerned that solutions to mitigating food waste would disrupt current workflow, as well as the financial impact of adding another system to step to their employees, and their corporate office not allowing adoption of these practices.

Other Commercial Food Businesses Impacting Food Waste

About Other Commercial Food Businesses Impacting Food Waste in Southfield

- Hotels, country clubs, and banquet halls are a significant producer of food waste in Southfield.
- Hospitals and nursing homes surveyed employed high level strategies for reducing food waste.
- University and office buildings where there are cafeterias often have buffets where food waste is prevalent.

Food Waste Habits

Non-restaurant commercial food businesses in Southfield were more difficult to define and survey. Often, these kitchens are producing a high volume number of meals, utilizing buffet-style service, and serving large numbers of people in a short amount of time. Managers of these commercial food businesses had a more difficult time giving concrete numbers for their businesses, as they tend to be seasonal or have several service areas. Food waste generally comes from prepared food that was held to its maximum safe holding time as on a buffet line, with scraps from preparation such as egg shells and fresh produce and leftover pastries or bread.

Most establishments do not track food waste or utilize any post-production food waste mitigation techniques, with the exception of a few bright spots. One hospital cafeteria reported food waste as a top priority with tracking, training, upcycling, and anaerobic digestion in place and fully utilized. Other food waste diversion efforts include making stock or soups from recycling food or scraps, creating staff meals regularly, and employing “trayless dining” to discourage diners to not take more than they can eat. Besides the hospital, no other business surveyed is regularly composting or donating food for rescue or animal feed.

Opportunities & Motivation

Opportunities for other commercial food businesses impacting food waste are training, food rescue, and composting. These types of commercial kitchens generally have the capacity for more education such as staff training and more infrastructure where restaurants usually do not due to the types of meals served and their seasonality. Surveyed businesses were interested in receiving more information about food rescue, and all said that adopting composting would be relatively simple for them if the service were subsidized or reduced the amount of other waste management costs.

Challenges

While interest and opportunity are relatively high in this category, they do not come without additional challenges. A challenge in many cafeterias is the inability to plan for the number of meals because of infrequent employees in-office, the seasonality of students, and unplanned event attendance. Because of the unpredictability of large events in these spaces, food rescue becomes a challenge with events ending late at night, with no safe food-holding spaces available until a pickup can be scheduled. Designated storage space for donated items (such as refrigerators or bins) was mentioned in several interviews. Another challenge in these spaces is the space to store compost bins where animal activity is not a problem and that the space is aesthetically pleasing.

Development Plan to Eliminate Food Waste in Michigan Schools

While schools do not contribute the most food waste in Southfield, they have the potential to be great agents of change as they help form new habits and thinking in youth. Public schools provide breakfast and lunch to students everyday, presenting multiple opportunities to develop these new habits and ways of thinking about food. Lanie Belloli, a student at Harvard Extension School, created the following report that discusses the potential for addressing food waste in schools and resources to implement specific strategies.

HARVARD
Extension School

DEVELOPMENT PLAN TO ELIMINATE FOOD WASTE IN MICHIGAN SCHOOLS

Prepared For: Make Food Not Waste

Prepared By: Lanie Belloli

Harvard University Extension School

DEVP E-599: Global Development Practice Capstone

Judith Irene Rodriguez MA (*Advisor*)

May 11, 2024

CONSULTANT BIOGRAPHY

Lanie Belloli is a Quality Complaints Specialist for a Boston-based Pharmaceutical and Biotechnology company and a graduate student at the Harvard University Extension School (HES), where she is currently completing the final semester of her Master of Liberal Arts in Global Development Practice.

Originally from Metro Detroit, Michigan, she proudly identifies as a Michigander, taking great pride in her Southeast Michigan roots. Her academic and professional experiences allowed her to embark on a transformative journey from engineering to sustainable development, focusing her research and advocacy efforts on improving the social determinants of health detrimentally impacting the cities of Detroit and Flint.

In 2015, at the height of the Flint Water Crisis, Lanie completed her undergraduate education at Kettering University with a Bachelor of Science in Mechanical Engineering, a Bioengineering specialty, and minors in Biology and Biochemistry.

After graduation, Lanie spent the next five years as a supplier quality engineer and vehicle product investigator at Fiat Chrysler Automobiles, where she developed expertise in Root Cause Analysis, Corrective and Preventive Actions (CAPA), and streamlining manufacturing processes. This experience reinforced the importance of getting to the root cause of a problem to develop robust solutions. However, it wasn't until after beginning her HES journey that she understood just how impactful living in Flint, a city so catastrophically impacted by the state's worst public health threat, would be on her life.

In 2020, Lanie began graduate school at the Harvard Extension School as a Biology major. However, during her second semester, she enrolled in a course called Social Medicine in the United States. The first class was dedicated to the Flint Water Crisis, sparking her passion for addressing social determinants of health to improve public health outcomes in urban communities. This course not only transformed her understanding of how vast the field of public health was but also why Lanie changed her major to Global Development Practice. She then spent the next four years channeling her passion for medicine and biology into researching social determinants of health and advocating for strategies to improve healthy food access, reduce food insecurity, and improve food equity and water justice, particularly for Detroit and Flint.

With over 13 years of experience in engineering quality, Lanie is a seasoned mid-level professional, bringing a unique blend of technical expertise and social consciousness to her work. Her keen eye for innovation and sustainable solutions brings a wealth of experience in leading investigations and Root Cause Analysis across diverse sectors, aligning her technical proficiency with a deep-seated commitment to community well-being. She has earned accolades for mentoring teams, delivering innovative solutions aligned with corporate objectives, and recognition for driving operational excellence.

Outside of her academic and professional pursuits, Lanie enjoys spending quality time with loved ones and her beloved 8-year-old labradoodle, Kona. She is a season ticket holder for Broadway in Detroit, loves attending concerts, enjoys exploring nature through hiking and traveling, and relishes every opportunity to enjoy good food and wine. During the summer months, Lanie prioritizes moments of relaxation along Michigan's freshwater beaches, particularly Lake St. Clair and Lake Michigan in Holland.

EXECUTIVE SUMMARY

Make Food Not Waste (MFNW), a Detroit, Michigan-based environmental nonprofit organization that aims to keep food out of landfills and slow climate change through education, food upcycling, and advocacy, has partnered with the City of Southfield on an ambitious endeavor named The 2030 Project. The 2030 Project was formed in response to the urgent need for a coordinated effort to meet Michigan's and global food waste reduction targets.[1] By concentrating on highly populated areas, the project seeks to maximize impact and efficiency in reducing Michigan food waste by one billion pounds annually.[1] With foundational support from the Michigan Department of Environment, Great Lakes, and Energy (EGLE), The 2030 Project is developing a tactical blueprint to divert 100% of food waste from landfills in Southfield, thereby creating a replicable model to reduce food waste in 14 additional Southeast Michigan cities over the next six years.[1,2] As part of The 2030 Project, this development plan details the comprehensive strategy for eliminating food waste in Michigan schools.

Michigan schools discard nearly 40 million pounds of food each year, which accounts for 4.5% of all food waste sent to Michigan landfills.[3,4] Yet, 1 in 8, or roughly 300,000, children do not know where their next meal will come from.[4–8] This negative relationship between the number of children experiencing food insecurity and the volume of food schools waste when they are intended to provide a healthy and safe learning environment for their students presents significant economic, environmental, and social implications on a child's academic performance and quality of life.

To eliminate school-created food waste and support Make Food Not Waste's vision of making Michigan a state whose residents value food and prevent it from ending in landfills, this development plan aims to address the following objectives:

1. Eliminate food waste in Michigan schools by prioritizing food waste prevention and diversion instead of disposal,
2. Integrate food and climate education into the Pre-K-12 curriculum, and
3. Reduce childhood food insecurity through school food recovery and redistribution.

To achieve these objectives successfully, this development plan provides seven initiatives to help schools eliminate food waste holistically: 1) School Commitment, 2) Data Collection, 3) Food Waste Elimination, 4) Lunchroom Policy Changes, 5) Food Recovery & Redistribution, 6) Food & Climate Education, and 7) Easy Wins. These initiatives are intended to create a blueprint not only for eliminating food waste in schools but also for creating lasting behavioral changes in how society views and addresses food waste while alleviating food insecurity among school-aged children. Using this blueprint, this development plan aims to provide specific actions that Make Food Not Waste and schools can take to demonstrate the economic, environmental, and social benefits of reducing food waste and enhancing food security while allowing students to see the direct consequences of their actions and inspire them to advocate for and adopt sustainable food practices.

The successful implementation of this development plan will support Make Food Not Waste's mission of keeping food out of landfills while helping Michigan eliminate one billion pounds of food waste and contribute to the United Nations' goal of cutting food waste in half by 2030 while providing education on the importance of adopting sustainable food practices to ensure that food-insecure children are prioritized when schools have excess food. Not only will implementing this development plan reduce food and trash costs, but successful implementation will also provide experiential learning opportunities that keep students engaged during school, inspire students to enroll in higher education STEM programs, reduce childhood food insecurity, and help build community.

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ACRONYMS & ABBREVIATIONS

Abbreviation	Meaning
SNAP	Supplemental Nutrition Assistance Program
US	United States
FV	Fruits & Vegetables
USMP	Universal School Meals Program
MDE	Michigan Department of Education
USDA	United States Department of Agriculture
MFNW	Make Food Not Waste
WWF	World Wildlife Fund
NRDC	Natural Resources Defense Council
EGLE	Environment, Great Lakes, and Energy
EPA	US Environmental Protection Agency
SPS	Southfield Public Schools
TCS	Temperature Controlled for Safety
COPD	Chronic obstructive pulmonary disease

CHAPTER 1: SPONSORING ORGANIZATION

1. SPONSORING ORGANIZATION

Make Food Not Waste (MFNW) is a Detroit, Michigan-based environmental nonprofit organization that aims to keep food out of landfills and slow climate change through education, food upcycling, and advocacy.[9]

Founded in 2017, Make Food Not Waste has worked to fill gaps within the food waste reduction ecosystem. Initially focusing on public engagement, the organization shifted to direct action during the COVID-19 pandemic, opening its first *Upcycling Kitchen* (***Figure 1***) in 2021 to repurpose surplus food into nutritious meals for the community.[2] By 2023, their operations expanded significantly, increasing meal production and demonstrating the power of innovation in food waste management.[10]

Figure 1

Upcycling Kitchen Detroit Logo

Make Food Not Waste honed its expertise in food waste reduction by representing Detroit in the Natural Resources Defense Council's (NRDC) Food Matters Great Lakes Cohort from January 2021-June 2023. During that time, the organization also secured funding from the Environmental Protection Agency (EPA) to pilot the international food waste certification, The PLEDGE™ on Food Waste (***Figure 2***), to reduce food waste in the hospitality industry throughout the US.[11]

Figure 2

Upcycling Kitchen Detroit Logo

As a recognized leader in food waste advocacy, Make Food Not Waste has played a crucial role in policy development and implementation, including significant contributions to the Michigan Department of Environment, Great Lakes, and Energy's (EGLE) MI Healthy Climate Plan and the Roadmap to Food Loss and Waste Reduction to identify barriers, potential solutions, and opportunities to eliminate food waste throughout Michigan.[12] Supported by seed funding from the EGLE, Make Food Not Waste continues to drive forward with The 2030 Project, its initiative to cut food waste in half by 2030, aligning with the state of Michigan, the US, and the United Nations, while also maintaining its Upcycling Kitchens and educational programs.[1]

The 2030 Project was formed in response to the urgent need for a coordinated effort to meet Michigan's and global food waste reduction targets.[1] By concentrating on highly populated areas, the project seeks to maximize impact and efficiency in reducing Michigan food waste by one billion pounds annually.[1] With foundational support from EGLE, The 2030 Project is developing a tactical blueprint to divert 100% of food waste from landfills in Southfield, setting a replicable model to reduce food waste in 14 additional Southeast Michigan cities over the next six years.[1] Key to The 2030 Project's success is the involvement of multiple food waste reduction service providers and support from city and state officials. Together, these experts and officials are developing a blueprint for how they can best work together to divert 100% of food waste in the most efficient way possible, including the development of a highly detailed plan that defines costs, logistics, partnerships, policies, communications, and infrastructure requirements for each sector contributing to the creation of food waste.[1] Once the blueprint is complete, Make Food Not Waste will oversee its implementation in Southfield, begin working with two additional cities to adapt the blueprint to their locations, and continue this process until it has been implemented within all 15 Southeast Michigan cities.[1]

Mission & Values

Make Food Not Waste's mission is to "keep food out of landfills and slow climate change by creating lasting solutions to food waste through education, food upcycling, and advocacy."[9] The organization operates by the following set of values:

i. Joy; remain positive and supportive and treat others with kindness;
ii. Courage; take on big challenges and atypical projects;
iii. Generosity; serve the community and partners;
iv. Commitment to data; follow best practices whenever possible;
v. Transformation; make large-scale change;
vi. Listening; co-create experiences with the community.[1,10]

Business Model & Goals (Financial, Community, Environmental)

The nonprofit generates revenue through donations from government sources, foundations, corporate sponsors, and individual donors.[10] Make Food Not Waste's operating budget for Fiscal Year 2024 (FY24) is $565,000, and currently employs four full-time and seven part-time employees.[10]

Make Food Not Waste aligns its operational strategy with four key goals to reach its vision of cutting Michigan's food waste in half by 2030.[10] These goals are:

i. Be the voice of food waste reduction in Michigan by providing leadership and public engagement,
ii. Reduce food waste in leading food waste generators by providing technical training to foodservice operators and public education campaigns,
iii. Provide a home for edible food that has nowhere to go by processing it in the Upcycling Kitchen, and
iv. Maintain a healthy organization by committing to their employees and board members' health and well-being.[1,10]

CHAPTER 2: DEVELOPMENT PLAN OBJECTIVES

2. DEVELOPMENT PLAN OBJECTIVES

This development plan was created for Make Food Not Waste to develop a tactical blueprint for eliminating food waste in Michigan schools, as part of The 2030 Project's initiative to eliminate one billion pounds of food waste from Michigan landfills by 2030.

In 2022, 17.7 tons of food, equaling 29.5 million meals, were discarded in Michigan's Pre-K-12 schools, costing the state $127 million.[8] This volume of food waste is equivalent to 79% of the approved $160 million budget to fund the Michigan School Meals Program for just one year.[13] Not only does this volume of food waste suggest that the 1.4 million students participating in the program are not consuming the food, but it also means that nearly 40 million pounds of food intended to feed children is being sent to landfills instead, wasting seven billion gallons of water and releasing roughly 81 metric tons of carbon dioxide annually.[8,14] To effectively address food waste created by schools, a comprehensive strategy is needed to understand what, how, and why food is being wasted in schools.

Therefore, the goal of this development plan is to ***create a comprehensive, actionable strategy for effectively eliminating food waste in Michigan's Pre-K-12 schools that can be deployed in 15 cities in Southeast Michigan over the next six years.***

OBJECTIVES

To achieve this goal, this development plan aims to address the following three objectives:

4. Eliminate food waste in Michigan schools by prioritizing food waste prevention and diversion instead of disposal, as outlined in the EPA's Wasted Food Scale (***Figure 3***).[15]
5. Integrate food and climate education into the Pre-K-12 curriculum.
6. Reduce childhood food insecurity through school food recovery and redistribution.

Figure 3

U.S. EPA's Food Waste Scale[15]

By using the information and recommendations provided in this development plan, Make Food Not Waste will be able to work with schools to:

- determine what, how much, and why food is wasted in Michigan schools,
- fill existing knowledge gaps surrounding solutions schools can adopt to eliminate food waste,
- implement comprehensive food waste diversion programs in school lunchrooms to divert food waste from landfills,
- adopt best practices in the lunchroom to recover uncompromised food,
- recommend experiential and enrichment opportunities to improve food and climate education in Pre-K-12 curriculums,
- develop a food redistribution model prioritizing food insecure students within each school before diverting into the community, and
- build a stronger community between the city and its schools.

PROJECT SCALE

The scale of this development plan is specific to schools within the borders of Southfield and Lathrup Village, as depicted in **Figure 9**. However, the development plan will only apply to schools within the Southfield Public School system, as all other schools in the city declined to participate.

The additional 14 cities earmarked for participation in The 2030 Project after Southfield are out of scope. However, the implementation model developed for Southfield will be replicated in and adapted for each city over the next six years.

SCOPE

The scope of this development plan is to create a comprehensive, actionable blueprint that encompasses the above objectives, allowing Make Food Not Waste to implement the recommended initiatives outlined in Chapter 8 successfully.

Implementation of the recommendations outlined in this development plan is out of scope. However, the consultant will be available to provide additional consultation and assistance throughout the implementation process.

CHAPTER 3: BACKGROUND

3. DEVELOPMENT PLAN OBJECTIVES

This section discusses existing barriers to addressing food waste and food insecurity throughout Michigan and the United States to provide necessary background information to understand the connection between food waste and food insecurity. This section discusses the United States' stance on the Right to Food and how it shapes food access, the United States' existing food access, food waste, and child health paradox, and the federal and state laws regulating food access.

THE FOOD ACCESS, FOOD WASTE, CHILD HEALTH PARADOX

The United States food system demonstrates a distressing paradox between healthy food access, food waste, and childhood health because the United States' stance on the right to food remains deeply entwined in a complex web of politics that significantly influences the current food system's economic, environmental, and social dimensions. For example, the US spends roughly $92 billion annually on food and nutrition programs, yet nearly $218 billion of edible food goes uneaten, while 38 million people, including 12 million children, battle food insecurity yearly.[5,16,17] Although 1 in 6 Americans, including 1 in 4 children, are food insecure, the country discards more than enough edible food to feed them.[3]

The critical importance of healthy food for positive health outcomes cannot be overstated, particularly during early childhood. The repercussions of malnutrition in children have lifelong and often irreversible health issues, including diminished gut biodiversity, developmental stunting, obesity, allergies, asthma, diabetes, and mental health disorders.[18–21] This uneaten food exacerbates food insecurity and causes irreparable environmental and social harm that adversely affects children's health and quality of life. Addressing this paradoxical food system requires a comprehensive, systemic approach that mitigates cost-related barriers to healthy food, curtails food waste, and enhances exposure to healthy food through educational initiatives simultaneously. The interconnected nature of child health, access to healthy food, and food waste presents a complex but critical challenge that demands immediate and concerted efforts for resolution.

The Right to Food

Food insecurity is a global public health concern; thus, Zero Hunger is the second of the 17 SDGs.[22] While the SDGs recognize water, health, and education as human rights, access to safe and nutritious food does not carry the same importance in the United States political framework.[23] For example, the US is one of only two countries that have not ratified the Convention on the Rights of the Child, where Article 24 states that children have the right to be both physically and mentally fulfilled and should have adequate nutritious food and clean drinking water to combat disease and malnutrition.[24] Furthermore, the US has not ratified the International Covenant on Economic, Social, and Cultural Rights due to its opposition to Article 25.1 of the United Nations' Universal Declaration of Human Rights.[23,25] Article 25.1 states that everyone is entitled to a standard of living adequate to maintain health and well-being, including access to food.[23] Yet, during the 2015 United Nations General Assembly, the US was one of several developed countries opposed to food as a human right and remains the only country that has not ratified the International Covenant on Economic, Social, and Cultural Rights, opposed including the right to food in the 1996 and 2002 World Food Summit declarations, and continues to resist economic, cultural, and social rights.[23,26] Therefore, the US has made its opposition to food as a human right known globally, leaving US food insecurity to be shaped by a system that views food as a commodity to be purchased with the appropriate means rather than a requirement for life.[27]

Food Waste

Addressing food waste is critical for eradicating food insecurity.[28] Yet, the United States discards approximately 40% of all edible food, amounting to 133 billion pounds, annually, of which nearly 1.5 billion pounds is discarded just from Pre-K-12 schools.[5,29] This food waste spans the entire food supply chain, causing environmental degradation and hindering sustainable food production and consumption.[30] The nearly 138 billion pounds of food wasted in the US generates 3.3 billion tons of greenhouse gas (GHG) emissions and consumes 14% of the Earth's freshwater, leading to biodiversity loss and desertification.[31–35] Moreover, 75% of this waste is sent to landfills, contributing to nearly 20% of the country's methane emissions, while food packaging comprises over 63% of the solid waste in landfills.[32,36] Furthermore, modern agricultural practices, such as monocropping and synthetic fertilizers, deplete the soil of micronutrients, turning fertile land into barren dirt, further threatening the land's capacity to produce food.[37] Therefore, food waste not only affects current food accessibility but also poses a long-term threat to food security and human survival.

The economic impact of food waste is equally staggering, costing the US nearly $218 billion annually.[16,38] These figures underscore the urgency for innovative solutions to divert food from landfills and highlight the existing food system's failure to prevent food waste, causing considerable environmental damage and impairing the supply chain's ability to sustain future food production. Despite the effects of food waste on the environment and food supply, little progress has been made across the entire supply chain to mitigate and divert food waste from landfills, leaving millions without sufficient access to healthy food. Therefore, a multifaceted approach that addresses food waste's economic, environmental, and social dimensions is urgently needed to create a sustainable food system that ensures equitable access to sufficient healthy food.[39]

Child Health and Food Access

a. Healthy, Hunger-Free Kids Act

The Healthy, Hunger-Free Kids Act of 2010 marked a pivotal step in combating childhood obesity, achieving a notable reduction in obesity risk for 5.9 million children by 2018.[40] This legislative milestone enhanced nutritional standards in national school programs, contributing to a 47% decrease in the likelihood of obesity among impoverished children in just eight years.[40] Before its implementation, obesity rates among this demographic were consistently rising. Despite its success, dietary requirements were relaxed in 2020, driven by concerns about excessive school food waste.[40] These relaxed dietary requirements allowed schools to reduce the healthy food served and replace it with unhealthier options, including pizza and fries.[40] Although food waste is problematic, nutrition standards should not be manipulated as a potential mitigation strategy. Instead, strategies, such as composting programs and food conservation, preparation, and recovery education, should be integrated into K-12 curriculums to reduce food waste.

b. Michigan School Meals Program

In July 2023, Michigan became the 7th state to adopt a Universal School Meals Program for the 2023-2024 school year, with legislation introduced to make the program permanent.[13,13,41–44] The Michigan School Meals program's $160 million budget will provide 1.4 million children with free breakfast and lunch in all public K-12 schools participating in the National School Lunch and Breakfast Programs.[13] The decision to adopt a statewide program was based on the widespread success of the USDA's Child Nutrition Program (CNP) waivers, which provided universal meals to all students during the COVID-19 pandemic, regardless of income.[13,13,41–44] However, the income-based CNP waivers ended in the summer of 2022, leaving students without universal meals for the 2022-23 school year.[13]

Prior to the COVID-19 pandemic, low-income families of four with an annual income of $36,075 or less qualified for free meals and no more than $51,300 to qualify for reduced-cost meals through the National School Lunch and Breakfast Programs.[45] However, the Michigan School Meals Program (***Figure 4***) is expected to save families an estimated $850 annually, ensuring children do not go hungry by providing healthy meals that prepare them for learning.[13]

Figure 4

Michigan School Meals Logo

The program not only ensures healthy meals are accessible to all students but also supports Michigan agriculture by working with 10 Cents a Meal, a local food incentive program that helps fund Michigan's School Nutrition Programs by encouraging the purchase of fresh, locally grown produce and dried beans for school meals.[13] However, with more students receiving free meals, the risk of excessive food waste in schools increases.

For example, in 2022, Michigan's Pre-K-12 schools discarded 17.7 thousand tons of food, equaling 29.5 million meals, costing the state $127 million.[8] This volume of wasted food accounts for 79% of the Michigan School Meals Program's $160 million budget for the 2023-24 school year.[13] Not only does this suggest that the 1.4 million students participating in the program are not consuming the food, but it also means that nearly 40 million pounds of edible food is sent to landfills instead of feeding these children. Furthermore, this volume of waste food is also responsible for wasting natural resources, including seven billion gallons of water and releasing roughly 81 metric tons of carbon dioxide annually.[8] With the program's high taxpayer cost, it is critical to implement innovative solutions that target reducing food waste produced by schools to ensure the program's longevity at feeding children nutritious meals.

Charity & Donations

Charitable food donations have become a leading approach to tackling food insecurity in the United States. In 2022, Gleaners Community Food Bank, one of Metro Detroit's largest food banks, provided roughly 47 million pounds of food to families in southeast Michigan, highlighting the magnitude of food insecurity throughout Metro Detroit.[46] Yet, this impact extends beyond southeast Michigan. Since the early 1930s, food charity has been a critical mechanism for addressing food insecurity throughout the U.S., serving as a governance system that influences food policy and access by linking private, public, and non-profit sectors together.[47] However, the existing legal and political framework governing the U.S. food system fails to address the systemic issues driving food insecurity, thus only providing families with temporary relief.

This framework not only perpetuates the cycle of food insecurity but also creates excessive food waste. A substantial amount of donated food often reaches expiration before distribution or is not suitable for consumption due to quality concerns, leading to significant food waste.[47] Consequently, a substantial percentage of food in charity networks is discarded, contradicting the fundamental objective of these organizations.[47] Although charitable food donations play a role in the short-term alleviation of hunger, their limitations in addressing the root causes of food insecurity and their inadvertent contribution to food waste require innovative and comprehensive strategies to address it.

a. Federal Food Donation Policy

Federal food policy is regulated through top-down legislative efforts to address food insecurity by redirecting surplus food for hunger relief.[47] During the Great Depression, the 1933 Agricultural Adjustment Act was enacted to allow the USDA to purchase surplus food from farmers and distribute it for hunger relief, and it remains the foundation of U.S. food and nutrition policy today.[47,48] Since 1933, 42 federal food policies have been enacted, allowing nearly all entities—from individuals and communities to corporations, farmers, and schools—to donate surplus food in good faith.[47–49] Yet, none encourage healthy food donations nor set nutrition and quality requirements for donated food.[48] Although the primary purpose of food charity is to protect donors from liability and reduce food waste, only 2% of surplus food is donated by individuals and companies alike, wasting 108 billion pounds of food annually.[48,50] Despite nearly a century since its enactment, federal food policy has yet to address food insecurity or irresponsible consumption and production practices effectively. Instead, the existing food system views sufficient healthy food access as an entitlement instead of a fundamental human right.

i. Bill Emerson Good Samaritan Food Donation Act

Enacted in 1996, the Bill Emerson Good Samaritan Food Donation Act serves as a legal safeguard for businesses and individuals making good-faith food donations, designed to alleviate concerns about liability in the event of harm caused by donated food.[51] Under this Act, individuals and public and private institutions—including schools—are protected from legal liability when donating food in good faith.[51] Yet, schools frequently discard rather than donate surplus food due to a tangled web of logistical and perceptual barriers.[5,29] Lack of awareness about what protections the Act protects hinders donation efforts, as educational administrators remain concerned about liability and food safety—a fear underscored by the misconception that schools could face legal repercussions if a recipient gets sick from donated food.[52–54] Moreover, logistical challenges, including inadequate refrigeration and transportation costs, further deter schools from donating excess food.[55] These challenges, along with perceived food quality and safety concerns, further discourage schools from donating excess food, thus wasting millions of nutritious meals from being eaten.[8] Consequently, the legal framework to support food donations is in place. However, the practical barriers and persistent misconceptions surrounding liability protection prevent schools from fully engaging in efforts to mitigate food waste and food insecurity through food donations.

a. State Food Donation Policy

Federal and state policies regulate United States food charity, but policies and regulations vary by state. Although the FDA Food Code heavily impacts the food safety laws that each state has in place, the FDA Food Code is not binding, as states have the authority to decide which food laws to adopt and enforce.[56] Furthermore, topics not covered within the FDA Food Code are rarely addressed in each state's codes, including laws and regulations pertaining to school food donation safety.[56] For example, of the 252 food donation policies across all 50 states and the District of Columbia (D.C.), none have consistent state-level policies regulating food donations, which negatively impacts food nutritional quality.[57] All 51 states provide donors with liability protection, but only 14 have policies encouraging healthy food donations.[57] While the USDA encourages using "share tables'' in school lunchrooms, few states have included food safety requirements for what can be collected and redistributed to other students during mealtimes, outside of the basic requirement that all items must be whole or unopened.[56] Therefore, all 50 states and the District of Columbia have adopted a version of the FDA Food Code, but few ensure

donated food is high quality and nutritionally dense, thus hindering access to healthy food for Americans experiencing food insecurity.[56]

Michigan has six policies that regulate food charity, two establish date labeling requirements, and two provide liability protection to donors.[57,58] None, however, encourage healthy food donations or establish food safety requirements, which suggests that food donation policies are not intended to target food insecurity.[57] Instead, these policies are intended to incentivize protected entities—such as corporations and farmers—to donate low-quality, over-produced, and unsalable food to charity rather than sending these items to landfills. However, not requiring food donations to meet minimum nutrition, quality, or safety standards eliminates any incentive for entities to prioritize quality control over profit. Consequently, low-income Americans receive donated food, which can often be poor quality, unsalable food items, without adequate resources to secure safe and nutritious food for a healthy life through other means.[59] Food policies at the local, state, and federal levels should be revised to implement nutrition, quality, and safety standards for food donations and identify possible solutions that promote food sovereignty rather than promoting continued reliance on food charity with no alternative.

CHAPTER 4: COMMUNITY DESCRIPTION

4. COMMUNITY DESCRIPTION

The Development Plan (DP) will be initially deployed in Southfield schools as part of the citywide food waste reduction initiative in partnership with Make Food Not Waste for The 2030 Project. The DP will then act as the framework for implementing a comprehensive food waste diversion program in schools throughout Michigan over the next six years.

Southfield as the Center of It All™

Situated on the southeastern border of Oakland County (***Figure 5***), the City of Southfield serves as a quintessential example of the dynamic interplay between suburban charm and urban energy within Metro Detroit. What was once a rural farming community has, over the span of six decades, transformed into a bustling hub for business and a highly desirable community for residential life.[60] Southfield is celebrated not only for its iconic gold skyscraper skyline but also for its serene, tree-lined neighborhoods.[60] Known as the "Center of It All™" (***Figure 6***), the city is more than just a home for its 76,000 residents; it acts as a critical nexus within Metro Detroit, strategically located mere minutes from other key Metro Detroit locations, enhancing its accessibility and the vibrancy of community life.[61]

Figure 5

U.S. EPA's Food Waste Scale

Figure 6

The Center of in All Logo

Spanning more than 26 square miles, Southfield is noted for its extensive green spaces, including over 800 acres of parkland, several public golf courses, and a network of trails that encourage physical fitness and a deeper connection to nature.[61,62] Southfield is also home to over 10,000 businesses, including 110 Fortune 500 companies. The city includes roughly 27 million square feet of office space and retail and industrial space that spans more than 7 million square feet, catering to a daytime population of approximately 175,000 people.[61] With more office space than neighboring major cities, including Cleveland, Cincinnati, Detroit, Indianapolis, and Kansas City, Southfield reinforces itself as Michigan's undisputed business center.[61] The city's unique blend of expansive natural landscapes and robust economic infrastructure underscores its dedication to continuous growth, enhanced connectivity, and community building. Therefore, Southfield exemplifies a unique urban model where urban development and environmental sustainability coexist, establishing it as an essential cornerstone of Michigan's economic and environmental future.

Sustainable Southfield

In 2016, Southfield adopted the Sustainable Southfield Master Plan—only the second Master Plan to be adopted in the city's history—which aims to transform the city into an environmentally conscious, economically prosperous, and socially equitable community that enhances the quality of life for all living things.[63] A cornerstone of the Sustainable Southfield initiative is collaboration between city residents,

businesses, students, and elected officials to promote sustainability through community-oriented projects that balance Southfield's economic assets, natural resources, and social priorities to create a prosperous and equitable city that meets the diverse needs of all residents, now and in the future.[64]

Figure 7

Sustainable Southfield Logo

Sustainable Southfield (***Figure 7***) incorporates six principles to help create a more sustainable community, which include livable built environments, harmony with nature, resilient economies, interwoven equity, healthy communities, and responsible regionalism.[63] The Master Plan's focus on healthy living is particularly important for this development plan because it includes promoting and supporting urban agriculture, establishing sustainable food systems, and enhancing education, all of which directly relate to this development plan's three objectives.

Urban Agriculture:

Sustainable Southfield understands how impactful urban agriculture can be in building sustainable communities. Therefore, to promote urban agriculture, the Sustainable Southfield Master Plan includes:

i. adopting policies and regulations that ensure urban agricultural initiatives are integrated into future city planning,
ii. establishing community gardens to promote local food production and increase access to nutrient-dense food,
iii. promoting greenhouse projects to extend Michigan's growing season and provide community educational opportunities,
iv. providing municipal support for community-run urban agricultural programs, and
v. supporting programs that encourage residential and commercial composting while minimizing nuisances.

Food Systems:

Sustainable Southfield acknowledges the importance of having sufficient access to healthy food for community health. Therefore, to promote sustainable food systems, the Master Plan includes:

i. establishing new and expanding existing healthy food access in underserved areas of the city,
ii. improving school food environments and public facilities by reducing the sale of unhealthy, calorically dense foods,
iii. Supporting local food systems to improve food security and reduce the environmental impact of the food supply chain,
iv. increasing the use of public benefit programs to improve access to healthy foods, and
v. encouraging institutions—including schools, hospitals, colleges, and universities—to purchase healthier, locally sourced foods.

Education:

Sustainable Southfield recognizes the importance of education, its connection to food, and its necessity for improving educational attainment and improving economic growth. Therefore, to promote education, the Master Plan includes:

i. improving school food offerings to include healthier options,
ii. providing education on the benefits of healthy, locally grown food and sustainable food systems,
iii. developing educational programs that incorporate sustainability into the curriculum and community awareness initiatives, and
iv. increasing educational attainment and skill levels required for high-quality jobs.

