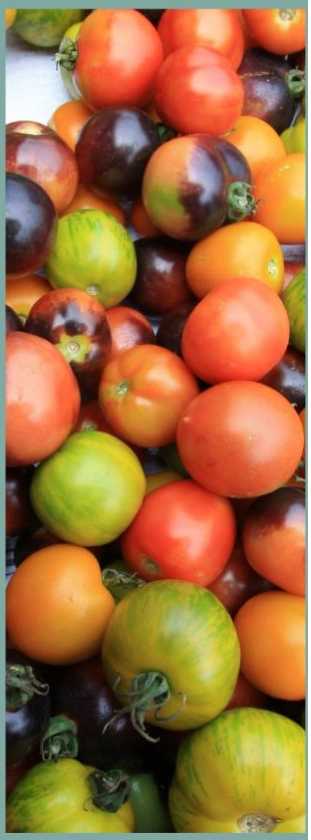
City of Winston-Salem

Food Resilience Report, 2025



Developing Food Resiliency Strategies

Winston-Salem

Department of Sustainability

Authors

Moriah Gendy, City of Winston-Salem
Dr.Shaleen Miller, City of Winston-Salem

Contributors

Dr. Rachel Zimmer, Wake Forest School of Medicine

Acknowledgements

Andy Szabat, Kalani Whillock, Zina Johnson, Breasia Wyn, Jennifer Chrysson

Sponsors

Camino Bakery, Second Harvest Food Bank

Departments

Recreation & Parks, Marketing, Neighborhood Services, Emergency Management, Community Assistance, City Link

Partners

City of Winston-Salem Community Sustainability Committee, City of Winston-Salem Urban Food Policy Council, Forsyth County Public Health Department, Forsyth County Public Library, Goodwill Industries, Island CultureZ, Novant Health, Piedmont Environmental Alliance, Piedmont Regional Food Council, Second Harvest Food Bank, Senior Services Inc., Wake Forest School of Medicine

This plan would not have been possible without the tireless efforts of so many committed community members and partners.

Indigenous Acknowledgement

The lands that the City of Winston-Salem steward served for centuries as a place for exchange and interaction for Indigenous peoples, specifically Saura (saw-ra), Catawba (ka-tah-buh), Cherokee (chair-o-kee), and Lumbee (lum-bee). We recognize that North Carolina is currently home to the following Indigenous tribes: The Eastern Band Cherokee, Coharie, Haliwa-Saponi, Lumbee, Meherrin, Occaneechi Band of the Saponi, Sappony, Tuscarora and the Waccamaw-Siouan, in addition to many other individuals belonging to Indigenous nations outside of North Carolina. We celebrate and honor the original and present-day Indigenous people of this land, their stewardship, and their contributions.

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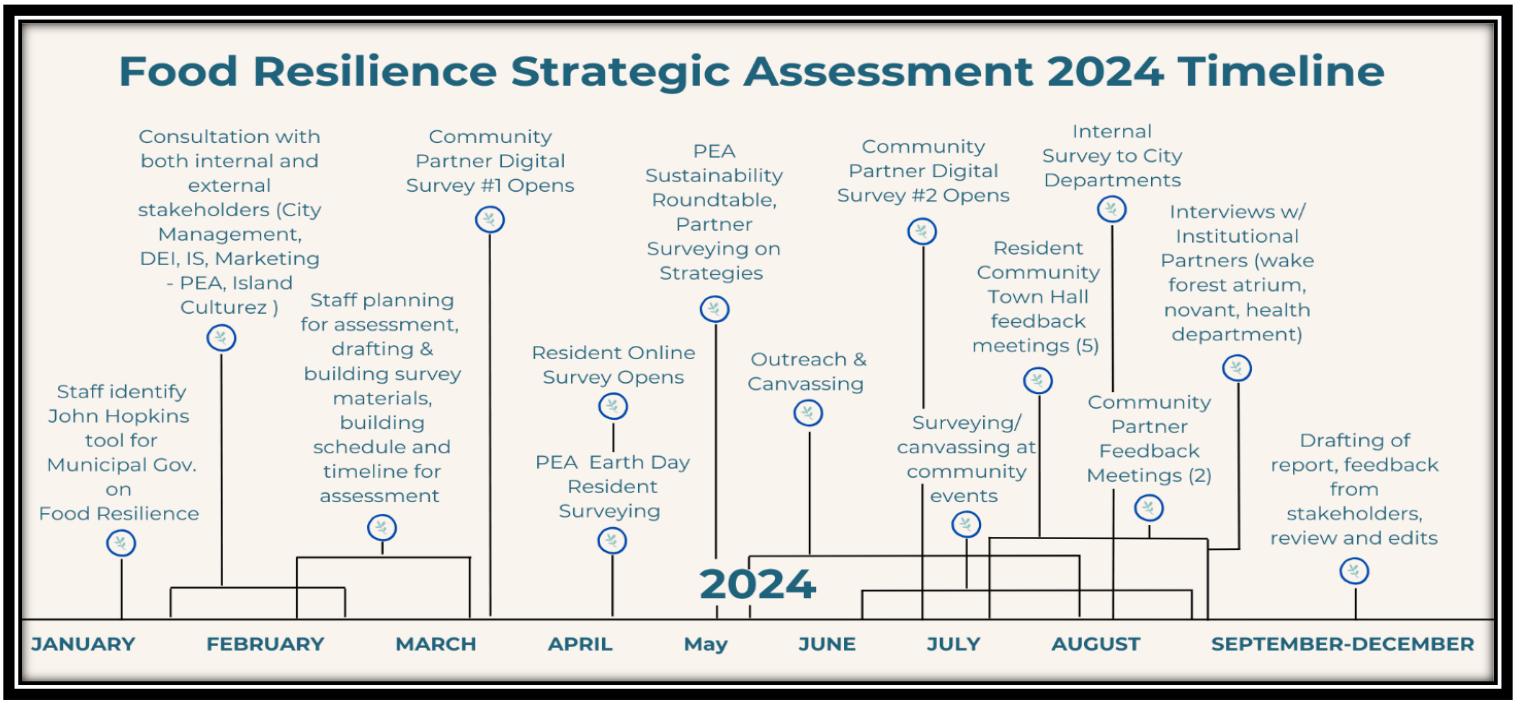
Executive Summary

> Food resilience is defined as the capacity over time of a food system to provide sufficient, appropriate, and accessible food in the face of various and unforeseen disturbances.

Food resilience is defined as the capacity over time of a food system to provide sufficient, appropriate, and accessible food in the face of various and unforeseen disturbances. Built into this definition is an understanding of sufficient quantity and nutritional quality of food. Since 2018, the City of Winston-Salem has been committed to raising awareness about food security, and in 2020, in the face of the pandemic, that commitment strongly moved into the space of food resilience. After funding and completing several projects and commitments, the City is ready to define what future work in this space may look like.

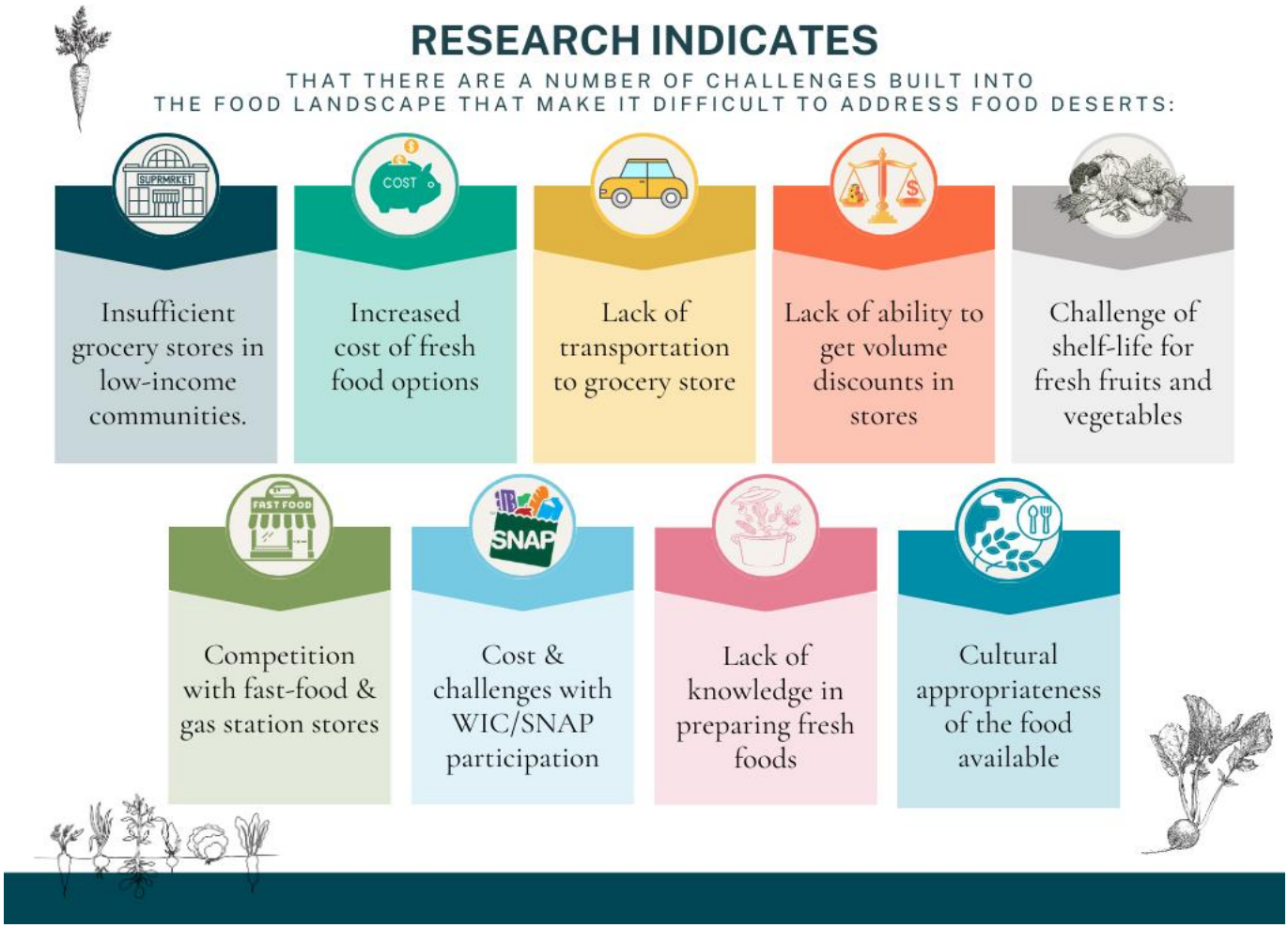
In January 2024, the Department of Sustainability for the City of Winston-Salem launched a comprehensive Food Resilience Strategic Assessment as part of the City's Food Resilience Program. We worked to identify relevant stakeholders in the food system, particularly those that participate in or help assuage food insecurity, as well as those with direct lived experiences and needs. Furthermore, we engaged in researching and benchmarking effective programs in other communities. Our assessment aimed to reach residents, community partners, and key institutional stakeholders. This assessment included a survey, both online and in-person community meetings with residents, similar meeting styles for community organizations, and interviews with larger organizations and institutions.



The resulting document is a part of the community's vision and values of our local food system. It is NOT a specific roadmap. This document outlines the priorities that the community recommends should be addressed, but it does not outline every step. Collaborative partnerships, made up of the community, will be needed to implement plan strategies. Many of the gaps and weaknesses in the food system cannot and should not be addressed from interventions by the city. In these cases, the city may be a supportive, collaborative, and encouraging partner.

Increasing food resilience is not something that can be delivered by one organization working in isolation. This food resilience report is just the beginning—there's still work to be done. This plan can serve as a springboard for everyone in the city and county. In writing this report, we hope expected outcomes include increasing emergency response coordination for food security, development of strategies and policies to support food deserts, building public awareness of urban food systems, and strengthening connections and promoting existing resources between food system stakeholders. We believe that there is a place for everyone to contribute to building a better local food system, whereby more than just basic needs are met.

Food System Limitations



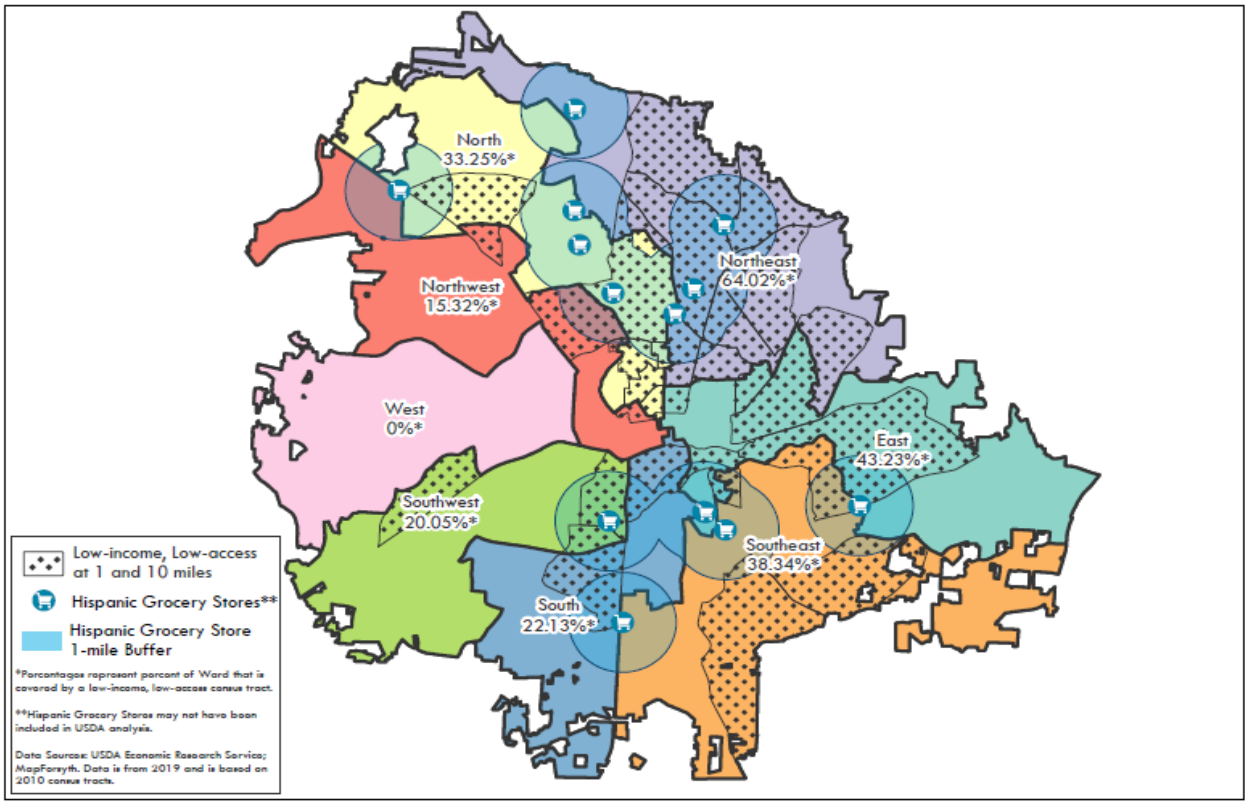
Brief Takeaways

The Local Food System

Our findings revealed significant vulnerabilities within the food system of Winston-Salem. Notably, over 55,500 individuals are considered food insecure, with only 66% eligible for Supplemental Nutrition Assistance Program (SNAP) and other food assistance programs. This gap is exacerbated by several contributing factors, including insufficient grocery access in low-income communities, inadequate transportation options, the high prevalence of convenience foods, varied cultural and community knowledge about healthy eating, and climate-related challenges such as heat islands and other climate hazards. Moreover, poor food system infrastructure and resilience planning further compound the risks faced by residents in low-access communities, particularly in times of crisis. Key Findings were compiled throughout our assessment that depicted a snapshot of food security within Winston-Salem.

Winston-Salem Low Income & Low Access to Grocery Stores, With Hispanic Grocery Overlay

Source: Billings, J. (2024). Food desert map With Hispanic Grocery, I mile Distance. City of Winston-Salem GIS;



The United States Department of Agriculture (USDA) defines a Food Desert as a measurement and tool for evaluating availability and access.[1] Food desert is defined by the USDA as an area that is low-income and where 33% of the population live more than 1 miles from the nearest full-service grocery store.[2] In the United States, about 12% of the population lives in a food desert as of 2017.[3] Seven of the eight wards in Winston-Salem have some part that is designated as a food desert.

While Food Deserts are based on distances to full-service grocery stores, many people rely on non-traditional stores. For example, ethnic and immigrant food businesses often serve people of color and immigrant populations, although their contributions are often outside of traditional food access evaluations.[4] These food outlets are important ways to provide healthy, affordable foods without planned intervention. Statistics have shown that ethnic food markets carry 1.6 to 2.6 times higher varieties of vegetables and fruits than a typical corner store. In Winston-Salem, there are several Hispanic groceries that serve the community in many of the areas labeled food deserts.

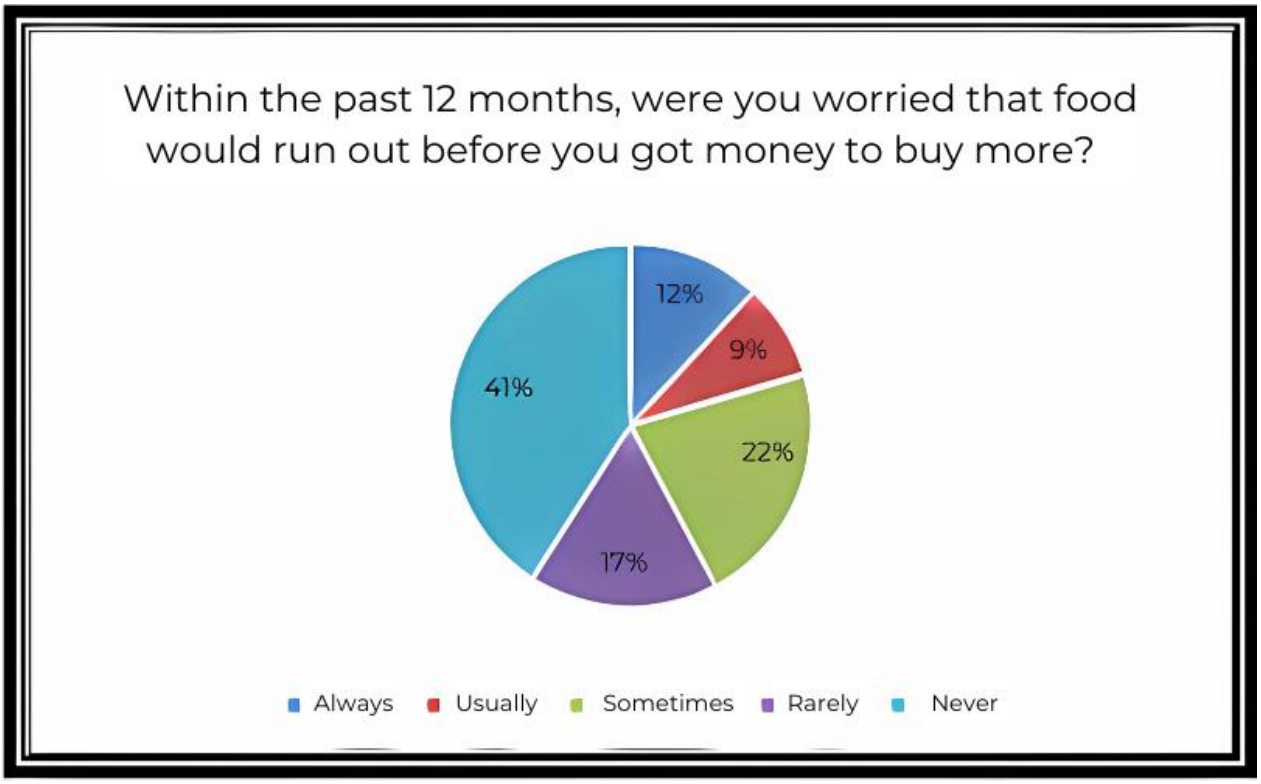
The food desert overlay map above also indicates the need for alternative measures to show the impacts that community assets have on the food system locally. Since non-traditional solutions will not change the shape of the food desert, the city and other partners must define and maintain other data and records of impact.

