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Wasted Food Solutions for Charlottesville, Virginia

Marketplace Analysis and Roadmap

Introduction

In 2021, the Center for EcoTechnology (CET) received support from the Charlottesville Department of Public Works to work with stakeholders in the City to develop recommendations to strengthen the wasted food marketplace. As part of this initiative, CET conducted a SWOT—strengths, weaknesses, opportunities, and threats—analysis to review the marketplace landscape, make new connections, and uncover short- and long-term actions that will lead to increased activity. CET contacted 22 food businesses (generators), service providers, and district representatives to understand current practices for managing wasted food and document existing opportunities around the region.

This report highlights the strengths, weaknesses, opportunities, and threats to the wasted food marketplace that were identified across the region. Strengths and weaknesses represent internal factors as experienced by interviewed stakeholders, while opportunities and threats are external factors of the marketplace overall. Overarching themes are identified in a traditional SWOT analysis chart, and additional details and specific observations about SWOT themes are expanded upon in the sections Overall Wasted Food Activity; Source Reduction; Food Recovery; and Source Separation for Composting, Anaerobic Digestion, and Feeding Animals. In addition to a summary of recommendations, a comprehensive list of short-, medium-, and long-term recommendations for moving forward is also included at the end of the document.

Summary of Recommendations

CET identified several opportunities to advance Charlottesville's wasted food marketplace. While low tipping fees for trash present a persistent threat to incentivizing wasted food solutions, the City can highlight existing prevention, food donation, and composting activities, and provide educational resources to motivate participation for reasons such as environmental and community benefits. The City can also develop networking and ongoing educational opportunities with generators and service providers to support collaboration and further facilitate source reduction, food recovery, and source separation efforts. Pairing these efforts with the creation and distribution of fact sheets, best management practices, and other materials can help guide generators when making decisions on how best to manage their unique food surplus. Additionally, CET recommends that the City pursue opportunities to provide funding and technical support for food recovery and source separation initiatives. Lastly, support is needed for composting infrastructure development and for existing service providers. This can be achieved by promoting the services of existing food waste haulers and processors, showcasing successful projects, and fostering new opportunities for additional processing capacity in the area. Food rescue agencies also need financial support to bolster their operations and continue serving the community.

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Overall Wasted Food Activity

STRENGTHS (Internal Factors)

- **Leaders of sustainability in the area have wide-reaching impacts.** For example, the University of Virginia (UVA) started the Sustainable Food Collaborative and encourages its on-campus vendors to adopt composting programs and offer compostable serviceware. Restaurants in the area view UVA as an important catalyst and support mechanism for waste reduction and diversion programs. The University's climate impact awareness and demand for eco-friendly products and practices exert a strong influence over the surrounding businesses. In addition, grocery store chain locations in Charlottesville have strong food donation programs and zero waste goals and are willing to share their best practices with other businesses looking to implement similar food rescue strategies.
- **Opt-in sustainability programs are available to businesses**. These include the Charlottesville Green Business Alliance, a group created by the Community Climate Collaborative that motivates members to make climate emissions reductions pledges, and Virginia Green, a sustainable tourism consultant that promotes green practices in the hospitality sector.
- **Neighboring businesses influence each other to start wasted food programs.** For example, a local bar and restaurant started composting their food scraps after learning about a neighboring bakery's collection program, at first sharing a food scraps dumpster with the bakery.
- **Resources exist for residents and students.** The City's website offers guidance on food waste diversion for residents, furthering general knowledge and awareness of sustainable surplus food management practices. Certain k-12 schools have educational programming focused on the importance of food donation.
- **Virginia has state liability protections. The** protections are for businesses that donate or distribute surplus food as seen in the ReFED Insights Engine, a research tool that can guide policy improvements that support further food waste reduction, rescue, and recycling.

WEAKNESSES (Internal Factors)

- **Limited capacity.** Additional staff capacity is needed to provide technical assistance to generators through a variety of strategies, including phone and email, on-site assistance, and educational outreach, such as workshops and the development of resource materials. Capacity pertains to both time and expertise available.
- **Lack of funding.** More funding is needed to support wasted food solutions on the commercial scale, such as food donation and composting.
- **Lack of policy.** Aside from Virginia's liability protections for food donations, state and local level disposal bans and legislation are currently limited in scope or absent, reducing incentives for recovery. This conclusion is based on the ReFED Insights Engine.