To further support the city's community-building efforts, the Sustainable Southfield Master Plan also highlights working with neighboring communities to promote a shared community interest in sustainability and share best practices and lessons learned. Not only does this plan recognize that sustainability efforts cannot thrive nor survive in silos, but it also embraces the importance of community involvement.

Southfield Schools

In addition to its thriving business and residential offerings, Southfield is equally committed to education. The city hosts 30 public and private schools, including a nationally recognized public school system, a specialized early childhood development center, and parochial and Hebrew schools. Refer to **Table 1** for a summary of all Pre-K-12 schools in Southfield and **Figure 8** for their locations depicted on a city map.

The city also promotes lifelong learning through its higher educational offerings, which include seven colleges and universities, as well as articulation agreements between the high schools and these institutions.

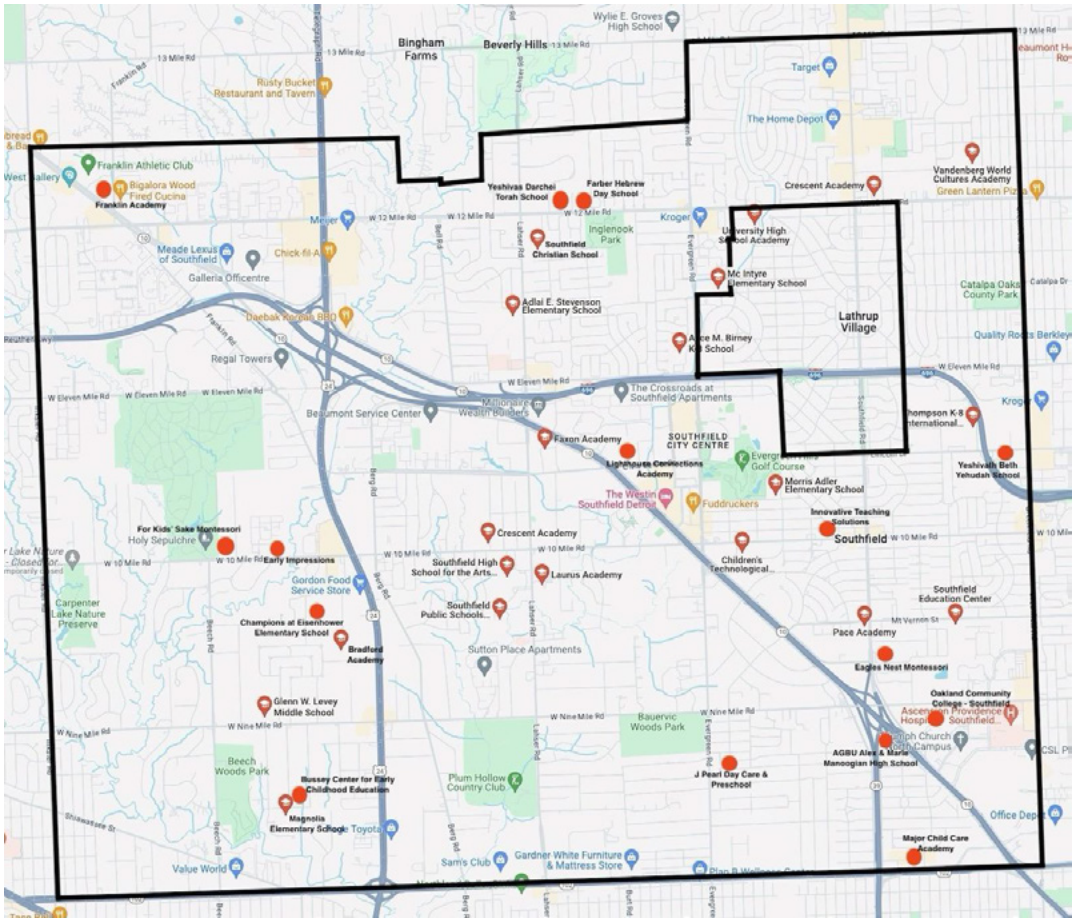
Table 1

Number and Type of Schools in Southfield

Grades	College	Day Care	Independent Charter	Montessori	Private	SPS	Grand Total
Day Care		1					**1**
Pre-K				2	1	1	**4**
K-5			1		1	5	**7**
K-8			4		1	3	**8**
Pre-K-8					2		**2**
6-8						1	**1**
Pre-K-12			2		2		**4**
9-12						2	**2**
2-Year College	1						**1**
Grand Total	**1**	**1**	**7**	**2**	**7**	**12**	**30**

Figure 8

Southfield, Michigan Schools[65]



NOTE: *Each red pin and dot represents a Pre-K-12 school in Southfield. The figure was created using Google Maps.*[66] *However, not all schools were displayed at once. Therefore, the red dots were added to indicate the location of all schools that were not displayed by view Google Maps presented.*

CHALLENGES & REQUIREMENTS

Challenges

Of the more than 76,000 residents living in Southfield, 70.1% of the population is black, and 21% is white.[67] While the median household income in Southfield is $60,006, over 11% of the population—including 13% of households—lives in poverty.[67] Consequently, Southfield residents living in poverty experience significant challenges not only in accessing sufficient nutrient-dense food but also with their health.

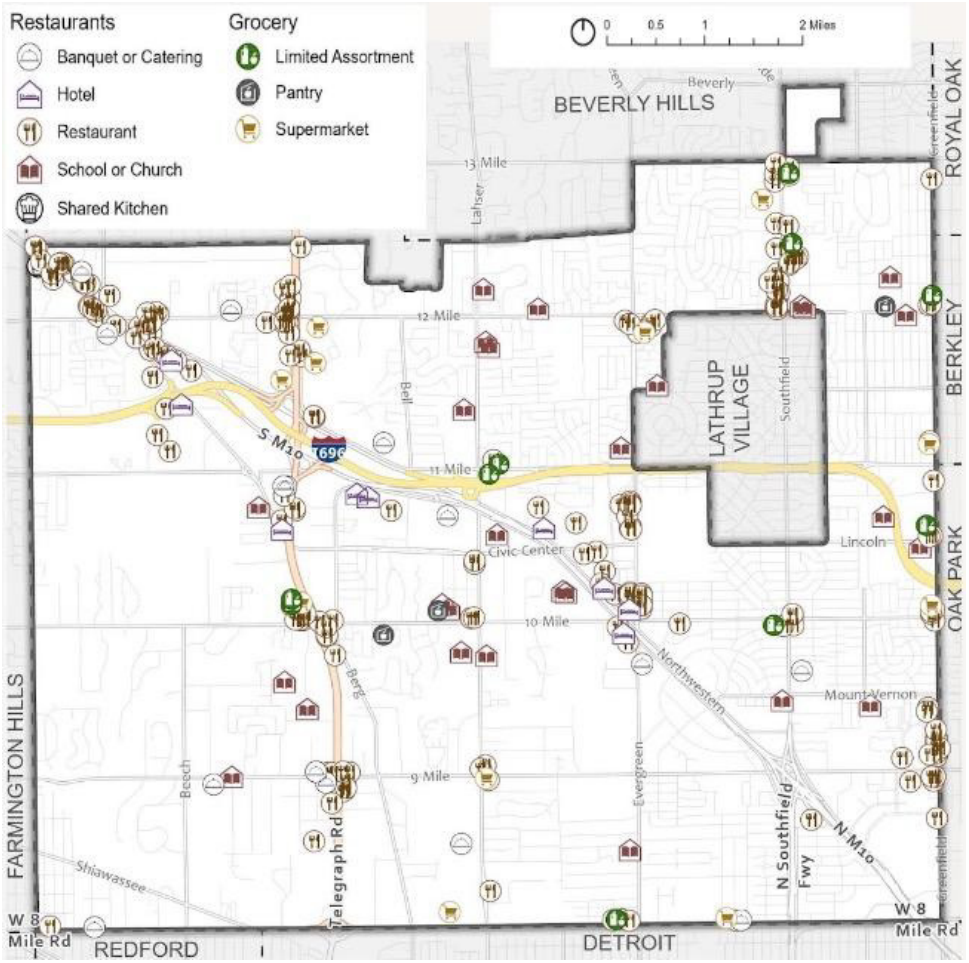
Healthy Food Access

Having sufficient access to enough safe and nutritious food is critical to support and maintain an active and healthy life.[59] Yet, an estimated 17% of Southfield residents, of which 22% are children, rely on the Supplemental Nutrition Assistance Program, the largest of 15 food and nutrition assistance programs in the United States.[4,6,68]

Full-service food access points in Southfield are limited, accounting for only 11 of the 292 food access points throughout the city.[69] With only 11 supermarkets, many Southfield residents reside in a food desert.[67] The United States Department of Agriculture (USDA) defines a food desert as a community or neighborhood with limited to no access to affordable and nutritious food.[70] More descriptively, an urban community residing more than one mile, or a rural community residing more than 10 miles, from a supermarket or large grocery store resides in a food desert.[71] Therefore, a major challenge that Southfield residents experience is limited access of affordable, nutrient-dense food. Refer to **Figure 9** for a map of the food access points throughout Southfield.

Figure 9

Southfield Food Access[67]



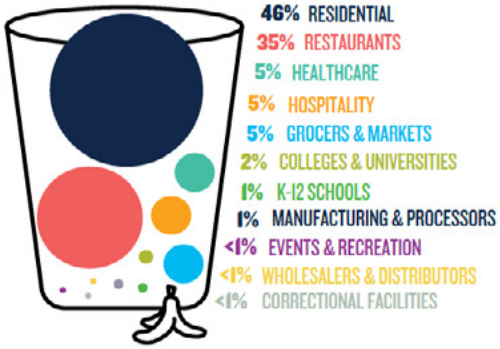
Food Waste

Roughly 9% of Southfield residents are food insecure, equaling $4.4 million in unmet meals.[6] However, the city also creates 15,000 tons of food waste, equaling 30 million pounds, annually.[69]

Southfield schools, in particular, account for only 1% of the food waste created throughout the city.[69] However, this 1% accounts for roughly 330,000 pounds and $38,000 in wasted food from schools alone.[69] Furthermore, this 1% accounts for 44,000 unmet meals for Southfield children.[69] Southfield schools experience significant challenges addressing food insecurity among their students due to the volume of food discarded each year.

Figure 10

Southfield Food Waste Distribution



Food Service for Southfield Public Schools prepares food at Southfield High School for the Arts and Technology (A&T) for seven of the district's 12 schools, while the remaining five prepare food for each meal onsite. It is currently unclear whether all 12 schools have the capacity and resources necessary to store prepared foods onsite if and when there is food leftover after each meal. Without proper resources to store surplus food safely, schools would be required to either transport it back to Southfield A&T to be packaged and stored or throw it away.

Healthy Living

Insufficient access to nutrient-dense food significantly also increases the risk of developing non-communicable diseases, such as diabetes, obesity, or cardiovascular disorders.[18–20] Consequently, 12% of Southfield residents have diabetes, nearly 38% are obese, and nearly 290 people out of 100,000 pass away from cardiovascular disease each year due to insufficient access to healthy food.[72]

Requirements

Southfield requires a comprehensive strategy for eliminating food waste in schools and diverting surplus food to children experiencing food insecurity. By eliminating food waste in its schools, the city can not only achieve the goals outlined in the Sustainable Southfield Masterplan, but it can also help Make Food Not Waste and the state reach its communal goal of cutting food waste in half and helping alleviate childhood food insecurity throughout the city. Therefore, this development plan serves as a comprehensive blueprint for how Make Food Not Waste can work with Southfield Public Schools and the city of Southfield to eliminate food waste in schools and alleviate childhood food insecurity.

CHAPTER 5: THEORY OF CHANGE

5. THEORY OF CHANGE

ToC Narrative

The Theory of Change (ToC) diagram shown in **Figure 11** illustrates how implementing a composting program in Michigan schools and integrating food waste, conservation, and recovery education into the K-12 curriculum can positively impact Make Food Not Waste's efforts to divert food from landfills to feed the community and fight climate change while ensuring all children enrolled in K-12 schools receive healthy, nutritious meals that they enjoy.

The diagram depicts how rescuing food from ending up in lunchroom trash bins allows schools to rescue edible, uncompromised food from the trash and redirect it to feed food-insecure residents and compost any food remaining. This process not only allows schools to reduce food waste but also presents a critical opportunity to alleviate food insecurity while simultaneously fighting climate change.

The ToC diagram in **Figure 11** describes activities that fulfill the following seven initiatives:

1. Secure Student Commitment
2. Collect Baseline Data
3. Eliminate Food Waste
4. Change Lunchroom Policies
5. Recover and Redistribute Food
6. Implement Food & Climate Education into the K-12 Curriculum
7. Implement Easy Wins

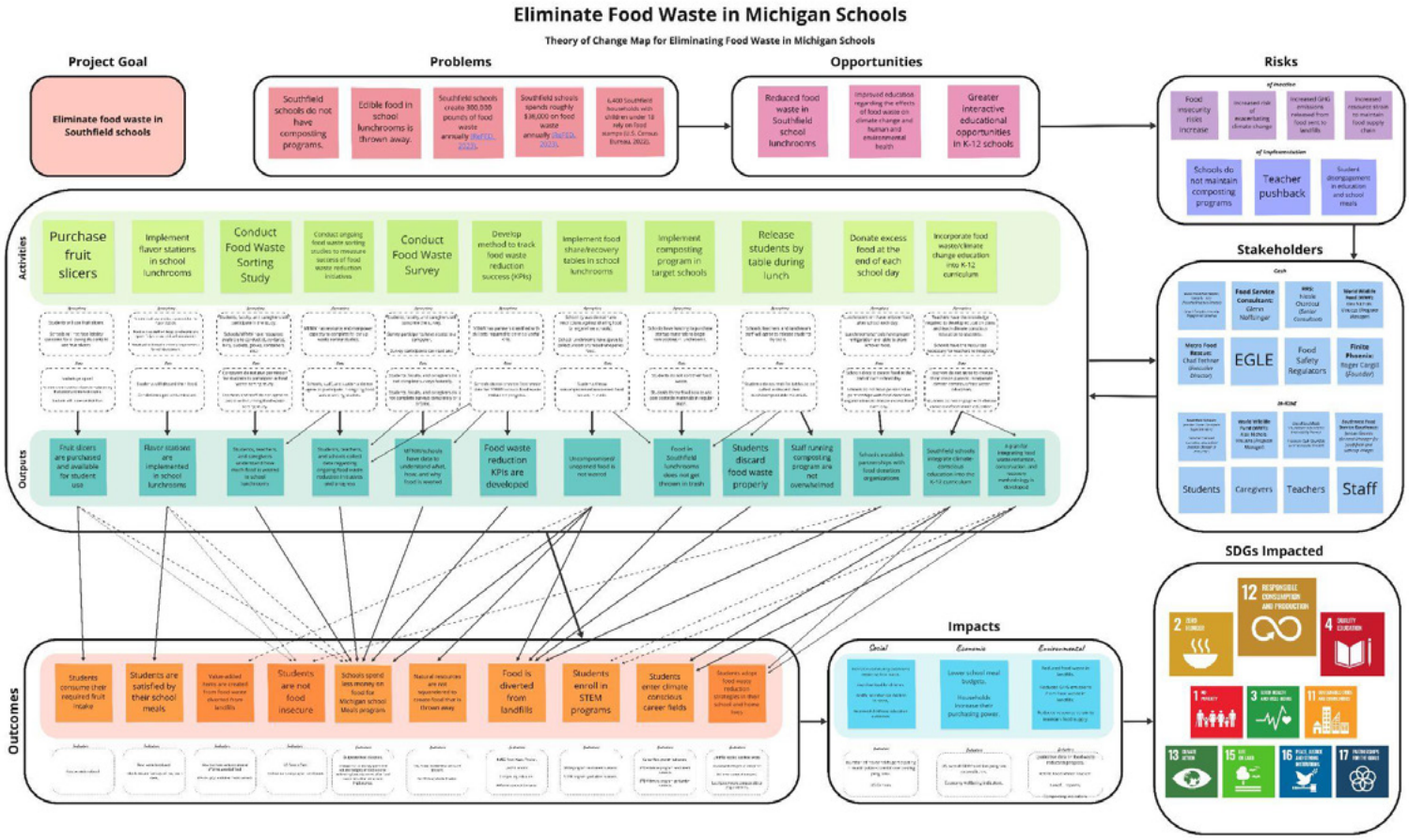
Theory of Change Statement

IF schools integrate food waste reduction, conservation strategies, and climate education into the Pre-K-12 curriculum and facilitate experiential learning through activities like food waste audits and comprehensive composting and recycling programs, **THEN** they will create a tactical blueprint for eliminating food waste that can be replicated in other schools and districts **BECAUSE** establishing a successful pilot program demonstrates the economic, environmental, and social benefits of reducing food waste and enhancing food security, while allowing students to see the direct consequences of their actions and inspire them to advocate for and adopt sustainable food practices.

Theory of Change Diagram

Figure 11

Theory of Change Diagram for Eliminating Food Waste in Michigan Schools[73]



Outputs

The outputs depicted in the Theory of Change Map represent the immediate results from implementing the recommended initiatives outlined in this development plan.

i. Fruit slicers are purchased and available for student use.
ii. Flavor stations are implemented in school lunchrooms.
iii. Students, teachers, and caregivers understand how much food is wasted in school lunchrooms.
iv. Students, teachers, and schools collect data regarding ongoing food waste reduction initiatives and progress.
v. Make Food Not Waste and schools have data to understand what, how much, and why food is wasted in schools.
vi. Food waste reduction Key Performance Indicators (KPIs) are developed.
vii. Surplus food is not wasted.
viii. Food in lunchrooms is not discarded in trash bins.
ix. Students discard food into proper waste streams.
x. Staff running the composting program are not overwhelmed.
xi. Schools have established partnerships with food rescue organizations.
xii. Schools integrate climate-conscious education into the K-12 curriculum.
xiii. A plan for integrating food waste reduction, conservation, and recovery methodology is developed.

Outcomes

The outcomes depicted in the Theory of Change Map are the anticipated results of implementing the recommended initiatives outlined in this development plan.

Short-Term Outcomes

xiv. Students consume their required fruit intake.
xv. Students are satisfied with their school meals.
xvi. Food is diverted from landfills

Medium-Term Outcomes

i. Value-added items are created from food waste diverted from landfills.
ii. Schools spend less money on food as part of the Michigan School Meals Program.
iii. Students adopt food waste reduction strategies in their daily lives.

Long-Term Outcomes

i. Students enroll in STEM programs.
ii. Students enter climate-conscious career fields.

Impacts

The impacts depicted in the Theory of Change Map represent the anticipated long-term results from implementing the recommended initiatives outlined in this development plan.

Economic

i. Lower school meal budgets
ii. Increased household purchasing power

Environmental

i. Reduced food waste in landfills
ii. Reduced GHG emissions from food waste
iii. Reduced resource strain to maintain food supply

Social

i. Increased community awareness regarding food waste
ii. Healthier food for children
iii. Improved health indicators for children
iv. Improved childhood academic performance

CHAPTER 6: STAKEHOLDERS & PARTNERSHIPS

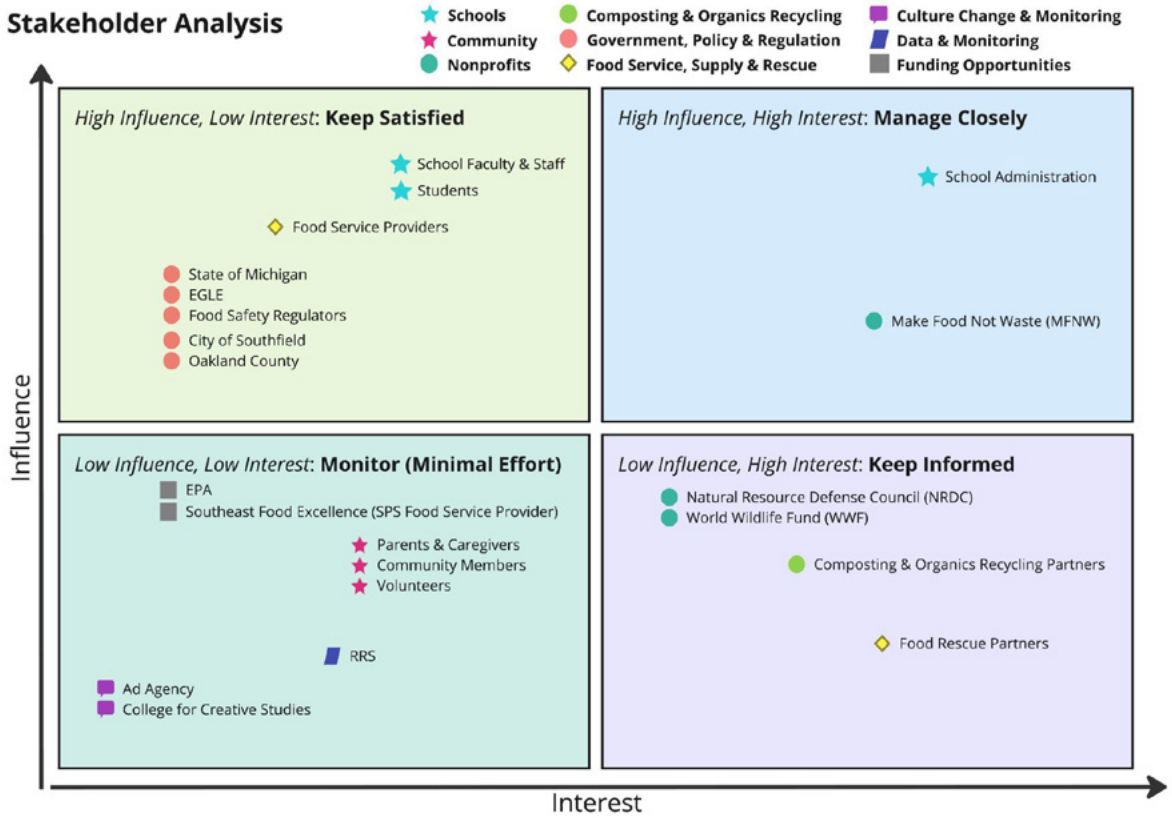
6. STAKEHOLDERS & PARTNERSHIPS

There are several key stakeholder groups that will be impacted and/or involved in the implementation of this development plan. Stakeholders are broken into nine (9) groups: Schools, Food Service, Supply & Rescue, Composting & Organics Recycling, Government, Policy & Regulation, Community, Nonprofits, Culture Change & Messaging, Data & Monitoring, and Funding Opportunities.

Figure 12 provides a comparative analysis of these stakeholder groups impacted and/or involved, directly or indirectly, in diverting food waste created by Michigan schools from landfills as part of The 2030 Project.

Figure 12

Stakeholder Matrix for Eliminating Food Waste in Michigan Schools



NONPROFITS

Make Food Not Waste

Make Food Not Waste is one of the most influential and interested stakeholders in the success of this project. Therefore, the nonprofit will be responsible for coordinating and overseeing the implementation of all recommendations and actions described in this development plan over the next six years.

I. Danielle Todd

Danielle is the founder and executive director of Make Food Not Waste. She is the sponsor of this project and will use this project to implement a food waste reduction program in all schools across 15 Southeast Michigan cities over the next six years, starting with Southfield.

Throughout the project, Danielle will be responsible for coordinating key stakeholders for the schools within each city, developing project deliverables, and working with each city to oversee the implementation of the recommendations and programs described in this development plan.

- **Stakeholder Type:** *Positive*

If Danielle moves forward with implementing this development plan, she will help ensure that Make Food Not Waste meets its goal of cutting food waste in half by 2030.

II. Qing Tiffany

Qing is the community engagement director for Make Food Not Waste. Throughout the project, Qing will be responsible for helping coordinate connections between K-12 education and the colleges and universities in the area to ensure the initiatives implemented in K-12 institutions continue into higher education.

- **Stakeholder Type:** *Positive*

If Qing uses the recommended initiatives provided in this development plan with the next two cities selected to adopt The 2030 Project's blueprint, she will be able to secure school support within these cities and help their K-12 schools reduce their food waste more effectively.

World Wildlife Fund

III. Alex Nichols-Vinueza

Alex is the program manager for food loss & waste at the World Wildlife Fund. He supports the project portfolio for the US Food Waste team, which includes projects related to agriculture, grocery retail, hospitality, and food service.[74] Alex is also responsible for the Food Waste Warrior program, which focuses on teaching students and teachers about food waste and sustainable food systems to help schools reduce food waste.[74]

Throughout the development of this plan, Alex will provide information on food waste reduction strategies in schools, existing information gaps, successful food waste reduction strategies, educational and enrichment opportunities to learn about food waste, preparation, conservation, storage, and reduction, and key considerations for successful food waste reduction strategy implementation in schools. His involvement in this project will ensure that known information gaps are not overlooked and key considerations are included in the development plan.

- **Stakeholder Type:** *Positive*

  If Alex uses the recommended initiatives outlined in this development plan, he can expand his food waste reduction efforts with schools by providing them with additional food waste reduction opportunities in addition to the best practices he currently works with schools to adopt.

SCHOOLS

Southeast Michigan schools are the targeted beneficiaries of this development plan and have the greatest influence over the success of this development plan and its implementation. Therefore, schools are the primary stakeholders of this development plan, as its outcomes will directly impact them. As part of The 2030 Project, Southfield schools, in particular, will have significant responsibility in the development of the food waste reduction program that will be implemented not only in Southfield as part of the pilot but will be used as the blueprint to replicate the program in 14 additional Southeast Michigan cities over the next six years.

Sustainable development projects are most successful when the targeted community is involved in their development, including identifying and implementing solutions unique to their community. Including the target community in the development process increases the likelihood that the target community will accept proposed solutions and actions and builds trust while providing the greatest opportunity that proposed solutions and actions will address all of the community's needs.

Therefore, Southfield schools will be a key stakeholder in developing a well-rounded food waste reduction program that eliminates food waste within each school and will also be critical for identifying opportunities to integrate climate-based education into the K-12 curriculum, including how food waste contributes to climate change.

Administration

IV. Superintendent and/or Deputy Superintendent

Each school district's superintendent and/or deputy superintendent will be critical for coordinating food waste reduction initiatives within each school in the district, connecting with school administrators and teachers, and providing information about any existing food waste reduction efforts the district has tried or plans to pursue.

- **Stakeholder Type:** *Positive*

  If the school Superintendent or their deputy supports the school food waste reduction initiative, they can help make the deployment of this development plan in schools as

comprehensive as possible while advocating for students and improving teacher morale to create a positive learning environment for all.

V. Director and/or Executive Director of Instruction

The director and/or executive director of instruction's involvement in this project will directly impact whether climate-based education, food conservation, and waste reduction education can be integrated into the K-12 curriculum. This role is critical for creating a circular education strategy far beyond the classroom. This role's involvement in the project will be necessary for designing and integrating lessons and experiential learning opportunities that help younger students pass their knowledge through each school they enter, helping to shift the culture of wasting food to a culture rooted in environmental stewardship and sustainability.

- **Stakeholder Type:** *Positive*

  If the Director of Instruction supports the school food waste reduction initiative, they can help develop age- and grade-appropriate curriculums that incorporate food & climate education, including designing experiential learning opportunities for students to not only learn hands-on, but also learn from each other. The Director of Instruction can also ensure that the curriculum meets the state educational requirements for each grade.

VI. Chief Financial and/or Operations Officer

The Chief Financial and/or Operations Officer for each school district will be responsible for connecting the district's food service provider with the project team and coordinating internal stakeholders within each school. This role will also be necessary for determining whether schools have Excess Fund Balances (EFB) that can be allocated to purchase materials and equipment to establish a comprehensive composting and recycling program in schools.

- **Stakeholder Type:** *Negative*

  If they are unable or unwilling to connect Make Food Not Waste's project manager with the district's food service provider or be transparent about available funds, the project manager will be unsuccessful in collaborating with each school collectively to develop a comprehensive food waste diversion process that seamlessly integrates into each school.

Food Service

VII. Food Service General Manager and/or Assistant Manager

Each district's food service general manager and/or assistant manager will be critical for integrating food waste reduction strategies and educational opportunities into Southfield school lunchrooms. This role is responsible for developing meal plans, ordering, preparing, and storing food for all schools within the district while also responsible for ensuring meals are high quality, nutritionally dense, and comply with meal reimbursement policies for the federal and Michigan school meal programs. This role is also responsible for tracking meal quantities, production volumes, and serving volumes, making this role critical for determining how the project can utilize existing data to establish accurate baselines.

- **Stakeholder Type:** *Positive*

If food service General and Assistant Managers support the school food waste elimination initiative, they can reduce food costs, better plan for meal requirements, and only order food items that students will consume, ensuring that food ordered becomes food eaten.

Schools

VIII. Teachers

Teachers will be key stakeholders in this project, as their participation will be critical for identifying and implementing the most feasible and effective solutions to integrate climate-based education, food conservation, and waste reduction strategies into the K-12 curriculum. Any proposed strategies must respect teachers' existing workload, ensuring that these new elements blend seamlessly into the curriculum without imposing additional responsibilities or burdens on them. Therefore, involving teachers in developing this plan is beneficial and essential, as their insights and practical experiences in and out of the classroom will ensure that their needs as educators are met while providing world-class, climate-conscious education to their students.

- **Stakeholder Type:** *Positive & Negative*

  If teachers embrace climate-based education and food waste reduction strategies, they can use the lunchroom as a classroom to inspire their students to eliminate food waste while teaching them how their actions contribute to climate change and aid global efforts to achieve the 17 Sustainable Development Goals. Therefore, their efforts will position them as change agents, which is instrumental in cultivating future generations of environmentally conscious and responsible citizens. However, if the proposed strategies burden teachers with additional responsibilities, they will likely push back against the program, preventing them from encouraging their students to become food waste warriors and agents of change to prevent climate change.

IX. Lunchroom Staff

Lunchroom staff will be key stakeholders in ensuring students and staff separate their plate waste correctly.

- **Stakeholder Type:** *Positive & Negative*

  If they are unable or unwilling to enforce the composting and recycling program rules consistently, schools will be unable to successfully divert food waste from landfills or reduce food insecurity among the student body. However, if lunchroom staff fully support the food waste diversion program, they will help mitigate unnecessary contamination within each waste stream, ensuring it is successfully diverted from landfills.

X. Custodial Staff

Custodial staff will be key stakeholders in determining how discarded items are handled by the school and responsible for helping Make Food Not Waste collect baseline data on how many bags of trash are thrown away each day and week.

- **Stakeholder Type:** *Positive*

  If they embrace the composting and recycling program, custodial staff will have fewer trash bags to replace and fewer trash bags to take to the dumpster each day. By reducing the

number of trash bags discarded every day, custodial staff will reduce their likelihood of ergonomic injuries, including binding, reaching, and pulling.[75–77]

FOOD SERVICE, SUPPLY & RESCUE

Food Service Contractors

Southeast Food Excellence (SFE) is the food service provider for Southfield Public Schools. SFE will be a key external stakeholder for the project. The company supports sustainability efforts by utilizing local vendors to reduce the food supply chain's carbon footprint, sponsoring K-12 gardening clubs and associated programs, onsite composting programs, and providing interactive educational opportunities for students, parents, and administrators to learn about cooking, nutrition, and culinary arts opportunities. Therefore, SFE's involvement in this project will be critical for implementing onsite composting programs in Southfield schools and developing associated educational opportunities that can be integrated into the K-12 curriculum to reinforce the importance of healthy food choices and food waste reduction to promote sustainability.

- **Stakeholder Type:** *Positive*

  If food service contractors support the school food waste elimination initiative, food costs will be reduced, and staff can better plan for meal requirements and only order food items that students will consume, ensuring that the food ordered becomes food eaten.

Food Rescue Partners

Food rescue partners will be critical for developing a strategy for diverting excess food from school lunchrooms to community members who are food insecure.

- **Stakeholder Type:** *Positive*

  If food rescue partners participate in the school food waste elimination initiative, they can help reduce food waste by redistributing surplus food throughout the community.

Make Food Not Waste's existing food rescue partners include:

i. Forgotten Harvest: rescues and redistributes surplus food to local charities throughout Metro Detroit to provide food insecure families with free, fresh, and nutritious food.[78]
ii. Metro Food Rescue: rescues surplus food that would otherwise be thrown away and delivers it to distribution sites around Metro Detroit.[79]
iii. One More Meal: works with high schools to package and redistribute surplus food to students and families at day's end.[80]

GOVERNMENT, POLICY & REGULATION

City Sustainability Planner

The city sustainability planner will be responsible for initiating contact and scheduling initial meet-and-greets with Southfield school representatives. This role will also be critical in coordinating efforts between K-12 institutions and other sectors to create circular economies.

- **Stakeholder Type:** *Positive*

  If the city sustainability planner supports the implementation of this development plan, it can help the city meet its sustainability goals.

Food Safety Regulators

Food safety regulators are critical stakeholders, as they will be responsible for confirming whether each school's share tables and food donations comply with food safety standards. They will also be responsible for establishing which food items—and under what conditions—can be shared and donated directly to students within each school and to food rescue organizations.

- **Stakeholder Type:** *Positive & Negative*

  If food safety regulators authorize schools to perform direct redistribution of food to students, they can support food waste elimination by ensuring students can receive direct access to food. They can also help reduce GHG emissions by authorizing direct redistribution of surplus food without additional transportation, storage, or refrigeration requirements. However, if food safety regulators do not authorize schools to perform direct redistribution of food to students, schools will continue to produce food waste, and students will continue to experience food insecurity.