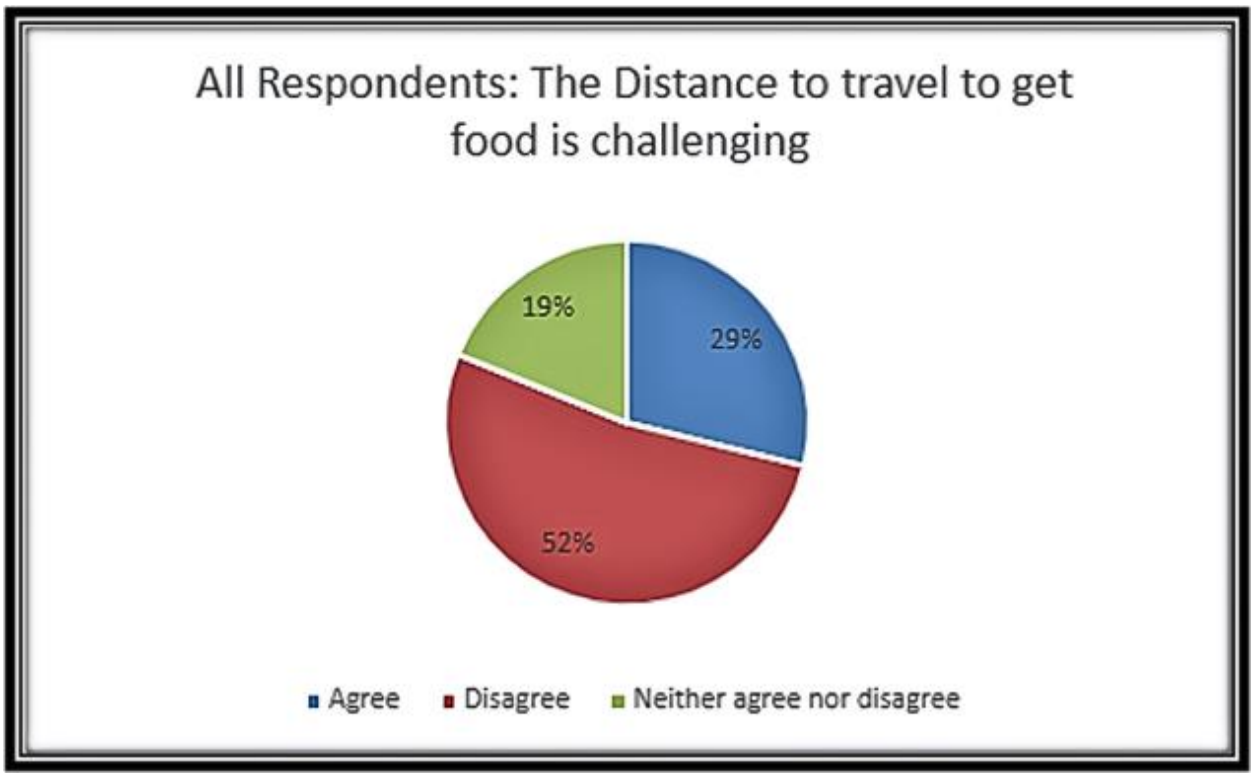
Community Feedback & Recommendations

During our assessment period, we surveyed residents, community partners and local organizations, as well as institutional partners. Surveying efforts incorporated several online survey tools, as well as several community town hall meetings. We invited members of our community to share with us their experiences, their work, the needs and the strengths of our food system. Notable challenges were reported, such as worry over money to afford groceries, or limitations on how to travel to grocery stores.

[1] Where previously the term “food desert” was used, the USDA now designates these areas as “low-income and low-access” to food.
[2] Low income is defined in this case as an area that has either a poverty rate greater than or equal to 20% OR a median family income not exceeding 80% of the median family income
[3] Hervey, 2021
[4] Khojasteh, 2022

WINSTON-SALEM FOOD RESILIENCE ASSESSMENT, RESIDENT SURVEY RESPONSES:





Community Proposed Solutions

Throughout the assessment, residents voiced their needs, partners shared insights and resources, and City staff conducted research and benchmarking of effective strategies from other communities. These efforts have culminated in the identification of several key strategies to address food insecurity and build food resilience.

Support Grocery Stores & Alternative Access Points

- Encourage stores
- Supplement online grocery delivery
- Mobile grocery store

Improve Transportation to Grocery

- Review bus policy
- Review bus routes & explore microtransit options

Expand Food Options & Improve Sovereignty

- Provide more prepared, hot foods
- Ensure communities have say about options provided

Urban Agriculture

- Local farmers markets
- Community gardens

Education & Residential Engagement

- Find pantry sources
- How to spend SNAP
- How to use pantry resources

Community Partner Funding & Engagement

- Not new, stretch existing
- Regular meetings/newsletter
- More funding for small organizations

City-Level Strategies for Strengthening Food Systems

While some of these strategies fall into the City's purview, others may fall into roles of the County Health Department, of local health providers such as Novant and Wake Forest Atrium, and others are community organization roles. An analysis of possible actions that the city could take revealed the following:

Funding

- Establish a revolving fund specifically for food organizations. Could prioritize types of services, such as those expanding food options to prepared foods or more cultural options.
- Fund through an RFP process and/or grant making to community organization to establish and run options such as mobile food grocery, Community Supported Agriculture (CSA) food delivery, food hub, or online food services.
- Continue funding for Hydroponics and/or services such as HOPE of Winston -Salem's provision of local food into the community

Planning, Zoning, & Land Use

- Recommend zoning changes to reduce hurdles for produce stands. This could include home produce stands and produce stands on vacant lots.
- Support planning and economic development decisions that support increased local grocery stores.
- Provide vacant lots for community gardens and urban agriculture

Transportation

- Assess the bag policy for the bus
- Review and revise bus routes for grocery store access
- Establish microtransit specifically for grocery store access

Education & Outreach

- Develop an app for residents to identify resources
- Develop a newsletter for community organizations to bridge information gap
- Conduct resident outreach on topics as indicated by residents. (Hire/pay for outreach in necessary spaces such as nutrition.)

Partner

- Engage in studies and partnered grant requests (including grant cost matching) with academic institutions and health care partners to increase outreach and projects. Prioritize projects such as prescription food boxes.

Evaluating some of the steps that the city could take the following graphic shows approximate estimation of cost and effort of implementation.

Background

Introduction

In the intricate tapestry of urban landscapes, the accessibility, affordability, and sustainability of food resources play a pivotal role in determining the overall well-being of a community. Ensuring an adequate, healthy food supply for now and in the future despite shocks and stressors of the environment, economics, and political situations requires a resilient food system. As we delve into this comprehensive report on food resilience in Winston-Salem, we embark on a journey to understand and address the multifaceted challenges that impact the community's food systems.

Our investigation is structured around three fundamental pillars: the identification and mitigation of food deserts, the assessment and optimization of existing food assets, and the enhancement of food resilience in the face of potential hazards. To foster a holistic understanding of Winston-Salem's food landscape, we will navigate through the geographical, social, and economic dimensions that shape the community's relationship with food.

Embarking on a transformative journey towards fortifying food resilience in Winston-Salem, this report leverages a robust municipal planning tool developed by Johns Hopkins University. Grounded in meticulous research methodologies, this tool facilitated the collection of vital partner information and fostered community engagement through purposeful meetings. Adding to this, we also included resident feedback through comprehensive surveys.

The process unfolds as a collaborative effort, harnessing the collective wisdom of stakeholders and the voices of the community. By tapping into the rich tapestry of insights and experiences, we aim to sculpt a nuanced understanding of Winston-Salem 's unique challenges and opportunities in the realm of food security.

Furthermore, this report undertakes a benchmarking initiative, drawing inspiration from cities engaged in similar food resilience endeavors. By juxtaposing Winston-Salem 's strategies with those of other urban centers, we seek to distill best practices, lessons learned, and innovative approaches that can bolster our community's journey toward a more resilient and sustainable food future.

This document represents the community's collective vision and principles for a robust local food system. Rather than providing a detailed action plan, it identifies key priorities that the community believes should be addressed. Achieving these goals will depend on collaborative efforts, as fostering food resilience is not something any single organization can accomplish on its own. This report serves as a starting point—there is still significant work ahead.

We see this plan as a catalyst for action throughout the city and county. By developing this report, we aim to inspire outcomes such as improved coordination for food security during emergencies, the creation of policies and solutions to combat food deserts, greater public engagement with urban food systems, and stronger networks among food system stakeholders.

Building a better local food system—one that goes beyond meeting basic needs—requires contributions from everyone.

The outlined strategies focus on enhancing food security for the entire community while prioritizing the needs of vulnerable and historically marginalized groups.

State of Winston-Salem Food System

Winston-Salem Forsyth County Food Security Data

Food security is one output of a functional food system. According to the 1996 World Food Summit, food security is defined as when people have, always, physical, and economic access to sufficient safe and nutritious food that meets their nutritional and food preference needs for a healthy life. [5] Food security is made up of:

FORSYTH COUNTY 2022 FOOD SECURITY DATA

SOURCE: FEEDING AMERICA (2022). *FOOD INSECURITY IN FORSYTH COUNTY*; U.S. DEPARTMENT OF AGRICULTURE, ECONOMIC RESEARCH SERVICE (2023). *FOOD ACCESS RESEARCH ATLAS*.[6]

- Availability, by which culturally appropriate food is available within a particular geography,
- Access, whether communities can access the stores with affordable food options, and,
- Utilization, where people can prepare and consume available food.

Food security is largely based on income, but even within a household, roles may contribute to food security. Overall, those who experience food insecurity have a lower per capita income; however, household members who are children, a disabled working age adult, or experienced job loss in the last year have been found to be more likely to be food insecure.[7]

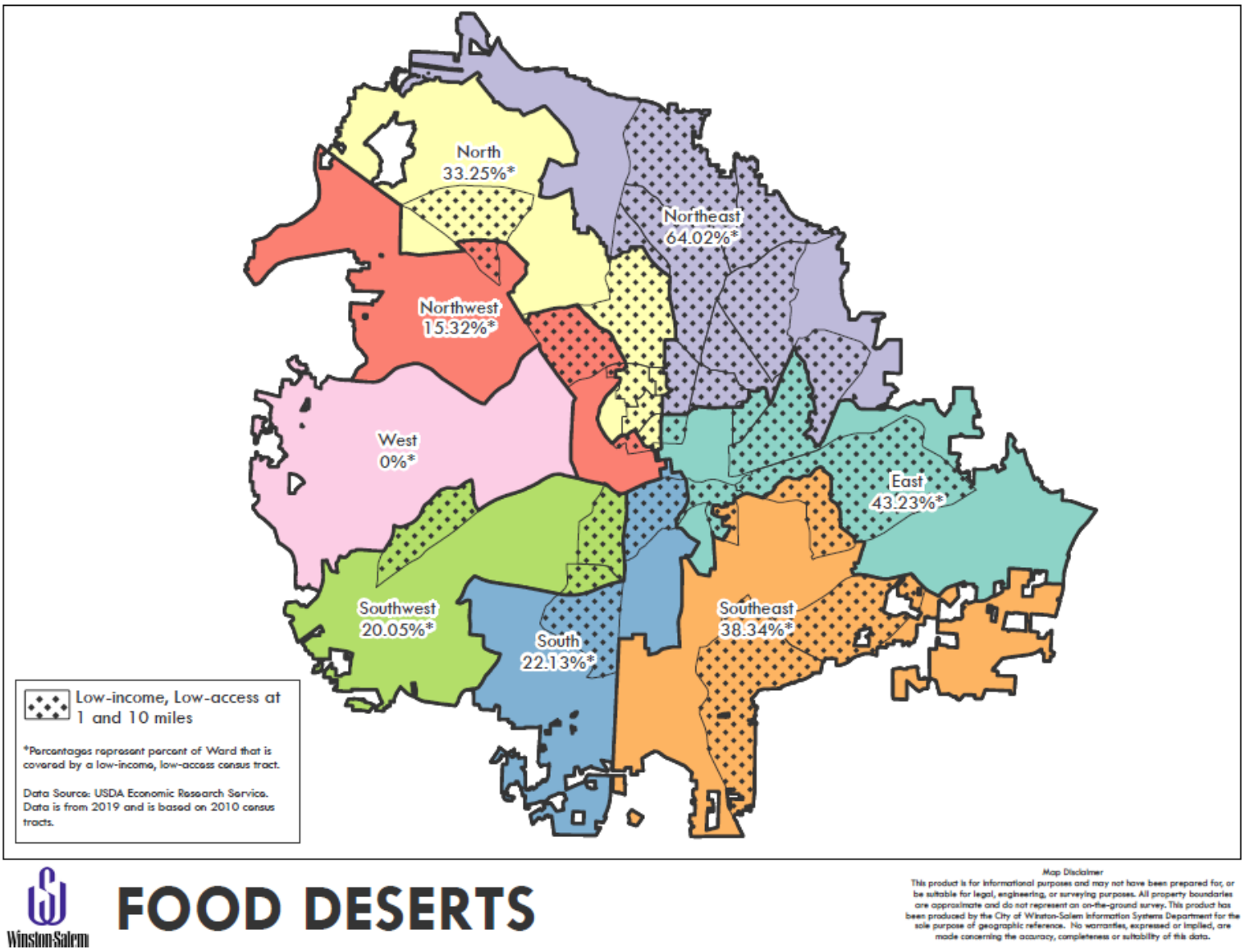
The Food Desert has been one way of measuring and evaluating availability and access.[8] Food desert is defined by the United

[5] Food & Agriculture Organization of the United Nations, Rome Declaration on World Food Security, 1996
[6] Feeding America, 2019
[7] Berkowitz, et al. 2024
[8] Where previously the term "food desert" was used, the USDA now designates these areas as "low-income and low-access" to food.

States Department of Agriculture (USDA) as an area that is low-income and where 33% of the population live more than 1 miles from the nearest full-service grocery store.[9] In the United States, about 12% of the population lives in a food desert as of 2017.[10] Seven of the eight wards in Winston-Salem have some part that is designated as a food desert.

Winston-Salem Low Income & Low Access to Grocery Stores

Source: Billings, J. (2024). Food desert map of Winston-Salem by ward Map. City of Winston-Salem GIS; Forsyth County data.



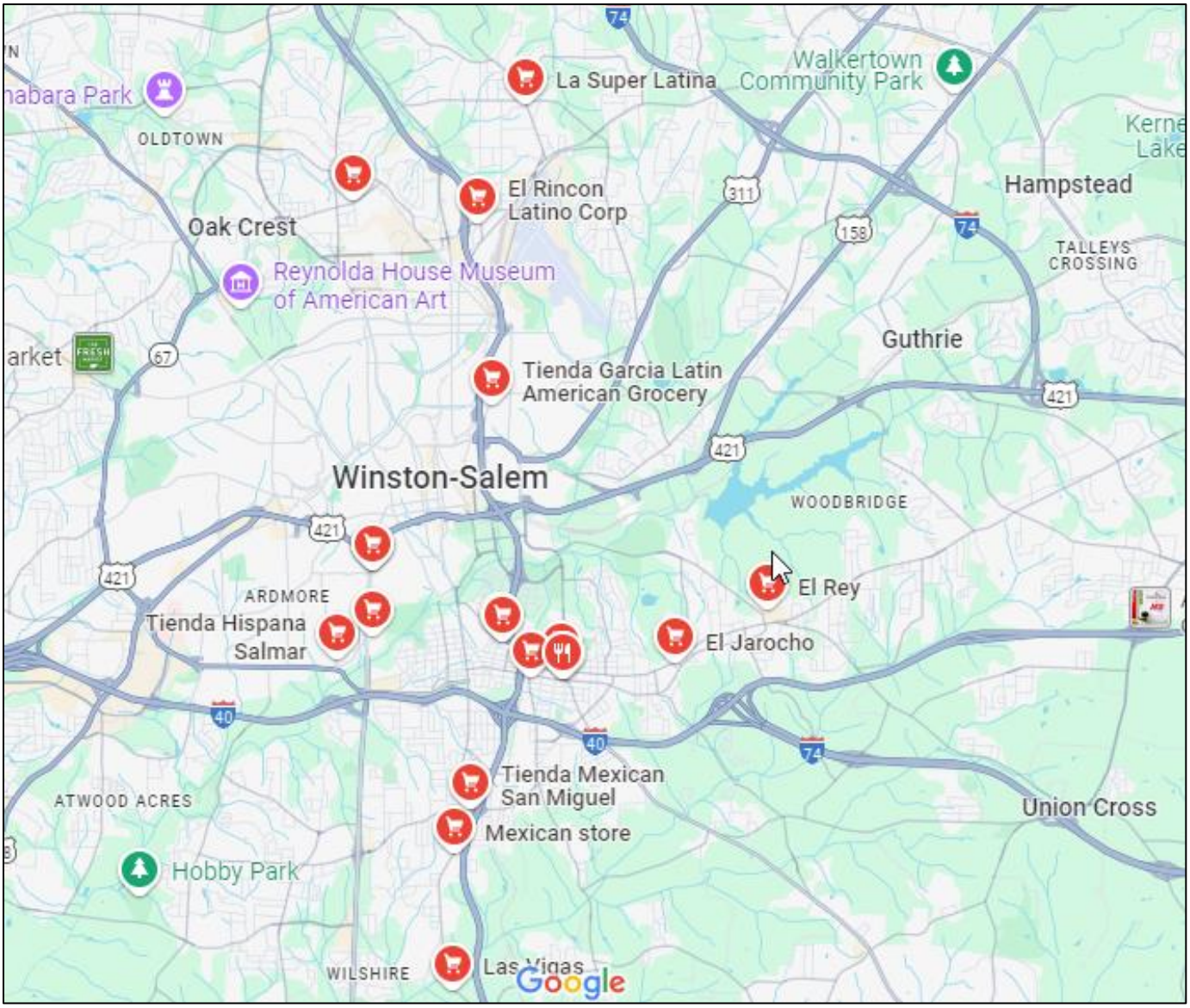
[9] Low income is defined in this case as an area that has either a poverty rate greater than or equal to 20% OR a median family income not exceeding 80% of the median family income

[10] Hervey, 2021

While Food Deserts are based on distances to full-service grocery stores, many people rely on non-traditional stores. For example, ethnic and immigrant food businesses often serve people of color and immigrant populations, although their contributions are often outside of traditional food access evaluations.[11] These food outlets are important ways to provide healthy, affordable foods without planned intervention. Statistics have shown that ethnic food markets carry 1.6 to 2.6 times higher varieties of vegetables and fruits than a typical corner store. In Winston-Salem, there are several Hispanic groceries that serve the community in many of the areas labeled food deserts.