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OPPORTUNITIES (External Factors)

- **Showcase high-profile generators and local leaders in sustainability.** Written or video spotlights, case studies, and stories for local media channels can be motivational to other businesses and institutions in the area.
- **Highlight potential cost savings.** A pandemic-induced focus on financial savings presents a new opportunity to share prevention tips and guidance with commercial generators who are actively seeking strategies to control costs.
- **Build awareness of the existing sustainability networks**. This includes the Charlottesville Green Business Alliance and Virginia Green, opening them up to incentives and support services.
- **Leverage the Downtown Business Association of Charlottesville**. This association can reach a variety of merchants and restaurants with educational materials and/or offers of support.
- **Divert from city-maintained facilities**. For example, golf courses, after-school initiatives, and summer camp programs could start diverting pre- and post-consumer food waste through composting.
- **Incorporate into Charlottesville's Legislative Positions the 10 policy categories presented in the Natural Resources Defense Council (NRDC) 2021 MidAtlantic and 2021 Southeast Food Waste Policy Gap Analysis and Inventory Reports that can be influential to food waste**. There is a chance to explore the applicability of each policy category to Charlottesville and/or Virginia, and adopt text from the NRDC on the importance of these policy measures and their effects. Particularly relevant categories include Food Donation Liability Protections; Organics Processing Infrastructure Permitting; Food Systems Plans, Goals, and Targets; and Grants and Incentive Programs Related to Food Waste Reduction.
- **Highlight methane emissions reduction.** As shown by the EPA Waste Reduction Model (WARM), food waste diversion is a greenhouse gas emissions reduction strategy, and therefore an important approach to combat climate change. A climate action plan or policies that set climate action goals can influence food waste, as referenced in the above NRDC report. Project Drawdown, a nonprofit seeking to help the world reach "drawdown"—the point in the future when levels of greenhouse gases in the atmosphere stop climbing and start to steadily decline, thereby stopping catastrophic climate change—as quickly, safely, and equitably as possible, notes reducing food waste as one of the top potential influences.

THREATS (External Factors)

- **Inconsistent employee retention.** Businesses in college towns often experience a fluctuation in employees throughout the year, adding to the difficulty of maintaining successful food rescue or diversion programs.
- **Space constraints.** Food diversion and rescue programs often require designated extra space, whether for an added outdoor dumpster or an area to store donation items. This is something that many stakeholders cite as a barrier to adopting donation or food scraps collection programs.
- **Low tipping fees for trash disposal.** This limits the financial incentive to participate in surplus food reduction, donation, and diversion programs.
- **Food waste diversion is a secondary concern.** Experiencing greater financial stress due to the pandemic, stakeholders in the business sector have voiced that food diversion programs are a priority for another year.

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Source Reduction

STRENGTHS (Internal Factors)

- **Source reduction by restaurants.** Chefs and food manufacturers in Charlottesville integrate source reduction into their operations by creating soups and stocks out of overripe produce and edible scraps, adapting menus to include specials, utilizing multiple ingredients across dishes, ordering ingredients daily, optimizing production schedules to avoid leftover food, and more.
- **Utilizing outside surplus product for meals.** For example, one restaurant takes in small amounts of spent grain from breweries as a bread ingredient but also composts a portion of their food scraps on-site.
- **Wasted food tracking and source reduction techniques by The Food Bank.** The Blue Ridge Area Food Bank tracks the food it is unable to distribute by weight, providing a consistent understanding of their wasted food footprint. The Food Bank also utilizes an online inventory system where rescue agencies can order food items, allowing for preferences to be met and uneaten food to be minimized.

WEAKNESSES (Internal Factors)

- **Lack of resources and programs on prevention.** Prevention is the most impactful measure to mitigate wasted food, but limited resources highlight this cost-benefit.

OPPORTUNITIES (External Factors)

Cost savings. Food prices are the highest they've been in a decade, which means the cost of wasting food is also at a high. Food waste prevention avoids having to pay for food twice (purchasing and disposal), representing potential cost savings for foodservice businesses.