Michigan Department of Education

The Michigan Department of Education (MDE) is a critical stakeholder, as it is responsible for setting standards and requirements for the Michigan School Meals program, determining whether schools adhere to the requirements established in each national child nutrition program, and determining reimbursement eligibility for all meals through the Michigan School Meals Program. MDE will be invaluable for clarifying schools' existing confusion and misunderstandings regarding meal reimbursement eligibility and how to implement Offer Versus Serve (OVS) for all meals served in K-12 institutions.

- **Stakeholder Type:** *Positive*

  If MDE supports the school food waste elimination initiative, they can ensure that school curriculums not only incorporate food and climate education into the K-12 curriculum and align with the MI Healthy Climate Plan's educational goals, but they can help design lessons and experiential learning opportunities that engage students while ensuring each lesson complies with each grade's educational attainment requirements.

CHAPTER 7: OPPORTUNITIES & RISKS

7. OPPORTUNITIES & RISKS

OPPORTUNITIES

Successful implementation of the recommended initiatives outlined in this development plan presents several opportunities to improve human and environmental health throughout Michigan.

Economic Savings

By eliminating food waste in Southfield schools, the city has the potential to recover $38,000 by adopting responsible food production and consumption strategies and implementing initiatives that follow the U.S. Environmental Protection Agency's (EPA) Food Waste Scale, including responsible food purchasing, donating and upcycling excess food, feeding animals, implementing composting programs, turning non-compostable products into biogases, and avoiding sending food to landfills and incinerators.[15,69]

Food Diverted from Landfills

By implementing comprehensive composting and recycling programs in Michigan schools, Make Food Not Waste has the potential to help Southfield schools recover roughly 330,000 pounds of food annually.[69] Furthermore, Make Food Not Waste can help the State of Michigan achieve its communal goal of cutting food waste in half by 2030 as part of The 2030 Project and the MI Healthy Climate Plan.[12]

Michigan School Meals Program Made Permanent

By conducting food waste audits and surveys to understand what, how, and why food is wasted and implementing comprehensive composting and recycling programs in Michigan schools, Make Food Not Waste can help safeguard the Michigan School Meals Program by ensuring the $160 million in taxes collected to fund the program are not thrown away in the form of uneaten food.[13]

Furthermore, the data collected as part of these food waste audits and surveys will be critical for measuring the program's success, determining the amount of waste created by the program, and estimating its annual cost for future budgets. Therefore, the successful implementation of this development plan will provide the necessary data to support making the Michigan School Meals Program permanent for all public schools.

Improved Climate-Based K-12 Education

By integrating food and climate education into the K-12 curriculum, Make Food Not Waste can help the State of Michigan achieve its goal of implementing climate-conscious education into the K-12 public school curriculum statewide.[81]

Reduced Greenhouse Gas (GHG) Emissions

By diverting food discarded in schools from landfills, Make Food Not Waste can help the State of Michigan achieve its goal of reducing Greenhouse Gas (GHG) emissions by 52% by 2030 and reaching 100% carbon neutrality by 2050.[81] Food waste accounts for nearly 8% of GHG emissions in the city of Southfield.[69] Therefore, successfully implementing a food recovery and redistribution process in Michigan schools will not only help mitigate one of the worst contributors to climate change, but this process will also help protect and improve the health of Michigan residents while protecting the state's natural resources.[81]

RISKS

Failure to implement the recommended initiatives outlined in this development plan presents several high-level risks to the health and well-being of Michigan residents and its environment. The full risk matrix can be found in Appendix G. Individual risks and mitigation strategies associated with each recommendation are further explored in Chapter 8.

Logistics Risks

Schools may not be able to secure partnerships with food rescue organizations that ensure consistent food drop-offs by school representatives or pickups by food rescue organizations. Without a logistics plan in place for who will be responsible for transporting excess food for community distribution, edible food will continue to go to waste through spoilage and end up in landfills.

Financial Risks

Financial risks associated with food waste in schools are significant. These risks include:

- Higher trash pickup costs due to food waste weight and the volume of trash thrown away each day/week.
- Funding provided by the federal school meals and Michigan School Meals programs is thrown away and cannot be used to feed food-insecure students and community members.
- The Michigan School Meals Program could lose funding when legislation advances in 2024 to make the program if program data indicates significant financial losses due to excess food waste.

Communication Risks

Make Food Not Waste may experience difficulty identifying and connecting with key school representatives necessary for successfully implementing the recommendations outlined in this development plan.

Environmental Risks

Environmental risks associated with food waste include increased Greenhouse Gas (GHG) emissions from food sent to landfills and irresponsible usage of natural resources—like water—to grow food that will be discarded, leading to biodiversity loss and desertification.[31–35] Food waste also contributes to 20% of the methane gas emissions in the United States, while accounting for 63% of the solid waste in landfills through food packaging.[32,36] Lastly, modern agricultural practices—such as monocropping and the use of synthetic fertilizers—deplete the soil of micronutrients, turning fertile soil into barren dirt, which threatens food production capabilities.[37]

Health Risks

Health risks associated with food waste include greater rates of respiratory illness in communities residing in close proximity to landfills, including asthma and COPD.[18–21] Food recovery and redistribution also has the potential to cause food-borne illnesses if food is spoiled or expired, or if surplus food is not properly stored during recovery and redistribution.

CHAPTER 8: RECOMMENDED INITIATIVES

8. RECOMMENDED INITIATIVES

This section includes detailed recommendations and deliverables to achieve the project's three objectives. This blueprint will allow Make Food Not Waste to implement these strategies in Southfield, followed by 14 additional Southeast Michigan cities. These strategies can also be adopted statewide, regionally, and nationally, with additional organizational and governmental support for food waste reduction efforts.

For these strategies to be successful, stakeholder engagement within each school, district, and local government will be necessary to secure support, participation, and resources for each activity.

The recommendations are broken down into seven initiatives, which are provided in **Figure 13**. Refer to **Chapter 12**, **Figure 21** for a complete timeline of each initiative's actions.

Figure 13

Project Initiatives for Implementation

School food waste elimination efforts should begin with Initiatives 1-2, ensuring commitment and support from school administrators and to capture baseline data to measure food waste reduction efforts over time. Once complete, each school can begin implementing Initiatives 3-7.

Initiatives 3-7 can be implemented independently or in parallel. However, it is recommended to begin with Initiative 3 to ensure each school has an established detection and diversion method to manage food waste and divert it from landfills while they tackle the challenges of implementing effective long-term food waste prevention methods.

While the importance of adopting comprehensive food waste prevention methods cannot be understated, these methods often require significant behavioral modification to effectively reduce food waste long-term. For example, only about 2-10% of the 108 billion pounds of surplus food available in

the US is donated.[1–3] Although anyone—including individuals and schools—can donate food, most donations are made by farmers, food manufacturers, distributors, or retailers, indicating significant knowledge gaps and barriers preventing schools from reducing food waste by donating their surplus food to their students or community.[15] Therefore, robust detection and diversion methods are critical and must be adopted to ensure schools can work through the challenges of implementing effective food waste elimination strategies while simultaneously keeping food out of landfills.

This approach not only aligns with the EPA Food Waste Scale's emphasis on recovery options when prevention is not yet feasible, but also creates a solid foundation for an adaptable and comprehensive food waste elimination program that supports the gradual integration of food waste prevention methods.[15] As each school works through the challenges of instilling lasting behavioral changes and refining their food waste reduction practices—processes that take considerable time to adopt and often encounter various challenges and setbacks—a robust composting and recycling program in each school will help Michigan to achieve its goal of eliminating one billion pounds of food waste from its landfills by diverting it to create compost instead of methane.[15]

Easy Wins can be implemented at any time during the implementation of the development plan.

NOTE:
Implementation of Initiatives 3-7 should begin at the start of a new academic year not only to establish rules and expectations but also to provide structure, order, and consistency throughout the school year.[82,83] However, if the timing does not align with the implementation of Initiatives 3-7 at the start of a new academic year, implementation should begin at the start of the spring semester.

INITIATIVE 1 — SCHOOL COMMITMENT

INITIATIVE 1 — SCHOOL COMMITMENT

The first initiative of this development plan requires establishing a relationship with each school to secure their commitment to eliminate food waste. This initiative will involve reaching out to each school and district, meeting with school leadership to explain the project's objectives, establishing a relationship with school representatives, appointing environmental champions for each school, and appointing an environmental lead for the district.

Initiative 1.1
Appoint a School Lead (Schools Coordinator)

This individual will represent Make Food Not Waste throughout the implementation of this development plan within each school. This individual will be responsible for:

i. identifying and engaging with representatives from each school,
ii. bridging communication between schools, city officials, and identified stakeholders, and
iii. developing a communication plan to engage stakeholders throughout each project initiative.

1.a. Create a citywide school contact matrix.

Once appointed, this individual will be responsible for creating a citywide school contact matrix that will serve as a comprehensive list of school-associated contacts for each school and the district. This matrix should include a minimum of the following information for each school:

i. School Name
ii. Grades (i.e., K-5, K-8, 9-12)
iii. Building Type (i.e., STEAM School, Administrative Office)
iv. Public or Private
v. Address
vi. Clubs and Organizations
vii. District Name
viii. Contact Names
ix. Contact Roles/Titles
x. Contact Information

Refer to Appendix A for a school contact matrix template.

1.a.1. Identify key stakeholders.

This individual should define the roles and responsibilities of each stakeholder, including the extent of their involvement in the implementation activities for each initiative. Several required stakeholders include:

i. Chief Financial and Operations Officer
ii. Principals of each school
iii. Food service
iv. Custodial/facilities staff
v. School administrators
vi. Students
vii. Parents
viii. Director of Instruction

This individual should decide whether a separate contact list containing only active stakeholder contact information would be beneficial. If the citywide contact matrix will be used for active stakeholders, a column should be added to note which contacts are actively involved in the project. If a separate contact list for active stakeholders is preferred, the contact matrix template available in Appendix A can be used.

1.b. Create a communication plan.

This individual should collaborate with the Work Department to create a communication plan for how to engage with project stakeholders throughout the implementation of the development plan in each school.

This plan should include recommended stakeholder engagement strategies, including all necessary meetings and workshops, to secure a commitment from schools, students, and community members. This plan should also align with the target school's academic calendar year to ensure the following:

i. Administration, faculty, staff, and students are available to organize, support, and conduct the recommended initiatives outlined in Initiative 2,

ii. Data collection during Initiative 2 can be completed during the academic year before implementing Initiatives 3-7, and

iii. Initiatives 3-7 can ideally be implemented at the start of the new school year (or following winter break, at the start of the semester).

Initiative 1.2
Secure Administration and Staff Support

2.a. Attend a school staff meeting to discuss the initiative.

Attending a staff meeting allows the School Lead to address the school's faculty and staff at once to explain the project, share ideas, identify champions, and begin developing project teams for each project initiative.

Initiative 1.3
Appoint a Sustainability Director for the District

This individual will be the main point of contact for the school district's sustainability efforts. This individual will be responsible for the following:

i. overseeing the planning and implementation of all district-wide sustainability initiatives and progress made at each school,

ii. working directly with each school's Sustainability Coordinator within their district to develop appropriate implementation strategies for each school, and

iii. ensuring strategies implemented at each school are consistent to ensure programs can be maintained seamlessly as new students matriculate in each year, and

iv. facilitating collaboration between schools, local communities, and external organizations to promote and integrate sustainable practices into the educational framework and improve the district's environmental impact.

Initiative 1.4

Identify a Project Team for Each School

4.a. Appoint a Sustainability Coordinator.

This individual will be the primary contact and lead sustainability efforts within their school. They will be responsible for the following:

i. overseeing and facilitating the food waste diversion program planning and implementation to monitor and promote its benefits and ensure the program is developed effectively, and

ii. championing sustainable practices within the school and helping to integrate them into the K-12 curriculum.

> ***NOTE:***
> *It is important to note that this individual is not solely responsible for carrying out every action outlined in this development plan but should serve as the main point of contact and coordinator in charge of arranging for each action step to be completed.*

Suggested Representatives:

i. School administration
ii. School staff member (custodial/facilities, librarian)
iii. School teacher
iv. Active PTA member
v. Student
   - It is important to note that a student should only be appointed to this position if another school leader cannot commit to the role. In this case, the Sustainability Director for the district would need to take additional precautions to ensure the role does not interfere with the student's academic work.

4.b. Elect a Student Environmental Lead.

This individual will be the student ambassador for all sustainability initiatives and lead all student-led environmental projects happening within their school. This individual will also be the liaison between the student body, school administration, and external stakeholders to ensure a comprehensive and sustainable approach is adopted to implement this development plan and any future initiatives. ***This role will require close collaboration with the school's Sustainability Coordinator and the district's Sustainability Director to integrate this plans recommended initiatives into the school's broader goals.***

While this individual will champion and lead these initiatives as the student ambassador, it is important to understand that the Student Environmental Lead's involvement in these initiatives are supplementary to their academic commitments and must be balanced accordingly. ***Therefore, the selected individual will need to work with their Sustainability Coordinator and guidance counselor to determine what level of involvement is appropriate for this role***.

4.c. Form a Sustainability Council.

The Sustainability Council will serve as the planning committee for how best to implement the initiatives outlined in this development plan and the school's future sustainability initiatives. The council will be responsible for:

i. identifying and maintaining funding sources for implementing the recommended initiatives,
ii. maintaining adopted initiatives over time,
iii. planning future sustainability initiatives,
iv. measuring the progress of each initiative over time.

The responsibility of establishing a Sustainability Council will likely fall to the school's Sustainability Coordinator. However, forming a Sustainability Council as early in the implementation of this development plan as possible will distribute the project's workload across the entire council, mitigating the likelihood of any single member becoming overwhelmed and unable to fulfill their role as a council member in addition to their other obligations.

Suggested Representatives:

- School administration
- School staff member (custodial/facilities, librarian)
- School teacher
- Kitchen staff
- Lunch monitor
- Active PTA member
- Student/Student Council member

Council members should include members of the student body to ensure the following:

i. prevent potential conflict and pushback,
ii. build ownership through shared responsibility,
iii. build leadership and collaboration skills, and
iv. provide experiential learning opportunities.

Stakeholders

The key stakeholders for Initiative 1 include:

i. School administration
ii. Principals
iii. Teachers
iv. Students
v. Parents
vi. Food Service

Key Performance Indicators (KPI)

Short-Term:

- Identify key stakeholders, including a Program Manager, Sustainability Director, Sustainability Coordinator, and student representatives.

- Completion of a communication plan.
- Establishment of a Sustainability Council.

Medium-Term:

- Establishment of a recurring council meeting schedule.
- Establishment of a council charter.
- Completed list of council roles & responsibilities.

Long-Term:

- Meeting Minutes from council meetings.
- Elections for future council roles.
- Progress updates for school sustainability initiatives.
    - Newsletter
    - Email
    - Morning announcements

Summary of Actions

Table 2

Initiative 1 Summary of Actions

Task			Time to Complete		Costs	Party Responsible	Notes
			Days	Months			
1. SCHOOL COMMITMENT			306	11	$0	School Lead	
1.1.	**Appoint a School Lead**		32	1	$0	School Lead	
	1.a.	Create A Citywide School Contact Matrix	22	1	$0	School Lead	
		1.A.1. Identify Key Stakeholders	239	8	$0	School Lead	
	1.b.	Create Communication Plan	195	7	$0	School Lead	
1.2.	**Secure Administration And Staff Support**		215	8	$0	School Lead	
	2.a.	Schedule And Attend School Staff Meeting To Discuss Initiative With Each School	230	8	$0	School Lead	
	2.b.	Meet With Food Service Provider To Discuss Food Waste Elimination And Cost Saving Opportunities	31	1	$0	School Lead	
1.3.	**Appoint A Sustainability Director For The District**		155	6	$0	School Lead, District Administrators	
1.4.	**Identify A Project Team For Each School**		81	3	$0	School Lead, School Principal	
	4.a.	Appoint A Sustainability Coordinator For Each School	171	6	$0	School Lead, School Principal	
	4.b.	Elect A Student Environmental Lead	31	1	$0	School Lead, Sustainability Coordinator	
	4.c.	Form A Sustainability Council	153	6	$0	School Lead, Sustainability Coordinator	

Risks & Mitigations

Table 3

Initiative 1 Risk Matrix

Title	Description	Mitigation(s)
Resource limitations	Limited resources (financial, human, time, etc.) prevents the PM from securing support from schools.	Raise awareness for MFNW's mission and goal, post volunteer and job opportunities to job boards, and share help needed to post on LinkedIn.
No administration support	Administrators do not support the project.	Attend school board meetings. Provide savings estimates if food waste is eliminated by the schools within each district. Meet with county officials to secure support for the project.
Limited staff participation	Staff resist project due to concerns over perceived workload.	Provide staff with potential resource savings by implementing the project. - Less trash (lower weight, less bags), less meal preparation
Limited student participation	Students resist the project due to not understanding how it relates to them and their futures.	Organize and hold a trash reduction competition. - Sports teams, clubs, etc. manage lunchroom waste sorting. - Team with the least amount of compostable/recyclable material in the trash at the end of the semester wins a prize (i.e., pizza party, early school release). Utilize lesson plans to teach students about food waste and climate change (*Initiative 6*).
Lack of coordination	Project manager faces challenges coordinating initiatives across multiple schools and departments.	Clearly define the PM's responsibilities and authority.
Stakeholder resistance	School staff and students do not support the project.	Involve stakeholders early in the project to answer questions and secure buy-in.
Ineffective communication	Communication plan does not meet MFNW or school expectations, nor align with the project timelines.	Tailor communication plan to each audience (staff, students, parents).
Stakeholder engagement	Difficulty engaging stakeholders throughout project.	Establish a clear plan for how PM will engage with stakeholders throughout the project.
Ineffective operations	Sustainability council unable to effectively implement project due to poor organization or lack of clear goals.	Define sustainability council's structure, objectives, and methods of operation. - Charter, role elections, role expectations, meeting schedule
Limited representation	Selected participants do not attend meetings nor have sufficient representation for ongoing initiatives.	Ensure sustainability council includes members from different school positions and grades to ensure comprehensive representation throughout each school.

INITIATIVE 2 — DATA COLLECTION

INITIATIVE 2 — DATA COLLECTION

The second initiative of this development plan requires collecting data from each school to establish a baseline for how much food is wasted, understand food quality, and evaluate what resources are available in each school's lunchroom and kitchen. The data collected then will be used to estimate cost savings, identify areas of opportunity to improve food quality and consumption, and determine what resources will be needed to eliminate food waste from each school's lunchroom and kitchen.

Initiative 2.1

Perform Resource Assessments & Meal Observations

Conducting a food service resource assessment for each school and performing meal observations are critical for developing effective food waste reduction strategies. These assessments will:

i. provide a comprehensive understanding of each school's existing resources—from appliances and equipment to utensils and consumables—which is instrumental for identifying areas of inefficiency and potential improvement in their existing waste reduction efforts,

ii. enable each school to optimize their food waste reduction strategies to work effectively within their kitchen, lunchroom, and classroom's existing capabilities while providing schools with future investment opportunities to further support their long-term sustainability efforts,

iii. identify opportunities to implement food waste prevention and diversion strategies within their existing systems.

Therefore, such an assessment is necessary to ensure that any proposed food waste reduction strategies are feasible and aligned with each school's existing operational capacity.

Refer to Appendix B for a food service resource checklist.

Initiative 2.2

Conduct A Food Waste Audit

Conducting a food waste audit in each school serves two primary purposes:

1. The audit allows each school to establish a baseline for the volume and nature of wasted food. Establishing this baseline is critical for schools to effectively measure the success of each food waste reduction initiative over time and help schools determine which composting method will be most applicable to accommodate their volume of food waste.
    a. Although collecting data from each school is ideal to establish accurate baselines, auditing a sample of schools with the same food service provider would likely be sufficient to understand what universal opportunities exist for reducing food waste in all schools within the district. However, audits should occur at schools of varying grade levels to ensure a clear understanding of how food consumption and disposal habits differ between elementary, middle, and high schools.
2. The audit provides students and staff with a hands-on and visual understanding of how their daily food consumption and disposal habits impact their environment. By conducting a food waste audit, schools can inspire future generations to become environmental stewards, extending its impact beyond the classroom. Refer to **Figure 14** for waste sorting examples.

Refer to Appendix B for existing food waste audit resources and guides.

Figure 14

School Food Waste Audit[84]

Recommended Steps Ahead of the Audit

1. Reach out to each school's Sustainability Coordinator and Sustainability Council to organize and conduct a food waste audit.
2. Conduct a training session with the audit volunteers (students, staff, parents, etc.) on conducting a food waste audit.
3. On the day of the audit, remove all trash bins that will not be used during the audit from the lunchroom.

Items Needed:

- Tables
- Large trash cans
- 5-gallon buckets
- Trash bags
- Scales (i.e., luggage, bathroom, or package)
- Signs
- Clipboards
- Writing utensils (i.e., markers, pens, pencils)
- Weight log sheet
- Interview sheets
- Gloves
- Food labels or photos for buckets
- Tape
- Cleaning suppliers
- Tarp

For every 100 students served in the lunchroom, it is recommended that the project team responsible for organizing and conducting the food waste audit consists of a minimum of the following:

- 1 - Facilitator (School Lead or individual trained to conduct food waste audits)
- 1 - School Administrator
- 2 - Teachers
- 1 - Nutrition or Food Service Representative
- 4 - Students

It is also recommended that there be a separate audit station for each grade to ensure that plate waste can be audited in a timely manner and identify differences between each grade's food waste practices to determine whether age impacts the volume and type of food wasted. Collecting audit data by grade level provides an opportunity for food service providers to make adjustments to their food orders to provide options that appeal to a majority of students across all grades, and adjust food offerings to accommodate grade preferences, when available.

Each station should consist of two (2) tables to conduct the following:

- The first table will be used for students to drop off their trays, where food will be separated into each bucket to be weighed and recorded.
    - Trays should be counted and recorded after each lunch period.
- The second table will be used to interview students regarding why they did not finish their food.

Potential Partnerships

a. Michigan State University Extension (MSUE)

Michigan State University Extension (MSUE) has expressed interest in supporting SPS to conduct food waste audits as part of their ongoing Policy, Systems, and Environmental Change (PSE) work to improve community health and well-being by improving access and practicality of making healthy choices.[85–87]

Therefore, it is recommended that the School Lead work with MSUE, the Sustainability Direcotr, and the Sustainability Coordinator for each school to schedule and plan food waste audits at each school.

Initiative 2.3
Conduct A Food Survey

A food survey is essential for gathering critical data regarding the types, quantities, and reasons for food waste in each school. This survey will also allow students and staff to provide feedback regarding their food preferences, consumption habits, and perceptions of food quality. It will also identify what culturally appropriate foods should be offered daily, allowing each school to pinpoint the key drivers of food waste. The survey results will help each school identify effective food waste reduction strategies and enable schools to make more sustainable, student-oriented decisions to improve meal satisfaction.

Refer to Appendix B for resources to conduct school food surveys.

Initiative 2.4
Host Meal Tastings

Meal tastings provide an opportunity for food service providers to test new recipes while providing students an opportunity to provide feedback on available food offerings.

Meal tastings can be implemented in several ways:

i. Tasting Days
    a. Tasting days provide students with hands on opportunities to learn about their food, where it comes from, and how to prepare it. Not only do tasting days provide an

experiential learning opportunity, but they can provide direct feedback to food service staff.

ii.

Initiative 2.5

Compile A School Food Quality and Waste Report

Compiling a school food quality and waste report is critical for enhancing transparency and accountability in managing school food resources. This document will provide a detailed analysis of food quality and the extent of waste generated in schools, prompting schools to develop and implement targeted action plans with specific deliverables to improve food quality while simultaneously reducing food waste. Therefore, this report will increase transparency and reinforce each school's commitment to creating future generations of socially responsible citizens by building a culture rooted in environmental stewardship.

This initiative can be implemented in one of two ways:

1. Each school publishes a school food quality and waste report, or
2. Each school district publishes a school food quality and waste report that shows each school's progress and provides status indicators for the district's overall progress.

The School Lead, food service provider, and each school's Sustainability Coordinator should work together to determine the most feasible strategy. However, it is essential to note that if the district chooses to pursue strategy two, each school will still be responsible for providing an update as part of the overall report, including a summary of their school's sustainability initiatives, status indicators, updates for ongoing initiatives, and planned future initiatives.

Stakeholders

The key stakeholders for Initiative 2 include:

i. School administration
ii. Principals
iii. Teachers
iv. Students
v. Parents
vi. Food Service
vii. Custodial & facilities staff
viii. World Wildlife Fund

Key Performance Indicators (KPI)

Short-Term:

- Number of volunteers signed up to participate in food waste audits.
- Initial food surveys and interviews to capture student and staff opinions and experiences regarding food quality and causes of food waste.

Medium-Term:

- Food survey response rates.

- Composting program bin audits over time to evaluate initiative adoption over time.

Long-Term:

- Volume of compost collected over time to identify process inefficiencies.
- Bags of trash thrown away over time to identify additional waste reduction opportunities.

Summary of Actions

Table 4

Initiative 2 Summary of Actions

Task			Time to Complete		Costs	Party Responsible	Notes
			Days	Weeks			
2. DATA COLLECTION			**302**	**43**	**$0**	**School Lead**	
2.1.	**Perform Resource Assessments & Meal Observations**		62	9	$0	School Lead	Can potentially be performed during meetings with school staff
	1.a.	Perform Resource Assessments	62	9	$0	School Lead	
	1.b.	Attend Meal Observations	60	8	$0	School Lead	
2.2.	**Conduct A Food Waste Audit**		92	13	$0	School Lead	
	2.a.	Coordinate a Volunteer Signup	31	4	$0	Principals or Sustainability Coordinators	
2.3.	**Conduct A Food Survey**		60	8	$0	School Lead	Can be conducted throughout the year
	3.a.	Perform Data Analysis to Evaluate Findings	31	4	$0	RRS, Project Partner, Food Service, or Sustainability Council	
2.4.	**Compile A School Food Quality and Waste Report**		74	10	$0	School Lead, Sustainability Council, Sustainability Director	

Risks & Mitigations

Table 5

Initiative 2 Risk Matrix

Title	Description	Mitigation(s)
Inaccurate or incomplete data	Poor record-keeping during assessments and audits.	Provide resources and training to staff and students involved in the assessments and audits to ensure comprehensive data collection. - Interview questions, waste tracking sheets, scales, etc.
Resistance to change	Students and staff are resistant to altering existing waste operations.	Engage all stakeholders throughout the process to understand concerns, answer questions, and gain support (refer to Initiative 1).
Resource limitations	Insufficient resources (financial, human, or physical) prevent completion of assessments and audits.	Utilize existing materials to conduct assessments and audits. Request volunteers to help organize and conduct assessments and audits. Apply for grants available through the World Wildlife Fund and SFE to conduct audits.
Non-compliance	Students and staff do not cooperate with the food waste audit requirements.	Involve students and staff in the food waste audit planning process to encourage support and buy-in (refer to Initiative 1 - Sustainability Council).
Data management	Insufficient resources to collect, store, and analyze data collected from the food waste audit.	Utilize efficient data collection tools and methods to manage and analyze food waste audit data effectively.
Low response rate	Students and staff do not complete the survey.	Make the survey engaging and easy to complete.
Biased responses	Responses do not accurately reflect the true preferences or habits of the survey participants.	Work with students and staff to develop a list of questions to ensure views of each party are reflected accurately. Make the survey anonymous to encourage participation and honesty.
Overwhelming information	Food waste report is too dense or technical for schools to understand or utilize.	Work with technical report writers and MFNW marketing experts to structure the report in an easy-to-understand report with key findings highlighted.
Lack of actionable insights	Food waste report does not translate findings into clear, actionable recommendations.	Utilize the key findings to provide clear, practical recommendations that facilitate action.

INITIATIVE 3 — FOOD WASTE DIVERSION

INITIATIVE 3 — FOOD WASTE DIVERSION

The third initiative of this development plan requires implementing a composting and recycling program in each school's lunchroom within the target city.

Initiative 3.1

Establish A School Composting And Recycling Program

Establishing a comprehensive composting and recycling program is critical to eliminating food waste in schools. Such a program prioritizes feeding students by ensuring excess food is managed responsibly through strategies including share tables and food donations rather than sending quality food to landfills. Establishing a composting and recycling program also encourages schools to use food waste as a learning opportunity to teach students about environmental stewardship; by composting on-site, students can see first-hand how uneaten food turns into a product that can nurture their environment rather than harm it. Therefore, this approach not only mitigates the negative impact of food waste but serves as a tool to educate students on the importance of resource conservation and responsible waste management. See **Figure 15** for an example of a school composting and recycling program.

Figure 15

School Composting Program[88]

1.a. Get Quotes From Waste Hauling Companies For Compost And Recycling Pickup.

During contract negotiations with waste haulers, include clauses where schools will renegotiate cost each year for the first 2 years to ensure that as schools become more comfortable with each food waste reduction initiative and food waste decreases, the cost for the required number of bins can be adjusted accordingly. The School Lead will work with the Sustainability Coordinator to help streamline the contracting process help each school determine which composting and recycling process is best for them by working with their waste hauling partners to answer the questions listed below. This list is not an all-inclusive list of questions, and therefore, the School Lead and Sustainability Coordinator should put together a list of questions that should be discussed with waste haulers before making a decision on which process each school will opt for.

i. Do contracts pay by the bin or pound?

ii. Can the contract be designed to allow for schools to renegotiate at a greater frequency (i.e., every semester, each year, every two years, etc.) to account for potentially significant changes in composting volumes?

1.b. Determine The Best Composting Method For Each School To Use.

There are several large-capacity composting options for schools to select from based on size, capacity, space, time, and financial requirements. Schools should work with their current waste hauler and city, as well as with Make Food Not Waste and their composting and organic recycling partners, to determine which composting and recycling process would work best for each school.

The School Lead will need to work with each school to determine the most appropriate bin setup for their school.

A matrix of several composting system options has been provided in Appendix C.

1.c. Conduct Training On Proper Bin Usage.

To ensure each school separates their plate waste and trash correctly, students, faculty, and staff will need to be trained on proper bin usage. Therefore, the School Lead will need train multiple representatives from each school in a timely manner to ensure each representative to provide training to the wider school community, which can be accomplished several ways. Refer to Appendix C for additional resources.

Training Options:

i. Conduct district-wide workshop with Sustainability Coordinators, administrators, student leads, food service staff, and custodial staff to provide training on proper bin utilization.

ii. Request volunteers to lead the composting and recycling program and conduct a training workshop at each school.

iii. Provide in-classroom training demonstrations.

1.d. Implement compost bins in high-traffic areas of the kitchen.

Identify where each trash bin is located, whether school kitchens use food scrap buckets during their food preparation, and where they discard their food scraps after food preparation is completed. These should be the locations where larger compost bins should be located throughout the kitchen to ensure maximum utilization and decrease the number of trash bags school custodial staff must replace each day.

Recommendations for Bin Setup

- Post clear signage with examples of what each bin should be used for.
- Provide a surface for students to set down trays/plates (mitigate spillage).
- Remove trash bins not being used as part of the compost & recycling program from the lunchroom.
- Make the existing process as inconvenient as possible for students and staff to stick to.
    - Make the trash bin the smallest within the Composting bin system, with the smallest opening as possible. If traysand containers can fit, they will end up in the trash.
    - Keep openings to the compost and recycling bins as large as possible.
    - Clearly mark each bin with labels and colors to differentiate them.

- Implement separate collection bins for returnables and recyclables. Schools, if they have recycling, typically have collection bins in or near their lunchroom for returnables, but not recyclables. Therefore, recyclables—such as plastic clamshell containers and plastic condiment cups with lids— are not separated from trash.

- Place each bin on a separate scale to measure the weight of each waste stream for easy tracking. This also serves as a tool to provide students and staff with visible, tangible, real-time data regarding how much food is being wasted vs. how much is being diverted from landfills.

Considerations for Bin Setup

i. If partnerships can be established with local farms or animal sanctuaries, an additional bin should be added to separate out food that is safe for animal consumption.

ii. If schools struggle to get students to throw trash in bins, the school should consider implementing a mobil composting bin system (i.e., volunteers or employees can roll bins throughout the lunchroom to collect items in their respective bins).

Initiative 3.2

Create A Food Waste Reduction Competition

Establishing a food waste reduction competition for students to participate in provides an effective strategy for reducing food waste in schools. By promoting friendly competition among their peers, students are encouraged to take ownership and responsibility over something that every person globally needs and is impacted by. Competition can ignite students' enthusiasm and motivation to actively engage in food waste reduction efforts while transforming them into change agents in their schools and communities.

Stakeholders

The key stakeholders for Initiative 3 include:

i. School administration
ii. Principals
iii. Teachers
iv. Students
v. Parents
vi. Food Service
vii. Custodial & facilities staff
viii. World Wildlife Fund
ix. CO Sustainability
x. City of Southfield

Key Performance Indicators (KPI)

Short-Term:

- Number of compost and recycling programs established in school lunchrooms.

Medium-Term:

- Bags of trash thrown away each week.
- Volume of compost collected each week.

- Number of schools with trash reduction competitions established.

Long-Term:

- Number of students and teams participating in trash reduction competitions each year.
- Changes in school meal budget spending over time.
- Changes in volume of food waste sent to landfills over time.