WINSTON-SALEM HISPANIC GROCERY STORE MAP

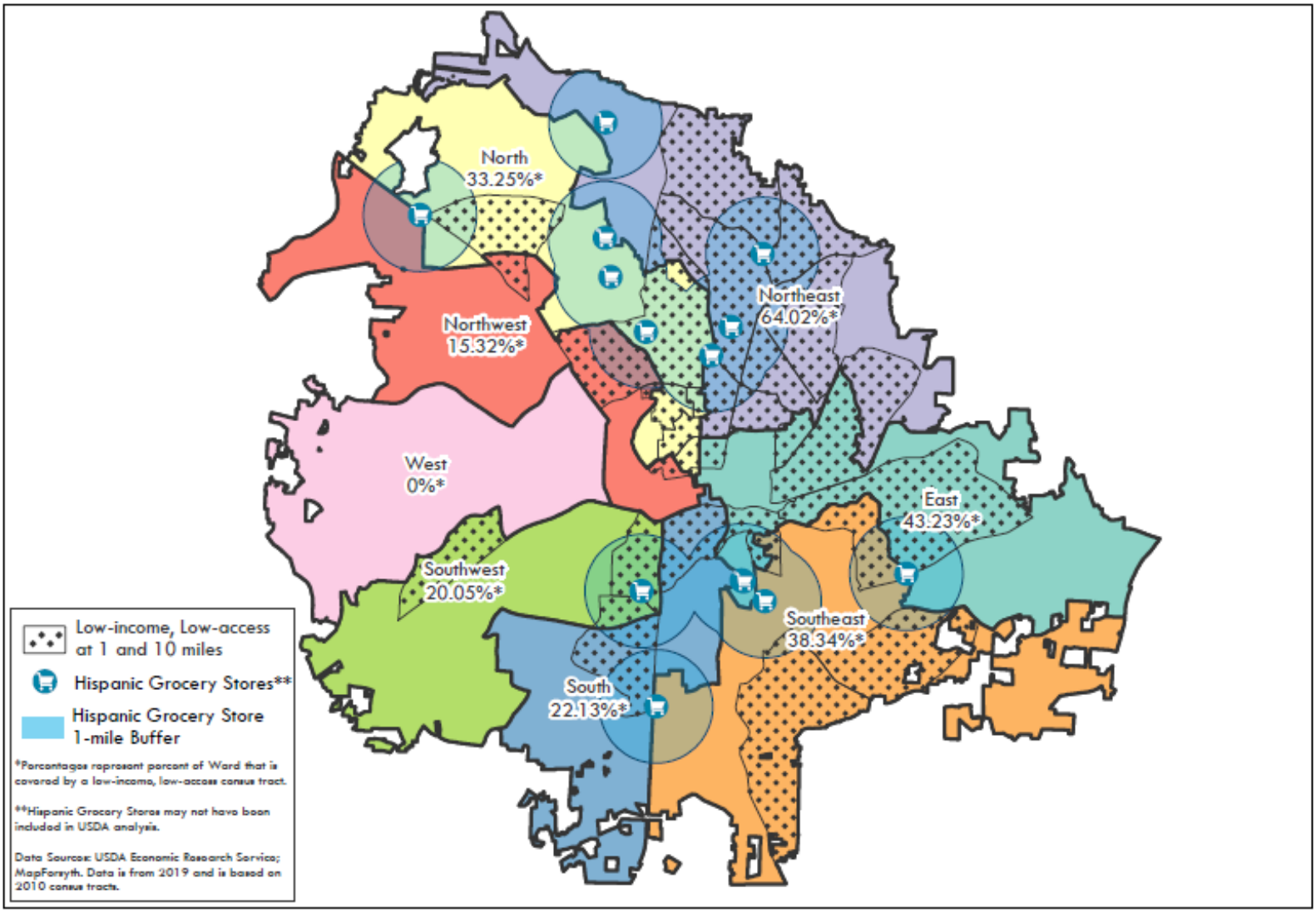
SOURCE: HISPANIC GROCERIES, GOOGLE MAPS, SEPT 2024



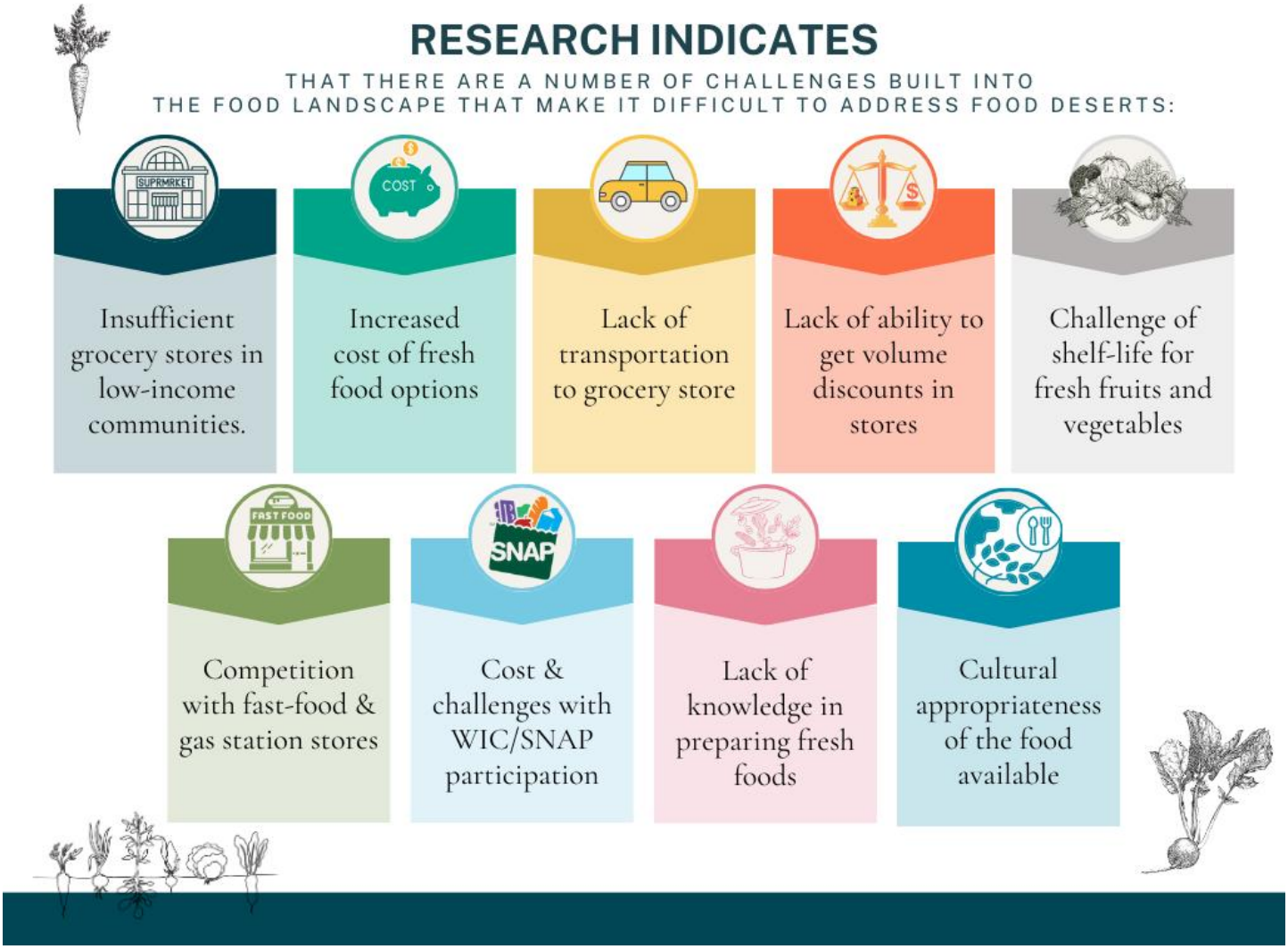
[11] Khojasteh, 2022

Winston-Salem Low Income & Low Access to Grocery Stores, With Hispanic Grocery Overlay

Source: Billings, J. (2024). Food desert map With Hispanic Grocery, I mile Distance. City of Winston-Salem GIS;



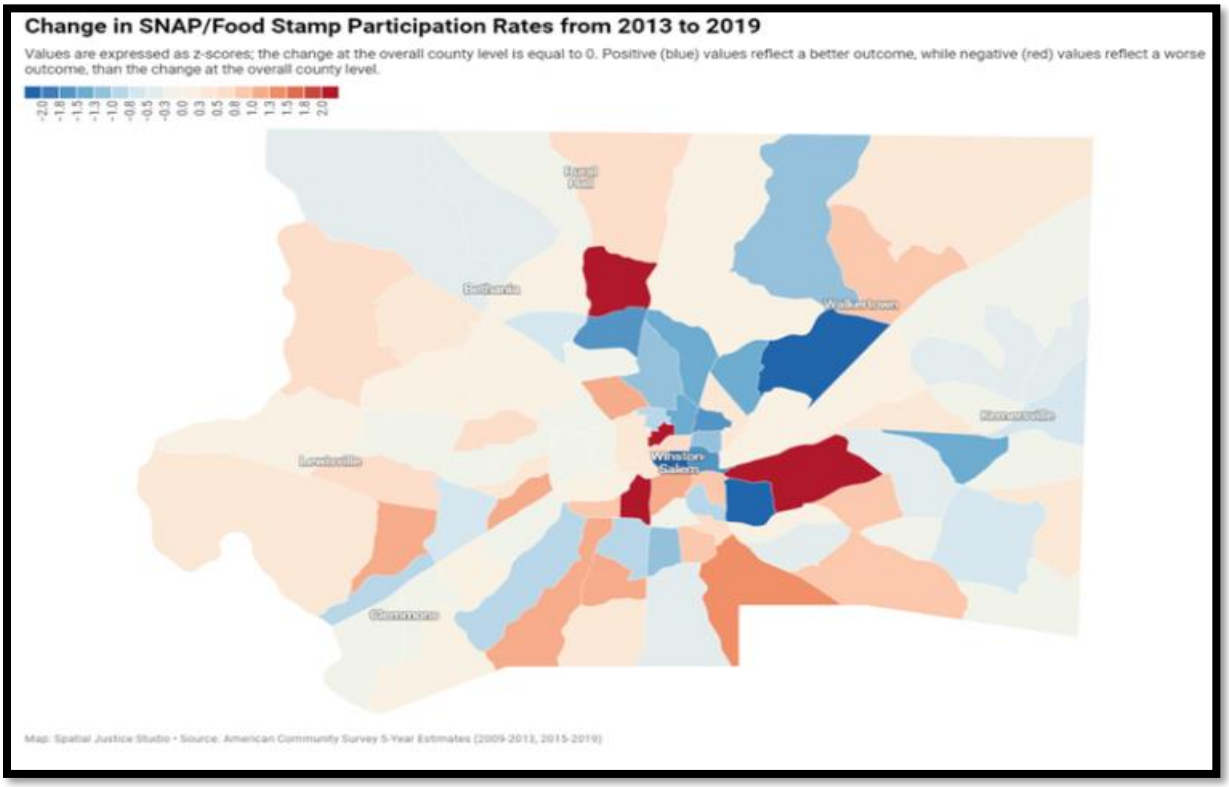
Food System Limitations

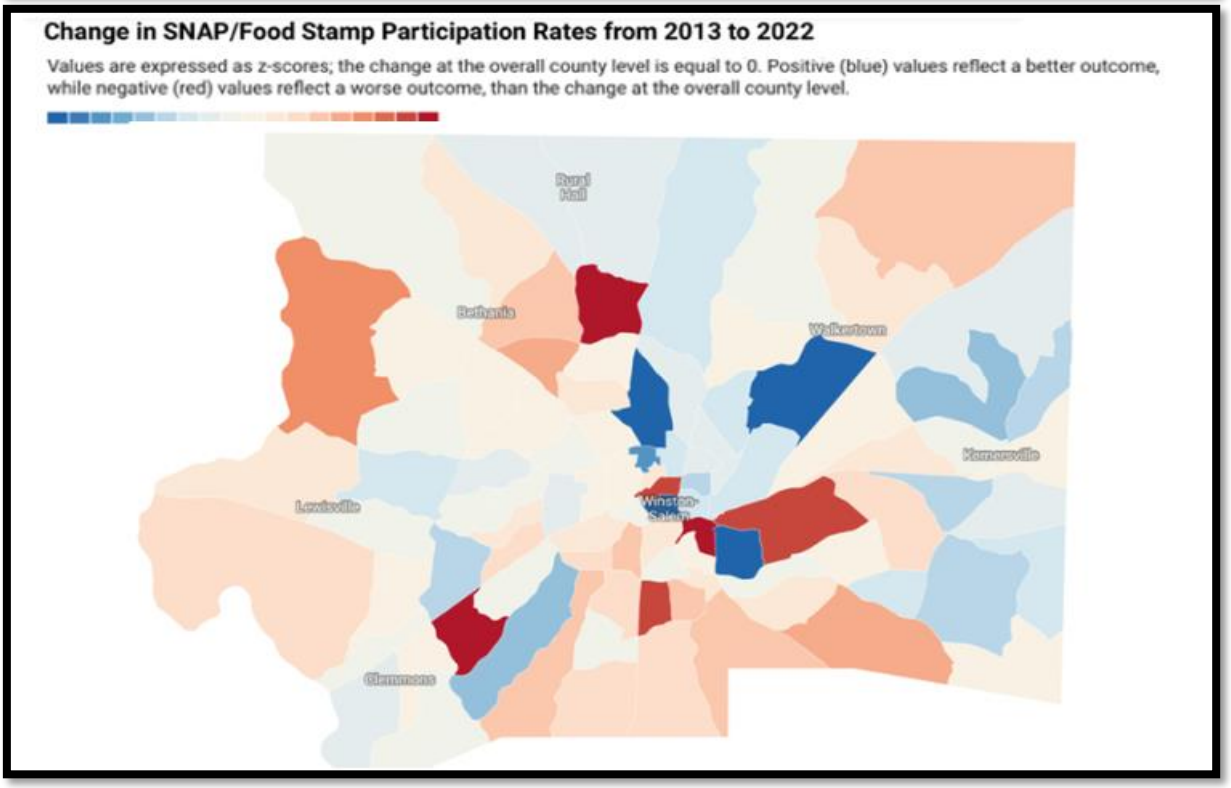


The following maps were sourced from the Neighborhood Atlas, a resource that is supported by the county MapForsyth group as well as the Spatial Justice Institute (WSSU). The following maps indicate changes in in the rate of SNAP/EBT (food stamp) participation between 2019 and 2022. Notably, it is apparent that there was an increase in the rate of SNAP/EBT use across the city during this time, although there was a decrease in certain areas of the city that are not considered food desert areas as well. This increase is somewhat expected, as the time frame in which these items were measured aligns with the COVID-19 pandemic, an event that put a notable strain on the greater food system, but, added additional vulnerability to low resourced areas.

Changes in Food Stamp Participation Rates (2 Date Ranges, 2019 & 2022)

Source: Forsyth County GIS, Neighborhood Atlas. (2024). Changes in Food Stamp Participation Rates, Maps of 2019 & 2022 shifts

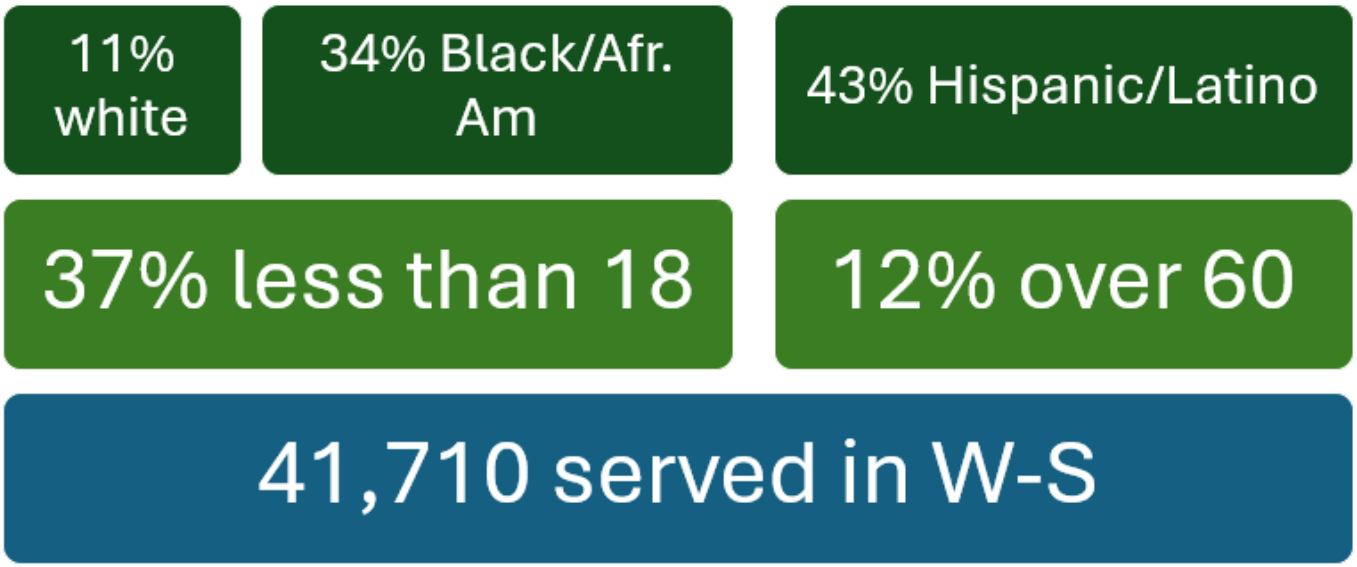




These findings are consistent with other data that also correlates increased utilization of food access programs.

Another way of measuring food security is via data on those seeking assistance. Second Harvest Food Bank data grocery assistance programs for Fiscal Year 2023/24 (July1, 2023-June 30, 2024) recognizes that 41,710 individuals were served from within their programs. 37% of these were under age 18, and 12% were over 60. In addition, for the first time ever, Hispanic/Latino population was the largest served at 43%, with Black/African American at 34%, and White at 11%. The highest serving zip codes are 27105 and 27107, in the North and East Southeast respectively.