- **Controlled in-house.** Source reduction efforts can be undertaken solely by the generator, allowing for increased control of the process.
- **Grocery stores can investigate new recipes or upcycling measures.** This primarily applies for items with consistent surplus, such as bakery products.
- **Reshaping Consumer Environment**. An action area proposed by ReFED, businesses can encourage consumers to waste less by creating the appropriate conditions in retail and restaurant settings. These actions may include reducing portion sizes, going tray-less, increasing signage at buffets, etc.

THREATS (External Factors)

- **Preventing post-consumer waste can be difficult.** Businesses and institutions don't have many ways to monitor or control the food waste generated on the customer side, particularly with the increase in carry-out services due to the pandemic.
- **Lack of control over purchasing.** Some of the smaller food suppliers used by Charlottesville foodservice businesses have gone out of business, leaving only larger vendors that often require customers to purchase a minimum quantity of product.

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Food Recovery

STRENGTHS (Internal Factors)

- **Established operations.** Food rescue and donation operations are well established in Charlottesville, and numerous tons of surplus food are rescued and distributed by these organizations each year.
- **Strong generator-rescue partnerships.** There is a strong network of established relationships among generators and service providers to divert materials for recovery. National programs, such as Feeding America and Kroger's and Wegman's recovery programs, have laid the groundwork to build relationships between the grocery stores, the Blue Ridge Area Food Bank, and surrounding food rescue agencies.
- **Generator experience with training and communications.** Grocery stores with donation programs integrate this into onboarding training plans, at times organizing tours for employees to see their food rescue partner locations. Consistent communication between grocery stores and the Blue Ridge Area Food Bank addresses potential scheduling and logistical difficulties, resulting in fruitful relationships.
- **Food rescue agency experience with communication.** Local food rescue organizations establish and maintain strong relationships with contacts at their various donor sites through consistent communication.
- **Collaboration among food rescue organizations.** For example, Loaves & Fishes serves as an intermediary between the Blue Ridge Area Food Bank and localized food donation agencies that have established relationships in their respective neighborhoods. If food rescue organizations receive more food than they can distribute, they communicate with other organizations about accepting it.
- **Community support for a successful local food bank.** The Food Bank is well-supported on community, state, and federal levels, enabling them to distribute nearly five million pounds of food annually.
- **Support of community organizations by The Blue Ridge Area Food Bank.** The Food Bank offers an annual grant opportunity to food rescue agencies for needed equipment. The Food Bank also manages their intake using an online inventory system where incoming food is logged and uploaded for selection by food rescue agency partners, which has proven to be an effective system to mitigate surplus.
- **Charlottesville's Food Equity Initiative.** This initiative outlines values, priorities, and goals for the City Departments to facilitate food equity. This directly translates to the *Food Systems Plans, Goals, and Targets* NRDC policy category, which can be influential to food waste according to the 2021 Southeast Food Waste Policy Gap Analysis and Inventory Report.
- **Charlottesville schools used share tables in the past.** Share tables allow unwanted food and beverage items to be stored or set aside for someone else.

WEAKNESSES (Internal Factors)

- **Limited awareness.** Education and outreach are needed to clarify liability protections for generators donating food for recovery.
- **Some donors can conflate donating food with getting rid of food**. Confusion can lead to donations of unsatisfactory to inedible quality going to food rescue organizations.
- **Food safety concerns.** Greater awareness of the protocol for safely handling hot prepared meals may be needed. Food rescue organizations are hesitant to accept items due to food safety concerns, resulting in a less clear pathway for restaurants to donate than grocery stores that have contracts with Feeding America.

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OPPORTUNITIES (External Factors)

- **Diversify participation.** A large portion of recovery efforts take place from grocery stores, but there are opportunities to increase recovery across the supply chain, including from restaurants, catering companies, and manufacturers.
- **Support and raise awareness of policies that support food recovery.** These include the NRDC 2021 Southeast Food Waste Policy Gap Analysis and Inventory Report, tax incentives, liability protections, and share tables.
- **Utilize an intermediary app or service.** Foodservice businesses could use this to upload donatable items at the end of each day that could be used by food rescue agencies providing pick-up services. Existing models, such as MEANS Database, Food Rescue US, and others, exist and can be incorporated.
- **Reference public data.** For instance, the most wasted food products in the retail sector include bread and other bakery items. This 2012 NRDC Issue Paper presents the largest losses in food retail on page 10.
- **Reduce inedible surplus donated.** This can be achieved via enhanced employee training programs and consistent communication between donors and food rescue organizations. There could also be help establishing programs for food rescue organizations to process inedible food scraps off- or on-site.