Summary of Actions

Table 6

Initiative 3 Summary of Actions

Task			Time to Complete		Costs	Party Responsible	Notes
			Days	Months			
3. FOOD WASTE DIVERSION			316	45			
3.1.	**Establish A School Composting And Recycling Program**		61	9	TBD	Sustainability Director, Sustainability Coordinator, School Lead	
	1.a.	Get Quotes From Waste Hauling Companies For Compost And Recycling Pickup	31	4	$0	School Lead	
	1.b.	Determine The Best Composting Method For Each School To Use	31	4	$0	Sustainability Coordinator	
	1.c.	Conduct Training On Proper Bin Usage	31	4	$0	School Lead, Sustainability Coordinator, Sustainability Director	
3.2.	**Create A Food Waste Reduction Competition**		302	43	$100	School Lead, Sustainability Director, Sustainability Coordinator	

Risks & Mitigations

Table 7

Initiative 3 Risk Matrix

Title	Description	Mitigation(s)
Insufficient buy-in	Insufficient support/participation from students, staff, and/or parents for implementing and maintaining a school composting program.	Conduct workshops to educate the school community about the benefits of composting. Attend staff meetings to educate school officials about the benefits of composting. Present the project during morning announcements for each school.
Operational challenges	Insufficient capacity or resources to properly manage compost requirements, leading to odor, pests, or health hazards.	Work with composting experts to determine the best composting strategy for each school. - Have composting partners put together matrix of available composting systems and provide estimates for municipal composting.
Cost	Insufficient funding to implement and maintain a composting program.	Secure funding and/or grants to implement and maintain school composting programs. - Apply for grants through Southeast Food Excellence (SFE).
Non-compliance	Students and staff do not follow plate waste disposal requirements.	Make the existing waste disposal process as inconvenient as possible. - Make compost bin the largest and general trash the smallest bin in the system. - Remove excess trash bins from the lunchroom. Implement clear labeling for all bins within the composting program. Conduct educational campaigns to educate students and staff on proper disposal methods. Implement lunchroom walkthrough process, where lunch monitors/custodial staff/volunteers walk bins around lunchroom to collect plate waste to ensure it is disposed of properly.
Misuse	Students and staff use incorrect bins to dispose of plate waste.	Audit bins used for composting program to ensure compliance and adjust system accordingly.
Workload	Composting program creates additional work for custodial staff.	Conduct training sessions with custodial staff and provide necessary resources to manage the composting program effectively.
Ineffective incentives	Students not interested in participation incentives.	Offer incentives that students are interested in. - Pizza, coffee, early release from school
Short-term focus	Competition does not encourage long-term behavioral change.	Design the trash reduction competition to promote ongoing awareness and long-term integration into K-12 curriculum and daily habits.
Data integrity	Insufficient resources or capacity to ensure fair and accurate waste measurements from student teams.	Use clear, fair, and easy-to-understand metrics for administrators, teachers, and staff to measure waste reduction for each student team.

INITIATIVE 4 — LUNCHROOM POLICY CHANGES

INITIATIVE 4 — LUNCHROOM POLICY CHANGES

The fourth initiative of this development plan involves implementing lunchroom policy changes to minimize the creation of food waste in each school's lunchroom.

Initiatives 4.1-4.3 are best practices for reducing food waste in schools and are recommended by the United States Department of Agriculture (USDA) via all school nutrition programs and the Michigan School Meals Program. Initiative 4.4 is recommended based on school lunchroom observations that took place between January and Febraury 2024.

Refer to Initiative 6.1 for recommended actions to educate administrators and staff on proper implementation of the initiatives outlines in this section, and Appendix F for additional resources and training materials.

Initiative 4.1

Extend Mealtimes to a 25-minute Minimum Seating Time

Extending mealtimes is critical for reducing food waste while simultaneously promoting better nutritional outcomes for students. Allowing adequate time for mealtime ensures that students can eat mindfully and finish their meals, decreasing the volume of unfinished or untouched food being discarded, thereby minimizing food waste. Additionally, mealtimes are the only break students receive during the middle and high school days. Therefore, by extending mealtimes, students receive time to unwind and socialize while ensuring enough time to consume their high-fiber meals.

Research Findings:

- Shorter lunch times increase plate waste.[89–92]
- Students consume significantly lower volumes of milk, fruits, and vegetables when given less than 25 minutes to eat.[92–94]
- Shorter eating times leave children feeling hungry throughout the day.[92,94]
- Longer lunch periods promote better nutritional outcomes by providing students with enough time to consume larger volumes of fiber-rich foods.[95]

Initiative 4.2

Implement Share Tables in School Lunchrooms

Implementing share tables in school lunchrooms provides a practical and effective strategy to mitigate food waste while simultaneously addressing hunger. Allowing students to return unopened or uneaten food items to a designated area within the lunchroom makes them available to students who may be hungry during mealtimes. Share tables also provide opportunities for these items to be used during subsequent meals or as snacks during after-school programs. However, schools must enforce rigorous food safety standards when implementing and maintaining share tables to ensure that all items remain safe and uncompromised.

Refer to Appendix D for additional resources on Share Tables.

Figure 16

School Share Table

Consultant Observations:

- During school administration interviews, school principals raised concerns over food safety and what precautions should be taken when implementing share tables.[96]
- During a lunchroom observation at Oak Ridge Elementary School, a neighboring community school, faculty leaders shared that they previously had a share table, which was eliminated at the start of the Winter 2024 semester due to existing school bylaws preventing food sharing.[97]

Recommendations for Maintaining Food Safety Standards

- Utilize hot and cold storage to ensure items stay temperature controlled (i.e., hot food bag, fridge, buffet tray with ice, etc.).
- Post guidelines and visuals with examples of what can be returned to share tables.
- Conduct training and/or provide students with a flyer of what can be returned to share tables.
- Work with school administrators to update school bylaws to allow food sharing with requirements that ensure adherence to strict food safety laws and school-specific food requirements (i.e., allergen-free school, nut-free campus, etc.).

Initiative 4.3

Adopt Offer Versus Serve for Breakfast and Lunch in All Schools

Adopting Offer Versus Serve (OVS) for all K-12 meals and snacks can reduce food waste before food leaves the service line. Not only does OVS empower students by giving them autonomy to choose components of their meals, but this strategy better aligns meals with student preferences and appetites, thereby reducing the volume of food discarded. In school, choices are often limited. Therefore, OVS allows students to enhance their sense of independence and responsibility while encouraging them to choose healthy meal options.

Figure 17

Offer Versus Serve Example

Initiative 4.4

Release Students By Table at the End of Each Lunch Period

Releasing students by table in lunchrooms is a strategic approach to enhance the efficiency and effectiveness of lunchroom composting and recycling programs. This approach prevents an overwhelming number of students from attempting to sort their plate waste simultaneously, thereby allowing lunchroom staff and volunteers to manage the program effectively. By limiting the number of students trying to leave the lunchroom simultaneously, staff and volunteers stay calm, allowing them to more effectively guide students on sorting their plate waste properly, increasing the efficiency of the composting and recycling program. Therefore, this strategy enhances waste management effectiveness and instills in students a sense of order and responsibility while building a more sustainable and environmentally conscious culture.

Consultant Observations:

- During a lunchroom observation at Oak Ridge Elementary School, a neighboring Oakland County school, program volunteers became overwhelmed when students rushed to discard their plate waste at the end of each lunch period. The overwhelming environment led to greater mess,

more food ending up in trash bins, and program leaders taking students' trays and sorting plate waste instead of the students sorting themselves.[97]

- Keller Elementary School, a neighboring Oakland County school, releases students by table, which decreases the number of students trying to discard their plate waste at the same time, allowing program leaders to provide more instruction to students and better control the lunchroom composting program.[98]

Initiative 4.5

Implement Bulk Milk Dispensers

Milk is a required offering for all breakfast, lunch, snacks, and after-school child nutrition programs funded by the USDA. However, offering milk in cartons at least three times per day results in nearly 45 million gallons of milk wasted by schools, or roughly 32 cartons worth of milk wasted per student, across the country each year.[99] However, schools have the ability to recover 27.5 cartons worth of milk and solid waste per student by replacing individual milk cartons with bulk milk bags that, depending on the size, contain 48, 80, or 96 servings per bag.[100,101]

Bulk milk dispensers allow students to take the volume of milk they will consume without wasting the rest. They also ensure that students do not create unnecessary waste by taking a carton they will end up throwing away, thus encouraging students to be more mindful about what food items they take versus the items they actually consume.

It is recommended that the School Lead meet with the Sustainability Director, Sustainability Coordinators, and food service provider to discuss the feasibility of implementing bulk milk machines in school lunchrooms. During the meeting, the team should discuss the funding opportunities available to help schools offset the startup costs associated with bulk milk dispensers. Refer to Chapter 10 for additional details on funding opportunities available to schools.

Items Needed:

- Bulk Milk Machine
- Reusable or Compostable Cups
- Drying Racks
- Dishwasher
- Refrigeration
- Milk Waste Disposal Mechanism (Bucket & Drain)

Stakeholders

The key stakeholders for Initiative 4 include:

i. School administration
ii. Principals
iii. Students
iv. Parents
v. Food Service
vi. Custodial & facilities staff
vii. World Wildlife Fund
viii. City of Southfield
ix. Michigan Department of Education
x. Oakland County Health Department

Key Performance Indicators (KPI)

Short-Term:

- Changes in length of seated mealtimes.
- Adoption of share tables in school lunchrooms.
- Offer Versus Serve adoption rates in K-12 education.

Medium-Term:

- Uncompromised food collection rates over time.

Long-Term:

- Federal and state school food program budgets change over time.
- Fluctuations in milk purchases for school meals over time.

Summary of Actions

Table 8

Initiative 4 Summary of Actions

Task		Time to Complete		Costs	Party Responsible	Notes
		Days	Months			
4. LUNCHROOM POLICY CHANGES		**314**	**45**	**$0-12,000**	**Sustainability Director, School Administrators**	
4.1.	**Extend Mealtimes to a 25-minute Minimum Seating Time**	82	12	$0	School Administrators, Sustainability Director	
4.2.	**Implement Share Tables in School Lunchrooms**	35	5	$0	Sustainability Coordinator	
	1.a. Evaluate School Bylaws Regarding Food Sharing	47	7	$0	Schools	
4.3.	**Adopt Offer Versus Serve for Breakfast and Lunch in All Schools**	132	19	$0	Sustainability Director	
4.4.	**Release Students By Table at the End of Each Lunch Period**	29	4	$0	Sustainability Coordinator	
4.5.	**Implement Bulk Milk Dispensers**	212	30	$0-12,000	Sustainability Coordinator	

Risks & Mitigations

Table 9

Initiative 4 Risk Matrix

Title	Description	Mitigation(s)
Scheduling conflicts	Longer lunch periods interfere with instructional time or other school activities.	Revise school schedule to balance longer lunch periods with school start/end time and instructional time.
Supervision challenges	Longer lunch periods require additional staff or volunteers for supervision.	Allocate staff responsibilities to manage extended lunch periods without overburdening them. Create a rotating lunchroom supervision schedule for teachers and staff.
Health and safety concerns	Shared food increases food safety and allergy risks.	Establish and enforce strict health and safety protocols for share tables. - Cold storage, no packaged-at-home foods Implement signage to easily understand what can be returned to share tables. Provide training to students and staff regarding what can be collected and distributed through share tables.
Waste mismanagement	Share tables become another source of food waste.	Assign students, staff, or volunteers to oversee share tables to ensure only accepted items are collected.
System misunderstanding	Students and staff do not understand how Offer vs. Serve works, causing confusion and creating more waste.	Provide education and training to students and staff regarding how share tables and Offer vs. Serve works.
Imbalanced nutrition	Students return items they must take to comply with school meal programs, resulting in unbalanced diets.	Prepare a variety of healthy options for each meal that are appealing to students.
Inefficiency and delays	Releasing by table delays lunchroom clearing, preventing students and staff from returning to classrooms on time.	Develop procedures for how to release students by table during mealtimes that ensure adequate time to get from the lunchroom to each classroom.
Fairness issues	Students find releasing by table unfair.	Develop a rotating schedule for how the lunchroom will be released by table, ensuring that no one table is always first/last to be released.

INITIATIVE 5 — FOOD RECOVERY & REDISTRIBUTION

INITIATIVE 5 — FOOD RECOVERY & REDISTRIBUTION

The fifth initiative of this development plan involves implementing a food recovery and redistribution process within each school's lunchroom within the target city. This initiative will include establishing a process for recovering excess food to redistribute within each school, a process for redistributing excess food throughout the community for human consumption, and a process for redistributing food scraps for animal consumption.

Initiative 5.1

Serve Recovered Food During Other Meal Times

Reusing leftovers and food recovered from shared tables offers an opportunity for schools to teach students about the importance of food conservation and responsible consumption. By including these items in future meals, schools can show students that leftovers can be high quality, nutritious, and delicious. Furthermore, serving these items communicates that leftovers should not be discarded but, instead, appreciated as nutritious and viable choices that also help to reduce food waste. Incorporating these food items into future meals also provides an opportunity for teachers to engage students in conversations about healthy eating habits and the environmental impact of wasted food, thus empowering them to make more sustainable food choices. Therefore, schools can not only encourage students to make more sustainable food choices but also challenge societal norms that often perceive leftovers as lesser quality than freshly prepared meals.[102]

1.a. Serve Recovered Food During After-School Programs.

Serving food recovered from school meals during after-school programs reduces food waste while addressing hunger among at-risk students. Utilizing this unserved and uncompromised food from the school's daily meal services allows schools to teach students about food conservation while mitigating stigma regarding the perceived quality of leftover food. This strategy also demonstrates a sustainable approach to food management. Therefore, this strategy ensures that no child goes hungry and no food is unnecessarily wasted, confirming educational institutions' role in student health and well-being.

1.b. Serve Recovered Food During Next Day's Meals.

Serving recovered food during the next day's meals offers schools a dynamic solution for reducing food waste. Schools can repurpose leftovers from previous meals and combine them with fresh ingredients to create entirely new meals, thus minimizing waste and maximizing resource utilization. Additionally, recovered food can be integrated into the meal planning process to make a positive feedback loop, where surplus from one day becomes an integral component of the next day's menu. Therefore, this strategy allows schools to maximize resource utilization, reduce waste, and promote culinary innovation by allowing students to learn how to make new dishes from existing ingredients.

It is recommended that the School Lead works with the food service provider to determine whether each school can safely store leftover food onsite or if it is feasible to transport surplus food to Southfield A&T to be packaged and stored. It is also recommended that the School Lead evaluates the feasability of storing leftover food onsite while conducting resource assessments at each school.

Considerations for Food Re-Service

- Prioritize collecting food items that do not qualify as Temperature Controlled for Safety (TCS).[103]
- The School Lead should contact the Oakland County Health Department (OCHD) to confirm that the TCS food recovery system follows share table best practices and adheres to established food codes and regulations.[103]
- Equip share tables with temperature control mechanisms and establish a monitoring schedule with temperature logs to ensure TCS food items adhere to Food Code provision §3-306.14(B)(1) or (2) (i.e., mini fridge, fridge, etc.).[103,104]

Initiative 5.2
Package Surplus Food to Send Home with Students

Sending surplus food home with students at the end of the day and over the weekend provides a viable path to reducing food waste while ensuring that food purchased as part of the federal and Michigan School Meals Programs are used to feed students as they intended. By sending surplus food home with students, schools can ensure that students have enough to eat for dinner and over the weekend, which offers many benefits, including:

i. Alleviating food insecurity by ensuring students have food after school and on weekends,
ii. Increasing test scores by ensuring students are well nourished,
iii. Improving school attendance by incentivizing attendance by providing free meals,
iv. Reducing behavioral issues by eliminating hunger as a distraction, and
v. Increasing attention span by ensuring students don't experience hunger, allowing them to perform optimally in school.[105]

Potential Onsite Solutions

Various systems can be established to send surplus food home to students so they and their families can consume it. Some examples include:

i. Establishing school pantries for community distribution,
ii. Donating surplus food to food rescue organizations,
iii. Starting Backpack programs, and
iv. Performing direct redistribution of surplus food to students.

It is recommended that the School Lead work with schools to develop these food redistribution pathways, ensuring they are viable for each school and whether they would be better suited for implementation at the district level.

Potential Partnerships

Multiple organizations provide food to students after school and over the weekends. However, their structures and functionality differ. Three existing programs are described below. Refer to Appendix E for additional resources.

b. Blessings in a Backpack

Blessings in a Backpack is a nonprofit organization that provides "Weekend Food Packs" of ready-to-eat food to send home with students to ensure they have food over the weekend, free of charge.[106,107] The organization partners with Sysco to provide nutritional and kid-friendly food items that are peanut-free, require minimal preparation and no refrigeration and do not require the use of kitchen appliances—or items, such as can openers.[106,107]

Figure 18

Blessings in a Backpack Logo

Stevenson Elementary School, one of SPS' 12 schools, currently runs a Blessings in a Backpack program for its students, which has been very successful. Stevenson's Principal, Tonya Hickman, shared that her students take full advantage of the program's offerings.[96] Students even request backpacks to assist members of their community, indiciating the program's to reach far beyond schoolgrounds.[96]

The Blessings in a Backpack program could be used for redistributing surplus food in schools if the items are shelf-stable.[106,107] However, because the program's success is based on providing shelf-stable food to students, additional programs and strategies may need to be considered to redistribute prepared food items to students.

It is recommended that the School Lead work with Southfield Public Schools' program representative to determine if prepared food can be included in student backpacks and whether students are given choices of what items they get to take home.

c. One More Meal

One More Meal is a nonprofit organization that recovers and packages surplus food from secondary schools for redistribution to students and households at the end of the day.[80,80,108] By recovering surplus food that would otherwise be discarded, the organization addresses four top barriers to food donation: transportation, liability concerns, a lack of refrigeration, and regulatory constraints.[80,80,108]

Figure 19

One More Meal Logo

The program also allows students to decide what their next meal will be by serving surplus food buffet style.[80,80,108] By serving buffet style, students can take only the food items they or their families will eat, mitigating the risks of food waste by providing students with choices.

To make a partnership with One More Meal as sustainable as possible, the School Lead should work with the nonprofit and schools to determine whether utilizing reusable To-Go containers is possible, as well has how to best to ensure students return the containers in a timely matter to ensure their availability for future meals.

d. Green2Go

Figure 20

Green2Go Logo

Green2Go is a nonprofit organizatio that aims to transition takeout containers provided in dining halls from single-use consumables to more sustainable and reusable products.[109] Currently, the organization works with 52 universities throughout the US. However, establishing a partnership with Green2Go could not only support the organization's mission to reduce single-use plastics, this partnership could also keep packaging from wasted food out of landfills, which accounts for more than 63% of solid waste sent to landfills.[32,36] By adopting such a program, K-12 schools have the added potential to further reduce trash pickup costs, providing schools with greater flexibility to transition from trash pickup to compost pickup.

The program works by providing students with a carabiner at the beginning of their college career, which allows each student to exchange it for one reusable takeout container. Once students return their container to the dining hall, their carabiner is returned to them.

To make the program cost effective, dining services at Dartmouth University charge students $10, which covers costs for the reusable containers, carabiners, and replacements if lost or broken.[110] To ensure food safety remains the highest priority, the following should be enforced:

1. Staff or ServeSafe-trained volunteers should serve food into the containers, and
2. Students should not be allowed to reuse containers. Containers should be returned and exchanged for a container that has been sanitized by ServeSafe-trained staff or volunteers.

If partnering with Green2Go is not possible, the School Lead can work with schools to conduct a pilot of a similar program at one of Southfield's high schools to determine its feasibility in K-12 schools.

Items Needed

i. Reusable To-Go Containers
ii. Carabiners
iii. Drying Racks

Additional Opportunities

Although not explored as part of this initial development plan, additional opportunities can be explored to expand food waste elimination efforts beyond schools to help the local community. As time and resources permit, the opportunities listed below should be further explored to begin building circular economies between schools and the larger community.

i. Implement community food pantries at schools.

Principal Hickman shared that Stevenson Elementary School currently runs an onsite community food pantry. The school manages the pantry and Community members can put food in or take food as needed. Additionally, students help to sort food for the food pantry.

It is recommended that the School Lead work with the Sustainability Director, Sustainability Coordinators, and local food rescue organizations to determine whether expanding their food pantry model to other schools throughout the city would be feasible.

ii. **Redistribute food unfit for human consumption to local farms.**

While Metro Detroit is not known for its vast farmland or farm animals, the area has several farms that could potentially utilize food discarded by schools for animal feed.

Consultant Observations:

- A lunchroom observation in Metro Detroit revealed that the school used separate bins for general compost and farm animal food scrap collections. The separate bins were used to separate foods typically toxic to various farm animals—such as meat or onions—from animal safe foods—like apples and bread.[111] After lunch, the animal-safe food bins were then taken to Pingree Farms in Detroit by a staff member or volunteer and served to the animals.

It is recommended that the School Lead reach out to local farms to guage their interest in serving food scraps to their animals. If farms express interest, the School Lead should coordinate meetings with the Sustainability Coordinators, Sustainability Director, Sustainability Council, and local farms to develop a feasible strategy to separate animal-safe food scraps from general compost and transport the food scraps to the local farms.

Stakeholders

The key stakeholders for Initiative 5 include:

i. School administration
ii. Principals
iii. Teachers
iv. Students
v. Parents
vi. Food Service
vii. Food Rescue
viii. Nonprofit organizations

Key Performance Indicators (KPI)

Short-Term:

- Adoption of a school food recovery strategy.

Medium-Term:

- Volume of uncompromised food that is collected over time.

Long-Term:

- Federal and state school food program budget changes over time.
- Food recovery donations received from schools over time.

Summary of Actions

Table 10

Initiative 5 Summary of Actions

Task			Time to Complete		Costs	Party Responsible	Notes
			Days	Months			
5. FOOD RECOVERY & REDISTRIBUTION			**284**	**40**		Schools	
5.1.	**Serve Recovered Food During Other Meal Times**		29	4		Schools	
	1.a.	Serve Recovered Food During After-School Programs	51	7		Schools	
	1.b.	Serve Recovered Food During Next Day's Meals	51	7		Schools	
5.2.	**Package Surplus Food to Send Home with Students**		212	30		Project Partner, Nonprofit	
	2.a.	Purchase Materials to Send Surplus Food Home with Students	224	32	$6,755	Sustainability Director, Food Service Provider	Cost to cover all HS students in SPS
	2.b.	Perform a Pilot to Test Reusable To-Go Container Feasibility at HS	90	13		MFNW	

Risks & Mitigations

Table 11

Initiative 5 Risk Matrix

Title	Description	Mitigation(s)
Food safety	Recovered food increases food safety and allergy risks.	Establish food safety protocols that require all excess food to be stored and reheated according to food safety guidelines.
Stigma	Students feel stigmatized for eating "leftover" food.	Utilize positive messaging to promote consumption of leftover food before preparing new food, emphasizing the importance of food waste reduction and community sharing.
Perceived quality	Students, staff, and parents perceive leftover food as lower quality.	Ensure leftover meals are prepared and presented with the highest quality possible. Organize cooking demonstrations that educate students, staff, and parents on how to creatively utilize leftovers.
Menu variety	Repeated meals decrease interest in school meals.	Provide opportunities to increase visibility for how to use leftovers creatively to prepare new meals.
Logistical challenges	Packaging and distributing leftover food to students is complex, requiring multiple 3rd parties.	Develop a streamlined system for packaging and discreetly distributing excess food (backpack programs).
Legal challenges	Packaging and distributing food directly to students is not protected by food donation laws.	Work with Michigan DoE, EGLE, and USDA to identify strategies to effectively and safely distribute food directly to students without unnecessary 3rd party involvement.
Privacy concerns	Identifying and targeting in-need students raises privacy and stigmatization concerns.	Work with counselors and social workers and utilize school meals program paperwork to discreetly identify food insecure students.
Maintenance and stocking	Keeping little pantries well-maintained and stocked causes resources constraints.	Assign students, staff, and volunteers to regularly check and maintain little pantries. Encourage the use of little pantries as volunteer opportunities for students.
Community participation	Community involvement and utilization of little pantries is insufficient to maintain them.	Promote little pantries through community events and collaborations to encourage their use and support. - MFNW's Annual Community Feast - Flyers (around the community and sent home with students)

INITIATIVE 6 — FOOD & CLIMATE EDUCATION

INITIATIVE 6 — FOOD & CLIMATE EDUCATION

Initiative 6.1

Organize a Workshop to Educate Schools on Existing Meal Program Requirements

Organizing a training workshop to educate school administrators and food service providers on the existing laws and requirements for the federal and state Child Nutrition Programs is a critical strategy to mitigate food waste in schools. During the conversations with school principals as part of this project, several notable discrepancies and uncertainties regarding school meal reimbursement regulations were identified, regarding Offer Versus Serve (OVS), share tables, and food donations, which hinder each school's ability to feed their students healthy but palatable meals and reduce food waste. Therefore, providing schools with training to clarify the convoluted laws and requirements regulating Child Nutrition Programs and food donations is imperative for ensuring the success of this development plan.

Refer to Appendix F for a list of resources available on the existing federal and Michigan school meals programs.

Consultant Observations:

- Foodservice general and assistant managers believed all Southfield Public Schools were participating in Offer Versus Serve (OVS), while nearly all principals indicated that students must take all meal components. This finding suggests one of the two following explanations:
    - Schools are not implementing OVS properly, or
    - Schools are simply not implementing OVS.
- Principals and the food service team were confused about the laws and regulations surrounding share tables and food donations.

Initiative 6.2

Integrate Food and Climate Education into the K-12 Curriculum

Integrating food and climate education into the K-12 curriculum is critical for reducing food waste in schools and aligning the K-12 curriculum with the initiatives outlined in the Michigan Healthy Climate Plan to promote a culture of environmental stewardship.

Refer to Appendix F for links to existing lessons, experiential learning opportunities, and field trip ideas.

2.a. Work with the Director of Instruction to Develop a Food & Climate Education Integration Strategy.

Working closely with the Director of Instruction for the school district will be instrumental in successfully integrating food and climate education into the K-12 curriculum. The Director of Instruction is responsible for overseeing curriculum development, encouraging educators to adopt innovative instruction strategies, and coordinating educational programs across each school and course of study. Their involvement will ensure that lesson plans align with academic standards for each age group and learning style and support the district's broader educational objectives. The Director of Instruction's influence and authority over the district's K-12 curriculum can also encourage support from educators and administrators, which is critical for the widespread adoption and implementation of curriculum changes.

This strategic partnership will not only enhance the curriculum but will also elevate students' understanding and engagement with sustainability topics, preparing them to make informed decisions about their food consumption habits and their environmental impact. By aligning efforts with the Director of Instruction, Make Food Not Waste can ensure that food and climate education is both impactful and sustainable, thus creating lasting behavioral changes in how society views and addresses food waste.

2.b. Promote Existing Resources Available on Food & Climate Education for Integration into the K-12 Curriculum.

Many lesson plans and ideas for creating experiential learning opportunities around food and climate education exist. Sources from the Massachusetts' Green Team, World Wildlife Fund, and the Institute of Science & Math Education provide free lessons, worksheets, workbooks, and how-to guides for teachers to integrate these topics into existing curriculums seamlessly.

Not only will utilizing existing lesson plans reduce the burden placed on teachers to create new and innovative ways to teach students about these topics, but it will also allow them to use previously tested resources with high success rates for student engagement. For example, the Massachusetts Green Team has designed its lesson plans to align with the Massachusetts Science and Technology/Engineering, Mathematics, and Language Arts curriculums and, since 2004, has been integrated into 159 schools throughout the state. They even provide ideas for in-person and virtual field trips and presentations to help make these topics interesting, engaging, and impactful for students of all ages.[112–114]

2.c. Implement Vermiculture Kits in Elementary School Classrooms.

Vermiculture is a form of aerobic compost production, which utilizes red wiggler earthworms to break down organic materials into nutrient-rich soil.[115]

Potential Partnerships

Multiple organizations offer vermiculture kits to schools to teach students about composting and encourage schools to begin composting food scraps instead of sending them to landfills.

a. CO Sustainability

CO Sustainability has partnered with another Oakland County school district to provide vermiculture kits to elementary schools and teach their students about the importance of composting.

Robb Harper from CO Sustainability has expressed interested in providing the same vermiculture kits and education to Southfield Public Schools. Therefore, it is recommended that the School Lead work with Robb, the Sustainability Coordinator, and the Director of Instruction to develop a classroom curriculum that provides students with an hands-on opportunity to learn about composting that connects back to Michigan's science curriculum requirements.

b. Bower School Farm

Bower School Farm, located in Bloomfield Hills, MI, is a nonprofit organization that provides nature-based teaching and learning activities to K-12 schools, including

education on local wildlife, native plants, various forms of compost—including offering vermiculture kit rentals—livestock, farming, and 4H.

Sara Covatta, one of Bower School Farm's Community Guides, has expressed interested in working with Southfield Public Schools to provide vermiculture kits and educational resources for teaching students about composting. Therefore, it is recommended that the School Lead work with Sara, the Sustainability Coordinator, and the Director of Instruction to provide place-based opportunities for K-12 students. These programs should focus on composting and its benefits for the local environment, ensuring that each opportunity integrates into the broader Michigan science curriculum. This approach will enhance students' understanding of sustainable food systems while ensuring adherence to state curriculum standards.

Recommendations for Lesson Plans

- Utilize data collected from food waste audits to connect the experiential learning opportunity to the classroom.
- Utilize composting to teach students the science behind how food scraps turn into soil.[116]
- Teach students about chemical reactions by teaching them how to can food while preventing bacteria and preserving nutrient content.[117–121]

Stakeholders

The key stakeholders for Initiative 6 include:

i. Superintendent (or deputy)
ii. (Executive) Director of Instruction
iii. Principals
iv. Teachers
v. School board
vi. Students
vii. Food Service
viii. Custodial & facilities staff
ix. World Wildlife Fund
x. CO Sustainability
xi. City of Southfield

Key Performance Indicators (KPI)

Short-Term:

- Number of volunteers that sign up for school sustainability initiatives.
- Student engagement and interest in food & climate education.

Medium-Term:

- Number of food & climate lessons integrated into the K12 curriculum.
- Number of food & climate experiential learning opportunities offered to students (field trips, demonstrations, workshops, etc.).
- Food & climate assignment completion rates and performance.

Long-Term:

- Michigan STEM/climate college program enrollment numbers over time.
- Michigan STEM/climate college program graduation rates over time.
- Number of schools that become certified as Michigan Green Schools over time.
- Number of school gardens started over time.
- Number of sustainability-related clubs and after-school activities that are created over time.

Summary of Actions

Table 12

Initiative 6 Summary of Actions

Task			Time to Complete		Costs	Party Responsible	Notes
			Days	Months			
6. FOOD & CLIMATE EDUCATION			**365**	**52**	**$0**	**Superintendent, Director of Instruction**	
6.1.	**Organize a Workshop to Educate Schools on Existing Meal Program Requirements**		74	10	$0	School Lead	
6.2.	**Integrate Food and Climate Education into the K-12 Curriculum**		365	52	$0	Superintendent, Director of Instruction	
	2.a.	Work with the Director or Instruction to Develop Food & Climate Education Integration Strategy	201	29	$0	School Lead, Director of Instruction, Superintendent, Southfield Sustainability Office	
	2.b.	Promote Existing Lesson Plans to Integrate Food & Climate Education into the K-12 Curriculum	201	29	$0	School Lead, Director of Instruction, Superintendent	

Risks & Mitigation

Table 13

Initiative 6 Risk Matrix

Title	Description	Mitigation(s)
Teachers overburdened	Extra work is required for teachers to create lesson plans for food & climate education.	Provide teachers with ready-to-use lesson plans to integrate food & climate education into the K-12 curriculum. - Utilize existing lesson plans from Massachusetts' Green Team. - Utilize existing lesson plans from the World Wildlife Fund. - Utilize STEM Teaching Tools' lesson plans created by the Institute of Science & Math Education.
Resource constraints	Teachers do not have enough time or resources to teach students about food waste and climate change effectively.	
Data complexity	Data collected during audits is too complex to integrate into lesson plans.	Utilize existing lesson plans created to supplement food waste audits and integrate findings into the classroom.
Student engagement	Students don't engage with material.	Utilize experiential learning opportunities to create lessons that are interactive, engaging, and relatable.
Curriculum integration	Teachers cannot find opportunities to integrate food waste and climate change lessons into curriculum.	Align lesson plans with existing subjects and test standards to ensure seamless integration and alignment with existing standards.

INITIATIVE 7 — EASY WINS

INITIATIVE 7 — EASY WINS

Initiative 7.1

Procure Child-Safe Fruit Slicers

Procuring fruit slicers for students to use during mealtimes is an innovative strategy that can not only reduce food waste but also enhance accessibility and enjoyment of fruit among students. Providing such tools allows students to consume fruit in a manner that suits their individual needs and preferences. Moreover, serving whole fruit without a convenient method of slicing can render it inaccessible to a significant portion of students, including those with dental or orthodontic limitations, such as missing front teeth or braces.[122,123] Additionally, providing fruit slicers better aligns school meals with students' preferences, as they often prefer sliced fruit for convenience and ease of consumption.[124–126] Therefore, this strategy promotes healthier eating habits by encouraging students to consume nutritious foods in their preferred form and improves accessibility while reducing food waste in schools.