SECOND HARVEST FOOD BANK OF NWNC DATA



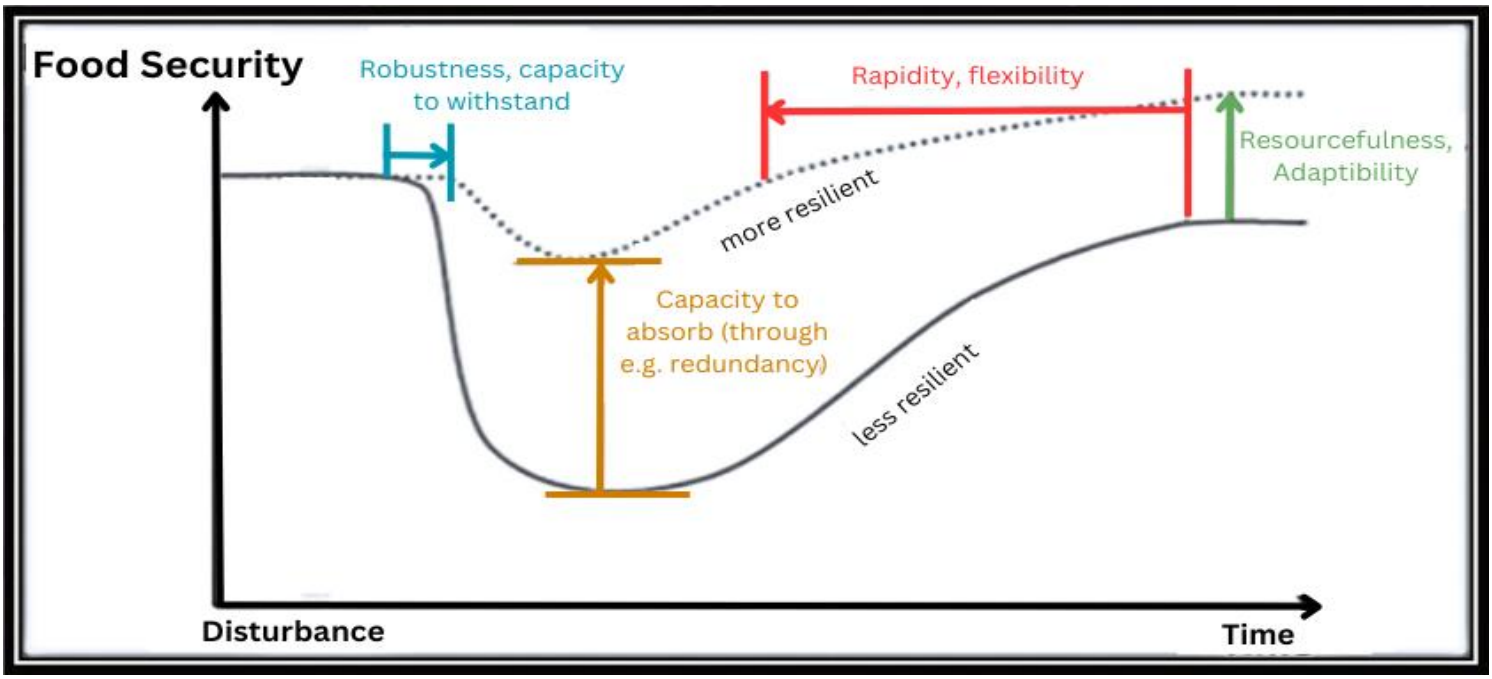
Another key component of food security is whether the food environment is healthy. Unhealthy food environments or inequitable access to nutritious food can lead to poor public health outcomes, and on an individual level foster chronic health problem such as obesity & heart diseases. Individual food security problems may also be compounded by poor dietary choices and nutrition knowledge.[12]

Food Resilience Definition

In an era marked by complexity and uncertainty, especially highlighted by the food system's failures during the 2020 pandemic, food resilience has gained increased attention in Winston-Salem. This concept includes ensuring the sufficient quantity and nutritional quality of food, while also focusing on the system's ability to adapt to disturbances over time.

[12] U.S. Department of Agriculture, n.d.

SOURCE: TENDALL, ET. AL (2015)



Food resilience is defined as the capacity over time of a food system to provide sufficient, appropriate, and accessible food in the face of various and unforeseen disturbances. Built into this definition is an understanding of sufficient quantity and nutritional quality of food. The food resilience action cycle also conceptualizes the idea that there is a learning and preventative action components in the food system, whereby response is not a one-time action but a continuing developing capacity, which allows a food system to adapt in a changing environment.

The food resilience action cycle recognizes that resilience is not achieved through a single response but through an ongoing process of learning and preventive actions. This allows the food system to continuously develop its capacity to adapt to changing environments.

In Winston-Salem, food resilience is also closely tied to environmental justice. According to the North Carolina Food System Resilience Strategy Report, produced by Duke University's World Food Policy Center and the Center for Environmental Farming Systems, Black, Indigenous, and People of Color (BIPOC) communities face disproportionately negative impacts during systemic shocks and stressors, due to long-standing inequities.

Rather than aiming for a simple "bounce-back" from crises, Winston-Salem's food resilience strategies focus on transformation and improvement. These strategies are designed not only to address food security issues across the community but also to address the needs of vulnerable and historically disadvantaged populations.

Food System Landscape

Forsyth County Profile, Food security, PTRFC 2021 Food Assessment

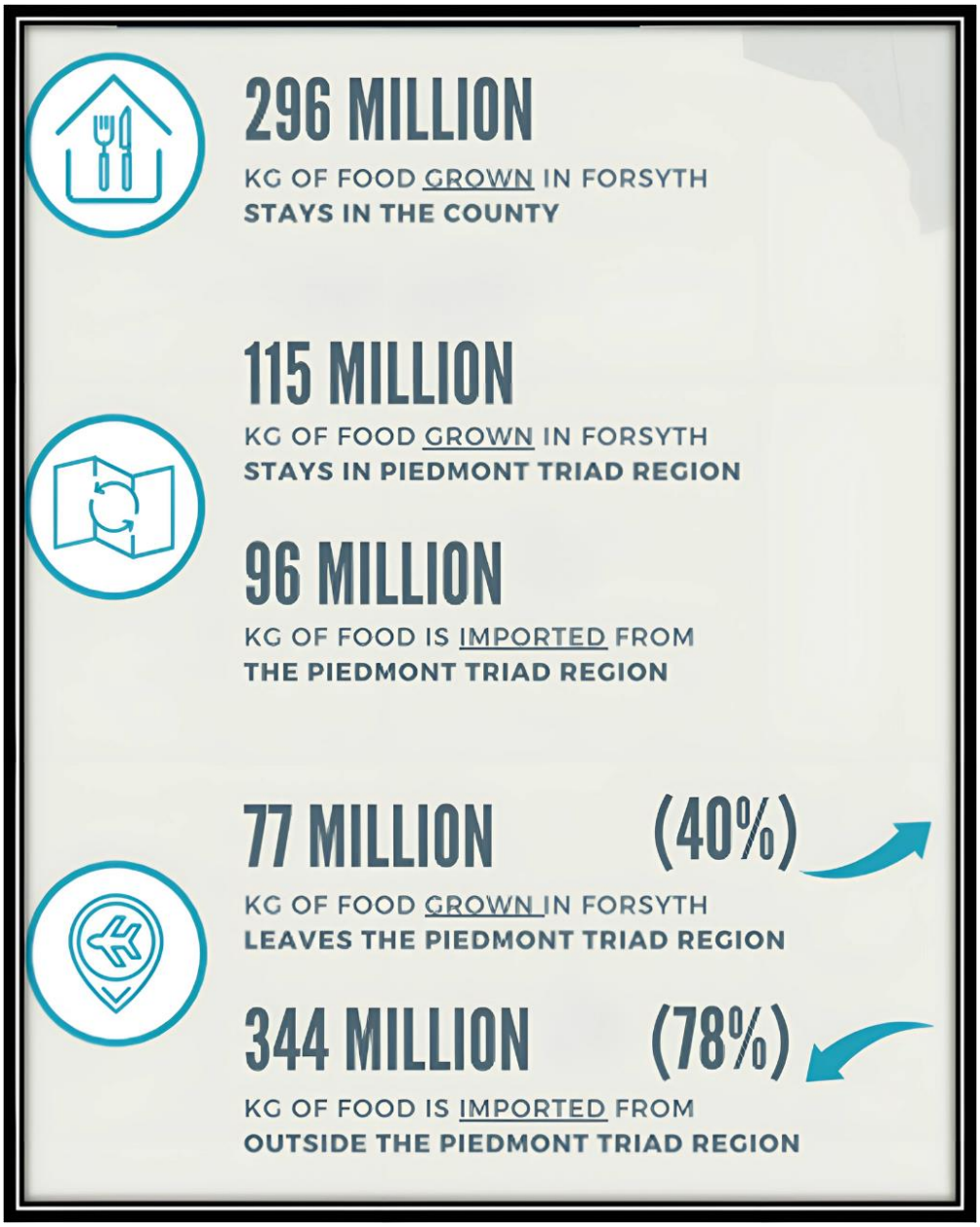
Source: *Regional Food System Assessment – Forsyth County Profile*, 2021, Piedmont Triad Regional Food Council

Building on the understanding of food insecurity and access challenges, it is vital to understand our communities' network of food access points and resource availability. In 2021, the Piedmont Triad Regional Food Council conducted a food assessment to develop a baseline

understanding of the regional food system. While this assessment was conducted for the full Piedmont region, county profiles were developed to assess local communities.[13]

Forsyth County Profile, Imports VS Exports, PTRFC 2021 Food Assessment

Source: *Regional Food System Assessment – Forsyth County Profile*, 2021, Piedmont Triad Regional Food Council



Cities consume 80% of all food being produced globally. [14] This is notable and local by looking at the volume of food imported into the Piedmont Triad Region is outpaced by the volume of food produced and consumed within our region. Reliance on importation of food within the region indicates a reliance on nationalized food distribution system. As a result, inherent gaps within our food system are bred; creating low-access food communities that are not prioritized within the intricate network of food logistics throughout the country.

[13] Piedmont Triad Regional Food Council, Food Assessment, 2021
[14] DePaolis, 2024

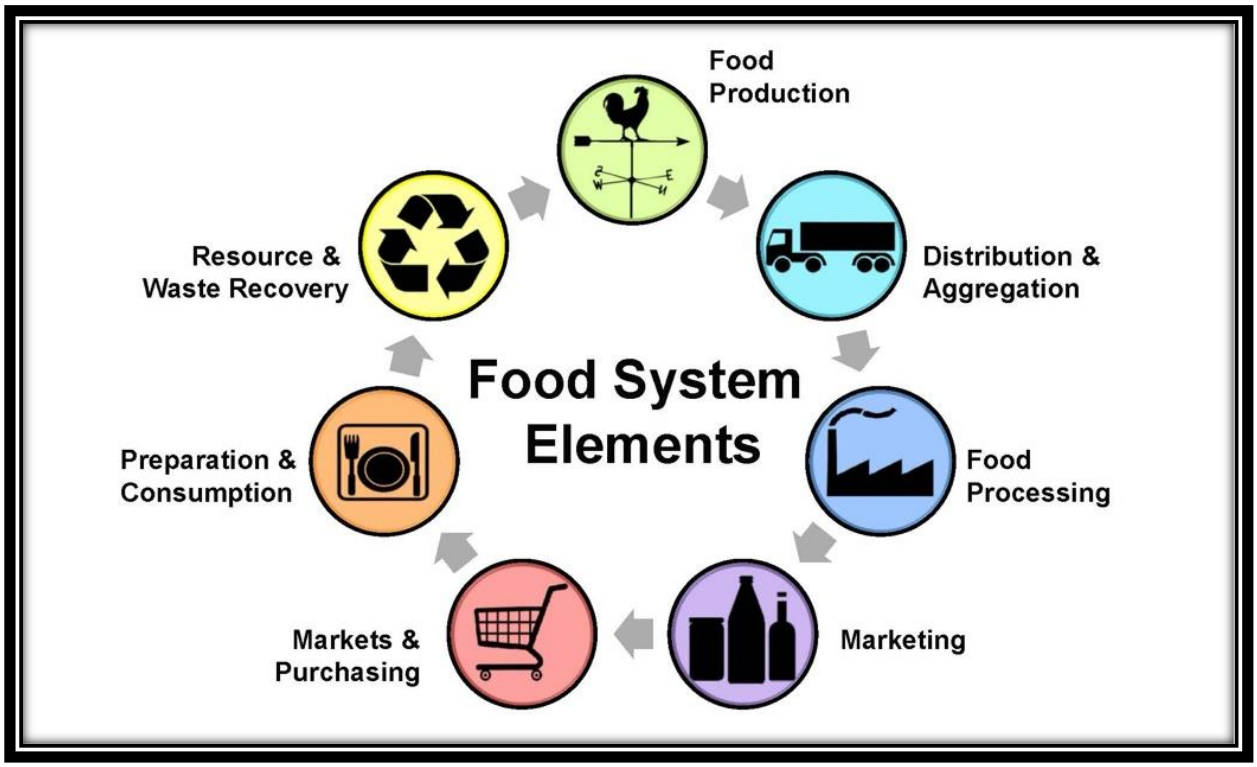
Forsyth County Land Loss Projection

Source: American Farmland Trust

Further contributing to the creation of low access communities is also the consistent and long-term loss of agricultural land, with the American Farmland Trust projecting that 46% of agricultural land loss are anticipated in Forsyth County by 2040. Gaps that are created within our nationalized food system, such as grocery stores choosing not to develop within urban low-income communities and rural communities, reinforce low income also becoming low access. A key solution might be to ensure food is produced locally and yet land loss limits that possibility and limits the opportunity for economic development.

Food system Logistics

Source: *University of Cornell, College of Agriculture & Life Sciences*



Moreover, understanding the amount of food that exists in the county is key to understanding our food system. Adding to this fabric of understanding of local food system is also an evaluation of food waste that is documented within the county.

North Carolina Food Waste

Source: NC Department of Environmental Quality (DEQ)[15]

In 2014, the US generated 38.4 million tons of food waste (14.9 percent of total municipal solid waste (MSW) generated) and sent 29.4 million tons of food to the landfills (21.6 percent of total MSW landfilled). This is 184 pounds of food landfilled per capita in 2014.[16] Landfills are the source of 20 percent of the total methane emissions in the United States contributing to climate change.[17] The Environmental Protection Agency, United States Department of Agriculture and the United Nations all have set goals to decrease food waste by half by 2030. [18]

- Nearly 1 in 6 of our neighbors in North Carolina is food insecure. [19]
- In 2012, North Carolina generated 247 pounds of food waste per person. [20]

[15] North Carolina Department of Environmental Quality, 2016
[16] EPA, 2016
[17] EPA, 2014
[18] EPA, USDA, UN
[19] Feeding the Carolinas
[20] NCDEQ, 2012

- In 2015, North Carolina recovered approximately 100,000 tons of excess food through food donations (15%), animal feeding (18%), anaerobic digestion (20%) and composting (47%). [21]

Notably North Carolina Department of Environmental Quality (NCDEQ) projects that Forsyth County generates 2.7 M tons annually, or nearly 27% of the content of our landfill. The number is striking when considering high rates of food insecurity – further illuminating clear gaps in our food system in which waste is generated rather than reaching communities through food distribution logistics. The lack of infrastructure in low access communities is one significant source that can be correlated with our food waste indicators, as NCDEQ also notes that better food distribution channels is preferable and essential when reducing food waste. NCDEQ also shows that the capacity to process food waste into compost, essentially redirecting waste out of our landfills, is low across NC, with Forsyth County only processing 7% reported by permitted composting facilities.[22]

NC County Profiles, Compost Capacity

Source: County origins of Organic Waste processed (as reported by NCDEQ DWM permitted composting facilities in fiscal year 2014-2015).

County	Material %	County	Material %
Wake	22%	Avery, Brunswick, Buncombe, Carteret, Catawba, Chatham, Cumberland, Davidson, Edgecombe, Franklin, Lincoln, Moore, Nash, and Orange	1 % each
Mecklenburg	15%		
Guilford	8%		
Forsyth	7%		
Hyde	6%	Alamance, Anson, Ashe, Bertie, Columbus, Granville, Halifax, Haywood, Hoke, Iredell, Johnston, Jones, Macon, Martin, Mitchell, Montgomery, Onslow, Pamlico, Pitt, Randolph, Richmond, Robeson, Rockingham, Rowan, Rutherford, Sampson, Scotland, Stanly, Union, Vance, and Wayne	less than 1% each
Durham and Craven	5% each		
Watauga	4%		
Cabarrus and Gaston	3% each		
Harnett	3%		
Lee and Wilson	2%		

[21] NCDEQ, 2016
[22] NCDEQ, 2016

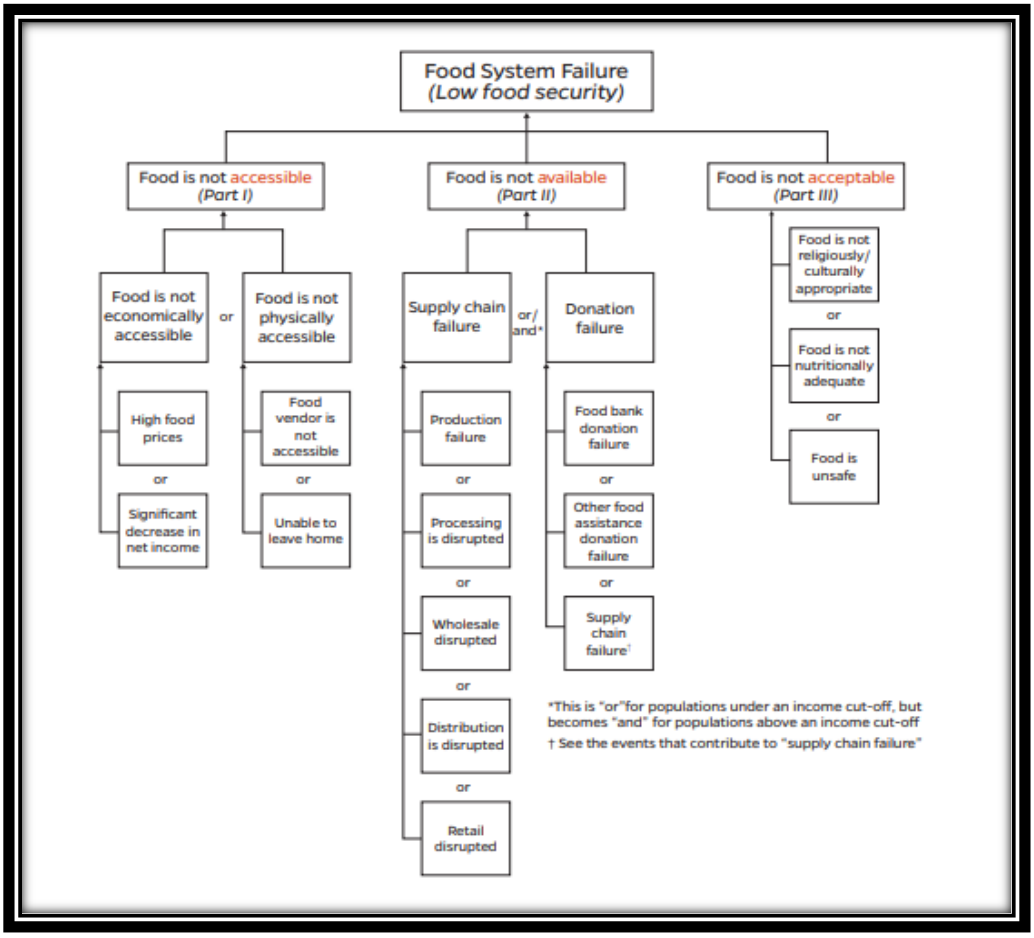
Climate Change and Food System Vulnerabilities

> A food system failure occurs when the interconnected processes involved in the production, processing, distribution, and consumption of food are disrupted, resulting in significant challenges to food security.