THREATS (External Factors)

- **Logistics.** Recovery requires extra planning and coordination as compared to disposal. Work is needed to ensure generators understand and buy into the social, environmental, and economic benefits of rescue.
- **Food spoilage.** Despite investments to expand infrastructure, there is a need for more support to enable distribution of food such as deli meat and produce before it spoils. Necessary resources include equipment for refrigeration and transportation, as well as staffing.
- **COVID restrictions.** Food pantries are prevented from using client choice models and hosting soup kitchens due to COVID safety restrictions, increasing wasted food.
- **Limitations on space and employee bandwidth.** These limitations inhibit food rescue organizations from accepting and distributing large quantities of food items.
- **Availability of culturally-sensitive foods**. Food donation agencies find it difficult to secure sources of certain culturally sensitive foods, such as halal meat.
- **Store policies**. Grocery stores without food donation in their store policies are deterred from participating.

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Source Separation for Composting, Anaerobic Digestion, and Feeding Animals

STRENGTHS (Internal Factors)

- **Existing drop-off programs.** Charlottesville offers three composting drop-off locations that are free for use by residents, as well as a wealth of resources and tips for composting or collecting food scraps at home.
- **Existing haulers of and outlets for organic waste.** For instance, Black Bear Composting, Panorama Paydirt, and Life Cycle Organics, all of which serve both the residential and commercial sectors.
- **Source separation programs at businesses.** Certain restaurants and grocery stores in the area divert their food scraps for composting or animal feed. Some restaurants with food scrap collection contracts also use compostable serviceware and extend their source separation practices to catering events hosted off-site.
- **Relationships between generators and service providers.** Business stakeholders have spoken positively of the service and communication provided by organics haulers. One restaurant provides food scraps to multiple local farmers by allotting each of them a designated bucket that they can pick up at their convenience.
- **Commitment of businesses to making programs work.** Restaurants with existing programs are willing to budget and plan for organics collection programs. One business separates out food scraps further to meet the differing requirements of their industrial compost and animal feed outlets. Another business with multiple locations transports their food scraps from auxiliary locations to the main location for pick up.

WEAKNESSES (Internal Factors)

- **No organics collection service is offered by the City.** This lessens the likelihood that citizens will compost and translate this concern to the businesses they support.
- **Limited options.** A lack of diversity in processing infrastructure limits the comprehensiveness and resilience of the food waste management system. There also is a lack of anaerobic digestion facilities in the state.
- **Lack of participating generators.** More large generators source separating food scraps for diversion are needed to spur an increase in demand for organics hauling and processing.
- **Non-comprehensive programs.** Businesses with source separation programs are focused on only diverting organics produced in the back-of-house, due to ease of separation, and do not collect front-of-house, preventing the maximum diversion potential of wasted food. Additionally, some grocery chains do not have composting standardized into operations across store locations.
- **Limited awareness.** Food waste generators aren't always aware of their diversion options. For example, some restaurants are not aware that current composting technology can process the type of wasted food they produce.
- **Under-staffed smaller diversion operations**. Because of this, service providers such as animal feed sites may have delays in service.

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OPPORTUNITIES (External Factors)

- **Leverage and support existing service providers.** The organics haulers and processors serving businesses and institutions in the area have the capacity to collect from more entities and are actively seeking new customers.
- **Use large generators to seed marketplace demand.** Large volume generators can act as anchors for establishing new hauling routes and ensuring feedstock for processors, which in turn can drive additional capacity in the system.
- **Share training procedures.** The high employee turnover rate common to foodservice businesses in a college town presents the opportunity to create and share robust training procedures for source separation among businesses.
- **Education and marketing.** Restaurants with composting programs can supply informational materials on residential drop-off options with takeaway food and/or compostable to-go containers. These green practices can also serve as a marketing opportunity for businesses.
- **Highlight the symbiotic relationship between generators and processors.** For example, showcase a hauler that provides finished compost product back to a business that contributed food scraps.
- **Widen use of reusableware by restaurants and caterers**. Once implemented, this can cut down on contamination in private and public food waste receptacles. Look to UVA's dining hall reusable program for best practices and to spur demand for these items in local businesses.