Research Findings:

- Children prefer to consume sliced fruit.[124–126]
- High fiber foods take longer to consume and reach satiety.[127–129]
- Elementary-aged children begin losing their baby teeth around six, making whole fruit inaccessible for students to consume or meet their recommended daily fruit intake.[122,123]
- 14.5% of US children between 8 and 18 years of age undergo orthodontic treatment—including braces and retainers—which limits the types of food they can consume while undergoing treatment.[130] Patients undergoing orthodontic treatment are provided lists of foods they should avoid, which include whole apples and crunchy veggies when unchopped or uncooked.[131,132] However, orthodontists provide alternative consumption options for patients to continue enjoying foods they love, including chopping apples into slices and serving baby carrots instead of whole.[131,132]

On-Demand Versus Prepare Ahead

The table below provides a comparison of on-demand versus preparing ahead sliced fruit in schools. The table compares advantages and disadvantages of both methods and provides several examples of personal and commercial grade tools that schools could purchase to increase students' consumption of fresh fruit. However, the information in this table is not an exhaustive list; it is provided to help the Sustainability Coordinator for each school make the best decision possible for their students and schools.

Table 14

On-Demand versus Prepare Ahead Fruit Slicer Matrix

		On-Demand		Prepare Ahead	
#	**Category**	**Advantages**	**Disadvantages**	**Advantages**	**Disadvantages**
1	**Waste**	• Less fruit wasted due to storage and preservation requirements • No food packaging waste	• Fruit can fall on fall on the ground during slicing	• Students waste less by taking fruit to go, if portioned out ahead	• More fruit wasted due to storage and preservation requirements • Increased food packaging waste, depend on storage capabilities • Increased food packaging waste if portioned out ahead
2	**Resources**	• No refrigeration required • No oxidation concerns • No storage required	• Requires purchase of fruit slicers ○ i.e., handheld or commercial grade	N/A	• Requires refrigeration • Requires storage • Requires oxidation control (lemon juice)
3	**Labor**	• As needed	• Labor intensive if staff support is required • Students strength not enough to use handheld unit	• Students can grab and go • Less labor labor intensive	• High labor costs
4	**Meal Reimburse**	• Reimbursable because students take whole piece of fruit	N/A	• Reimbursable if portions are measureable	• Not reimbursable if students do not take the required portions
5	**Portion Sizes**	• Students take required portion sizes	• Students take more than they can eat	• Students take as much or as little as they want to eat	• No regulation over volume students take ○ i.e., Students don't take whole serv
6	**Autonomy**	• Students are given autonomy to decide for themselves how they prefer to consume their food	• Younger students may need assistance to use	N/A	• Students cannot decide how they want t consume their food

7	**Time**	• Students can prepare their food quickly • Can grab and go if they don't mind whole fruit	• Students have to wait for slicer to be available for use • Students can't grab and go if they want sliced fruit	• Students can grab prepared food quickly, leaving more time for them to eat • Faster than by hand	• Requires significant staff time to prepare fruit ahead of time
8	**Safety**	**Commercial Grade** • Blade guards available **Handheld** • Requires both hands for use	**Commercial Grade** • Younger students would require supervision while using	**Commercial Grade** • No risk to student safety	**Commercial Grade** • Potential injury loading fruit in slicer ○ i.e., Time restraints, repetitive action (reduced focus)
9	**Difficulty Level**	**Commercial Grade** • Load and pull/press handle **Handheld** • Place fruit, press with both hands	**Commercial Grade** • Student demonstration required for proper use **Handheld** • Requires both hands for use	**Commercial Grade** • Load and pull/press handle	N/A
10	**Options**	**Commercial Grade** • Can place tray/bowl under unit to catch fruit • Multiple blades to cut a variety of fruits and vegetables	**Handheld** • Single purpose use ○ i.e., apple corer/slicer, orange wedger • Requires plate/cutting board	**Commercial Grade** • Multiple blades to cut a variety of fruits and vegetables	**Commercial Grade** • Requires consistent cleaning
11	**Cost**	**Handheld** - Affordable	**Commercial Grade -** Expensive	**Commercial Grade -** Expensive	**Commercial Grade -** Expensive
12	**Models - Handheld**	 133	 134		
13	**Models - Commercial Grade**	 135	 136	 137	 138

Initiative 7.2

Establish A "Flavor Station" in School Lunchrooms

Establishing flavor stations in school lunchrooms is a strategic initiative that reduces food waste by empowering students to personalize their meals to their taste preferences. By offering a variety of condiments and spices, schools can empower students to enhance the flavor profile of their dishes, making them more appealing and enjoyable, which is particularly beneficial when school meals contain larger volumes of whole fruits and vegetables, grains, and lean proteins. This customization encourages students to eat healthier options by allowing them to experiment with enhancing their flavor using different sauces or dips. Therefore, by promoting student autonomy and culinary exploration, schools can turn the condiment and spice bar into a practical tool for nutrition education, healthy eating, and food waste reduction. Refer to **Figure 21** for a sample flavor station in schools.

Figure 21

School Flavor Station[139]

Recommendations for Establishing Flavor Stations in Schools

- Provide an assortment of shelf-stable spices and sauces (i.e., Sriracha, balsamic vinegar, red pepper flakes, garlic powder, etc.).[140]
- Provide fresh items, such as lemon or lime slices, to brighten the flavor of school meals.[140]
- Provide daily spice recommendations based on the day's meals (i.e., taco sauce or chili powder when serving tacos or black bean soup, etc.).[140,141]

- To ensure spice and condiment offerings adhere to existing nutrition standards, salt should not be available at the flavor station. However, if needed, salt should be made available to students through the kitchen upon request and under supervision.

Stakeholders

The key stakeholders for Initiative 7 include:

i. School administration
ii. Principals
iii. Food Service
iv. Custodial & facilities staff
v. Oakland County Health Department

Key Performance Indicators (KPI)

Short-Term:

- Initial student food satisfaction surveys.

Medium-Term:

- Changes in fruit and vegetable discard rates (in compost and trash bins) over time.

Long-Term:

- Changes in student food choices over time.
- Long-term student food satisfaction surveys.

Summary of Actions

Table 15

Initiative 7 Summary of Actions

Task		Time to Complete		Costs	Party Responsible	Notes
		Days	Months			
7. EASY WINS		**120**	**16**	**$0-200**	**Schools**	
7.1.	**Purchase child-safe fruit slicers**	103	15	$20-200*	Food Service	• 3-pack (apple, orange, and mango slicers) • Industrial fruit slicer with 9 attachments available (sold separately)
7.2.	**Establish a lunchroom condiment and spice bar**	29	4	$60-200*	Food Service	• Insulated condiment dispenser • Bulk condiment dispenser

Prices listed are per unit. Refer to the budget matrix provided in **Chapter 10, Table 17 for additional details and links.*

Risks & Mitigations

Table 16

Initiative 7 Risk Matrix

Title	Description	Mitigation(s)
Safety concerns	Increased risk of injury if students utilize sharp tools without supervision.	Establish a safety protocol for students to utilize fruit slicers. - Utilize under the supervision of staff (particularly younger students) - Implement safety mechanisms to ensure safety during use
Hygiene and sanitation	Multiple people utilizing tools without an established cleaning schedule increases contamination risks and spread of diseases/illnesses.	Implement a strict cleaning and maintenance protocol to reduce contamination risks.
Equipment misuse or damage	Frequent equipment utilization increases risks of misuse or damage, requiring higher maintenance costs.	Provide training and clear instructions for how to use fruit slicers correctly and safely.
Condiment overuse or waste	Students use more condiments than needed, creating excess waste.	Use dispensers that limit the amount dispensed at a time to reduce waste.
Cross-contamination	Open containers increase contamination risks.	Label all condiments and spices clearly, to avoid cross-contamination. - Do not include options with known allergies to avoid potential exposure. - Use dispensers instead of jars or vessels requiring spoons for proper serving.
Mess and maintenance	Frequent utilization creates a mess and shortages, requiring additional resources to maintain and keep options full.	Assign students, staff, and volunteers to maintain, clean, and restock the condiment & spice bar regularly.

CHAPTER 9: PERFORMANCE MANAGEMENT & REPORTING

9. PERFORMANCE MANAGEMENT & REPORTING

GENERAL KPIs

While the Key Performance Indicators (KPI) listed in the previous chapter are specific for measuring progress of each initiative individually, the KPIs in this section can be used to measure long-term progress for the overall project over time.

Long-Term:

- US Census data to evaluate societal impact across key indicators, including poverty, food insecurity, health, and education.
- GHG emissions from food waste over time.
- Household purchasing power fluctuations.
- Federal and state school food program budgets change over time.

ACTIVITIES FOR MEASURING PROGRESS

Data Collection & Audits

The metrics outlined above require recurrent collection and monitoring to evaluate progress over time. Make Food Not Waste should work with key stakeholders for each target district and school to determine which metrics are critical for evaluating the initiative's long-term success and who will be responsible for collecting and monitoring each metric and at what cadence. ***The above list is not all-inclusive and should be reviewed and adjusted to capture the most critical metrics for measuring food waste reduction progress in schools.***

Make Food Not Waste, and the target schools should identify and train at least two long-term volunteers (one as primary and one as backup) who will be responsible for collecting and monitoring the agreed-upon metrics. Establishing a collaborative database, such as Google Docs (short-term) or Domo (long-term), is recommended to capture each metric over time, easily analyze the available data, and show real-time progress. Once a database has been established, it is also recommended that Make Food Not Waste perform an annual audit to ensure any data collected is captured correctly and any errors identified can be corrected in a timely manner. However, Make Food Not Waste could utilize existing partnerships, such as with ReFED, to capture food waste data on a local level, in addition to capturing statewide data.

It is important to capture baseline values for any metric that will be used to track long-term progress. While Initiative 2 includes actions to establish baseline measurements for food waste, opinions and suggestions regarding food waste and quality, and resource availability, any metrics not captured under Initiative 2 will require additional actions to ensure a baseline measurement can be established.

REPORTING

A robust reporting strategy will create transparency between schools and Make Food Not Waste and between schools and the Federal and Michigan School Meals Programs. This transparency will ensure that key stakeholders work together to ensure funding for the Federal and Michigan School Meals

Programs is not wasted, remains fully allocated to feeding children enrolled in K-12 education, and funding remains available to keep each program running with taxpayer support.

Furthermore, a robust reporting strategy is critical for creating transparency regarding Michigan's direct contributions to SDG2: Zero Hunger and SDG12: Responsible Consumption and Production. Therefore, the following reporting opportunities are recommended:

1. **Annual School Food Quality and Waste Report**

   Make Food Not Waste should work with schools to produce annual progress reports on school adherence to agreed-upon Key Performance Indicators (KPI) for reducing food waste. Annual reporting provides an opportunity to hold both schools and Make Food Not Waste accountable for their efforts towards Michigan's ambitious goal of eliminating 1 billion pounds of food waste from landfills by 2030. This can also create transparency between schools, state legislators, and taxpayers to demonstrate the effectiveness of food waste reduction initiatives while ensuring that funding allocated for feeding students is utilized efficiently. Therefore, schools and Make Food Not Waste can use annual KPI reporting to effectively monitor food waste reduction progress, thus reinforcing accountability and responsible resource management.

   In addition to measuring food waste, this report should also analyze food quality to assist schools in developing targeted strategies to enhance the nutritional value and appeal of school meals. By collecting student feedback, schools can integrate collected input into meal planning processes, ensuring that meals are enjoyable while promoting healthier relationships with nutrient-dense foods among their students.

   Recommended Methods for Data Collection:

   i. Surveys
   ii. Focus Groups
   iii. Taste Tests
      i. For students
      ii. For staff
   iv. Student Food Shows
   v. Student Participation on Food and Nutrition Advisory Committees
   vi. Lunchroom Suggestion Boxes

2. **Bi-Annual Indicator Report**

   School districts should collaborate with their city's sustainability office and Make Food Not Waste to develop a bi-annual school food quality and waste report that offers more comprehensive reporting on food waste Key Performance Indicators (KPI) every two years.

   This bi-annual report should provide a more in-depth analysis of each school's progress compared to other schools in the district and how the district's overall progress aligns with the city's broader sustainability goals.

   This type of collaborative reporting can also help facilitate community support for school sustainability initiatives and encourage residents to actively participate. Additionally, partnering with the city's sustainability office can help both parties identify opportunities for enhancing static and dynamic sustainability efforts citywide. Therefore, collaborative bi-annual reporting can not only provide transparency but can also promote a more resilient and environmentally conscious community.

CHAPTER 10: FUNDING REQUIRED, SOURCES & PROCESSES

10. FUNDING REQUIRED, SOURCES & PROCESSES

Make Food Not Waste has already secured funding for The 2030 Project through donations from consultants, nonprofit organizations, higher education institutes, and public donations. The organization has also secured in-kind support from these entities and city, county, and state officials who are providing expertise and support to the project.

However, as part of The 2030 Project, existing resources should be utilized before seeking new equipment and materials to make the initiative as sustainable as possible. Therefore, Make Food Not Waste should work with schools to develop a blended funding approach consisting of previously secured funding, in-kind support from project partners, school Excess Fund Balances (EFB), and grants, as applicable. Not only will this approach promote sustainability efforts, but it will also help ensure the continuity of school composting and recycling programs by keeping long-term maintenance costs low.

EXPENSES

The largest expense that schools should expect to implement the recommendations outlined in this development plan will be the composting strategy they choose to adopt. A matrix containing available composting options—along with estimated costs and labor requirements—can be found in Appendix C.

A list of resources needed to implement the recommendations outlined in this development plan can be found in Appendix G.

While the cost of implementing a comprehensive composting and recycling program in schools can vary greatly, it is important to remember that having **any** waste diversion program established is better than having **no** waste diversion program established. Therefore, schools can keep costs low by utilizing existing equipment and resources, eliciting donations, applying for grants, and allocating EFBs to implement and maintain these programs.

FUTURE INVESTMENT OPPORTUNITIES

If additional funding becomes available, purchasing the following items should be considered to transition school lunchrooms into zero-waste lunchrooms:

i. Dishwasher
ii. Dishwasher racks
iii. Bulk milk dispenser
iv. Reusable cups
v. Reusable utensils
vi. Reusable trays

GRANTS

This section contains a list of grant opportunities that schools can apply for to establish and maintain sustainability initiatives that help create circular economies to combat food waste in schools. Make Food Not Waste should work with schools to evaluate each suggestion and determine the most suitable grants to achieve each school's goals.

PATRICK LEAHY FARM TO SCHOOL GRANT PROGRAM

The Patrick Leahy Farm to School Grant Program offers schools 24 months of funding to increase access to locally grown foods and help connect students to their food sources. Funding can be used for education, school gardens, field trips, taste tests, and the purchase of locally sourced foods for school meals. It is important to note that recipients must match 25% of their project budget with cash or in-kind donations.

- **Potential Grant Amount:** Up to $500,000
- **Application Timeline:** October to January each year
- **Website(s):**
  - Farm to School Grant Program Guide[142]
  - Resources for Farm to School Grant Program Applicants[143]
  - Farm to School Fact Sheets[144]
- **Point(s) of Contact:** SM.FN.FarmToSchool@usda.gov

LEANPATH 12.3 INITIATIVE

Leanpath offers free or reduced-cost hardware and software to culinary educators and nonprofits to educate, measure, and track efforts to reduce food waste. The hardware and software are available as part of the Leanpath 12.3 Initiative, which aligns the organization's efforts with the United Nations SDG12.3 to cut food waste in half by 2030.[145]

- **Potential Grant Amount:** N/A
- **Application Timeline:** Unclear. Interested schools and educators should fill out the food waste prevention application and discuss the available opportunities with a Leanpath representative.
- **Website:**
  - Food Waste Prevention Application[146]
  - Leanpath 12.3 Initiative[145]
- **Point(s) of Contact:** initiative@leanpath.com

COMPOSTING

The grants listed below provide funding to establish and maintain school composting programs.

Food Waste Warriors Program

World Wildlife Fund's Food Waste Warriors program offers K-12 schools grants, stipends, toolkits, and lesson plans to engage students in food waste reduction initiatives. Funding can be utilized for teacher stipends, training, materials, and educational or project-related costs.

- **Potential Grant Amount:** Varies.
  - $7,500 for implementation support in 3-5 schools.
  - $25,000 for implementation in at least 7-10 schools across a district.
- **Application Timeline:** July 20th

- **Website:** https://www.worldwildlife.org/pages/bring-food-waste-warriors-to-your-school[147]
- **Point(s) of Contact:** fwwstaff@googlegroups.com

EDUCATION

The grants listed below provide funding for schools to incorporate food & climate education into the Pre-K-12 curriculum.

National Agriculture in the Classroom

The National Agriculture in the Classroom Organization (NAITCO) offers an opportunity for general education teachers to incorporate agricultural education into Pre-K-12 classrooms.[148]

- **Potential Grant Amount:** Up to $500
- **Application Timeline:** April 15, 2024
- **Website:** https://agclassroom.org/teacher/grants/[148]
- **Point(s) of Contact:** Michelle Blodgett - mblodge@michfb.com

GARDENING PROGRAMS

The grants listed below offer an opportunity for schools to implement school gardens, which would provide educational and experiential learning opportunities for students and create a circular economy where excess food waste created by a school can be used to feed the onsite garden.

Big Green Jumpstart Program

As part of their Jumpstart Program, Big Green offers Metro-Detroit schools a grant to establish onsite gardens to support and engage students in outdoor education.[149]

- **Potential Grant Amount:** $2,000
- **Eligibility Criteria:** https://biggreen.org/wp-content/uploads/2023/05/Program-Summary.pdf[150]
- **Application Timeline:** March 1st - March 29th each year
- **Website:** https://biggreen.org/jumpstartdetroit/[149]
- **Point(s) of Contact:** info@biggreen.org

Samull Classroom Herb Garden Grant

The Herb Society of America is offering elementary schools in grades K-6 funding to establish herb gardens. The funding can be used to purchase supplies, including soil, tools, and containers.

- **Potential Grant Amount: $300**
- **Application Timeline:** Unclear. Interested schools should visit The Herb Society of America's website during the summer 2024 for information on when the 2025 application cycle opens.
- **Website:** https://www.herbsociety.org/get-involved/grants-scholarships/[151]
- **Point(s) of Contact:** https://www.herbsociety.org/about/contact.html

MEAL IMPROVEMENT GRANTS

Fuel Up Grant

The United Dairy Industry of Michigan offers a grant to help schools improve access to healthy meals by providing school nutrition equipment to K-12 schools.

cover the startup costs for schools to implement bulk machines.

- **Potential Grant Amount:** Unclear. The grant application
- **Eligibility Criteria:** https://www.fuelup.org/funding-information
- **Application Timeline:** March 12th - April 16th each year
- **Website:** https://www.fuelup.org/funding-information
- **Point(s) of Contact:** https://www.fuelup.org/contact-us

Moolah for Schools

The United Dairy Industry of Michigan offers a grant to help schools cover the startup costs to implement bulk machines in their lunchrooms.

- **Potential Grant Amount:** $500-6,200
  - https://www.milkmeansmore.org/wp-content/uploads/2024/04/Moolah-for-Schools-Grant-Option-2.pdf [152]
- **Eligibility Criteria:**
  - https://www.milkmeansmore.org/wp-content/uploads/2024/04/Moolah-for-Schools_Grant-Overview-Packet_06-2024_WEB-1.pdf [153]
- **Application Timeline:**
  - Round 1: March 14th - May 10th each year
  - Round 2: March 14th - November 22th each year
- **Website:** https://www.milkmeansmore.org/schools-educators/grants/moolah-for-schools/ [1]
- **Point(s) of Contact:** https://www.fuelup.org/contact-us

CASH

Make Food Not Waste should work with schools to identify opportunities for how to spend their Excess Fund Balances (EFB) to implement recommendations outlined in this development plan.

Under Section 206 of the Healthy, Hunger-Free Kids Act, Child Nutrition Programs must operate a Non-Profit Food Service Account (NFSA), which accrues all revenue earned from selling non-reimbursable food items.[154] Schools must reinvest these funds into their food service program to benefit the children enrolled in these programs.[154]

As part of this provision, NFSAs are only allowed to carry a balance equating to the three-month average expenditures for the program.[154] For anything over this amount, the Michigan Department of Education

(MDE) requires that schools create a Spend Down Plan of Action (POA) for how they will use their EFBs at year-end.[154]

These funds allow schools to upgrade existing kitchen equipment and purchase new equipment and supplies to decrease meal preparation time, improve food quality and service times, and create more sustainable lunchrooms.[154] EFBs can also be used to purchase supplies and equipment for school garden programs.[154]

- **Website(s):**
  - Instructions for Completing the Excess Fund Balance Spend Down Plan of Action Form[155]
  - Spend Down Plan of Action Ideas for Excess Fund Balances[156]
  - Pre-Approved Food Service Equipment List[157]
- **Contact Information:**
  - **Email:** MDE-Fiscal@michigan.gov
  - **Phone:** 517-241-5380

IN-KIND DONATIONS

Make Food Not Waste should work with schools to identify potential in-kind donors for establishing and maintaining school composting and recycling programs and provide experiential learning opportunities. In-kind donations can include:

i. Volunteers to help run the lunchroom composting and recycling program.
ii. Volunteers to build lunchroom composting stations and onsite compost bins.
iii. Organics experts to provide composting workshops and expertise as to which composting style will be best for each school.
iv. Hardware stores to provide buckets, grow bags, tarps, shovels, and gloves for waste audits, composting, and workshops.
v. Restaurants to provide meals to food waste reduction competition winners.
vi. Chefs to provide cooking demonstrations to students.

Let's Go Compost

Let's Go Compost offers free composting tools for schools to integrate composting education into the K-12 curriculum. This 501(c)(3) nonprofit organization designed its program to improve environmental literacy, improve understanding of the importance of waste reduction and recycling, and create the next generation of environmentally conscious citizens.[158]

- **Potential Grant Amount:** N/A
- **Application Timeline:** Unclear. Interested teachers and schools should contact Let's Go Compost to determine when applications are due for Fall 2024 support.
- **Website:** https://www.letsgocompost.org/request-school-composting-support[158]
- **Point(s) of Contact:** education@letsgocompost.org

FUNDING MANAGEMENT PROCESS

Funding provided as part of The 2030 Project should be managed by Make Food Not Waste and released as each initiative begins implementation. The Project Manager will be responsible for ensuring that each initiative of the project remains within the established budget and determining whether adjustments or additional funding will be required.

Funding secured by schools should be jointly managed by the Sustainability Council and the district's Chief Financial Officer (CFO) if the CFO is not an appointed council member. This will provide the council with financial expertise to ensure the project requirements align with the existing budget.

The Project Manager and Sustainability Council should also work together to align existing funding streams and determine how available funding should be allocated to implement each project initiative. This partnership will be critical for identifying potential budget risks and developing an appropriate risk mitigation strategy to ensure implementation can continue.

BUDGET

Budget

Table 17

Budget Matrix

CHAPTER 11: VISION, GOVERNANCE & STAFFING

11. VISION, GOVERNANCE & STAFFING

VISION

Make Food Not Waste envisions Michigan as a state whose residents value food and prevent it from ending in landfills. Driven by its mission to keep food out of landfills and slow climate change by creating lasting solutions to food waste through education, food upcycling, and advocacy, the organization focuses on food source reduction and feeding people by developing solutions to stop food waste before it occurs and turning excess food into value-added products for the community. While a majority of their work aligns with their mission's actions, specifically upcycling excess food and raising awareness about how to reduce food waste, the recommendations outlined in this development plan expand upon Make Food Not Waste's mission by integrating food and climate education into the K-12 curriculum, providing greater opportunities to educate a community's youngest residents on the importance of reducing food waste so these practices become apart of their everyday lives.

The successful implementation of this development plan will support Make Food Not Waste's mission of keeping food out of landfills while helping Michigan eliminate one billion pounds of food waste by 2030. Furthermore, successful implementation will contribute to the UN's goal of cutting food waste in half by 2030 while providing education on the importance of reducing food waste to ensure that food-insecure children are prioritized when schools have excess food. Not only will this reduce food and trash costs, but successful implementation will also provide experiential learning opportunities that keep students engaged during school, inspire students to enroll in higher education STEM programs, reduce childhood food insecurity, and help build community.

STAFFING

Once The 2030 Project blueprint is completed, Make Food Not Waste will oversee its implementation in Southfield, begin working with the next two cities to adapt the blueprint to their locations, and continue this process until it is implemented in all 15 Southeast Michigan cities.[1] Therefore, as part of The 2030 Project, Make Food Not Waste will require the following internal project roles to implement the recommendations outlined in this development plan successfully:

- **Danielle Todd:** As founder and executive director, Danielle will support the implementation of the development plan by connecting the project team with city, county, and state representatives and existing project partners. Additionally, Danielle will be responsible for determining what funding from The 2030 Project will be allocated for this implementation. Danielle's support will be available throughout Initiatives 1-7.
- **Project Manager:** The project manager will be responsible for executing Initiative 1 and coordinating efforts with each school throughout Initiatives 2-7. For a list of the project manager's responsibilities, refer to Chapter 8, Initiative 1.
- **Volunteers:** Make Food Not Waste volunteers will support the project manager in executing Initiative 2 in each school and support the project manager and Sustainability Council where needed throughout Initiatives 3-7.
- **Culinary Director:** The culinary director will support the project manager and each school's food service provider in executing Initiatives 5-6 in each school. They will provide expertise on transforming excess or leftover food into new meals. They will also provide support in

developing experiential learning opportunities to teach students how to improve the palatability of their food while reducing waste.

GOVERNANCE

Communication and information sharing between the project manager and volunteers will be as follows:

- Bi-weekly meetings between the project manager and volunteers to provide status updates on each Initiative's deliverables.
- Between bi-weekly meetings, the project manager and volunteers will communicate and provide feedback via email and documents shared through Google Drive.

During the project's initial kickoff meeting, the project manager and volunteers will need to discuss whether to use phone or text communication methods—in addition to the methods outlined above—for quicker communication, as needed.

Throughout the project, if the established communication method is determined to be insufficient or additional interim meetings are needed, the project manager will work with the volunteers to adjust their communication methods and meeting cadence to meet the project's objectives and deliverables.

CHAPTER 12: MILESTONES & TIMELINES

12. MILESTONES & TIMELINES

This development plan is divided into seven Initiatives to give Make Food Not Waste the greatest opportunity for success with implementing a food waste reduction initiative in Michigan schools.

The development plan is designed to begin with Initiatives 1 and 2, allowing Make Food Not Waste to secure school commitment for participation in The 2030 Project and collect baseline data required to measure progress over time. The plan is designed to then begin implementation of Initiatives 3-7, either independently or in parallel, depending on school funding and resource availability.

While Make Food Not Waste plans to begin executing implementation of the The 2030 Project in November 2024, Initiatives 1 and 2 are currently underway in Southfield, and Initiatives 3-7 are designed to begin implementation in late August or early September, at the start of the 2024-2025 school year.

For each city after Southfield, Make Food Not Waste will ideally begin outreach efforts for Initiatives 1 and 2 in the fall before planned implementation. However, school outreach should begin no later than mid-January to provide enough time for data collection and planning of Initiatives 3-7 well ahead of starting a new academic year. Refer to **Figure 22** for a GANTT Chart for the development plan.

NOTE:
Implementation of Initiatives 3-7 should begin at the start of a new academic year not only to establish rules and expectations but also to provide structure, order, and consistency throughout the school year.[82,83] However, if the timing does not align with the implementation of Initiatives 3-7 at the start of a new academic year, implementation should begin at the start of the spring semester.

Milestones

INITIATIVE 1 — SCHOOL COMMITMENT — FALL 2023 TO WINTER 2024

Make Food Not Waste should begin communicating with target city schools as soon as possible to secure commitment from school administrators, food service, teachers, custodial staff, students, and parents. Therefore, Make Food Not Waste should plan to have a project manager onboarded by January of the planned implementation year to kick off communication with schools and key stakeholder identification.

INITIATIVE 2 — DATA COLLECTION

Make Food Not Waste should begin the data collection initiative no later than mid-April of the planned implementation year and complete actions 2.1-2.4 by the end of the academic year. Action 2.4 will be ongoing and begin at the end of the following academic year to provide a progress report for each school within the district.

INITIATIVE 3 — FOOD WASTE DIVERSION

Make Food Not Waste should work with schools to begin implementing the food waste diversion initiative by mid-July of the planned implementation year. Action 3.1 would be completed by the end of September. Action 3.4 will be ongoing but will be completed by the end of each academic year.

INITIATIVE 4 — LUNCHROOM POLICY CHANGES

Schools should begin planning for the lunchroom policy changes outlined in Initiative 4 by the end of May of the planned implementation year and fully implemented by the end of September.

INITIATIVE 5 — FOOD RECOVERY & REDISTRIBUTION

Make Food Not Waste should work with schools and food rescue partners to begin planning food recovery and redistribution strategies by September of the planned implementation year and be fully established by the end of the calendar year.

INITIATIVE 6 — FOOD & CLIMATE EDUCATION

Make Food Not Waste and schools should begin developing food and climate lesson plans and experiential learning opportunities by the end of May of the planned implementation year and have a fully established curriculum incorporating food and climate education by the end of the academic year.

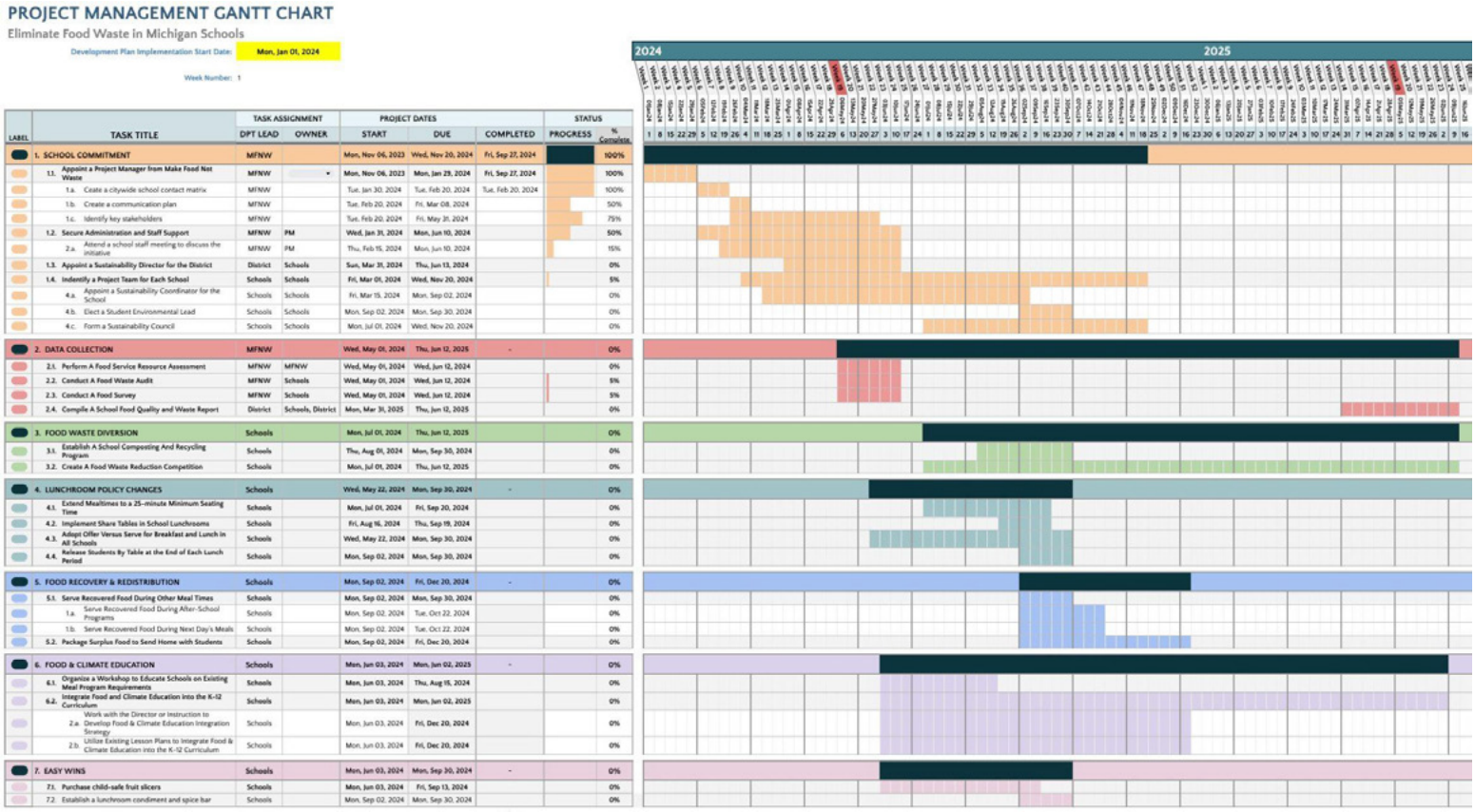
INITIATIVE 7 — EASY WINS

Schools should begin planning to allocate some of their Excess Fund Balances (EFB) to purchase materials needed to implement Initiative 7 by the end of May of the planned implementation year. Schools should also plan to have the required materials acquired and implemented in school lunchrooms by the end of September.