Climate change presents a major threat to North Carolina's food system, amplifying existing vulnerabilities and posing risks to food security. As temperatures rise and weather patterns become increasingly unpredictable, the frequency and severity of extreme weather events also increase. This volatility endangers the stability of food production, distribution, and access across the state. This section explores how climate change, along with associated hazards such as the COVID-19 pandemic, disrupts the food system. These disruptions can arise from natural disasters, economic crises, political instability, or public health emergencies, each directly affecting the three core dimensions of food security: accessibility, availability, and acceptability of food. When the interconnected processes of the food system are disrupted, it is considered to be a food system failure.

Forsyth County Land Loss Projection

Source: From Baltimore Food System Advisory Report, 2017 | Figure: Food System Failure



Food Accessibility

Food accessibility refers to the ability of individuals and households to obtain sufficient and nutritious food. A food system failure can severely hinder accessibility through disruptions in supply chains and increases in food prices. For instance, during extreme weather events like hurricanes, roads may become impassable, preventing food from reaching markets. Similarly, economic downturns can reduce household incomes, making it difficult for families to afford the food they need. The COVID-19 pandemic highlighted these issues when lockdowns and economic slowdowns limited access to food, particularly for low-income and vulnerable populations. When food is not accessible, people may resort to less nutritious options or face hunger and malnutrition.

Food Availability

Food availability pertains to the presence of adequate quantities of food of appropriate quality, supplied through domestic production or imports. A food system failure can lead to significant shortages in food supply, as seen during severe droughts or floods that destroy crops and livestock. For example, prolonged droughts in North Carolina have reduced crop yields and strained water resources, impacting the overall availability of food. Disruptions in the global supply chain, such as those caused by trade restrictions or logistical challenges during the pandemic, can also reduce the availability of essential food items. When food is not available, markets may experience empty shelves, and consumers may face difficulty finding staple foods necessary for a balanced diet.

Food Acceptability

Food acceptability involves the cultural and social appropriateness of food, as well as its safety and quality. A food system failure can compromise the acceptability of food in several ways. Contamination events, such as the presence of harmful pathogens or chemicals, can make food unsafe to eat, leading to public health crises and loss of consumer confidence. Additionally, disruptions in the food system can force communities to rely on unfamiliar or culturally inappropriate foods, reducing the overall acceptability of their diet. For instance, during supply chain disruptions, communities may receive emergency food aid that does not align with their dietary preferences or cultural practices, affecting their willingness to consume the provided food.

Impacts of Climate Change on Food Production

Extreme Weather Events

Droughts: Extended periods of drought can devastate crops, reduce yields, and lead to soil degradation. For instance, the severe droughts in 2007-2008 and 2011-2012 led to significant reductions in crop yields, particularly for corn and soybean farmers in North Carolina. In 2024, North Carolina continues to face impacts to corn from drought.

Floods: Increased rainfall and flooding can destroy crops, erode soil, and disrupt planting and harvesting schedules. Flooding from Hurricane Florence in 2018 drowned about 3.4 million chickens and turkeys and 5,500 hogs.

Storms: Hurricanes and typhoons can cause widespread destruction to agricultural infrastructure, livestock, and crops. Hurricane Florence in 2018 resulted in over $1.1 billion agricultural losses, particularly for tobacco, sweet potatoes, and livestock.

Temperature Changes

Heatwaves: Elevated temperatures can stress crops and livestock, reducing productivity and increasing mortality rates. North Carolina experienced extreme heat in the summer of 2019, which stressed the state's poultry and swine industries, leading to decreased production and increased costs.

Shifting Growing Seasons: Changes in temperature patterns can alter growing seasons, affecting the timing of planting and harvesting. This can disrupt traditional agricultural practices and reduce the availability of certain crops. For example, North Carolina's apple growers have faced challenges with changing bloom times, impacting yield and quality.

Impacts on Food Distribution and Access

Infrastructure Damage

Transportation: Extreme weather events can damage transportation infrastructure, disrupting the supply chain and causing delays in the distribution of food.

Storage: Floods and storms can damage storage facilities, leading to the loss of stored food and reduced availability of essential commodities.

Economic Impacts

Market Volatility: Climate-related disruptions can lead to increased volatility in food prices, making it difficult for low-income households to afford nutritious food. The 2010 Russian heatwave and subsequent export ban on wheat caused global wheat prices to spike, impacting food security worldwide.

Livelihoods: Farmers and agricultural workers are directly affected by climate change, facing reduced incomes and increased uncertainty. This can lead to higher levels of poverty and food insecurity, particularly in rural areas.

The COVID-19 Pandemic and the Food System

The COVID-19 pandemic has further highlighted the vulnerabilities of the global food system. Lockdowns, travel restrictions, and economic slowdowns have disrupted food production and distribution, exacerbating food insecurity for millions of people.

Supply Chain Disruptions

Labor Shortages: Restrictions on movement and illness among agricultural workers led to labor shortages, affecting planting, harvesting, and processing of food. For example, the meatpacking

industry in the United States experienced significant disruptions due to COVID-19 outbreaks among workers.

Logistical Challenges: Border closures and transportation restrictions disrupted the flow of goods, leading to delays and increased costs. Perishable goods, in particular, were affected by these logistical challenges.

According to a study in *JAPA,* larger grocery store chains are more likely to be interrupted for longer durations than local stores. [23]

Access to Food

Food Deserts: The pandemic exacerbated existing food deserts, where communities lack access to affordable, nutritious food. With many low-income households facing economic hardships, the ability to purchase healthy food diminished, increasing reliance on food banks and emergency food assistance.

Emergency Responses: Governments and organizations implemented various emergency response measures to address food insecurity, including expanding food assistance programs and supporting local food systems. However, these measures often faced challenges in reaching the most vulnerable populations.

IMAGES FROM CITY OF WINSTON-SALEM COMMUNITY MEETING ON THE WEAVER FIRE, 2024

Other Hazards

Beyond the challenges posed by climate change and pandemics, North Carolina's food system is also vulnerable to several other hazards that can significantly impact food security. The food system relies not only on physical infrastructure but also on people—workers must be able to reach their jobs, and consumers need access to places where food is distributed. Any threat that disrupts these daily operations can have a ripple effect on the entire food system.

Economic Instability

One critical hazard is economic instability. Economic downturns—whether due to national recessions or local economic shifts—often result in job losses and reduced household incomes, especially in rural areas that depend heavily on agriculture and related industries. This financial

[23] Holdback-Moorman, 2024

strain restricts families' ability to purchase nutritious food, driving an increased reliance on food assistance programs. For example, the decline of tobacco farming, which once played a pivotal role in North Carolina's economy, has left many farming communities economically vulnerable, exacerbating levels of food insecurity.

Political and Policy Changes

Changes in political policies also have far-reaching consequences for food security. Policies related to agriculture, trade, and social services directly impact the availability and affordability of food. For instance, shifts in trade agreements can influence the price and availability of imported and exported goods, disrupting local markets. Similarly, changes in federal agricultural policies and subsidies can undermine the financial stability of farmers in North Carolina, affecting their production decisions and overall economic viability. Reductions in funding for food assistance programs like SNAP (Supplemental Nutrition Assistance Program) would also leave vulnerable populations without adequate support, further deepening food insecurity.

Security Threats: Terrorism, Cyberattacks, and Food Contamination

North Carolina's food system is increasingly susceptible to security threats such as terrorism, cyberattacks, and food contamination. Terrorism presents a risk to food security by targeting critical infrastructure—like water supplies, transportation networks, and food processing facilities. A direct attack could severely disrupt food production and distribution, causing widespread shortages. For instance, contamination of a major irrigation water supply could devastate crops and impact public health on a large scale.

Cyber information attacks are an emerging hazard. With the increasing digitization of agriculture and food supply chains, these systems are vulnerable to cyberattacks. A targeted attack on agricultural data systems—controlling irrigation schedules, planting, or supply chain logistics—could significantly disrupt food production. A cyberattack in 2021 on a major meat processing company demonstrated the vulnerability of food systems, causing temporary shortages and price spikes.

Finally, food contamination, whether accidental or intentional, poses a serious threat. Contamination can occur at any stage in the food supply chain, from farm to table. Events such as the 2018 E. coli outbreak linked to romaine lettuce illustrate the potential for widespread foodborne illness and the damaging effect on consumer confidence and market stability. Ensuring food safety through stringent monitoring and rapid response mechanisms is essential to protecting public health and maintaining food system resilience.

Winston-Salem Food Resilience Efforts

The following explores the City's current food resilience efforts. For historical information, programs, and other departmental work in the food system, please see the appendices.

Kimberley Park Hydroponics Farm

Help Our People Eat (H.O.P.E.) of Winston-Salem was awarded the contract for the Kimberly Park Hydroponic Farm on April 11, 2023, and was funded July 28, 2023. In the first month of operation, the Food Resilience staff member running the facility deep cleaned the facility, prepared soil and beds, and participated in hydroponic training, and began seeding. By the end of December, the facility produced 1,341 pounds of food, with their first harvest near Thanksgiving 2023. In the first year of production, the Kimberly Park Hydroponic Farm produced 2,782 pounds of food, valued at $27,251, which the H.O.P.E. of Winston-Salem used to feed 445 families weekly. In addition, H.O.P.E. and the facility have hosted a variety of tours including H.O.P.E. Cooking Class instructors, the Forsyth Food Chats Group, and the Master Gardener Association of Forsyth County.

Urban Food Policy Council

The Urban Food Policy Council is an official City advisory committee of nine members. The Urban Food Policy Council is tasked with initiating and promoting actions that increase food access in the City of Winston-Salem, with a particular emphasis on activities in the urban core. The council shall advocate for policies that build a sustainable, equitable and healthy local food system with a goal of enhancing the health of the citizens of Winston-Salem, strengthening local economies and market opportunities and reducing hunger and food insecurity. The duties of the council are detailed in the following:

- Develop strategies to address food access needs in food deserts;
- Solicit external support for food-related initiatives;
- Support and encourage programming related to food, nutrition, cooking, gardening, and other topics;
- Devise strategies to increase retail options in food deserts;
- Serve as a forum for discussing food issues;
- Make recommendations for enhancing the use/operation of food-focused City facilities including the Fairgrounds Farmers Market;

- Educate members of the community about the importance of healthy, fair, and sustainable local food;
- Explore ways to encourage and promote food-based entrepreneurship; and
- Undertake such duties as may be requested by the Mayor and City Council.

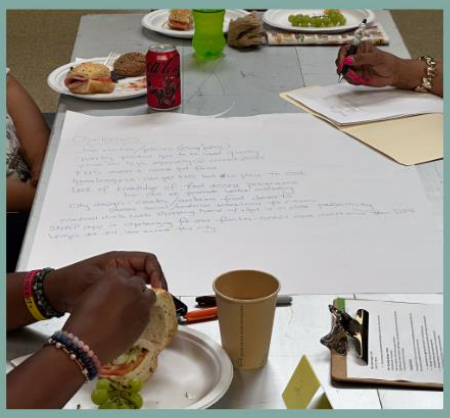
Fairgrounds Farmers Market

A City of Winston-Salem operation, the Farmers Market at the Winston-Salem Fairgrounds stands as Forsyth County's longest-running source for a wide array of locally raised produce and goods. Since its inception in 1974, the market has been a cornerstone of the community, offering a diverse selection of fresh fruits, vegetables, and proteins. Currently, the Farmers Market is run by Fairgrounds staff, an auxiliary department of Winston-Salem. Vendors pay a small fee to participate.

In addition to produce, vendors at the Fairgrounds Farmers Market provide a range of products including flowers, handmade baskets, cakes and pies, fresh baked breads, jams and jellies, honey, crafts, and much more. This rich variety of offerings makes the market a vibrant hub for local food and crafts.

In a recent development aimed at enhancing accessibility, the Fairgrounds Farmers Market now accepts SNAP Electronic Benefits Transfer (EBT) cards. This addition allows individuals and families who rely on SNAP benefits to purchase fresh, nutritious foods such as fruits, vegetables, and local meat and dairy products directly at the market. This change is a significant step towards making healthy food options more accessible to all community members. The market currently operates every Saturday from 6 a.m. to Noon.

Project Overview



Project Overview

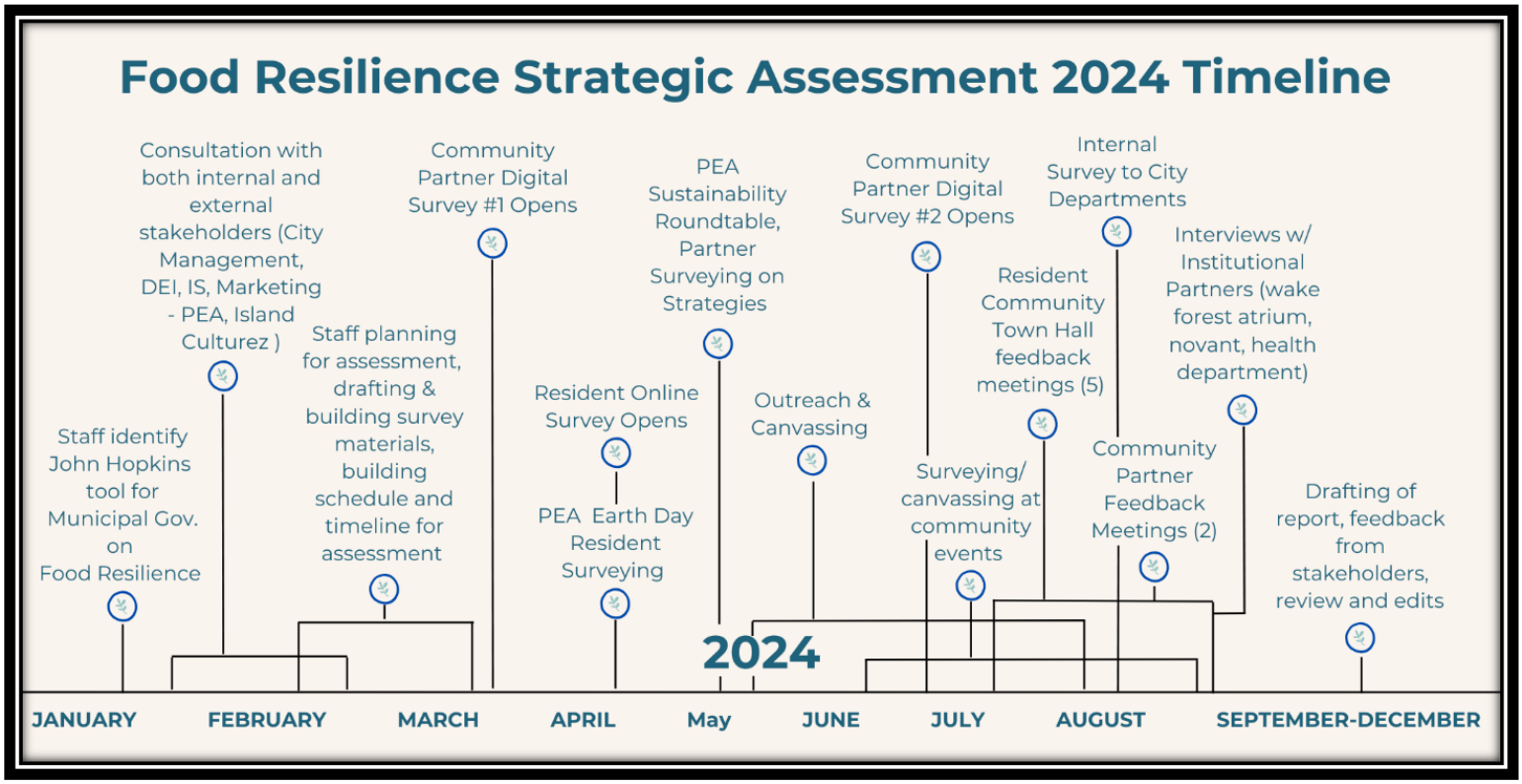
In January 2024, the Department of Sustainability for the City of Winston-Salem launched a comprehensive Food Resiliency Strategic Planning Effort. This initiative aimed to enhance the community's food system resilience by soliciting feedback and key insights from relevant stakeholders to develop community-supported strategies for food security and sustainability for all residents.

Scope

The scope of our Food Resiliency Strategic Planning effort encompassed various elements to ensure a holistic approach.

1. **Community Engagement**: Engaging residents and stakeholders through surveys and public meetings to gather comprehensive feedback.
2. **Research and Benchmarking**: Studying successful food resilience strategies from other urban centers to identify best practices and innovative approaches.
3. **Development of Tools**: Creating and deploying surveys and other tools to collect data and insights from residents and community partners.
4. **Institutional Collaboration**: Partnering with key institutions to leverage their expertise and identify opportunities for collaboration and improvement.
5. **Data Analysis**: Analyzing the collected data to identify trends, gaps, and areas for improvement in the city's food system resilience.

By integrating these components, the Department of Sustainability aims to develop a robust and inclusive Food Resiliency Strategic Plan that addresses the unique needs and challenges of Winston-Salem, ensuring a sustainable and secure food future for all its residents.