THREATS (External Factors)

- **Low tipping fees for waste.** This limits the financial incentive to participate in diversion programs and inhibits the creation of a food scrap composting market. The problem is magnified by a lack of understanding as to why service providers charge to pick up waste material when they also make financial gains from the final compost product.
- **Permitting new organics processing sites.** The process can be a lengthy, costly, and difficult.
- **Space constraints and fear of attracting rodents.** These are common concerns cited by organizations as reasons preventing them from source separating food scraps.
- **Time required.** The perception that source separation is time consuming deters business participation.
- **Lease conditions.** In lease agreements where trash pickup is included, businesses have less financial motivation towards, and in certain cases, control over, starting source separation programs if this is not a priority of the property manager or landlord.
- **Standardizing compostableware.** Standardization is difficult for large generators, particularly institutions with various national food vendors. Supply chain issues add to this difficulty.
- **Contaminated feedstocks.** Source separation programs that include post-consumer waste, such as those of restaurants and festivals, may lead to increased contamination.

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Recommendations

Immediate actions

- **Pursue ongoing opportunities to highlight positive examples of wasted food diversion activity.** Showcase successful businesses and provide opportunities for the community to learn more about the benefits of food waste prevention. For instance, share best practices of leaders in the institution, grocery, and restaurant sectors. Consider offering promotional templates or platforms that can be utilized by restaurants with existing wasted food programs on social media. See this Social Media Toolkit developed by CET that highlights businesses in Rhode Island.
- **Leverage the cost-saving opportunities of food waste prevention.** Cost-saving opportunities support generators that are currently being threatened by the economic impacts of the pandemic. Consider offering technical assistance and other resources, such as this Leanpath case study on the University of Rochester which shows that the benefits of food waste prevention include financial savings.
- **Promote the many other benefits of food waste diversion and recovery efforts**. Benefits include feeding hungry people, environmental sustainability, and positive public relations. Cater messaging to each business sector. Emphasize that source separation programs can lead to cleaner, more efficient waste collection systems. Oregon's Wasted Food, Wasted Money campaign highlights the potential return on investment from food waste prevention.
- **Develop and distribute legal fact sheets for food rescue.** Explore partnering with the Harvard Food and Law Policy Clinic (FLPC) to develop legal fact sheets on liability protections, tax incentives, date labeling laws, and guidelines for feeding animals for Virginia, and disseminate these to generators. More information is available on the Harvard FLPC website.
- **Equip health inspectors**. Ensure that health inspectors have tools such as the abovementioned legal fact sheets and other guidelines on prevention and source separation, such that they can be conduits of information to food service businesses in Charlottesville. The NRDC Engaging Health Departments: Overview Guide provides information on engaging health departments in the process of tackling food waste.
- **Highlight businesses that are donating food or composting food waste.** Businesses can utilize window clings or adaptable marketing materials. For example, the Certifiably Green Denver program provides window clings to certified businesses, and RecyclingWorks in Massachusetts posts social media content that can be re-shared by businesses.
- **Provide online or physical resources to businesses.** Resources can be in the form of tip sheets, training tools, and/or contact information of local service providers that support their efforts to explore donation and diversion programs. Develop an online database of service providers, including food rescue organizations, animal feed operations, haulers, and processing facilities. One resource example is the Zero Waste Guide for foodservice establishments developed by the City of Philadelphia.
- **Support awareness of source separation among residents.** This will positively affect businesses that are already composting post-consumer waste or are considering program implementation. Clearly communicate which materials are compostable to aid source separation efforts. Combine this outreach with visualizations of the impact that many people can have if they compost food scraps.