GANTT Chart for Recommended Initiatives

Figure 22

GANTT Chart for the Development Plan's Recommended Initiatives



CHAPTER 13: SUSTAINABILITY GOALS & CONTRIBUTIONS TO THE 2030 AGENDA

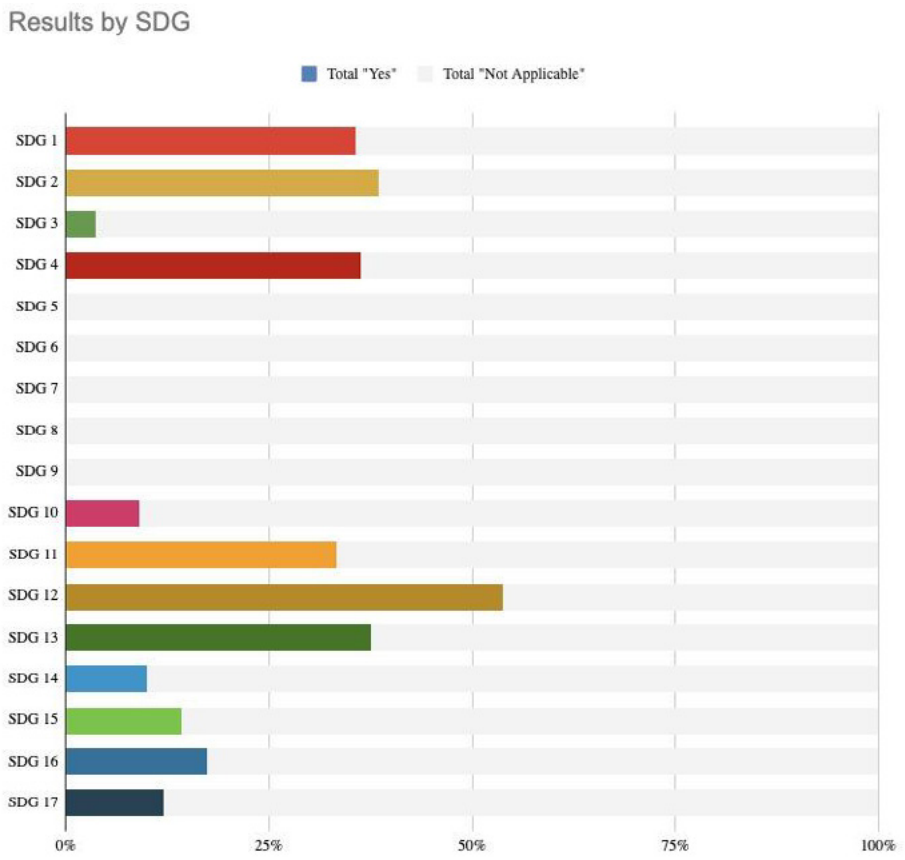
13. SUSTAINABILITY GOALS & CONTRIBUTIONS TO THE 2030 AGENDA

In 2015, the 195 United Nations Member States unanimously endorsed The 2030 Agenda for Sustainable Development.[159] The 2030 Agenda is a comprehensive master plan for fostering global peace and prosperity, benefiting humanity and the environment in the present and future. The 17 Sustainable Development Goals (SDGs) are central to this agenda, each with multiple targets and associated indicators to measure global progress over time.[159] Together, the SDGs serve as a call to action by all countries, emphasizing the need for worldwide collaboration. These goals acknowledge the connection between eradicating poverty and other hardships with strategies to improve health and education, reduce inequality, and fuel economic advancement while addressing climate change.[159] Therefore, the SDGs provide a blueprint representing the United Nations' collective vision for a balanced and sustainable future that benefits humanity and the planet.

Figure 23 shows how this development plan contributes to each SDG and its associated indicators. Each colored "**Yes**" bar represents the SDG indicators this project addresses, while each gray "**Not Applicable**" bar represents the SDG indicators not influenced by the project.

Figure 23

Contributions to the SDGs



Strengths & Direct Contributions to the SDGs

As discussed in Chapter 2, this development plan intended to address three objectives: food waste elimination, food & climate education, and food insecurity reduction. Accordingly, this project directly contributes to the following Sustainable Development Goals (SDGs):

SDG2: Zero Hunger

This project relates to SDG2 because nearly 40% of all edible food available in the United States, equivalent to 108 billion pounds, goes uneaten each year.[160] More than enough food is available to feed every person in America, yet 38 million people battle food insecurity yearly.[31,31] Furthermore, this project relates directly to SDG2 because reducing food waste can help reduce all forms of malnutrition and ensure all people, especially the poor and those in vulnerable situations, have access to nutritious and sufficient food all year.[28]

SDG4: Quality Education

This project relates to SDG4 because students must be well nourished to receive an inclusive and equitable quality education. Experiencing even short-term or intermittent food insecurity can result in poorer test scores, reduced school attendance, behavioral issues, and decreased attention span.[105] Therefore, reducing food waste, integrating food and climate education into the K-12 curriculum, and using food purchased as part of the federal and Michigan School Meals Programs effectively not only ensures that students have sufficient access to nutrient-dense foods to improve their academic outcomes, but also ensures that students are provided real-world examples of how their food consumption habits impact the environment around them.

SDG12: Responsible Consumption and Production

This project relates to SDG12 because the United Nations, as well as the State of Michigan, intends to cut food waste in half by 2030.[161] Therefore, this project directly aligns with the U.N.'s initiative. Furthermore, it supports the global effort of creating sustainable food systems that eliminate food waste at every stage of the supply chain. The project also emphasizes the importance of providing adequate education regarding sustainable development and harmony with nature by integrating food and climate education into the K-12 curriculum to educate not only students but also teachers, administration, parents, and the outstanding community to begin making long-term behavioral changes regarding how society addresses food waste and views sustainable food systems.[161]

Additional Contributions to the SDGs

This project also contributes to the following SDGs, either directly or indirectly:

SDG1: No Poverty

This project relates to SDG1 because the federal school meal programs provide social protection systems for food-insecure children, while the Michigan School Meals Program expands this social protection to not only ensure that food-insecure children do not go hungry but also eliminate the stigma associated with utilizing such programs by providing meal access to all students, regardless of income.

SDG3: Good Health and Well-Being

This project relates to SDG3 because healthcare costs associated with malnutrition and pollution are significant. The Food and Land Use Coalition (FOLU) estimates that wasted food costs almost $12 trillion

annually.[162] Furthermore, excess food waste increases reliance on pesticides and fertilizers, which pollute the soil used to grow food and can negatively affect human and environmental health, increasing the risk of cancer and groundwater contamination.[163]

Food waste diverted from landfills can be composted, promoting soil health, reducing reliance on pesticides and fertilizers, and reducing risks of respiratory illnesses, including asthma and Chronic obstructive pulmonary disease (COPD).[164–167]

SDG10: Reduced Inequalities

This project relates to SDG10 because reducing food waste in schools ensures that food purchased through the federal and Michigan School Meals Programs is used effectively to feed students rather than sent to landfills. By ensuring this food is used effectively, schools can help alleviate food insecurity.

SDG11: Sustainable Cities and Communities

This project relates to SDG11 because reducing food waste in schools can divert 17.7 thousand tons of food from landfills, allowing cities to reduce the burden of food waste on their waste management systems by keeping compostable materials out of solid waste streams.[8]

SDG13: Climate Action

This project relates to SDG13 because irresponsible food consumption and production causes climate change, biodiversity loss, and pollution. Nationally, food waste accounts for 2% of energy, over 25% of fresh water, and 31% of cropland available to produce discarded food.[54] Furthermore, food waste sent to landfills accounts for nearly 20% of US methane emissions, while food packaging accounts for 63% of all solid waste sent to landfills.[32,36] Therefore, this project relates to SDG13 by taking steps to reduce the negative impact of food waste on the planet's natural and finite resources.

SDG14: Life Under Water

This project relates to SDG14 because an estimated 7 billion tons of food waste pollutes the oceans annually. Food waste not only disrupts ocean ecosystems but is also responsible for population surges in some bird species and population reductions in some fish species.[168] Furthermore, food waste that ends up in waterways depletes them of oxygen as it decomposes, creating dead zones where marine life cannot sustain life.[169]

SDG15: Life on Land

This project relates to SDG15 because nearly 30% of global farmland, equaling about 80 million acres, produces food that is never eaten.[168] This land could be better utilized as wildlife habitats, housing, or greenspaces for communities to benefit from, while the food currently wasted could be recovered and redistributed to the nearly 238 million people battling food insecurity each year.[170]

SDG16: Peace, Justice, and Strong Institutions

This project relates to SDG16 because creating robust reporting strategies that provide transparency to school meal spending, food waste, and meal satisfaction can help schools transition to more sustainable food practices while holding them accountable to adopt measures to reduce food waste and become more sustainable over time.

SDG17: Partnerships for the Goals

This project relates to SDG17 because reducing food waste in Michigan schools would allow them to maximize the funding provided through the federal and Michigan School Meals Programs to feed students they enjoy more effectively. Additionally, the Michigan School Meals Program is fully paid for through federal reimbursements and state funding and requires participating schools to fully utilize funding provided through the federal program.[171] By implementing comprehensive food waste reduction initiatives, schools can encourage and promote sustainable food systems and leverage available funding effectively to ensure students obtain quality education while providing transparency regarding how these funds are utilized.

Opportunities for Continued Contribution to the SDGs

Some additional opportunities for Make Food Not Waste to further contribute to the SDGs but are currently out of The 2030 Project's scope are listed below:

SDG11.7.1: "Average share of the built-up area of cities that is open space for public use for all, by sex, age, and persons with disabilities."

Make Food Not Waste can further contribute to SDG11 by working with city officials and their sustainability offices to require all new or redeveloped properties to implement comprehensive compost and recycling systems. They can also collaborate to identify opportunities for community green spaces that can act as compost drop-off sites and community gardens to grow food and provide educational opportunities for the community.

SDG12.6.1: "Number of companies publishing sustainability reports."

Make Food Not Waste can further contribute to SDG12 by working with schools, city officials, and sustainability offices to develop strategies for robust sustainability reporting.

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14. REFERENCES

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APPENDICES

APPENDIX A: INITIATIVE 1 RESOURCES

SCHOOL CONTACT MATRIX

The table provided below (***Figure 24***) is the contact matrix containing school-specific information only. The link provided in this Appendix contains the full contact matrix used throughout the project, which was already been shared with Make Food Not Waste early in the project.

A link to the matrix can be found here: School Contact Matrix Template

Figure 24

School Contact Matrix

#	School	Other Names	Grades	Building Type	Private or Public	Address	School or District	District Name	Building/Division	Role	Name	Office Phone #	Cell Phone #	Email	Clubs	Notes
1	Adler Elementary	Morris Adler Elementary School	K-5	Elementary School	Public	19100 Filmare Street	School	SPS				248-746-8870				
2	AGBU Alex & Marie Manoogian School		Pre-K-12	Pre-12 STEAM School	Public	22001 Northwestern Hwy	School	Independent Charter				248-569-2988		agbu@manoogian.org		
3	Birney K-8 School	Alice M Birney K8 School	K-8	K-8 School	Public	27225 Evergreen Rd	School	SPS				248-746-8800			Student Council	
4	Bradford Academy		Pre-K-12	Pre-12	Public	24218 Garner St	School	Independent Charter				248-351-0000				
5	Bussey Center for Early Childhood Education		Pre-K	Preschool	Public	24501 Fredrick St	School	SPS				243-746-7350				
6	Children's Technological Academy		K-8	Religious School (K-8)	Private	19424 W 10 Mile Rd	School	Private				248-799-0066		VLCCTAoffice@gmail.com		
7	Crescent Academy		K-8	K-8 School (Charter)	Public	17570 W 12 Mile Rd	School	Independent Charter				248-423- 4581				Wellness policy allows for opportunities for students to volunteer in the lunchroom, SMART Goals: 1. The schools shall schedule meal mes so there is minimum disrup on by recess, and other special programs or events. 2. The school shall provide a rac ve, clean environements in which the students eat. 3. Students are permi ed to have water in the classroom. 4. Students are discouraged from sharing their foods or beverages with one another during meal mes, given concerns about allergies and other restric ons on some students' diets. 1. Daily Announcements will include the daily lunch menu. 2. Students may have opportuni es to volunteer in the lunchroom. 3. Students provide feedback annually through a survey. The survey results are used to make changes to the menu and food programs at the District.
8	Crescent Academy Elementary		K-5	Elementary School	Public	25175 Code Rd	School	Independent Charter				248-281-4471				
9	Eagles Nest Montessori Inc		Pre-K	Montessori School	Private	23646 Southfield Rd	School	Montessori				248-569-0726				
10	Faith Christian Academy		K-5	Religious School (K-5)	Private	20000 W Nine Mile	School	Private				248-354-8025		info@fca-mi.com		Air and Waste Management Award Winner Environmental Society of Detroit - Sciencce Award
11	Farber Hebrew Day School		Pre-K-12	Religious School (Pre-12)	Private	21100 W 12 Mile Rd	School	Private				248-386-1625		info@farberhds.org	Model UN	Hot lunch is available three days a week. A dairy lunch is offered two days a week and a meat lunch is offered once. Students are allowed to bring their own kosher dairy or parve lunches. On Tuesdays and Thursdays they have the option of bringing a meat lunch. Separate tables are set up for students eating meat. Cutlery, straws, napkins, cups and bowls available for all students.
12	Hope Academy		K-8	K-8 School (Charter)	Public	26275 Northwestern Hwy	School	Independent Charter				248.301.9909			Bloomberg - Global Scholars	School teaches students how to adop a "global mindset"
13	For Kids' Sake Montessori		Pre-K	Montessori School	Private	25700 W 10 Mile Rd	School	Montessori				248-353-7253		info@forkidssakemontessori.com		
14	Franklin Academy		Pre-K	Preschool	Private	29613 Franklin Rd	School	Private				248-352-6105				Science and STEM education STEM Lab
15	Kennedy Elementary School	Kennedy Learning Center	K-5	Elementary School	Public	16299 Mt Vernon St	School	SPS				248-746-4360				
16	Lasma Academy		K-8	K-8 School (Charter)	Public	24590 Lahser Rd	School	Independent Charter				248-799-8401				
17	Lewy Middle School	Glenn W Lewy Middle School	6-8	Middle School	Public	25300 W 9 Mile Rd	School	SPS				248-746-8740				
18	MacArthur K-8 University Academy		K-8	K-8 School	Public	18901 w 12 Mile Road	School	SPS				248-746-8590			Student Council Junior Zontas	
19	Major Child Care Academy		Day Care	Day Care		17390 Eight Mile Rd #120	School	Day Care				248-327-7045		admin@majorscaacademy.com		
20	McKinley Elementary School		K-5	Elementary School	Public	19600 Saratoga Blvd	School	SPS				248-746-7365			Student Lighthouse Team	
21	Oakland Community College - Southfield		2-Year College	Community College	Community College	22322 Rutland Dr	School	College								Articulation Agreement between SPS and OCC: https://www.oaklandcc.edu/cte-credit/high-school-agreements/southfield-public/southfield-public-school-district Courses on Sustainability & Nutrition Similar agreements in other SE Michigan schools
22	Pace Academy	Dr Joseph F Pollack Academic Center of Excellence	K-8	K-8 School	Public	23777 Southfield Rd	School	Independent Charter				248-569-1060				
23	Southfield Christian School		Pre-K-12	Religious School (Pre-12)	Private	28650 Lahser Rd	School	Private				248.357.3660		info@southfieldchristian.org		Science Fair (MS) & Science Olympiad (HS) Student Council Student Ambassadors
24	Southfield High School for the Arts and Technology		9-12	High School	Public	24675 Lahser Rd	School	SPS				248-746-8600			C2 Pipeline - Partnered with WSU - Meetings Mon-Thurs 3:30-5:30pm	
25	Stevenson Elementary School	Adlai Stevenson Elementary	K-5	Elementary School	Public	27777 Lahser Rd	School	SPS				248-746-6640				
26	Thompson K-8 International Academy		K-8	K-8 School	Public	16300 Lincoln Dr	School	SPS				248-746-7400			Green Team	
27	University Middle / High School Academy		9-12	High School	Public	19301 Twelve Mile Rd	School	SPS				248-746-4370			GreenAssa Club - russell.macag@southfieldk12.org - Thursdays - Seminar 10:50-11:15 - Fi03 & Greenhouse	Lathrup Village
28	Vandenberg Elementary School	World Cultures Academy	K-5	Elementary School	Public	16100 Edwards Ave	School	SPS				248-746-7377			Science Club - Mrs. Miller (scientist in charge) - Afterschool Wednesdays - Outdoor garden	
29	Yeshiva Beth Yehudah School		Pre-K-8	Religious School (Pre-K)	Private	15751 Lincoln Dr	School	Private				248-557-6750		yby@yby.org		Participates in NSLP
30	Yeshivas Darchei Torah School		Pre-K-8	Religious School (Pre-K)	Private	21550 W 12 Mile Rd	School	Private				248-948-1080		info@ydsdetroit.org		

APPENDIX B: INITIATIVE 2 RESOURCES

FOOD SERVICE RESOURCE CHECKLIST RESOURCES

The materials provided in this appendix are meant to help Make Food Not Waste perform a comprehensive food service resource assessment effectively.

The Michigan Department of Education provides schools with materials to determine what their kitchens require to prepare and store food for their students, as well as resources for schools to determine how to utilize their Excess Fund Balances (EFB).

Excess Fund Balance (EFB) Resources

i. All About Excess Fund Balances [172]
ii. School Food Service Account Revenue from the Sale of Non-Program Foods [154]
iii. Nonprofit School Food Service Account Nonprogram Food Revenue Requirements [173]
iv. Completing the Excess Fund Balance Spend Down Plan of Action Form [155]
v. Spend Down Plan of Action Ideas for Excess Fund Balances [174]
vi. Pre-Approved Food Service Equipment List [157]

a. The Food Service Resource Checklist created for this development plan was adapted into a Google Sheet from MDE's Pre-Approved Food Service Equipment List[157] so that Make Food Not Waste can perform resource assessments for each school efficiently and asynchronously. Refer to **Figure 25** for a sample of the Food Service Resource Checklist created for this development plan.

i. *The full checklist can be found here: Food Service Resource Checklist*

Figure 25

Sample Food Service Resource Checklist

	School	District-Wide Information	Adler Elementary	Birney K-8 School	Bussey Center for Early Childhood Education	Kennedy Elementary School
55	**LUNCHROOMS (refer to the link below:)**					
56	Pre-approved Food Service Equipment List from MDE					
57	**Lunch Monitors**					
58	*Staff Member*					
59	*Students*					
60						
61	**Do students have access to condiments, sauces, and spices?**					
62	*Bulk Dispensers*					
63	*Individual Packets/Servings*					
64						
65	**Meal Service**					
66	Recyclable Clamshells (For Salads/Meals)					
67	Disposable Plastic Cups (Fruit, Vegetables, or Condiment Servings)					
68	Paper Boats					
69	Washable Plates					
70	Washable Trays					
71	Washable Silverware					
72	Washable Cups					
73	Milk					
74	Milk Cartons - Individual					
75	Milk Dispenser					
76	Straws?					
77	Disposable Silverware Packets					
78						
79	**Composting & Recycling**					
80	Liquid Separation (Bucket)					
81	Compost Bin					
82	*All Food Scraps*					
83	*Separate Bins for Produce/Grains and Meat*					
84	Recycling (Well Managed, Not Contaminated)					
85						
86	**Carts/Cabinets**					
87	Can Dispenser Rack					
88	Condiment Cart/Bar					
89	Dish Dolly/Caddy					
90	Heated Transport Cart					
91	Holding Cabinet					
92	Insulated Transport Cart					
93	Kiosk					
94	Proofing Cabinet					
95	Refigerated Transport Cart					
96	Sheet Pan Rack/Speed Rack					
97	Storage Rack					
98	Trash Cart					
99	Tray Dispenser					
100	Utility Cart					
101						
102	**Cleaning**					
103	Commerical Sinks/Three Compartment Sinks					
104	Containers to Handle Recyclables					
105	Dish Machine/Dishwasher					
106	Dish Tables					
107	Floor Troughs					
108	Garbage Disposal					
109	Pot and Pan Machine					
110	Specialty Sinks: Hand, Pot & Pan, Prep, Produce, Utility					
111	Sprayer Hose					
112	Water Booster Heater					
113	Water Softener (food service exclusive)					
114						
115	**Computers/Hardware & Software**					
116	Cash Registers/Point-of-Sale (POS) Equipment/Hardware					
117	Computer Hardware					
118	Point of Sale (POS) Software					
119	Software/programs for management (i.e., inventory, nutritional analysis)					
120	Meal counts, eligibility application approval					
121						
122	**Cooking**					
123	Barbeque					
124	Broiler					
125	Char broiler					
126	Cook Chill Kettle					
127	Cook Top/Range					
128	Exhaust Hood/System					

FOOD WASTE AUDIT RESOURCES & GUIDES

The materials provided in this Appendix are to help Make Food Not Waste conduct food waste audits.

Pre-Consumer Food Waste Audit Guides

i. Measuring Tracking and Analyzing Pre-Consumer Food Waste [175]

Food Waste Audit Guides

i. Lunchroom Waste Audit Guide [176]
ii. Guide to Conducting Student Food Waste Audits: A Resource for Schools [177]
iii. Food Waste Audit for Schools - Sustainable New Jersey [178]

Policy, Systems, and Environmental Change Information

i. FY 2024 SNAP-Ed Policy, Systems, and Environmental Change Intiative Data Toolkit [85]

SCHOOL FOOD SURVEY RESOURCES

The materials provided in this Appendix are to help Make Food Not Waste conduct a school food survey.

School Lunch Survey Guides and Example Survey Questions

i. School Lunch Survey Guide and Sample Questions [179]
ii. Student School Food Survey [180]
iii. A Curriculum Guide Companion to the film Nourish: Food + Community [181]
iv. Food Service School Questionaire [182]
v. Lunch Survey Questions for Students [183]
vi. Lunch Survey for Parents [184]
vii. Kids Taste - Food Hero Kids' Tasting Survey Resources [185]

APPENDIX C: INITIATIVE 3 RESOURCES

FOOD WASTE REDUCTION GUIDES & TOOLKITS

Food Waste Reduction Guides and Toolkits

i. School Food Waste Reduction Toolkit [186]
ii. A STEP-BY-STEP GUIDE TO LUNCHROOM COMPOSTING [187]
iii. WASTING LESS FOOD IN K-12 SETTINGS: BEST PRACTICES FOR SUCCESS [188]
iv. US Composting Council: Backyard composting and vermicompsting resources and links - by state [189]

COMPOSTING MATRIX

The matrix provided below is not an exhaustive list of available composting options. However, it provides several options at various price points and labor requirements for schools to get started. The composting and organics recycling partners involved with The 2030 Project helped develop the matrix shown in **Figure 26**, which has been shared with Make Food Not Waste.

The composting and organics recycling partners involved with The 2030 Project also helped create a matrix outlining some benefits and challenges with available composting options, including municipal, on-site compost piles, and on-site digesters, which are shown in **Figure 27**.

A link to the matrix can be found here: Composting Matrix

Figure 26

Composting Options Matrix

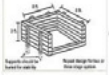
#	Name	Photo	Municipal or Onsite	Weight	Unit Size	Unit Material	Type	How it Works	Capacity	Composting Time	Need to Stir or Turn?		Options	Accepted Material	Not Accepted Material	Tips	
1	Kitchen composter (such as Lomi, Reencle or Harp)		Residential	23kg (50lbs)	12"X28"X18"	Plastic and metal	Kitchen	Add food waste and the machine mixes and breaks the food scraps down in 24 hours.	12kg (27lbs) per week	24 hours	No	Manages food waste as it occurs eliminating smell and rodent issues;	everything is included	BPI certified compostable products. proteins, vegetables and fruits	non compostable plastics and oil	NOTE: Proper communication about these systems is very important. These systems are "compost alternatives" or "producers of feedstock suitable for composting" or "producers of products that are not compost and are suitable for amending soil". They are generally designed either to "collect food scraps" or "reduce food scraps into another form". The product literature for Lomi calls the product "Lomi Earth" and describes it as homemade fertilizer. Reasearch is underway to learn about the produce produced by Reencle system.	
2	Aerobic Digestion (Harp)		Drop off site, hotel, hospital, school casino and downtown district.	1000-2500 lbs	From 75"X49"X 48" to 259" X 193" X 91"	Stainless steel	On site management	Add food waste and the machine mixes and breaks the food scraps down in 24 hours.	from 440 lbs to 5.5 tons per 24 hours	24 hours	No	Allows to manage food waste immediately without developing smell or attracting rodents	Cart dumper, shredder and auto feed	BPI certified compostable products. proteins, vegetables and fruits	non compostable plastics and oil	Unlike traditional composting, there is no need to create a recipe as the food at it's freshest it can be placed inside the machine. Many food scrap collection programs are shut downbecause of odor. There is no odor during processing.	$38,00
3	CD Sustainability		Business Food Waste Collection	Up to 400 lbs when full	64 Gallon	Plastic and metal	Institution and Business	Put front and back of the house scraps into container. Gets picked up weekly for compost.	64 Gallon	NA	No	Pick up frequency and number of carts on site is flexible to best fit collection volume/ customer need	Compostable liners	All food scraps BPI Certified compostables	Non-compostable items (traditional plastic, metal, glass) Un-certified compostable products Bulk grease	Liners keep bins cleaner, reduces smells, prevent freeze-in during winter	Pick up
4	My Green Michigan		On site collection + commercial pick up		44" tall, 22" wide, 26.5" deep	HDPE	Commercial	Curbside food waste collection bin	64 gallons 224 lbs	NA	No	Pick up frequency and number of carts on site is flexible to best fit collection volume/ customer need	Compostable liners	All food scraps BPI Certified compostables	Non-compostable items (traditional plastic, metal, glass) Un-certified compostable products Bulk grease	Liners keep bins cleaner, reduces smells, prevent freeze-in during winter	Pick up
5	3-bin system + feedstock storage (food scraps, browns) + Kitchen collection carts/buckets		On-site		1 typical sized wooden bin = 4x4x4 (cube) [can be larger] wire bins vary in size	COMPOST SYSTEM Wood, 1/4" Hardware cloth, Corrugated metal for lids, locking system; hardware; [Note: modified Compost Knox system design] AERATED SYSTEM COMPONENTS (recommended to reduce labor requirements) FOUNDATION Concrete slab or pavers - place composting system on; also used for mixing materials FEEDSTOCK COLLECTION AND STORAGE SYSTEMS Food scraps: Jori tumbler; Compost for food scrap storage Yard Waste (leaves, wood chips, saw dust, grass clippings): 2-3 bin wire system FINISHED COMPOST STORAGE Open pile; Bin or Bay	Community-Scale	Collect yard waste in wire bin system Collect kitchen food scraps in bins or buckets Transport food scraps to compost system site Transfer food scraps to tumbler & mix with browns Build compost pile using best practices recipe (food scraps, yard waste, water) Put materials in 3 bin system (1st bin); monitor temperatures and moisture to ensure reduction/elimination of pathogens and weed seeds Manage through remaining 2 bins to the curing phase	Depends on size	~3 months	Yes	Requires management of incoming materials, composting, storage and distribution of finished compost	size can be changed based on need	Vegetative food waste; Yard Waste	Meats, bones, FOG (fats, oils, grease), dairy	PARTICIPATORY IMPLEMENTTION Identify an experienced composter or someone willing to learn how to compost; Someone with capacity to serve as the "composter and compost system manager"; Best Practice: Partner with an experienced composter during learning curve Composter training: on-line with facilitated discussions (4-6 hours), .5 day hands-on Offer training to teachers, volunteers and students engaged in composting: on-line training w/facilitated discussions (4-6 hours); on-line training self-paced (4 hours), hands-on training (.5 day) Train kitchen staff how to "collect clean" food scraps (no labels, twist ties, plastic, inorganic materials, etc.)(only acceptable materials); introduce them to the composter to build relationship Train general services staff how to "collect appropriate" yard waste; introduce them to the composter to build relationship Identify uses of compost and engage users about how they will use compost in advance of starting the program; encourage them to take the on-line training to build awareness and appreciation for the process; introduce them to the composter to build relationship	betwe varie materi
6	Sepura		On-site		15.25"-20.25" X 11" X 12.5"	Plastic and metal	Kitchen	https://sepurahome.com/products/sepura	2.6 gallons	2-4 weeks	No	Unit collects food scraps through kitchen sink disposal system; Recommends emptying sealed food scrap bin every 2-4 weeks	NA	All food scraps BPI Certified compostables	Non-compostable items (traditional plastic, metal, glass) Un-certified compostable products Bulk grease	NOTE: Proper communications about this system is very important. This system is a "compost alternative that produces feedstock suitable for composting". The system is designed "collect food scraps" through the garbage disposal system. The product literature illustrates how the disposal system "collects food scraps" and makes recommendations to divert food scraps to curbside bin or composting of food scraps. The system itself does not produce compost.	

Figure 27

Composting Benefits and Challenges Matrix

	Municipal		Onsite (Compost Pile)		Onsite (Digester)	
#	Benefits	Challenges	Benefits	Challenges	Benefits	Challenges
1	Less labor intensive (No regular compost pile maintenance)	More expensive	Cheaper (lower waste hauler costs)	Labor intensive (daily maintenance)	Lower waste hauler costs	Less labor intensive (No regular compost pile maintenance)
2	No risk of ratios being off balance	No circular economy integrated into the composting process for the schools	Experiential learning opportunities for students (integration into K-12 curriculum and enrichment activities, like gardening or green clubs; compost crews)	Greater risk of ratios being off balance	Experiential learning opportunities for students (integration into K-12 curriculum and enrichment activities, like gardening or green clubs)	Higher upfront and maintenance costs (initial purchase & electricity)
3	Doesn't require a dedicated space to compost	No onsite use for compost created from onsite food scraps	Can use compost for onsite landscaping	Requires adequate volume of carbon ("brown") materials to maintain correct balance	Can use compost for onsite landscaping	Requires a dedicated space to establish and maintain compost (Need enough space to install)
4	Builds community connections	No experiential learning opportunities available to students (in K-12 curriculum or in enrichment activities)	Can sell compost created onsite for fundraisers to the community	Requires a dedicated space to establish and maintain compost (Need enough space to install)	Can sell compost created onsite for fundraisers to the community	Requires staff and student support and buy-in
5	Less onsite logistics to figure out	No fundraising opportunities	Schools keep the finished composted product	Requires staff and student support and buy-in	Schools keep the finished composted product	Power supply is 240V 3-phase at remote sites that can be a challenge, usually a street light has this power.
6	Quicker to start	Must coordinate with waste hauler to pick up compost	School doesn't need to coordinate days and times for someone to pick up compost	Requires initial startup costs build and setup compost site	School doesn't need to coordinate days and times for someone to pick up compost	The soil amendment needs to cure for 6 days after it exits the machine prior to use. Once the 6 days have passed the amendment can be used exactly like compost.
7		Schools do not keep final composted product	Students have an active role in the process		Students have an active role in the process	
8		Storage containers must be kept outside until pickup			Eliminates the carbon impact of transportation, food, miles add CO_2, methane and cost.	
9					Eliminates on site bad smells, the only smell would be the containers if they ae not washed or the site does not use compostable bags.	
10					Eliminates the recipe required of composting by focusing on browns and greens instead the site is balancing moisture (for example if it is too wet from watermelon day just add brown paper towels from the bathroom)	
11					The above makes the process a lot less labor intensive than piling and turning.	
12					Fully automated literally open the lid throw it in and restart the machine.	
13					Machine can be outside	
14					Remote access through an application allowing the user to know the weight, temperature and any other aspect of the process without being on site.	
15					Complete and total pathogen elimination, food waste carries a lot of harmful pathogens especially if it has been sitting for a week!	

APPENDIX D: INITIATIVE 4 RESOURCES

SHARE TABLES RESOURCES

There are many resources available to help schools integrate food and climate education into the K-12 curriculum. Therefore, the materials provided in this Appendix are to help Make Food Not Waste work with schools and Directors of Instruction to utilize existing and develop new lesson plans and experiential learning opportunities for students that can be integrated into the K-12 curriculum.

Share Tables

i. HELPING SCHOOLS SAVE FOOD: Food Share Table [190]
ii. Share tables at schools [191]
iii. Use of Share Tables in Child Nutrition Programs [192]
iv. CalFresh Healthy Living Share Table Implementation Guide [193]

USDA-Approved Recipes

i. Recipes - FoodHero - Oregon State University [194]
ii. Information for Schools - Food Hero [195]
iii. Recipes by Ingredient - Food Hero [196]

APPENDIX E: INITIATIVE 5 RESOURCES

FOOD RECOVERY & REDISTRIBUTION RESOURCES

The materials provided in this Appendix are to provide Make Food Not Waste with resources to assist schools with establishing a food recovery & redistribution system to provide surplus food to students and their communities.

Blessings in a Backpack

i. Blessings in a Backpack Michigan - Benefits [197]
ii. Southfield - Blessings in a Backpack [198]
iii. Blessings in a Backpack - Program Specifics [106]
iv. Blessings in a Backpack - National Food Solutions [199]

One More Meal

i. One More Meal Explained [108]

Green2Go

i. Green2Go Website [109]
ii. Green2Go Information Guide [110]
iii. Green2Go Grant Application [200]

APPENDIX F: INITIATIVE 6 RESOURCES

FOOD & CLIMATE EDUCATION RESOURCES

There are many resources available to help schools eliminate their food waste and connect the lunchroom to the classroom through integration of food and climate education into the K-12 curriculum, while ensuring school meals adhere to child nutrition standards. Therefore, the materials provided in this Appendix are to eliminate existing knowledge gaps that prevent schools from adopting strategies currently supported by the federal and Michgian School Meals programs, and provide existing lessons, experiential learning opportunities, and field trip ideas to connect strategies adopted by school lunchrooms back to the classroom.

This Appendix contains online training courses for school administrators and food service staff, various educational resources for classroom tie-ins, and resources to ensure schools can adopt the lunchroom strategies outlined in Initiative 5 successfully.