Results & Analysis

Resident Survey Results

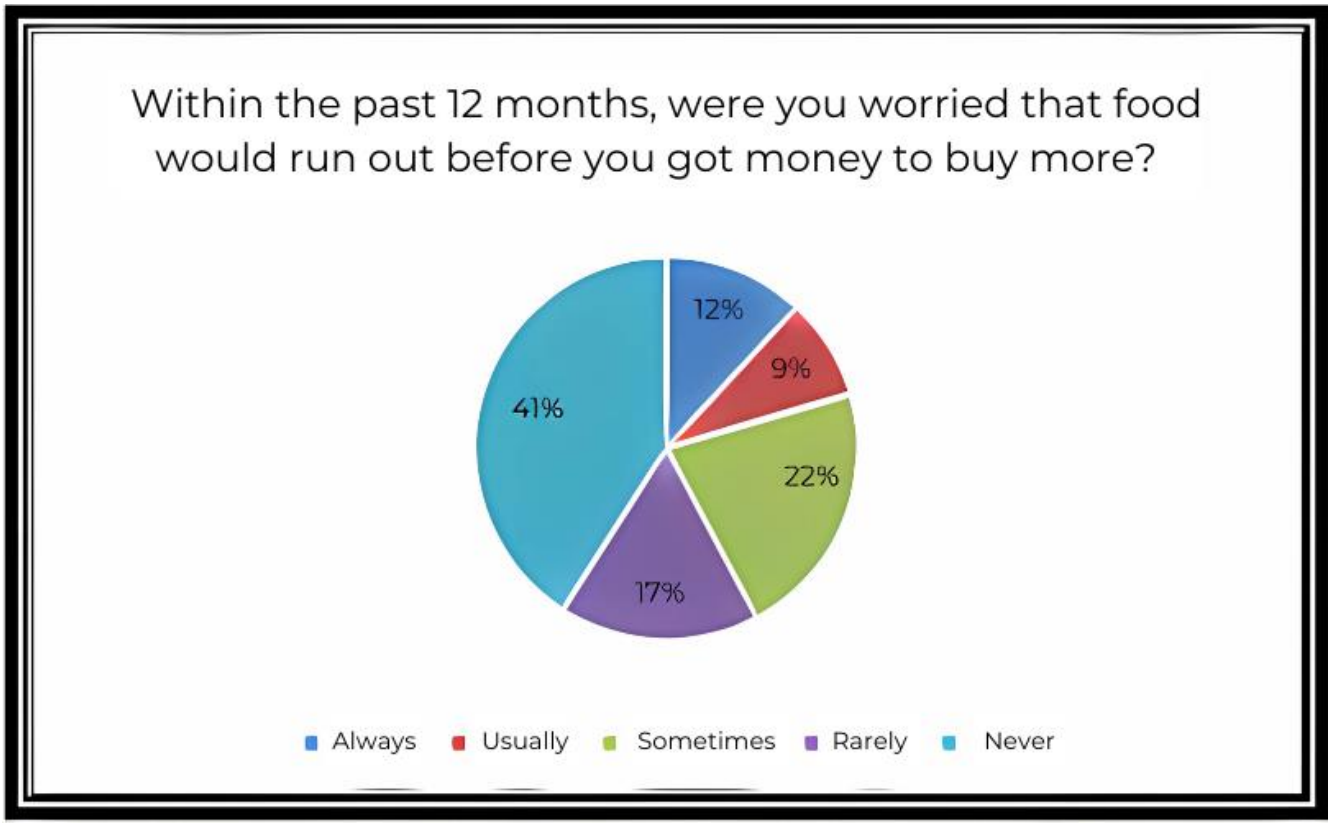
The resident survey had 303 responses. Based on self-reported responses, the age distribution followed a bell curve, though a higher proportion of females responded compared to males.

According to residents the **price of groceries** and the **quality of food** were the most important factors when choosing a grocery store, followed by **proximity** to their home. 69% of respondents reported that they shop at the nearest full-service grocery store.

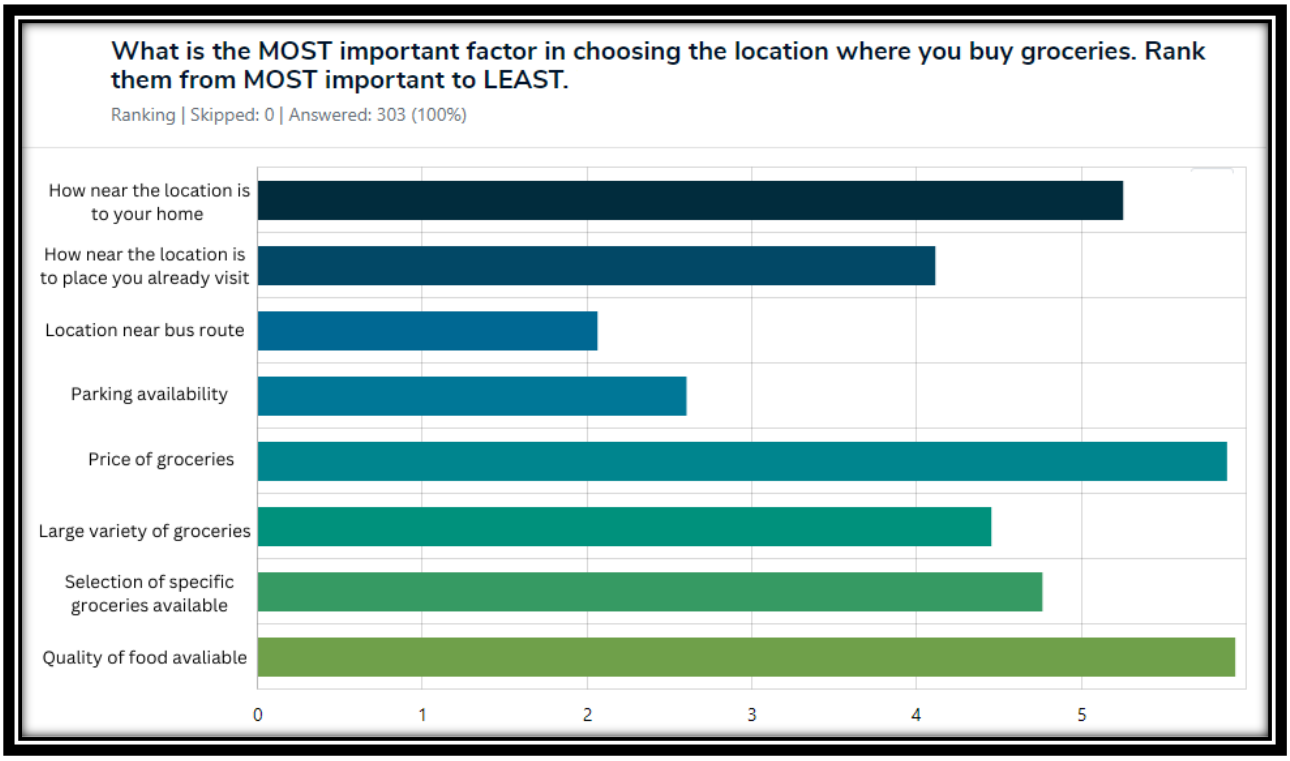
When comparing the survey data with Forsyth County's food insecurity rates, it appears that the survey successfully reached a representative sample of the population or even slightly more food-insecure individuals than average.

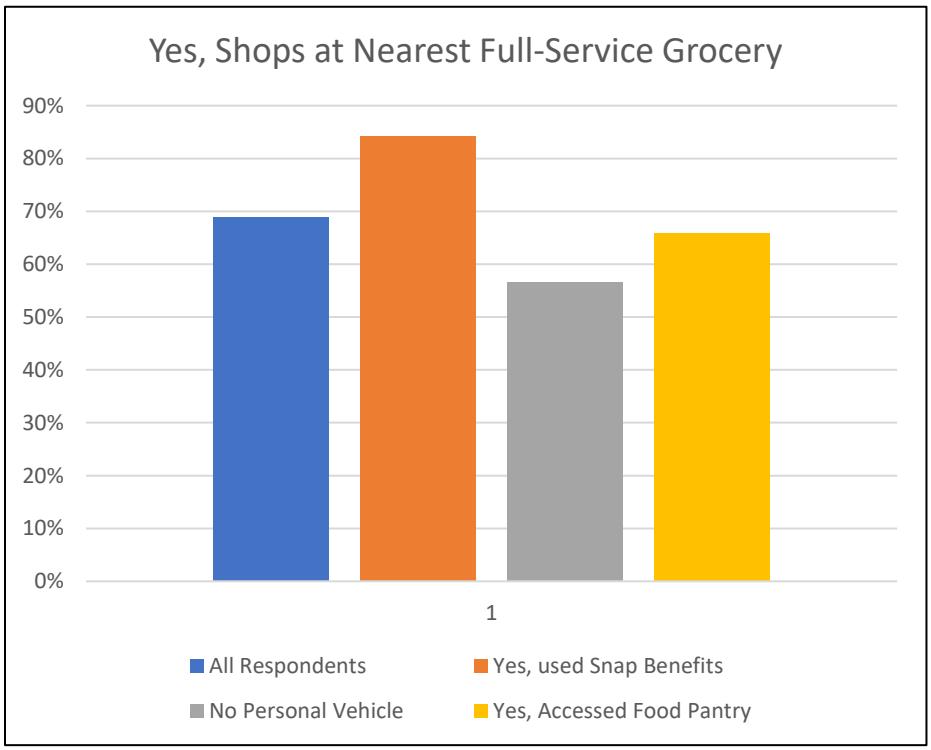
Within the past twelve months, have you or a household member…

Received SNAP or WIC	Visited and accessed a food pantry
18%	**13%**

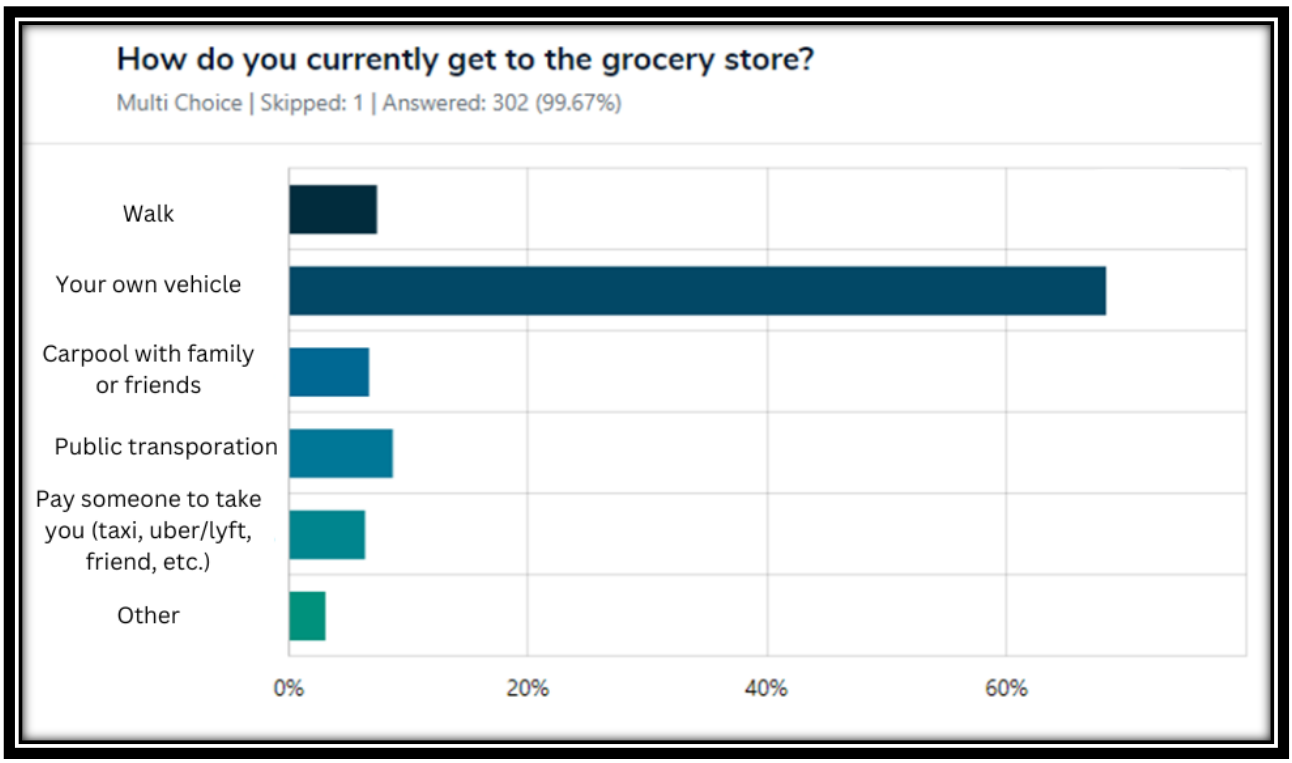


Grocery Store Accessibility & Resident Mobility



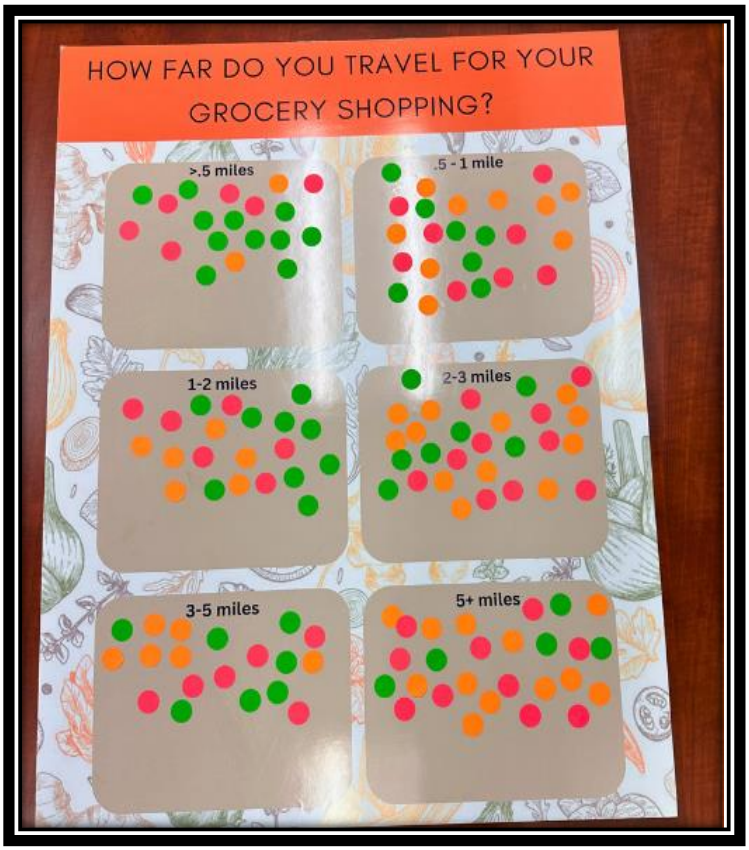


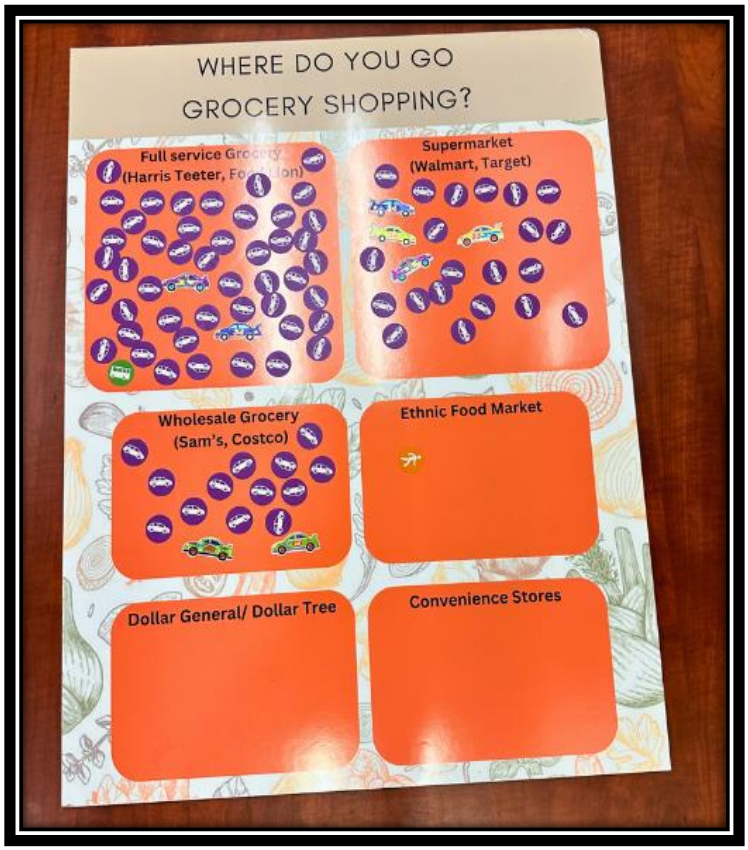
70% of our respondents reported that they get to the grocery store by their own vehicle. Respondents who said that they had accessed food pantries in the previous 12 months were the most likely group to walk, while respondents without a personal vehicle were the most likely to use public transportation.



Response Group	Walk	Your Own Vehicle	Carpool	Public Transport	Pay Someone
Yes, Accessed Food Pantry	High	Moderate	Low	Low	Low
No Personal Vehicle	Moderate	None	Moderate	High	Moderate
Yes, Used SNAP Benefits	Moderate	High	Low	Low	Low
All Respondents	Moderate	High	Low	Low	Low

Individuals who accessed food pantries were the most likely to walk, indicating limited transportation options. In contrast, those without personal vehicles relied heavily on public transportation to meet their grocery needs.29% of respondents found the distance to get food for their household challenging. That went up significantly to 72% for residents without a personal vehicle.