- **Support programs for youth that directly address, or instill the importance of, donating surplus food and reducing food waste.** Examples of these efforts include this guidance document on Food Sharing Tables in Schools created by Vermont organizations, this Philadelphia Parks & Recreation initiative to provide free meals to students, and videos and case studies from THE GREEN TEAM, an environmental education program funded by Massachusetts Department of Environmental Protection, administered under contact by the Center for EcoTechnology.
- **Support existing food scraps processors and haulers.** Conduct outreach to businesses promoting the services of processors and haulers, as well as the community benefits they can have by participating in the composting process.
- **Understand the main needs of food rescue agencies.** Ask them what resources would help them serve more people or better serve their existing clientele.
- **Publicly recognize and promote food rescue organizations through networking and public-facing channels.** Ensure that there is transportation available to the food rescue locations that do not offer a drop-off service.
- **Reference existing waste characterization studies**. These studies offer a better understanding and raise awareness of the percentage of food waste and other organic material in municipal solid waste. The 2012 NRDC Issue Paper highlights that food represents the single largest component of municipal solid waste reaching landfills, and this NRDC document provides guidance on estimating quantities and types of food at the City level. It is significant that most characterization studies find a larger percentage of food waste material comes from Industrial, Commercial, & Institutional (ICI) sources than from residential sources. Additional studies could be conducted to customize this data for Charlottesville.

Medium-term actions

- **Encourage chain grocery businesses**. Those without existing programs can integrate food donation into their policies, opening them up to the partner pickup program facilitated by networks such as Feeding America.
- **Identify and contact generators.** Charlottesville businesses that do not have existing programs for source reduction, recovery, and source separation programs can be opportunities for impact.
- **Provide tangible goals.** Businesses that meet tonnage diversion or donation goals may also receive financial or public recognition incentives as rewards.
- **Demonstrate wasted food management at public events.** Encourage event planners using public spaces to implement wasted food prevention, rescue, and composting practices to raise awareness about wasted food and divert the waste from disposal. An example can be found in this Waste Free Event Guide developed by the Los Angeles Department of Public Works.
- **Provide direct technical assistance to businesses.** Waste assistance to implement food surplus reduction, recovery, and diversion programs includes conducting site evaluations and providing customized recommendations on organics service providers, donation agencies, and best practices. Explore the opportunity for replicating existing efforts. Implement a Food Waste Business Challenge that businesses can opt into. Examples of technical assistance and food waste business challenges are: RecyclingWorks in

Massachusetts Technical Assistance, the Food Matters Restaurant Challenge in Denver, the Philly Food Waste Business Challenge, and the Zero Waste Business Rebate in Austin.

- **Explore funding opportunities and collaborative approaches to support expansion of food recovery infrastructure.** For instance, shared service opportunities for cooler space that is underutilized, and development of a central location to repackage bulk food for distribution. The Food Waste Innovation Grants offered by the Department of Small and Local Business Development in Washington, D.C. are one example.
- **Review zoning and other building codes in Charlottesville.** Ensure that they do not include requirements that restrict the siting or operation of composting facilities or other technologies for diversion. This Bans and Beyond resource, developed by Harvard and the Center for EcoTechnology, has a section on how zoning policies impact food waste reduction. Sustainable Development Code also produced a resource highlighting cities with model zoning codes that can be adapted for Charlottesville.
- **Work with health inspectors and food rescue agencies.** Partner to create and disseminate detailed and clear fact sheets to businesses about acceptable food items for donation, highlighting perishable and hot food items of contention. Denver, for example, has a Donations and Safe Food Handling webpage and a brochure that outlines food donation best practices.

Long-term actions

- **Open residential compost drop-off sites to small businesses for a fee.** Expanding the number of food scrap drop-off sites will decrease the logistical burden of diverting food waste.
- **Support the expansion of intermediary food recovery organizations that are active in the state**. Examples include Food Rescue U.S. and MEANS Database.
- **After gaining a better understanding of food rescue agencies' needs, provide financial support.** Organizations may be low on space, cold storage, vehicles, and staff. This support could be in the form of microgrants, such as those offered by the city of Philadelphia.
- **Leverage the existing uptown/downtown corridor recycling collection route for businesses considering food scraps collection services**. Expanding services for businesses can also increase access for residential food scraps collection services.