Online Training Courses

General

iv. Online Training Modules [201]

v. The Michigan School Meals Program - Overview [202]

vi. Michigan School Meals Training Materials for Schools [203]

vii. Offer Versus Serve Training Course [204]

viii. FAST: Excess Fund Balances (EFB) [205]

Breakfast in the Classroom

ix. Breakfast in the Classroom [206]

x. Project breakFAST toolkit [207]

Lessons, Experiential Learning Opportunities, Field Trip Ideas

i. Food Systems and Food Waste Reduction: Green Team and Classroom learning and activities [208]

ii. Field Trips and Presentations | The Green Team [112]

iii. Educational Resources for Schools - Classroom and Lunchroom - Food Hero [195]

iv. Food Waste Warrior Toolkits by Grade Level - WWF [209]

APPENDIX G: MISCELLANEOUS RESOURCES

RISK MATRIX

The table presented in this Appendix (**Figure 28**) lists the potential risks and their mitigations, likelihood, and impact on implementing the development plan successfully.

A link to the risk matrix can be found here: Risk Matrix

Figure 28

Risk Matrix

	Label	Initiative	Title	Description	Mitigation(s)	Likelihood	Impact
2		1	Resource limitations	Limited resources (financial, human, time, etc.) prevents PM from securing support from schools.	Raise awareness for MFNW's mission and goal, post volunteer and job opportunities to job boards, and share help needed post on LinkedIn.	Low	Medium
3		1	No administration support	Administrators do not support the project.	Attend school board meetings. Provide savings estimates if food waste is eliminated by the schools within each district. Meet with county officials to secure support for the project.	Medium	High
4		1	Limited staff participation	Staff resist project due to concerns over perceived workload.	Provide staff with potential resource savings by implementing the project. Less trash (lower weight, less bags), less meal preparation	Medium	Medium
5		1	Limited student participation	Students resist the project due to not understanding how it relates to them and their futures.	Organize and hold a trash reduction competition. Sports teams, clubs, etc. manage lunchroom waste sorting. Team with the least amount of compostable/recyclable material in the trash at the end of the semester wins a prize (i.e., pizza party, early school release). Utilize lesson plans to teach students about food waste and climate change (Initiative 6).	High	High
6		1	Lack of coordination	Project manager faces challenges coordinating initiatives across multiple schools and departments.	Clearly define the PM's responsibilities and authority.	High	Medium
7		1	Stakeholder resistance	School staff and students do not support the project.	Involve stakeholders early in the project to answer questions and secure buy-in.	Medium	Medium
8		1	Ineffective communication	Communication plan does not meet MFNW or school expectations, nor align with the project timelines.	Tailor communication plan to each audience (staff, students, parents).	Medium	High
9		1	Stakeholder engagement	Difficulty engaging stakeholders throughout project.	Establish a clear plan for how PM will engage with stakeholders throughout the project.	Medium	High
10		1	Ineffective operations	Sustainability council unable to effectively implement project due to poor organization or lack of clear goals.	Define sustainability council's structure, objectives, and methods of operation. Charter, role elections, role expectations, meeting schedule	Medium	Medium
11		1	Limited representation	Selected participants do not attend meetings nor have sufficient representation for ongoing initiatives.	Ensure sustainability council includes members from different school positions and grades to ensure comprehensive representation throughout each school.	Low	Medium
12		2	Inaccurate or incomplete data	Poor record-keeping during assessments and audits.	Provide resources and training to staff and students involved in the assessments and audits to ensure comprehensive data collection. Interview questions, waste tracking sheets, scales, etc.	Medium	Medium
13		2	Resistance to change	Students and staff are resistant to altering existing waste operations.	Engage all stakeholders throughout the process to understand concerns, answer questions, and gain support (refer to Initiative 1).	Medium	High
14		2	Resource limitations	Insufficient resources (financial, human, or physical) prevent completion of assessments and audits.	Utilize existing materials to conduct assessments and audits. Request volunteers to help organize and conduct assessments and audits. Apply for grants available through the World Wildlife Fund and SFE to conduct audits.	Low	Low
15		2	Non-compliance	Students and staff do not cooperate with the food waste audit requirements.	Involve students and staff in the food waste audit planning process to encourage support and buy-in (refer to Initiative 1 - Sustainability Council).	Medium	High
16		2	Data management	Insufficient resources to collect, store, and analyze data collected from the food waste audit.	Utilize efficient data collection tools and methods to manage and analyze food waste audit data effectively.	Medium	Medium
17		2	Low response rate	Students and staff do not complete the survey.	Make the survey engaging and easy to complete.	Medium	Medium
18		2	Biased responses	Responses do not accurately reflect the true preferences or habits of the survey participants.	Work with students and staff to develop a list of questions to ensure views of each party are reflected accurately. Make they survey anonymous to encourage participation and honesty.	Medium	Medium
19		2	Overwhelming information	Food waste report is too dense or technical for schools to understand or utilize.	Work with technical report writers and MFNW marketing experts to structure the report in an easy to understand report with key findings highlighted.	Medium	Medium
20		2	Lack of actionable insights	Food waste report does not translate findings into clear, actionable recommendations.	Utilize the key findings to provide clear, practical recommendations that facilitate action.	Medium	Medium

1	Label	Initiative	Title	Description	Mitigation(s)	Likelihood	Impact
21		3	Insufficient buy-in	Insufficient support/participation from students, staff, and/or parents for implementing and maintaining a school composting program.	Conduct workshops to educate the school community about the benefits of composting. Attend staff meetings to educate school officials about the benefits of composting. Present the project during morning announcements for each school.	Medium	High
22		3	Operational challenges	Insufficient capacity or resources to properly manage compost requirements, leading to odor, pests, or health hazards.	Work with composting experts to determine the best composting strategy for each school. Have composting partners put together matrix of available composting systems and provide estimates for municipal composting.	Medium	Medium
23		3	Cost	Insufficient funding to implement and maintain a composting program.	Secure funding and/or grants to implement and maintain school composting programs. Apply for grants through Southeast Food Excellence (SFE).	Low	Low
24		3	Non-compliance	Students and staff do not follow plate waste disposal requirements.	Make the existing waste disposal process as inconvenient as possible. Make compost bin the largest and general trash the smallest bin in the system. Remove excess trash bins from the lunchroom. Implement clear labeling for all bins within the composting program. Conduct educational campaigns to educate students and staff on proper disposal methods. Implement lunchroom walkthrough process, where lunch monitors/custodial staff/volunteers walk bins around lunchroom to collect plate waste to ensure it is disposed of properly.	Medium	High
25		3	Misuse	Students and staff use incorrect bins to dispose of plate waste.	Audit bins used for composting program to ensure compliance and adjust system accordingly.	Medium	High
26		3	Workload	Composting program creates additional work for custodial staff.	Conduct training sessions with custodial staff and provide necessary resources to manage the composting program effectively.	Medium	Medium
27		3	Ineffective incentives	Students not interested in participation incentives.	Offer incentives that students are interested in. Pizza, coffee, early release from school	Medium	Medium
28		3	Short-term focus	Competition does not encourage long-term behavioral change.	Design the trash reduction competition to promote ongoing awareness and long-term integration into K-12 curriculum and daily habits.	Low	Medium
29		3	Data integrity	Insufficient resources or capacity to ensure fair and accurate waste measurements from student teams.	Use clear, fair, and easy-to-understand metrics for administrators, teachers, and staff to measure waste reduction for each student team.	Medium	Medium
30		4	Scheduling conflicts	Longer lunch periods interfere with instructional time or other school activities.	Revise school schedule to balance longer lunch periods with school start/end time and instructional time.	Medium	Medium
31		4	Supervision challenges	Longer lunch periods require additional staff or volunteers for supervision.	Allocate staff responsibilities to manage extended lunch periods without overburdening them. Create a rotating lunchroom supervision schedule for teachers and staff.	Medium	High
32		4	Health and safety concerns	Shared food increases food safety and allergy risks.	Establish and enforce strict health and safety protocols for share tables. Cold storage, no packaged-at-home foods Implement signage to easily understand what can be returned to share tables. Provide training to students and staff regarding what can be collected and distributed through share tables.	Medium	Medium
33		4	Waste mismanagement	Share tables become another source of food waste.	Assign students, staff, or volunteers to oversee share tables to ensure only accepted items are collected.	Medium	High
34		4	System misunderstanding	Students and staff do not understand how Offer vs. Serve works, causing confusion and creating more waste.	Provide education and training to students and staff regarding how share tables and Offer vs. Serve works.	Medium	High
35		4	Imbalanced nutrition	Students return items they must take to comply with school meal programs, resulting in unbalanced diets.	Prepare a variety of healthy options for each meal that are appealing to students.	Medium	High
36		4	Inefficiency and delays	Releasing by table delays lunchroom clearing, preventing students and staff from returning to classrooms on time.	Develop procedures for how to release students by table during mealtimes that ensure adequate time to get from the lunchroom to each classroom.	Medium	Low
37		4	Fairness issues	Students find releasing by table unfair.	Develop a rotating schedule for how the lunchroom will be released by table, ensuring that no one table is always first/last to be released.	Low	Low
38		5	Food safety	Recovered food increases food safety and allergy risks.	Establish food safety protocols that require all excess food to be stored and reheated according to food safety guidelines.	Medium	Medium
39		5	Stigma	Students feel stigmatized for eating "leftover" food.	Utilize positive messaging to promote consumption of leftover food before preparing new food, emphasizing the importance of food waste reduction and community sharing.	Medium	Medium
40		5	Perceived quality	Students, staff, and parents perceive leftover food as lower quality.	Ensure leftover meals are prepared and presented with the highest quality possible. Organize cooking demonstrations that educate students, staff, and parents on how to creatively utilize leftovers.	Medium	Medium

	Label	Initiative	Title	Description	Mitigation(s)	Likelihood	Impact
40		5	**Perceived quality**	Students, staff, and parents perceive leftover food as lower quality.	Ensure leftover meals are prepared and presented with the highest quality possible. Organize cooking demonstrations that educate students, staff, and parents on how to creatively utilize leftovers.	Medium	Medium
41		5	**Menu variety**	Repeated meals decrease interest in school meals.	Provide opportunities to increase visibility for how to use leftovers creatively to prepare new meals.	Medium	Medium
42		5	**Logistical challenges**	Packaging and distributing leftover food to students is complex, requiring multiple 3rd parties.	Develop a streamlined system for packaging and discreetly distributing excess food (backpack programs).	Medium	High
43		5	**Legal challenges**	Packaging and distributing food directly to students is not protected by food donation laws.	Work with Michigan DoE, EGLE, and USDA to identify strategies to effectively and safely distribute food directly to students without unnecessary 3rd party involvement.	Low	Medium
44		5	**Privacy concerns**	Identifying and targeting in-need students raises privacy and stigmatization concerns.	Work with counselors and social workers and utilize school meals program paperwork to discreetly identify food insecure students.	Low	Low
45		5	**Maintenance and stocking**	Keeping little pantries well maintained and stocked causes resources constraints.	Assign students, staff, and volunteers to regularly check and maintain little pantries. Encourage the use of little pantries as volunteer opportunities for students.	Medium	High
46		5	**Community participation**	Community involvement and utilization of little pantries is insufficient to maintain them.	Promote little pantries through community events and collaborations to encourage their use and support. MFNW's Annual Community Feast Flyers (around the community and sent home with students)	Medium	Medium
47		6	**Teachers overburdened**	Extra work is required for teachers to create lesson plans for food & climate education.	education into the K-12 curriculum. Utilize existing lesson plans from Massachusetts' Green Team.	Medium	Medium
48		6	**Resource constraints**	Teachers do not have enough time or resources to teach students about food waste and climate change effectively.	Utilize existing lesson plans from the World Wildlife Fund. Utilize STEM Teaching Tools' lesson plans created by the Institute of Science		
49		6	**Data complexity**	Data collected during audits is too complex to integrate into lesson plans.	Utilize existing lesson plans created to supplement food waste audits and integrate findings into the classroom.	Medium	Medium
50		6	**Student engagement**	Students don't engage with material.	Utilize experiential learning opportunities to create lessons that are interactive, engaging, and relatable.	Medium	High
51		6	**Curriculum integration**	Teachers cannot find opportunities to integrate food waste and climate change lessons into curriculum.	Align lesson plans with existing subjects and test standards to ensure seamless integration and alignment with existing standards.	High	High
52		7	**Safety concerns**	Increased risk of injury if students utilize sharp tools without supervision.	Establish a safety protocol for students to utilize fruit slicers. Utilize under the supervision of staff (particularly younger students) Implement safety mechanisms to ensure safety during use	Medium	High
53		7	**Hygiene and sanitation**	Multiple people utilizing tools without an established cleaning schedule increases contamination risks and spread of diseases/illnesses.	Implement a strict cleaning and maintenance protocol to reduce contamination risks.	Medium	High
54		7	**Equipment misuse or damage**	Frequent equipment utilization increases risks of misuse or damage, requiring higher maintenance costs.	Provide training and clear instructions for how to use fruit slicers correctly and safely.	Medium	Medium
55		7	**Condiment overuse or waste**	Students use more condiments than needed, creating excess waste.	Use dispensers that limit the amount dispensed at a time to reduce waste.	Low	Medium
56		7	**Cross-contamination**	Open containers increase contamination risks.	Label all condiments and spices clearly, to avoid cross-contamination. Do not include options with known allergies to avoid potential exposure. Use dispensers instead of jars or vessels requiring spoons for proper serving.	Medium	Medium
57		7	**Mess and maintenance**	Frequent utilization creates a mess and shortages, requiring additional resources to maintain and keep options full.	Assign students, staff, and volunteers to maintain, clean, and restock the condiment & spice bar regularly.	Medium	Low

RESOURCE LIST

The resources needed to implement the recommendations outlined in this development plan include:

i. Time
ii. Space
iii. Lesson plans
iv. Fruit slicers
v. Materials to implement a comprehensive compost and recycling program
    a. Tables
    b. Bins
    c. Buckets
    d. Colander
    e. Lids
    f. Bags
    g. Gloves
    h. Aprons
    i. Signage
vi. Materials to implement an onsite food donation program
    a. Wood
    b. Plexiglass
    c. Screws
vii. Materials to implement a condiment and spice bar
    a. Table or cart
    b. Bulk dispensers
    c. Cups
    d. Spices
    e. Condiments
viii. Materials to implement onsite composting (*if applicable*)
    a. Composter
    b. Materials to build a compost pile
        i. Wood
        ii. Screws
        iii. Chicken wire
        iv. Shovels
        v. Gloves

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Contamination Prevention Plan

Contamination is a major issue of food scrap collection and processing into compost, as even just a little bit of noncompostable material can make the entire load not able to be composted properly and rejected by the hauler or processor. Identifying ways to prevent contamination from all sources, whether from homes, restaurants, offices, or parks, is a key piece in being able to divert food scraps. The Center for Creative Studies was tasked with designing a solution to prevent food scrap contamination. The following pages detail their solution which was designed with a cafeteria or place where people bus their own tables, but could be scaled for other places as well.

Compost Connection

A Journey from Scraps to Soil

College for Creative Studies

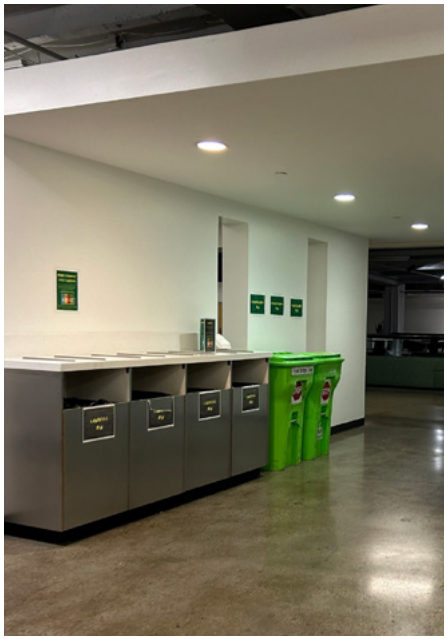
Color and Material Design

Abhiseck Sen
Chanmi Lee
Kaiwan Davar
Laura Lin
Nishi Bajaj

MAKE FOOD NOT WASTE

Have you ever had the problem of... having no idea where to put the trash?

Problems in the campus and cafeterias



Food waste problem Going Beyond Campus...

BenchMarking

Insight Mapping

Make Food Not Waste

Our Community Partner

Make Food Not Waste is a nonprofit organization dedicated to preventing food waste. They aim to keep food out of landfills and combat climate change through education, upcycling edible food that would otherwise be discarded, and advocacy.

Their initiatives include running an **Upcycling Kitchen**, which transforms nutritious but would-be-wasted food into meals, and **various community engagement** efforts to promote food waste awareness and reduction.

Make Food Not Waste

Our Community Partner

The 2030 Project, initiated by Make Food Not Waste, aims to halve Michigan's food waste by 2030, focusing on Southeast Michigan's 15 most populated cities. This effort aligns with federal and UN goals, targeting a reduction of 1 billion pounds of food waste annually.

Throughout the interview...

01 Integration of Predictive Ordering Systems

02 Strengthening Food Donation Processes

03 Addressing Contamination and ‘Wish Cycling

04 Collaboration on Digital Tools

05 Packaging Solutions

06 Effective Recycling and Composting Programs

Opportunity statements from interview

Lack of knowledge

- Lack of awareness
- Low motivation

Lack of trust in the system

- Disruption in the process
- Lack of appropriate behaviour
- Lack of updation in system
- Need for behavioral change

Convenience of operation

- Triggers to activate the interest in appropriate disposal
- Availing habit change
- Curious and conscious

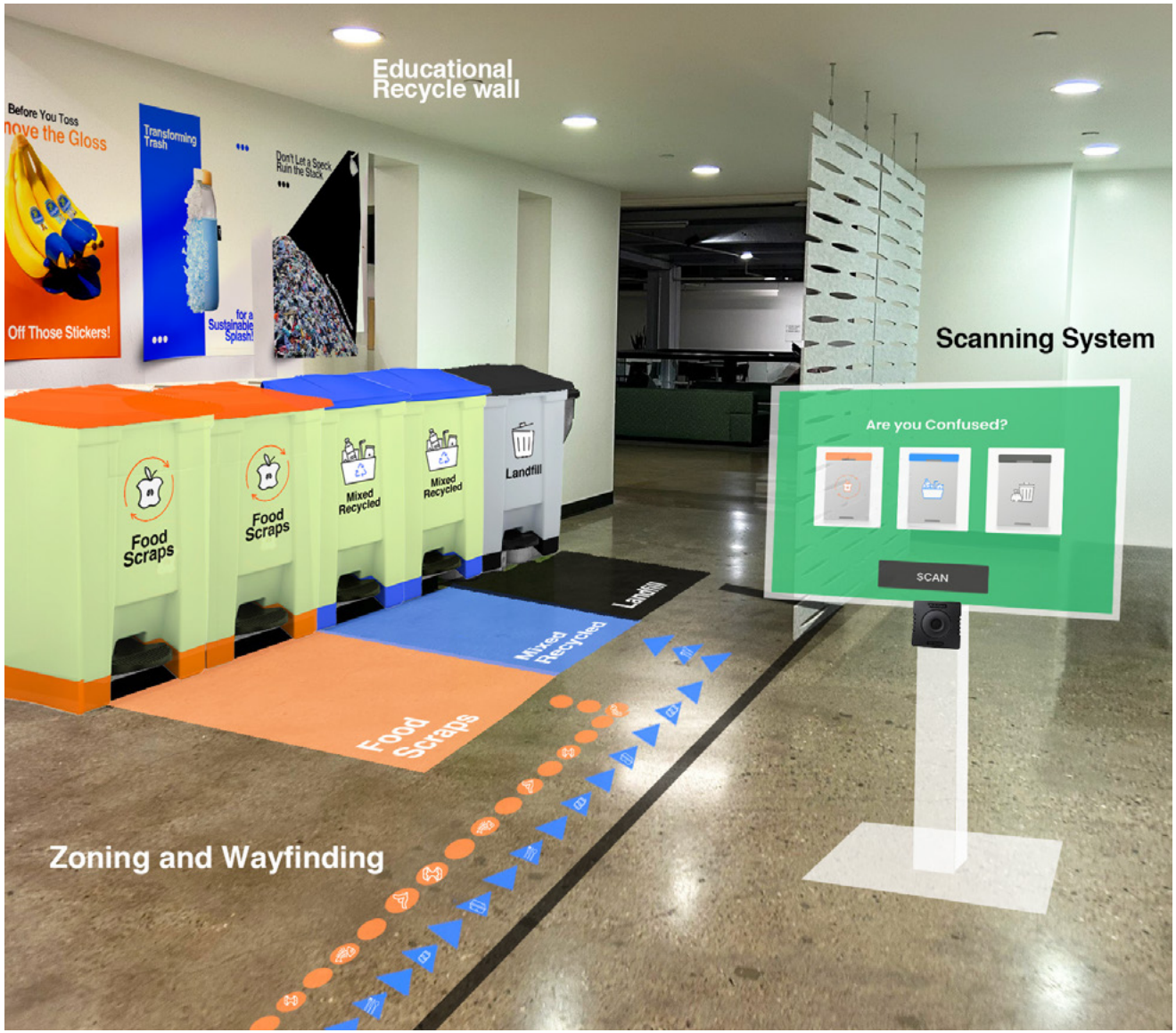
Lack of guided assistance

- Low tech support
- Lack of labels
- Lack of way findings

Compost Connection

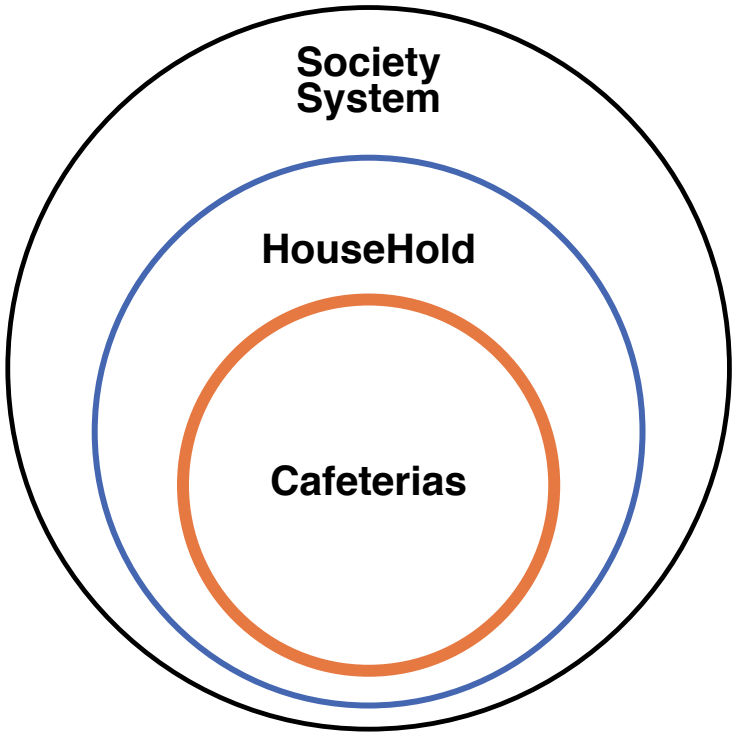
Solution Overview

- Color Coding
- Logo and Labeling
- Zoning and Wayfinding
- Scanning System
- Educational Recycle Wall



Solution Impact

Future perspective



5-10 Years

- Reutilizing the waste and channeling the waste
- Curating ways through integration of tech and Image detection
- Improvements in the garbage collection and it's management

3-5 Years

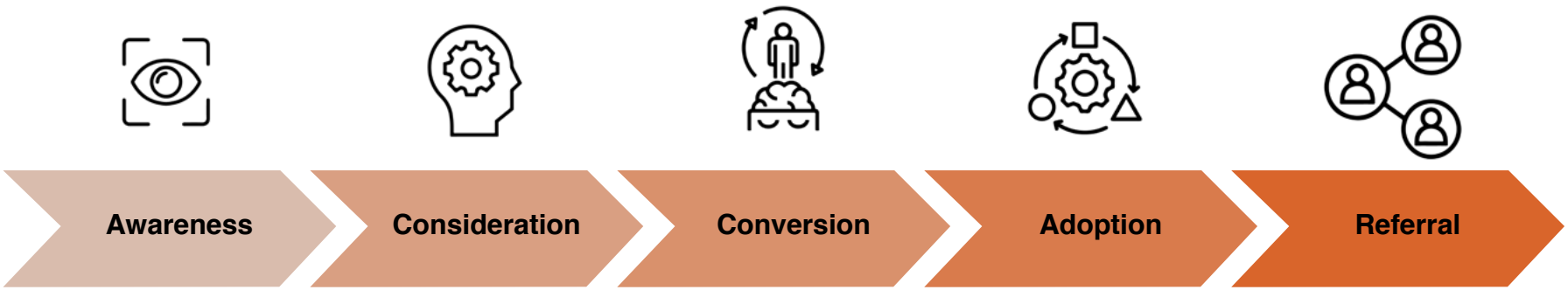
- Spreading awareness to help understand the ways of segregating waste
- How do we segregate
- Promoting tools for home composting and resource utilisation

1 Year

- Helping make students aware
- Zoning would everyone more conscious and aware
- Improved colour system will prompt users to become more conscious and make right decisions at different intervals

User Journey

Throughout the design solution



- Learning about the environmental impacts of food waste and discover the cafeteria's new zoning proposal for waste segregation and composting.

(Through posters and quick info sessions in the cafeteria.)

- Starting to see the cafeteria zones with color-coded bins and informational guides as a practical solution.

During lunchtime, there are opportunities for colleagues to discuss related topics. This can help them understand how important and impactful participating can be.

- Beginning using the designated zones for their waste, following the color codes and guidelines for segregation.

(Motivated by the simplicity and effectiveness of the system, students)

- Becoming proficient in segregating their waste as per the system, contributing to a significant reduction in food waste and contamination.

- Sharing their experiences and the visible benefits of the zoning system, advocating for its adoption beyond the cafeteria.

CCS Cafeteria Floorplan

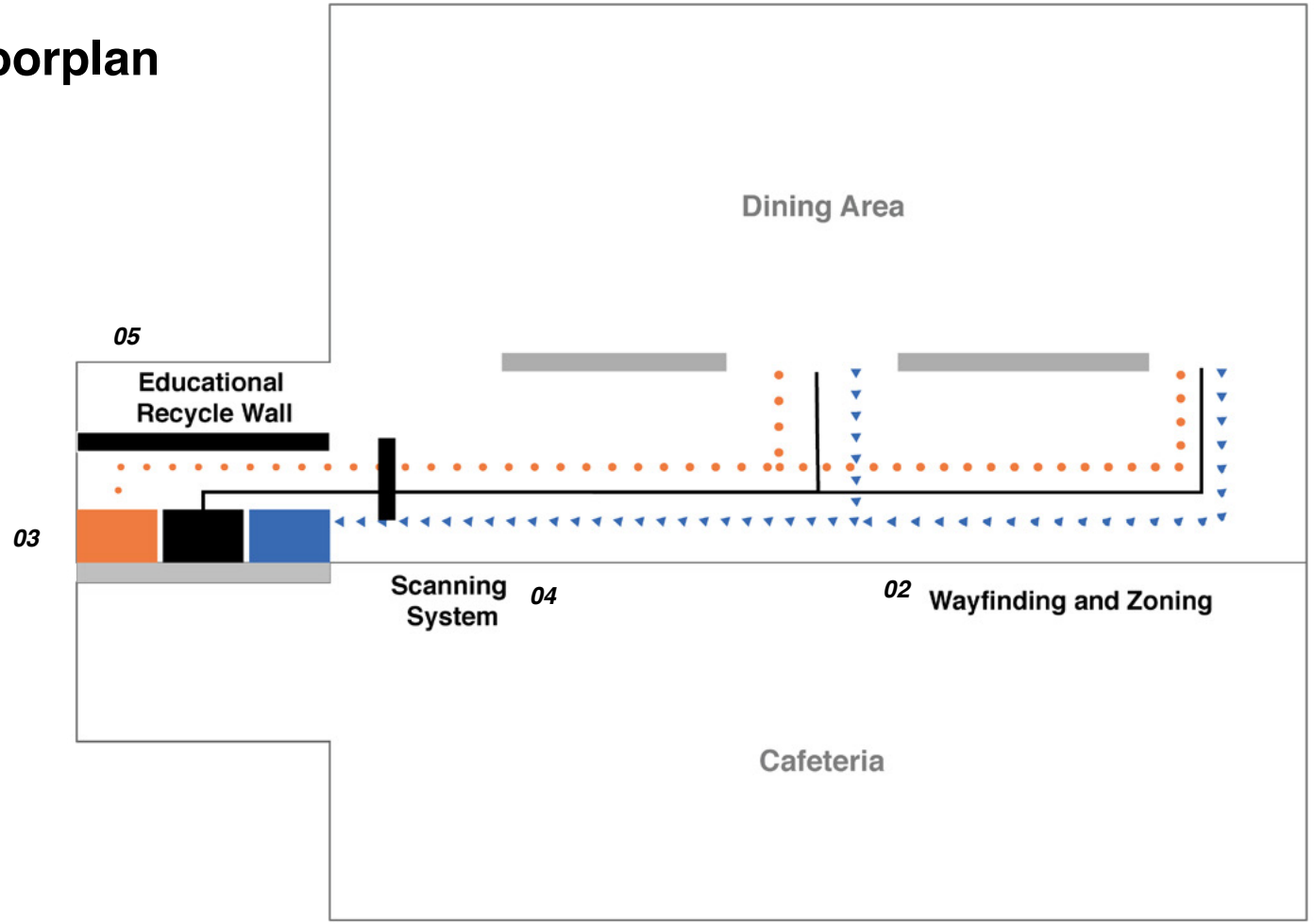
01 *Color Coding*

02 *Zoning and Wayfinding*

03 *Logo and Labeling*

04 *Scanning System*

05 *Educational Recycle Wall*

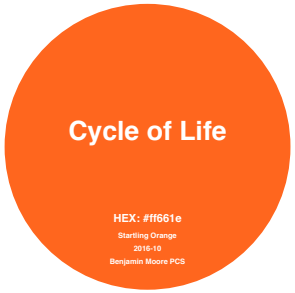


Color Coding

Solution Details

Lid of Bin

Food Scraps



Returning to the soil from which it came to enrich the Earth

Mixed Recycled

Achieving through recycling effort with a sense of responsibility

Landfill

Representing negative environmental impact

Body of Bin

Food Scraps
Mixed Recycled

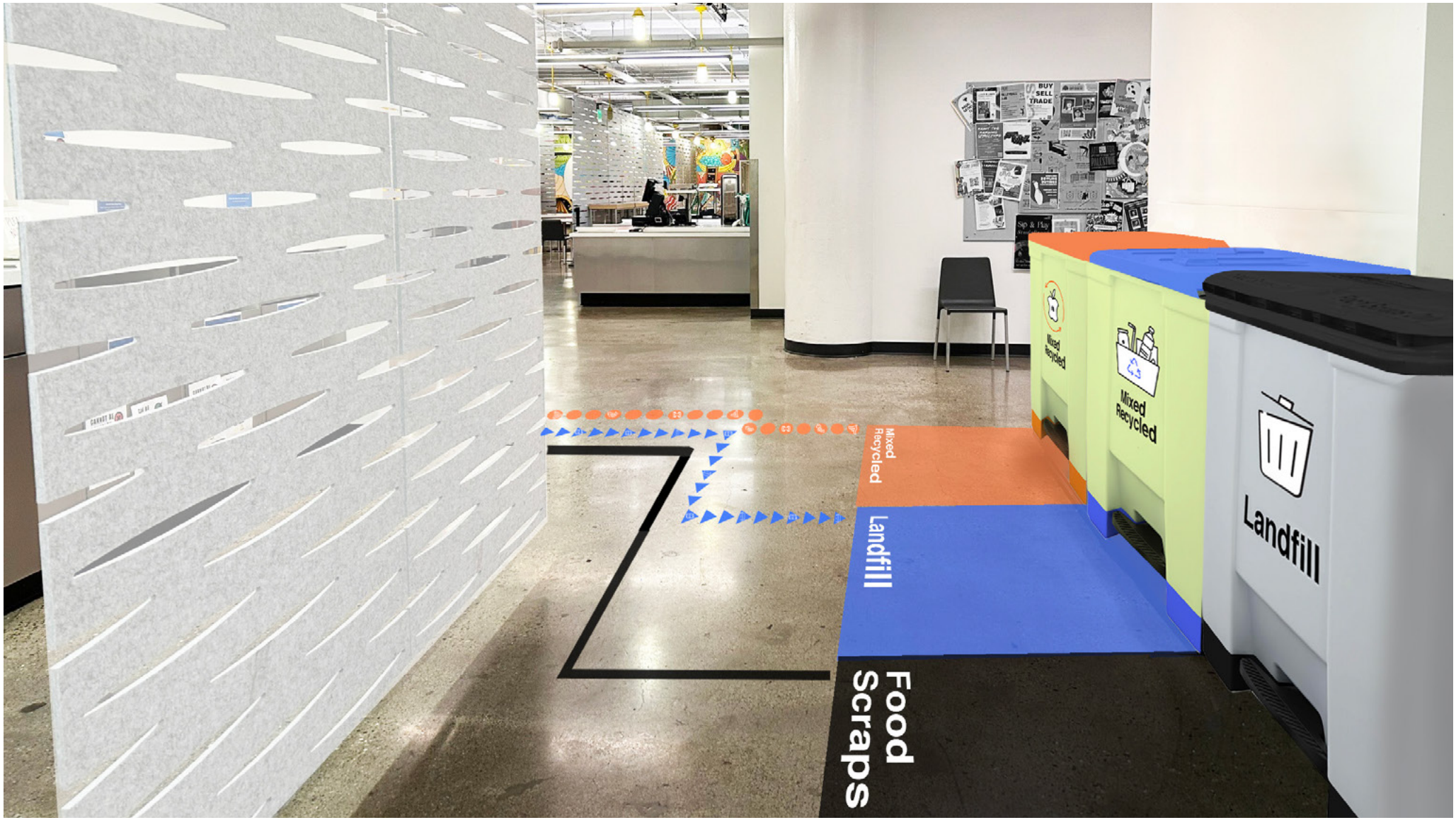
Reminding visually the planet's ability to regenerate with our efforts