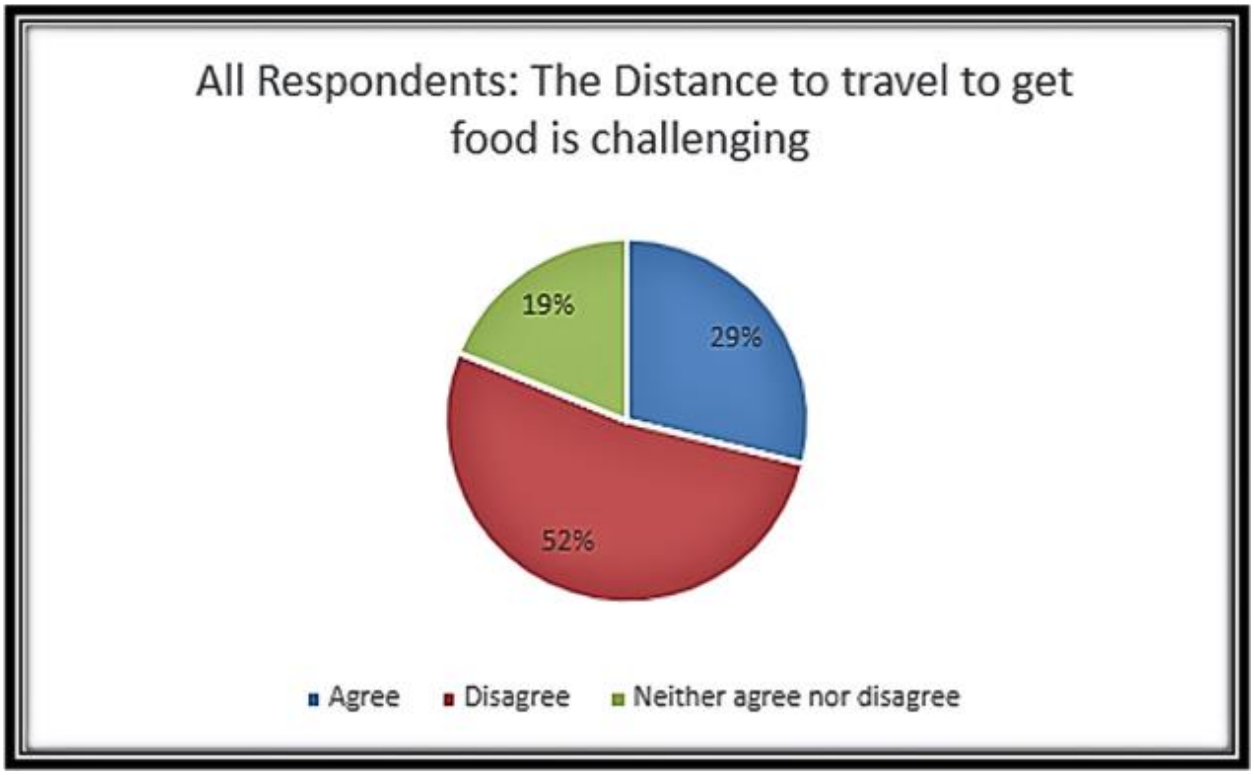


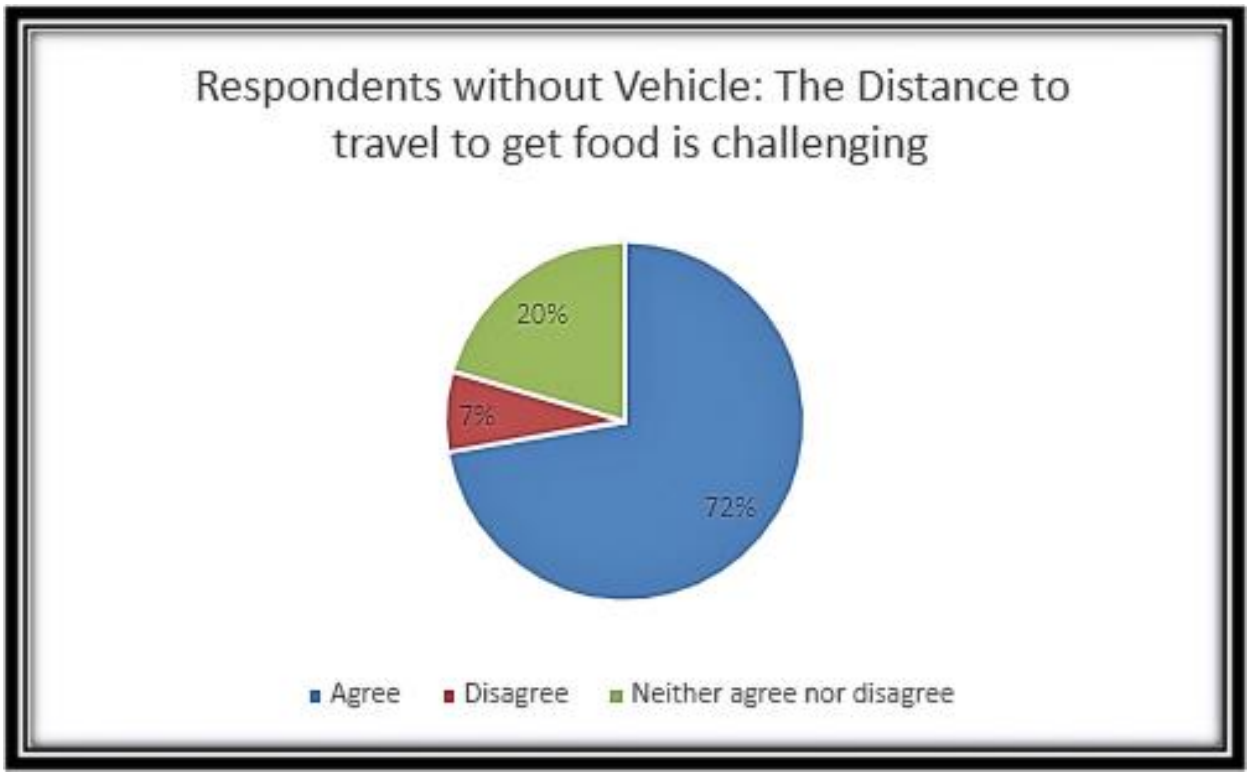
In-person surveying efforts were also conducted at various locations, including in-person community meetings and community events such as the Piedmont Environmental Alliance Earth Day event. Survey boards were utilized to collect information on distance traveled, preferred shopping, and mode of travel.

Where do you grocery shop?						
	Full Service Grocery (Harris Teeter, Food Lion)	Supermarket (Walmart, Target)	Wholesale Grocery (Sams, Costco)	Ethnic Food Market	Dollar General / Dollar Tree	Convenience Store
Car	95	36	8	3	2	
Pedestrian				1		
Bus	1					
Bike						

How far do you travel for your grocery shopping?						
	Less than .5 mile	.5-1mile	1-2 miles	2-3 miles	3-5 miles	5+ miles
Number of Respondents	20	25	21	32	21	31

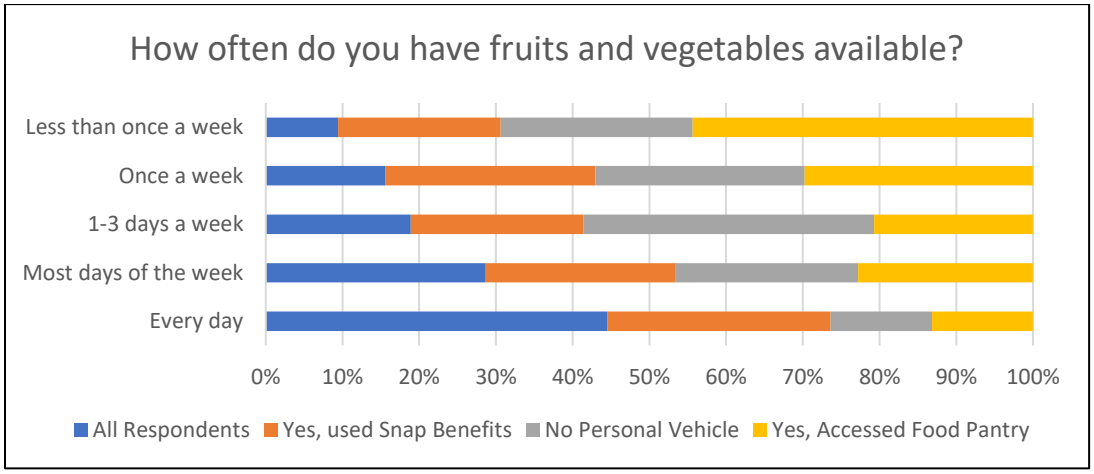
These findings further reinforce that the most common form of travel is by car, and that it is widely varied on how far an individual may travel for their desired grocery destination. This is notable because it also illuminates the clear disparity residents may experience if they simply do not have access to a car for their regular grocery needs.





Availability of Food and Resources

68% of all respondents reported having fruits and vegetables available at home either every day or most days. However, only 29% of those who have used SNAP/WIC benefits and 13% of residents without access to a vehicle reported having fruits and vegetables at home every day or most days of the week.

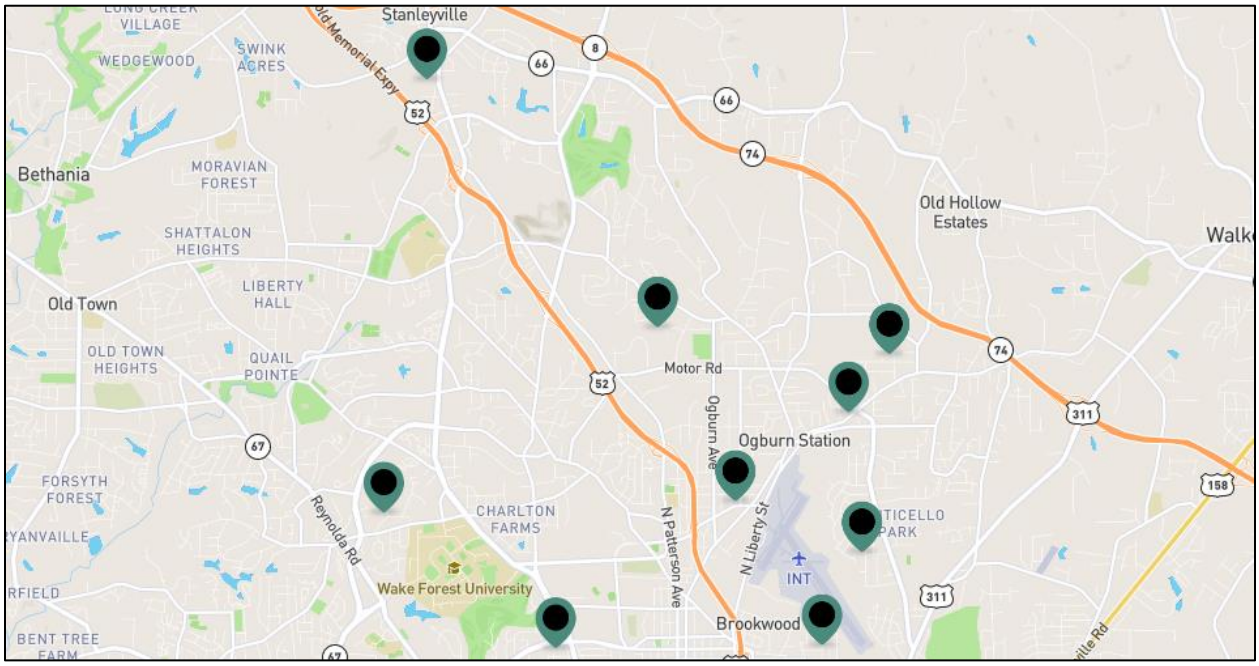


Geospatial Results

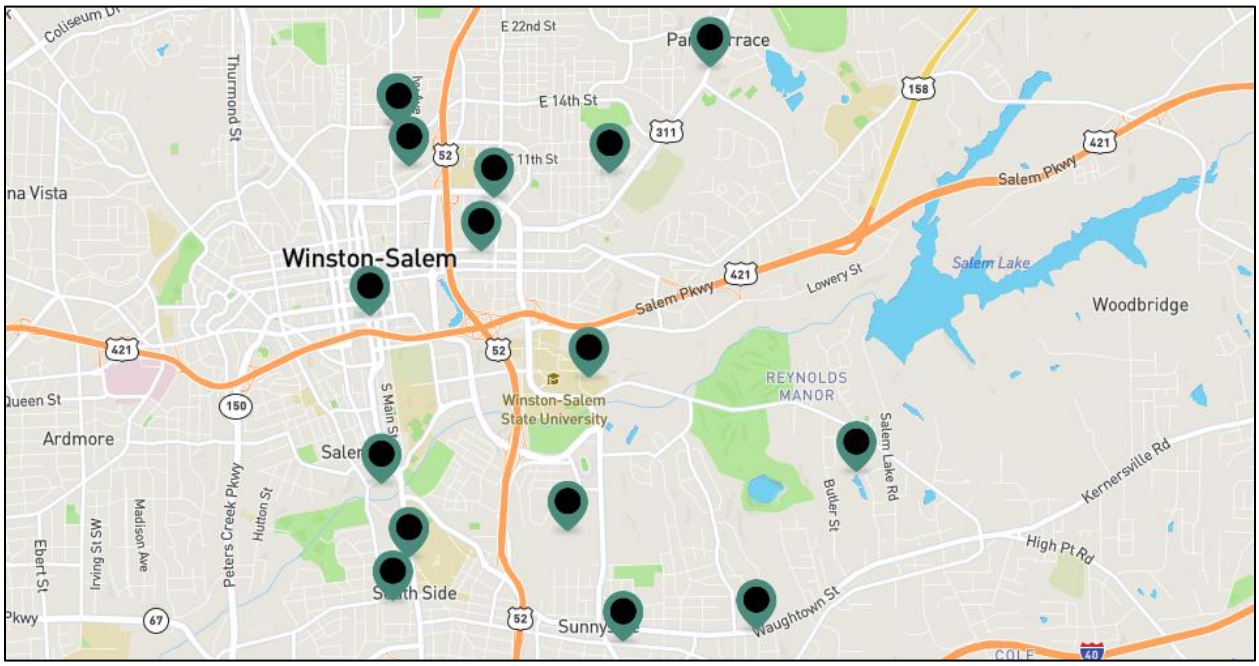
The residential survey allowed the opportunity for residents to suggest specific locations for food asset needs. 26 locations were marked on the map by 14 contributors. 6 of 26 were in zip code 27107; 6 in 27105; and 4 in 27101. All comments posted the need for a grocery store, or as one commentor said simply “Comida por favor.”

Full Map:

North Winston-Salem:

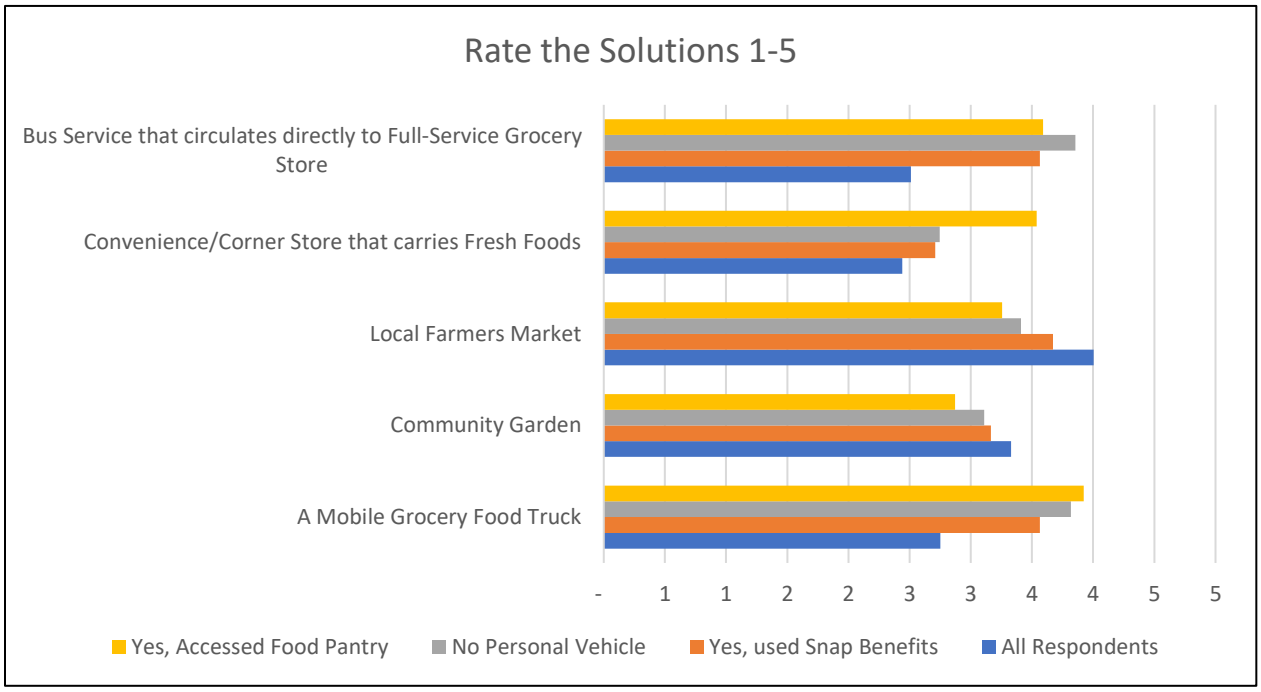


South Winston-Salem:

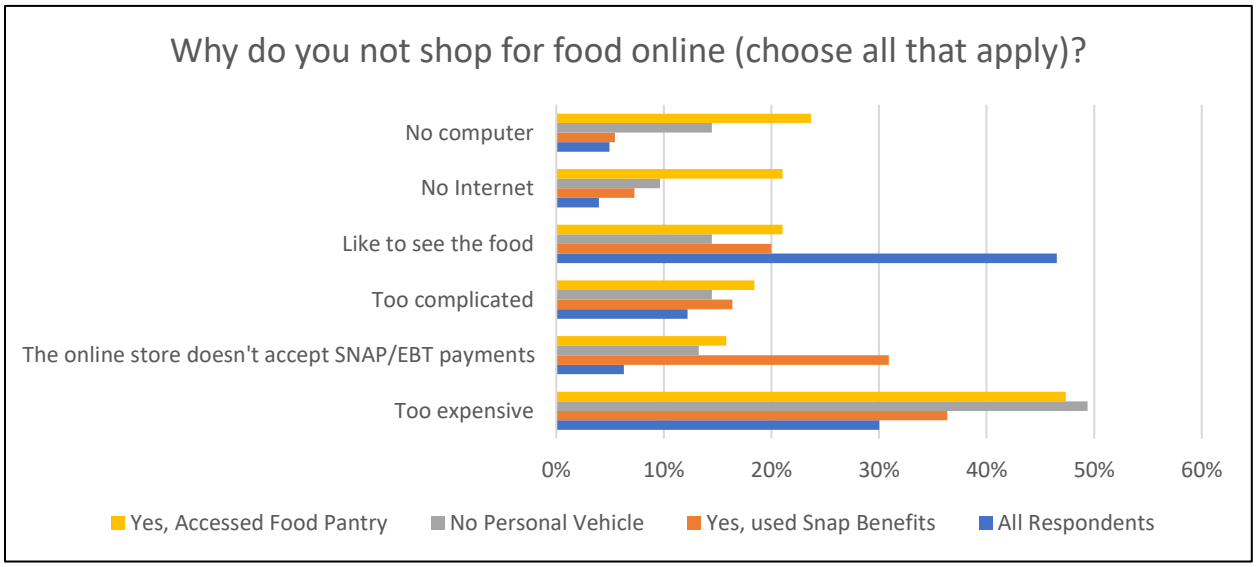


Resident Prioritization of Proposed Solutions

Residents were asked to rate which solutions they would be likely to use.



Residents were also asked whether they have shopped online for groceries in the past 12 months. 68% reported that they **never** shopped online for groceries. This percentage was slightly higher (78%) for respondents who did not have access to a personal vehicle. The reasons for not shopping online varied depending on the characteristics of the respondents.



Community Partner Survey Results

Operations

In Winston-Salem, a diverse array of organizations work to address food insecurity and promote nutrition, each with a unique focus and impact.

Several major players in the community serve a significant number of residents each month, often exceeding 1,000 individuals. Forsyth County Department of Social Services (DSS), for example, primarily provides Food and Nutrition Benefits, while the Forsyth Count Behavioral Health Service and Mobile Integrated Healthcare Community Paramedic connects residents to various resources. The Cobblestone Farmers Market not only offers nutrition education and food production through community gardens but also supports food recovery and redistribution and provides benefits through SNAP and WIC. Similarly, Crisis Control Ministry and N.C. Cooperative Extension - Forsyth County Center provide a mix of food pantry services, nutrition education, and emergency response food, along with efforts in food recovery and redistribution.

In contrast, organizations serving between 100 to 500 individuals each month offer a range of targeted services. The Winston-Salem Permaculture Collective, for instance, runs a food pantry and engages in food production and nutrition education. Love Out Loud and St. Peter's We Care House focus on food pantries and community meals, with St. Peter’s also contributing through its community gardens. The N.C. Cooperative Extension provides similar services, emphasizing food production and recovery, alongside nutrition education.