Landfill

Implying the impact of our actions on the environment

Zoning and Wayfinding

Solution Details


Mixed Recycled
Landfill
Food Scraps
Mixed Recycled
Landfill

Logo and Labeling

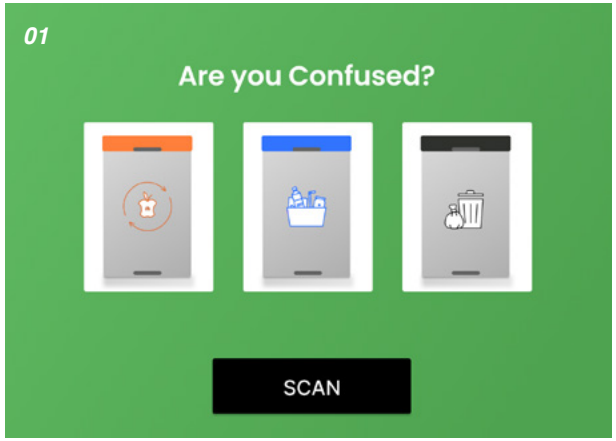
Solution Details

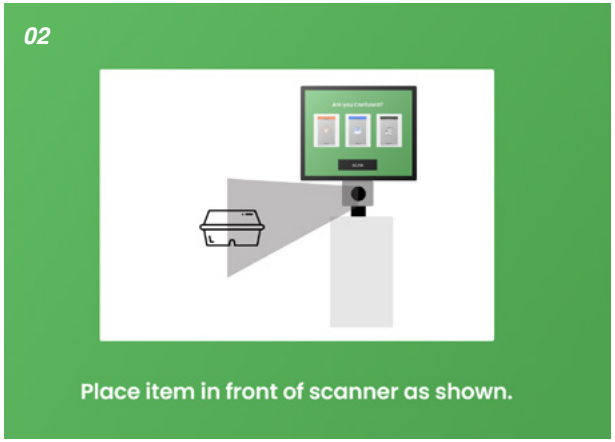
Compost Connection - Bin

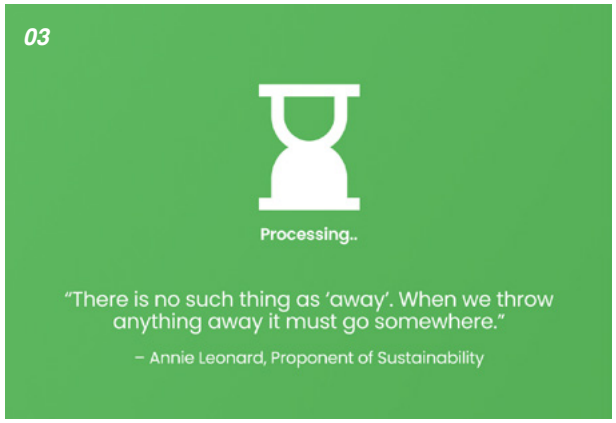
Solution Details

Scanning System

Solution Details







01 *Start Scanning*

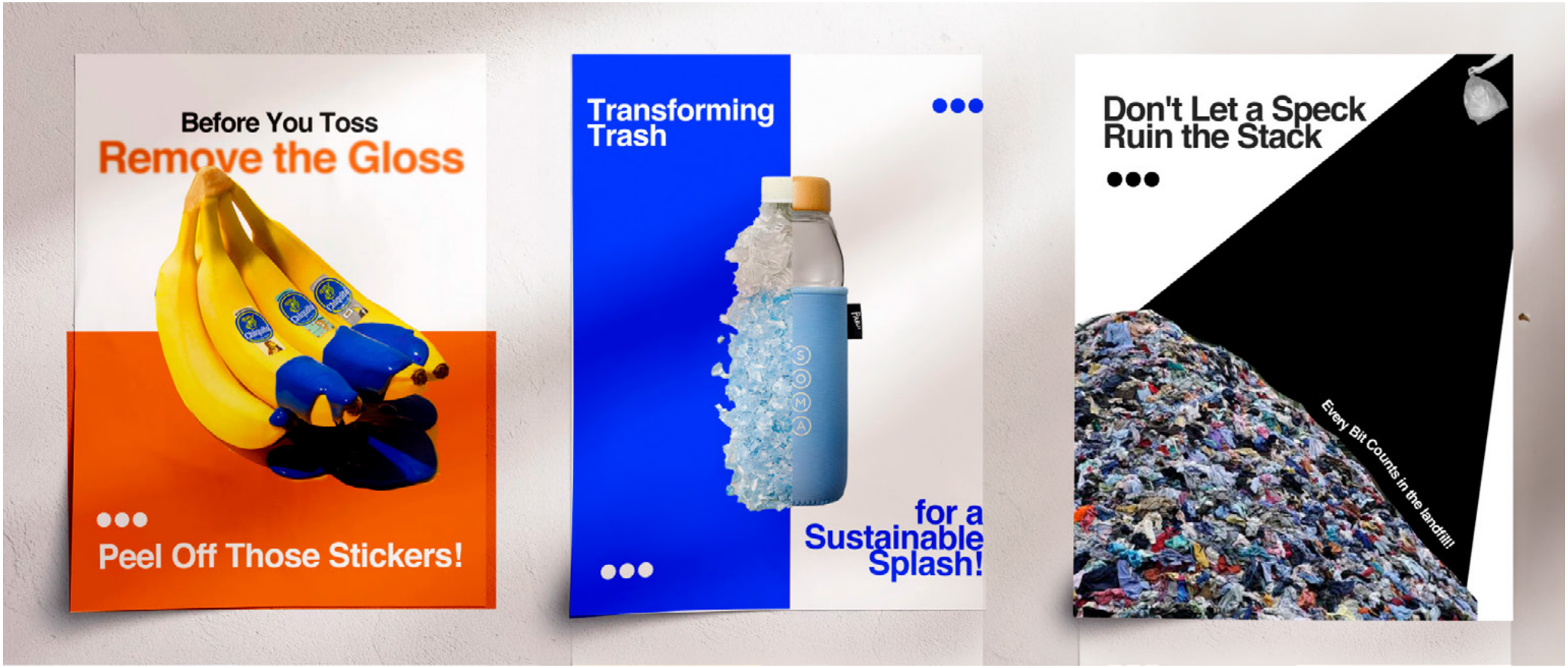
02 *Place Item in front of scanner*

03 *Processing*

04 *Scanning Results*

Educational Recycle Wall

Solution Details



Educational Recycle Wall

Recyclable Material Resume

Plastic

Disposal of plastic is essential for protecting the environment, safeguarding human health, conserving resources, and mitigating climate change

Glass

Glass is endlessly recyclable without losing its quality. Proper disposal of glass through recycling conserves natural resources such as sand, soda ash, and limestone, which are used in glass production.

Food Scrap

The production, transportation, and disposal of food requires significant energy inputs. By diverting food scraps from landfills and instead converting them into compost or energy through anaerobic digestion, we can conserve energy and reduce our overall carbon footprint

Cardboard

Cardboard is highly recyclable and can be repurposed into new cardboard products or other paper materials. Recycling cardboard conserves valuable natural resources such as trees, water, and energy

Metal

Effective disposal of metal through recycling conserves resources, reducing waste, saving energy, promoting economic growth, protecting the environment, ensuring community health and safety, and fostering innovation

Educational Recycle Wall

Recyclable Material Resume

*Percentage of discarded materials

Plastic

+	-
Lightweight	Non-biodegradable
Water resistant	Toxic Chemicals
Shock resistant	Habitat degradation
Thermally insulating	Ingestion

Glass

+	-
Transparent	Poor thermal insulation
Corrosion Resistant	Fragility
Hardness	Limited design flexibility
Non- Porous	Brittleness

Food Scrap

+	-
Biodegradable	Odour and Pest attraction
Soil amendment	Leachate Generation
Minimising waste generation	Waste of Resources
	Storage and Collection Challenges

Cardboard

+	-
Lightweight	Odour and Pest attraction
Water resistant	Leachate Generation
Shock resistant	Waste of Resources
Thermally insulating	Storage and Collection Challenges

Metal

+	-
Malleable	Heavy weight
Resistance to corrosion	Expensive Toxic
Recyclability	Can corrode
Can be alloyed	

Future Implemenations

Scalability to cafes and restaurants

- Training and calibration of the image recognition model and scanning system for the restaurant or cafe and low cost installation

Future Implemenations

Household integration - Application

- Education for home composting
- The scanning feature to tackle segregation confusion
- Community engagement for composting event engagement and general dialog along with new challenges and solutions in the journey to becoming carbon positive.

Compost Connection

Thank You!

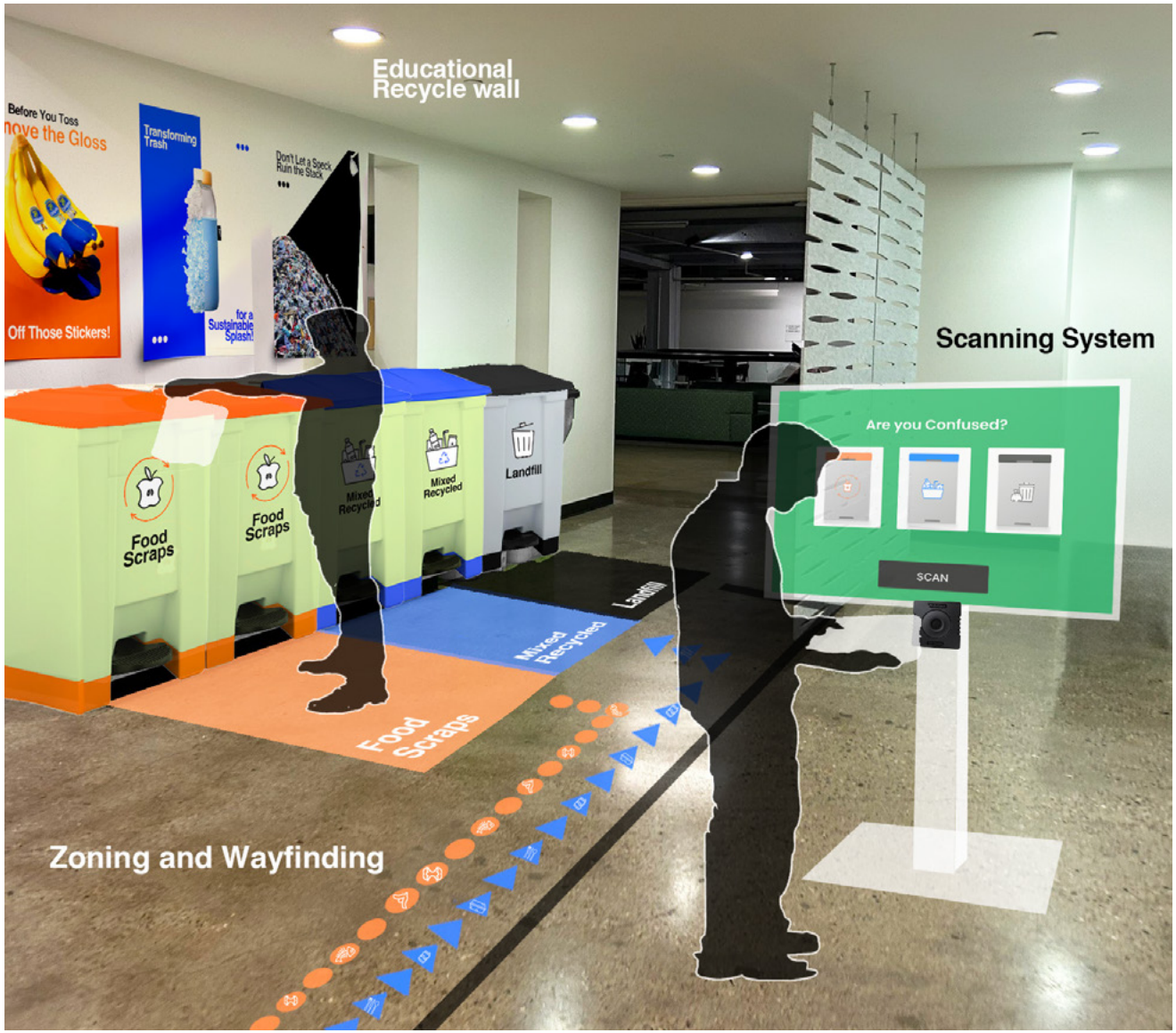
Color Coding

Logo and Labeling

Zoning and Wayfinding

Scanning system

Educational Recycle Wall



Preliminary Resident Survey Results Regarding the Food Scrap Collection Program in Wixom, MI

In Spring 2024, the city of Wixom, Michigan, began a program where residents could place food scraps in brown yard waste bags or designated carts with yard waste for weekly pickup. During the summer, residents of both Wixom and other communities served by RRRASOC were surveyed about their knowledge of food waste, current practices managing food scraps, and interest in food scrap diversion programs. The following provides a summary of the preliminary findings from each group.

Wixom resident survey results

- Most respondents (90%) set out yard waste for curbside pickup. Reasons for those who do not use this service include leaving it on their lawn (2 responses), composting at home (1 response) and not having a yard to care for (1 response).
- Despite robust outreach to residents, only 75% indicated that they were aware that they could put food scraps in their lawn waste bag for curbside pickup. The city's newsletter and the newsletter provided by RRRASOC were the ways most people learned about this service. For those who were not aware of the service, email and the city's website were noted as the best ways for them to receive information about new services.
- Only 36% of respondents shared that they are adding food scraps tot heir yard waste for curbside pickup.
    - When asked why they were not participating in this program, the main reason, cited by over half of respondents, was a lack of knowledge about what is accepted for pickup. Two other common reasons were putting scraps down the garbage disposal instead and being too used to throwing the food in the garbage. Only six respondents indicated that they compost at home and therefore do not use the service. Open-ended responses indicated concerns about pests and odors.
    - Of the sixteen respondents who answered the question about whether or not they were composting prior to adding food scraps to their yard waste, only one person responded that they did, indicating that this service is encouraging and facilitating new behaviors.
- 81% of respondents indicated that the food scrap collection with yard waste was a 4 or 5 from a scale spanning from 1 to 5.
- Respondent indicated that they personally felt it was beneficial to have food scrap pick up in Wixom for environmental reasons (94% of respondents), not composting at home (81% of respondents, saving space in the trash (50%), and reduced odors (31%).
- When asked what participants will do with food scraps when yard waste collection ends for the season, 75% of respondents said that they will stop sorting and go back to throwing food scraps in the trash. Only two people said they would take them to a composting facility, and two said they would store the scraps at their home.

RRRASOC resident survey results

- 86% of respondents feel that it is important to divert food scraps from landfills, with the main reason being that composting has many benefits and a second reason being that reducing food waste going to landfills is an essential component to reducing climate change. Of those who responded that they did not feel that it is important to divert food scraps from landfills, the most common reason was due to not considering why it would be beneficial to divert food scraps, followed by not knowing about composting food scraps or the benefits of that action.
- Only 24% of respondents indicated that they currently compost food scraps.
- The majority of respondents (86%) indicated that they would participate in a food scrap composting program if it was part of their community's services. Over half of respondents (66%) said they would not pay for private food scrap collection service, regardless of the cost. However, 25% of respondents would pay for a service if the cost was less than $10 per month, and an additional 4% would pay up to $15 per month. Two percent of respondents indicated that they would pay any price for this service.
- If asked to take food scraps to a composting facility or drop-off location, only 25% of respondents selected that they would be "likely" or "extremely likely" to participate. Almost all respondents (90%) indicated that they would only be willing to drive up to five miles to drop off food scraps.
- Most respondents (87%) set out yard waste for curbside pickup. Reasons for those who do not use this service include having a lawn care service (23 response), mulching yard waste (13 responses), not having a yard to care for (9 responses), and composting at home (6 responses) or at another facility (1 response)

APPENDIX F:

Methods

Appendix F: Methods

The Team

Make Food Not Waste (MFNW) convened a project team consisting of local and national experts in food waste prevention and communication, schools, food rescue, and organics recycling to inform the strategies and planning needed to completely eliminate food waste in Southfield, Michigan. Community partners, including city and county staff, representatives from grassroots organizations, schools, and universities, and residents also joined the project team. These experts were expected to provide not only ideas, but also complete research, collate documents, seek approvals, and complete other tasks that set up the strategies to be ready for implementation when funds become available. The project was managed by Giffels Webster, a consultant hired by MFNW.

Meetings

Team members were expected to attend three full group convenings and two workgroup meetings. Full group meetings were held at the Southfield Public Library Conference Room on January 30, March 26, and May 30, 2024, to align approaches and strategies and create synergies between groups.

Small workgroup meetings were held based on sector and strategy, specifically, food rescue, contamination prevention, organics recycling and composting, government role, communications strategy, and behavior change. Each workgroup had a set of questions to answer to support plan development and focus on completing the pre-work for implementation strategies.

Draft Development and Review

After months of research, discussions, and exploration of possible strategies, a draft was developed by the project manager and MFNW staff. The draft was circulated to the Project Team and other interested parties for review and feedback. The draft was revised accordingly.

APPENDIX G:

Strategies Explored, but Not Suitable for Southfield

Appendix G: Strategies Explored, but Not Suitable for Southfield

There are several food waste prevention, reduction, and elimination strategies that are feasible and effective in other communities, but were determined to not be an appropriate fit for Southfield. These are described below.

Require large food waste generators to report and divert food scraps

More and more municipalities and states are requiring large food waste generators to report their waste and diversion volumes. While what entities must report varies from program to program, they all support the idea that simply measuring these amounts helps change behavior and reduce food waste.

Legislation on this topic is currently being discussed at the state level. It was determined that it would be better for the state to handle this to level the playing field across the state for large generators.

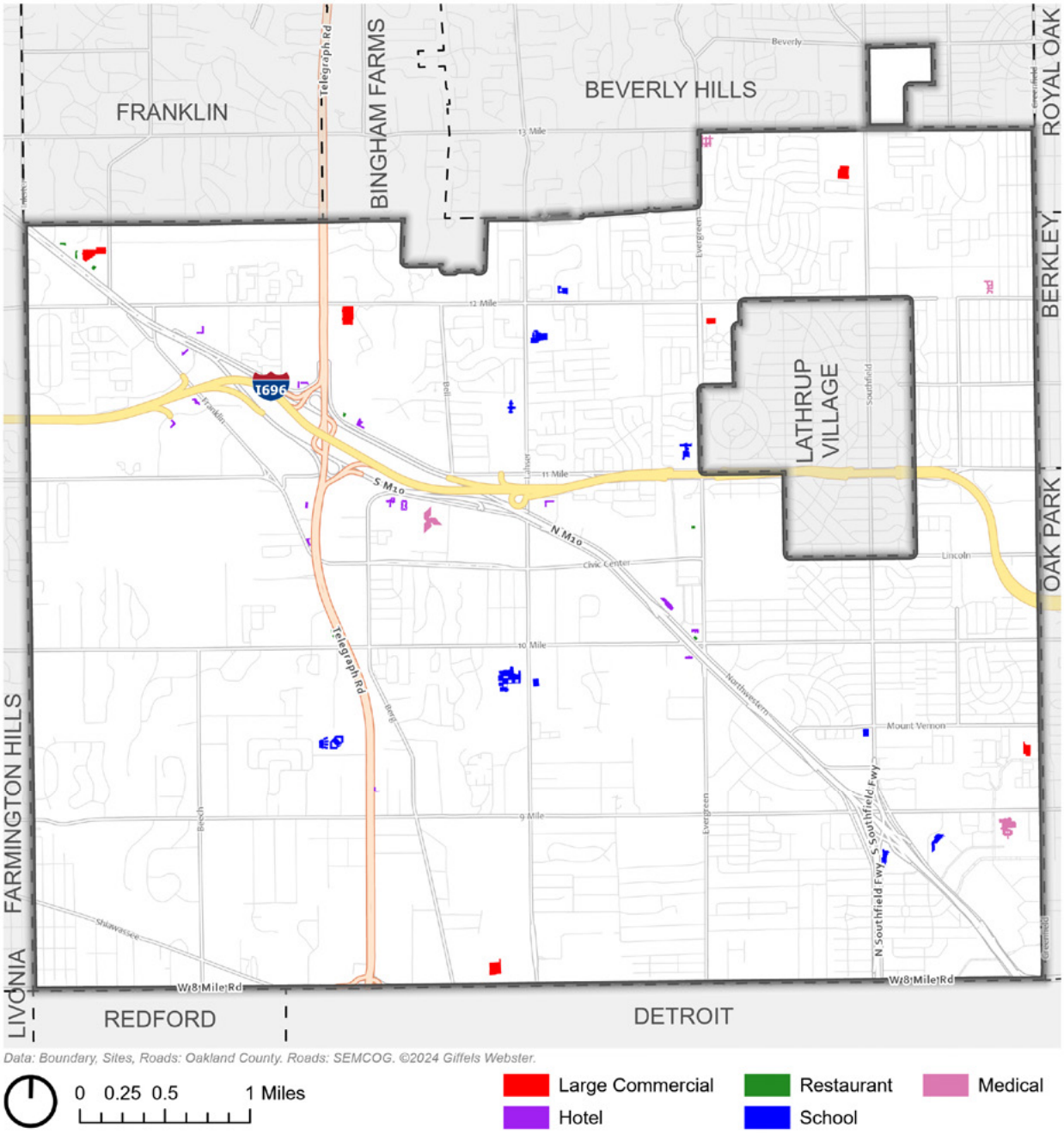
In the exploration of this strategy, a map (Map 6) was created for Southfield that shows those sites that are also likely to create more than two tons of food waste weekly. This threshold of two tons of food waste generated each week follows New York state's thresholds and methods for determining which sites would be required to participate in this program. Unlike New York, schools were not excluded from the category of a large generator. Residential sites (specifically multi-family sites that may reach this threshold volume) were not included, despite that being a best practice according to NRDC's Tackling Food Waste in Cities Report.

Advanced upcycling

There are numerous advanced upcycling technologies and specialized equipment manufactures that can process large quantities (millions of pounds annually) of underutilized food and organic material to make it suitable for human consumption. Many of these systems employ dehydration technologies that evaporate water by applying direct or indirect thermal energy typically with infrared, heat pump or gas-fired devices. Others employ microwaves or proprietary methods (e.g. cavitation or latent process energy) to densify, sanitize and render the organics shelf stable--and ultimately edible.

Even though these technologies could provide substantial food waste diversions and environmental benefits that surpass aerobic and anaerobic digestion, they were omitted from further evaluation given the fact that Southfield does not have sufficient large food or beverage producers to make this economically viable. Furthermore, residential food waste cannot be sourced readily as an input given the potential for contamination. Many of these advanced upcycling systems require consistent and predictable feedstocks and substantial capital expenditures at the outset to operate at necessary economies of scale. Although these technologies are not included in our initial recommendations, there could be situations in the future where further evaluation is warranted.

MAP 6. Large Waste Sites: Southfield



Distance From City Hall

Clinton River Water Resource Recovery Facility: 11.46mi
The Upcycling Kitchen at Salvation Army Harbor Light: 12.45mi
The Upcycling Kitchen: 15.39mi
Spurt Industries Composting Site: 16.62mi
Arbor Hills Landfill: 17.21mi
Country Oaks Landscape Supply: 40.69mi

giffels webster

LARGE WASTE SITES

Permit soup kitchens in more districts to process surplus food

Finding ways to increase upcycling of excess food in the city was discussed, including following the model of MFNW's Upcycling Kitchens, both located in Detroit. The Southfield zoning ordinance currently only allows soup kitchens to be located in the Regional Shopping (RS) and the General Business (B-3) districts as special land uses, requiring special approval to be permitted. This limits where these facilities can go within the city. Making this a permitted use in these districts or allowing it as a special use in additional districts was discussed as a way to incentivize and encourage upcycling of food. City staff indicated that this is not something that the City Council would approve, so it was not further explored.

Bulk purchase compostable serviceware for restaurants and events

Contamination is a large issue associated with addressing food waste, and much thought has been put into this plan to identify ways to reduce contamination in all situations. Providing supports to prevent contamination, such as bulk purchasing of napkins, plates, silverware, and other dishes used by patrons at restaurants where they bus their own table was discussed. However, given that the scope of this plan is really focused on just food waste and other compostable material, this idea was not included in the plan although it may be something to consider if contamination at restaurants and events becomes an issue.

Feed animals

Feeding animals food planned for human consumption but no longer desirable or fit for us is one of the more preferred options on the EPA's Wasted Food Scale (see Figure 2), and is really the last option for consumption before moving into options for recycling. While this is considered a relatively good use of food, the lack of farm sites in Southfield that could take even a fraction of the food waste suitable for animals makes this option not feasible. Individual sites, such as an office building, for example, may find a connection with a farmer that can manage the minimal waste from the office building, but we do not expect this to be the case for most sites in Southfield.

Pay As You Throw trash collection fees

Pay As You Throw (PAYT) is a method of collecting fees for trash pickup that has been used in other communities to incentivize diversion from landfill to recycling and composting. Tags are purchased to pay for bags of trash that are collected at curbside, so the more one throws away, the more tags are needed. This was not seen as a viable option in Southfield due to the likelihood that the financial incentive to divert waste from landfill would result in high recycling and food scrap contamination rates and therefore not pursued.

Unbundle waste collection service fees and reduce fees for those who compost

Currently city property taxes are not itemized to show the cost of waste collection versus recycling or other services. If unbundled and itemized, the cost of waste collection and food scrap pickup could be shown separately and a discount could be provided to those who participate in the food scrap collection program. However, it was determined that this would be difficult to manage and confirm participation, and reduced fees would be unlikely. Therefore, this was not further explored in the plan.

Increase frequency of food scrap collection and decrease frequency of landfill collection

As food scraps go from the trash bin to the compost bin, the amount of trash disposed of will greatly decrease, as will the likelihood of odors and other nuisances associated with food. If all food scraps are diverted, trash bound for the landfill could be picked up less frequently than it currently is. Adjusting the pickup schedule where food scraps are picked up weekly and trash less frequently could incentivize diversion. However, it could also lead to greater rates of contamination as people throw non-organic matter into the organics collection bin just to have it removed. Due to these concerns, this idea was not further explored, but may be in the future if the food scrap collection participation rate is high and weekly trash collection is no longer needed.

Implement an organics waste ban

The state ban on yard waste in landfills has been effective and shows a possible strategy to also divert food waste from landfills. Since this would be challenging to enforce, especially at the municipal level, and could be a disincentive to businesses coming to the city, this was not seen as a strategy for the city to take on. However, opportunities to support such a ban at the state level are encouraged as a ban would support all of the other strategies outlined in this plan.

Site a new compost facility in Southfield

Siting a new compost facility within the city was discussed as a way to reduce emissions associated with hauling food scraps and to alleviate pressure on existing sites that can accept yard waste and food scraps. This was of particular concern given that one of the local facilities that accepts yard waste does not also accept food scraps, and the other site may not have the capacity to absorb a 15 ton/year increase in volume. A compost facility was not deemed feasible within the city due to the relatively few parcels of land large enough to accommodate this use and their proximity to residential lots.

Promote aerobic digestion

Aerobic digesters are useful in reducing food waste produced at a site into a lighter, sterile soil amendment that can then be distributed on the grounds, mixed with soil and used in pots, stored, and/or hauled away to a compost site for incorporation into compost and final maturation. Aerobic digesters come in a variety of sizes and with varying costs. Their ideal location is one that produces at least 220 pounds of food scraps per day and has a place onsite or nearby that can use the amendment that is produced.

While Southfield has several sites that produce enough food waste to meet this minimum threshold, the urban environment in Southfield and lack of places to put amendment on these sites means that the amendment would most likely need to be hauled away. While the amendment could be stored, resulting in fewer pickups per year, and it would be lighter than food scraps, making it more fuel efficient, the lack of places that are a good fit for a digester coupled with its relatively high cost makes this option one that would be challenging to implement in Southfield.

TABLE 36. **Aerobic Digesters**

Machine Size (lbs per day)	Meals per Day (0.6 per meal)	Run Cycle	Footprint (ft)	Power	Venting	Labor (hours per day)	Capital Investment	Cost to Operate per Year
220	367	Batch	4.5 x 3.5	240V 3 phase	Y	1	$30,000	$994.32
440	733	Batch	6 x 4	240V 3 phase	Y	2	$50,000	$1,353.84
1,200	2,000	Continuous	12 x 5.5	240V 3 phase	Y	2	$80,000	$3,804.00

Partner with an anaerobic digestion facility

Currently, the closest anaerobic digestion facility is in Flint, Michigan. Given the distance and the associated greenhouse gases required for transport of food scraps and its position on the EPA Wasted Food Scale compared to composting, this plan does not recommend the use of anaerobic digestion for Southfield food scraps.

Create a workforce development program in circular waste management

Some discussion was had about the need to train a workforce to take on jobs in food waste and environmental issues in general. While it is known that more workers are needed in this field, this is outside the scope of this plan. Educating students about food waste and giving them opportunities to participate in different ways of addressing it such as by donating it, upcycling it in an after school cooking club, helping manage it at a community compost demonstration site, or sorting their food scraps for pickup in the cafeteria, are all ways to promote these careers and spark interest in this growing field and are included in this plan without being connected to a specific strategy to create a workforce development program.

APPENDIX H:

Glossary & List of Acronyms

Appendix H: Glossary & List of Acronyms

Glossary

Aerobic Digestion
Aerobic digestion is the natural process in which microorganisms break down organic matter in the presence of air (an aerobic environment)

Anaerobic Digestion
Anaerobic digestion is the natural process in which microorganisms break down organic matter in the absence of air (an anaerobic environment). Anaerobic digestion creates usable products such as biogas and digested material. (EPA).

Biosolids
Nutrient-rich organic materials resulting from the treatment of sewage sludge (the name for the solid, semisolid or liquid untreated residue generated during the treatment of domestic sewage in a treatment facility). When treated and processed, sewage sludge becomes biosolids which can be safely recycled and applied as fertilizer to sustainably improve and maintain productive soils and stimulate plant growth.

Conmingled
Refers to a mixture of several recyclable materials in one container.

Compost
The product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. Compost is typically used as a soil amendment, but may also contribute plant nutrients. (USCC).

Compostables
See Organics.

Composting
A controlled, aerobic (oxygen-required) process that converts organic materials into a nutrient-rich, biologically stable soil amendment or mulch through natural decomposition.

Composting, Community
A model of composting that sources organic materials locally, engages the community in the composting process, and uses the compost produced in local soils. For the purposes of this plan, it is anything under 500 cubic yards (when regulations from EGLE become applicable).

Composting, Commercial
A model of composting that sources organic materials potentially from both inside and outside the community it occurs at. For the purposes of this plan, it is a site that handles at least 500 cubic yards of organic material and is subject to regulation via EGLE.

Drop-off Site
A decentralized, publicly accessible location with collection containers serviced by a designated hauler meant for use by individual residents to leave their organic material for recycling.

Excess Food
Food that is donated to feed people. Also known as “Surplus Food.”

Food Desert
A community or neighborhood with limited to no access to affordable and nutritious food (USDA).

Food Loss
Unused product from the agricultural sector, such as unharvested crops, and production up to (and not including) the retail level.

Food Scraps
See Food Waste. This term is typically used to describe food that is composted.

Food Waste
Food that is not ultimately consumed by humans that is discarded or recycled, such as plate waste (i.e., food that has been served but not eaten), spoiled food, or peels and rinds considered inedible. Also known as "Food scraps" but typically used to describe food that is sent to a landfill, a sewer system, or incinerator.

Food Rescue
Proven method of "rescuing" surplus nutritious food and redistributing it to people instead of destroying it. Frequently, food rescues are charitable organizations that pick up or receive donated food across the food supply chain. Food rescue operations may also include distribution to people facing food insecurity.

Organics
The remains, residues or waste products of any organism that are recovered resources from solid waste disposal. Such materials may include, but are not limited to: food residuals; yard debris; and wood, plant or paper products. Also known as Compostables.

Packaging, Compostable
Capable of undergoing aerobic biological decomposition in a compost system, such that the material becomes visually indistinguishable and breaks down into carbon dioxide, water, inorganic compounds, and biomass. (USCC)

Product, Compostable
Any product specifically manufactured to break down in a compost system at the end of its useful life. May be made from plastic, paper, or plant fibers, along with other ingredients that provide necessary form and functionality. (USCC)

Scratch cooking
The practice of preparing food items from raw, whole ingredients rather than using pre-packaged or processed products. This typically involves techniques such as chopping, measuring, and mixing ingredients by hand, rather than relying on pre-made mixes or prepared ingredients.

Surplus Food
See Excess Food.

Upcycling
The processing of food, usually raw components, into another product that increases the longevity of the original.

Vermicomposting
Composting done with worms. The output material is frequently referred to as "worm castings" or "vermicompost."

Wasted Food
An overarching term to describe food that was 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 disposal in landfills or combustion facilities. This can be used to refer to both Excess Food and Food Scraps.

List of Acronyms

ACS
American Community Survey

DDA
Downtown Development Authority

EGLE
Department of Environment, Greats Lakes, and Energy

EPA
Environmental Protection Agency

FEMA
Federal Emergency Management Agency

MFNW
Make Food Not Waste

NRDC
National Resources Defense Council

RRRASOC
Resource Recovery and Recycling Authority of Southwest Oakland County

RRS
Resource Recycling Systems

SEMCOG
Southeast Michigan Council of Governments

USCC
United States Composting Council

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