Smaller organizations, serving fewer than 100 residents monthly, often concentrate on specialized services. The Triad Buying Cooperative is dedicated to food recovery and redistribution, while the National Birth Coalition encompasses a broad mission including nutrition education, emergency food response, and food production. The PLANT Providers focus on community meals and a fresh food prescription program, whereas Earthwood Urban Farm and Grace Presbyterian Church contribute through community gardens and food pantries, respectively. The Bethesda Center for the Homeless and Open Arms Community also provides community meals and nutrition education, addressing specific needs in their communities.

Across these organizations, there is a common goal of tackling food insecurity and enhancing nutrition, though their methods and reach vary. Larger organizations often provide a comprehensive suite of services, including immediate food access and long-term solutions like food production and recovery. Medium-sized groups tend to focus on a blend of direct food assistance and educational programs, while smaller entities often address niche needs with specialized services. This collective effort showcases a broad, collaborative approach to improving food security and nutrition in Winston-Salem.

Partnership Themes

Community organizations provided key insights on how their operations are interconnected with one another. Understanding the relationships that exist within our localized food system is crucial to future endeavors that the city may support or prioritize as well.

Key takeaways regarding organizational collaborations and partnerships reveal several common themes:

1. **Enhanced Resource Access and Distribution:** Many organizations report that partnerships significantly improve their access to resources and increase their capacity to distribute food. Regular interactions, whether through meetings, emails, or phone calls, help streamline resource sharing and coordination. This enhanced access often leads to greater food distribution capacity and improved outreach efforts.
2. **Coordination Challenges:** Despite the benefits, coordination among partners is frequently noted as a challenge. Organizations often experience difficulties in aligning schedules, communicating effectively, and ensuring that efforts are well-coordinated. These challenges can sometimes lead to resource constraints and inefficiencies, highlighting the need for improved communication and coordination strategies.
3. **Knowledge and Best Practice Sharing:** Collaborations often facilitate the sharing of knowledge and best practices. Organizations benefit from exchanging information on effective strategies, educational materials, and operational insights. This sharing helps to elevate the overall effectiveness of food distribution and community outreach efforts.
4. **Increased Funding Opportunities:** Partnerships can open doors to new funding opportunities. Collaborative efforts often attract additional support from donors, grant providers, and other funding sources. This is particularly evident when organizations

work together on joint initiatives or leverage their combined networks to secure financial resources.

5. **Resource Constraints:** Many organizations face limitations in resources, including funding, staff, and volunteer support. These constraints can impact their ability to fully engage in or sustain collaborative efforts. Addressing these limitations is crucial for maximizing the impact of partnerships.
6. **Diverse Collaboration Methods:** The methods of collaboration vary widely among organizations. Some rely on regular meetings and face-to-face interactions, while others use emails, phone calls, or online platforms. This diversity in collaboration methods reflects the different needs and capacities of the partnering organizations.
7. **Community Impact:** Partnerships often lead to tangible benefits for the community. Improved access to food, increased distribution capacity, and enhanced educational opportunities are common outcomes of successful collaborations. These efforts collectively contribute to a more resilient and supportive food system in the community.

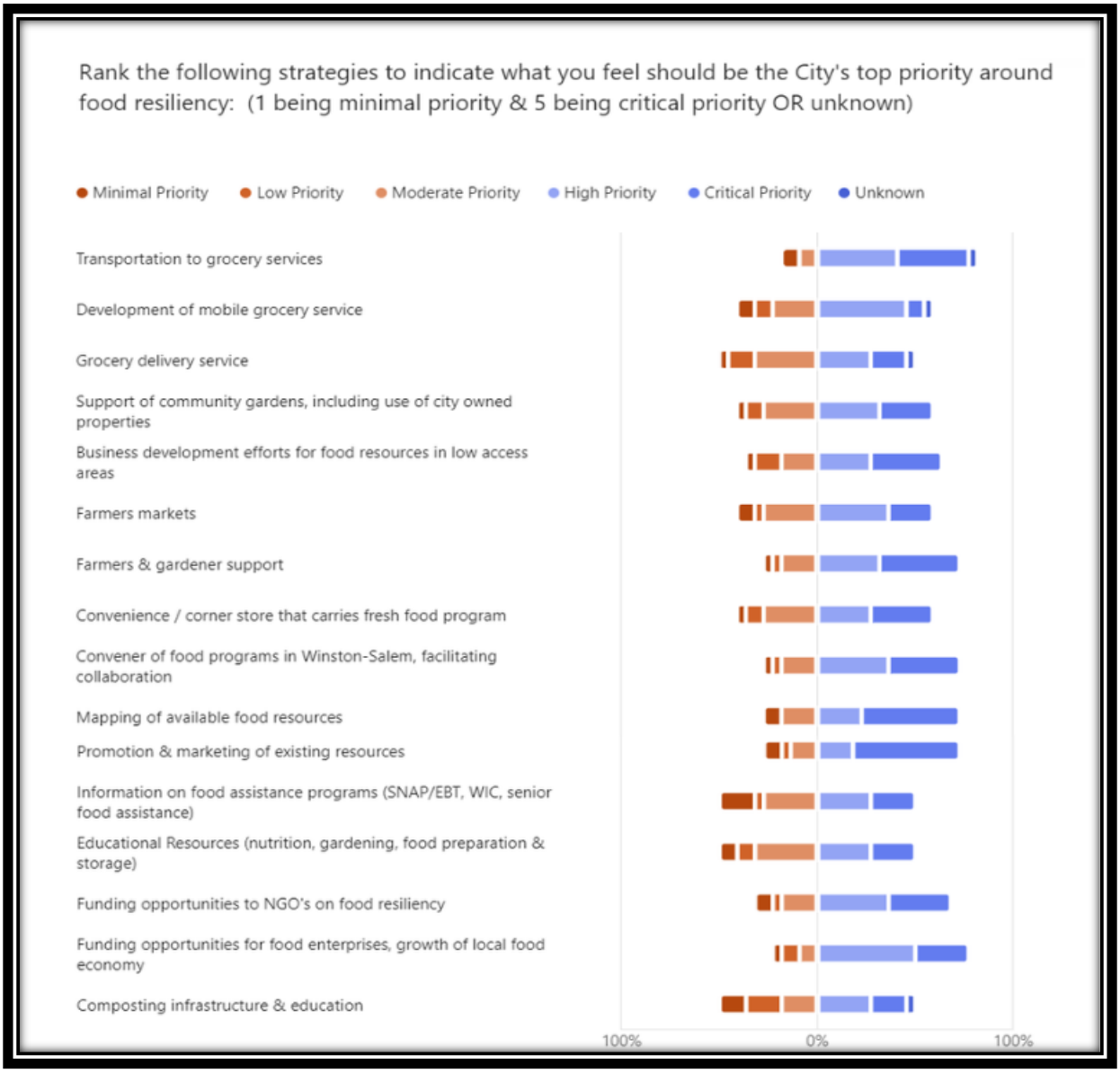
Overall, while partnerships among organizations are crucial for enhancing food access and distribution, addressing coordination challenges and resource constraints remains a key area for improvement. Effective communication, strategic alignment, and resource management are essential for maximizing the benefits of these collaborations.

Key Feedback on Partnerships & Collaborations

Partners articulated several key recommendations for how the City of Winston-Salem can better support collaboration and coordination among food-related organizations, as well as enhance their services and address critical areas in the food system.

One central theme is the need for improved coordination and the dismantling of existing silos between the existing community partner network, as well as between human and health services efforts. Many organizations express frustration with fragmented approaches and emphasize the importance of a unified strategy. There is a strong call for creating more robust collaborative networks that foster regular communication among all food-related entities. This could involve helping leading organizations in the field establish more regular and structured meetings, such as annual or quarterly gatherings, to ensure alignment and keep everyone informed about their roles and responsibilities.

In terms of resources, partners highlight a range of needs. Financial support for essential areas, such as distribution, utilities, and infrastructure, is a common request. There is also a significant call for grants to fund local food production and support for urban and small-scale farmers. Enhancing marketing and outreach efforts to promote food distribution locations and resources is seen as critical. Partners also suggest creating a centralized database or portal that offers comprehensive information about available food resources, which could help streamline access for both organizations and the community.



When it comes to emergency preparedness, partners stress the need for a well-developed plan that includes provisions for food distribution and community support during crises. Ensuring that emergency plans are inclusive of food-related needs and improving communication channels during such events are crucial recommendations. They also advocate for better translation and interpretation services to support multi-lingual communities during emergencies.

Additionally, there is a call for greater support in terms of education and awareness. This includes nutrition education for staff and broader community education on available food resources and healthy eating practices. Partners suggest initiatives like community meetups and informational campaigns to raise awareness and reduce nutrition insecurity.

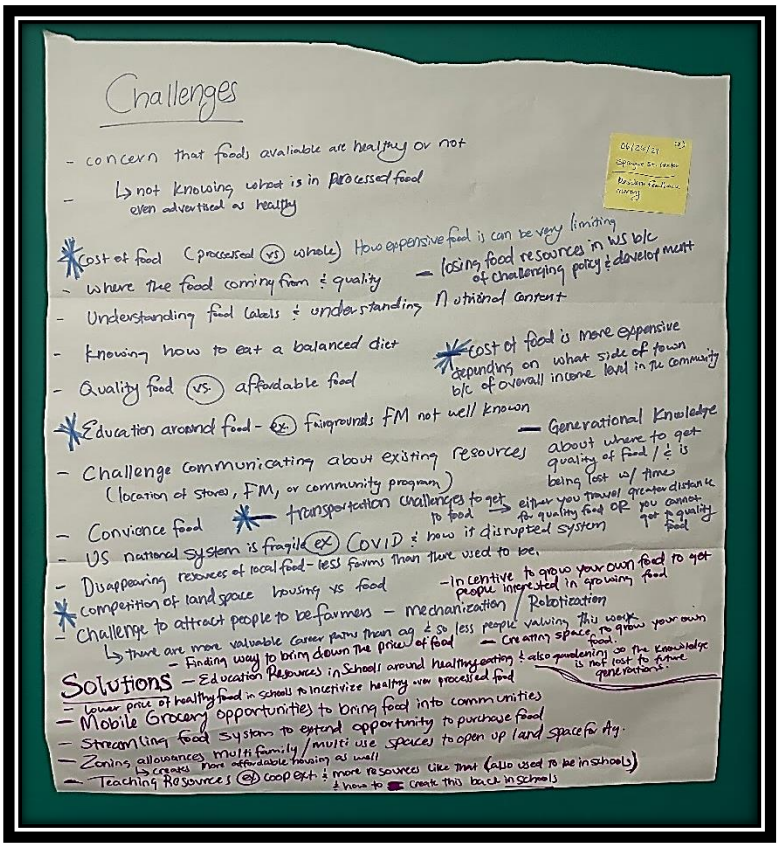
Overall, the feedback underscores a desire for more cohesive, resourceful, and well-coordinated efforts to enhance the food system's resilience and effectiveness in Winston-Salem.

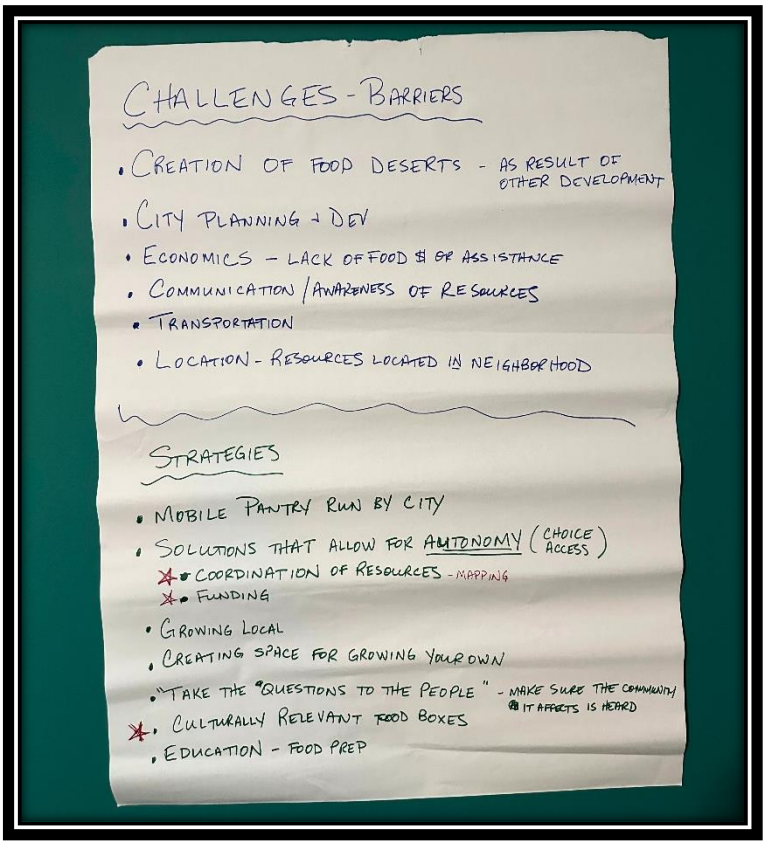
Feedback: Key Themes

The following section evaluates key feedback, needs, and challenges that were received from key stakeholders, ranging from residents, community partners, and institutional partners. The following section is not an exhaustive list of all challenges that were denoted during feedback meetings and surveying efforts, but rather reviews items that were mentioned frequently by the diverse range of stakeholders.

Through feedback from residents, community partners, and institutions, several challenges have emerged that underscore significant barriers to food security and resilience in Winston-Salem. Two of the most frequently mentioned challenges—raised in nearly every meeting—with residents and organizations—were **grocery store access** and **transportation issues**, which are highly interrelated.

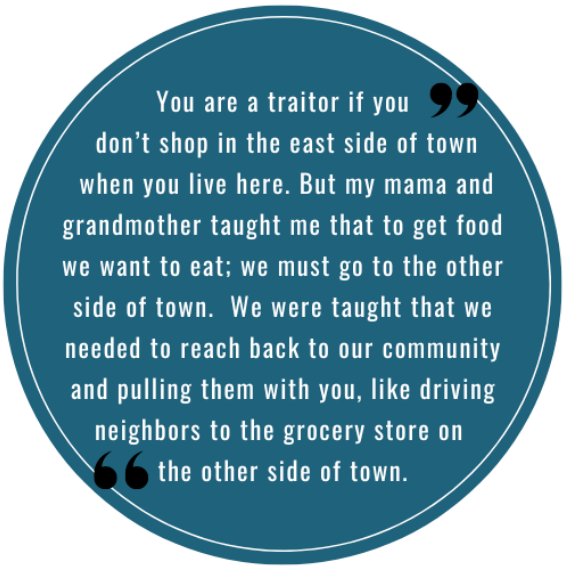
EXAMPLES OF FEEDBACK RECORDED IN PERSON PARTNER & RESIDENT MEETINGS. NOTE FULL RECORD OF RECORDED NOTES ARE AVAILABLE IN THE APPENDICES.





Grocery Store Access & Choice

As confirmed in the quantitative analysis of food deserts in Winston-Salem, **grocery store access** is a persistent issue in Winston-Salem. Residents and community organizations frequently noted a stark **disparity** between the availability of grocery stores on the west side of town compared to the east. The phrase "geography of it all" captured the divide. While some meetings referenced access issues in the north and the south of the city, but east was most often cited as the area with the greatest challenges. One sentiment was that addressing the north would be more difficult due to its rural nature.



One resident illustrated the impact of the divide: "You are a traitor if you don't shop in the east side of town when you live here. But my mama and grandmother taught me that to get the food we want to eat; we must go to the other side of town."

Community partners noted that the lack of grocery store access also contributes to certain areas being undesirable places to live. For instance, one partner explained that the absence of grocery stores near Salem Lake diminishes its appeal, even though the park itself is a valuable amenity.

Even in areas where grocery stores exist, the **perceptions of quality and choice** vary. A grocery store mentioned in the northern part of town, was deemed inadequate by a vegetarian resident, who found the quality of produce lacking. A grocery store in another part of town was considered unsafe by a resident attending the resident meeting at City Hall.

Affordability is another crucial factor. Many residents who attended meetings or took the short two-question survey at events reported traveling to distant grocery stores to find better prices and deals. More expensive options closer by, options such as farmers markets, and other non-grocery stores options were not seen as desirable by many. It was apparent that a grocery option close-by deemed unaffordable, was the same as no option at all.[24]

Community partners discussed the benefits, and drawbacks of programs such as "Double Up Bucks", which is a statewide SNAP/EBT program for farmer markets, where grant dollars help match a certain number of SNAP/EBT dollars a resident may spend at a farmers' market, essentially helping stretch food assistance dollars further, while also supporting greater economic opportunity for growers. While programs such as these help improve low-income

[24] Residents were also asked if they have shopped online for groceries in the past 12 months. 68% responded that they never shopped online for groceries. This was slightly higher at 78% for respondents without a personal vehicle. The reasons for not shopping online varied by respondent characteristics.

access to fresh, healthy foods, many people still focus on "how to get to Walmart" rather than considering farmers markets. If these programs are to be a part of future solutions, they would require significant educational and outreach efforts.

Public Transportation Barriers

Transportation plays a crucial role in food resilience, particularly for individuals and communities with limited access to grocery stores and fresh food options. Feedback from participants reveals several significant transportation barriers that impact their ability to access food. Many residents expressed frustration with the **inefficiency** of the local bus system, which can make grocery trips excessively long. One participant commented, "I live 7 minutes from here, but to take a bus, I would have to go other places, go downtown," highlighting how indirect routes make grocery trips overly time-consuming.

The **cost of bus** fare also was raised as a barrier, especially for low-income individuals who struggle to afford necessities. This financial strain can limit the frequency of trips to grocery stores, thereby reducing access to fresh and healthy food. Additionally, residents raised concerns about the limits on how much they can carry on the bus. While the actual rule allows up to four bags (provided they no not occupy additional seats), many participants believed they were limited to just two bags, adding further complications to their grocery trips. Nevertheless, the challenge of transporting multiple bags on public transit remains a significant obstacle for many, further complicating their ability to purchase and carry enough food for their households.

A particularly vulnerable group that has specific transportation issues are seniors. Many seniors may have driven in the past but no longer do so. This group is more likely to lack the skills necessary to access food without a car. Moreover, seniors are more affected by the **lack of amenities at bus stops**. The physical demands of public transportation, such as stepping up into the bus or carrying multiple bags, present significant obstacles for seniors, further limiting their ability to access fresh food.

Education on Healthy and Affordable Food

A recurring theme among resident participants was the lack of education on healthy eating and nutrition, which significantly hinders residents from making informed choices about their diets and overall health. This gap in knowledge leaves many individuals unaware of what constitutes a balanced diet and the long-term benefits of healthy eating, ultimately contributing to higher rates of diet-related illnesses within the community. The decline of community structures that traditionally provided education on cooking and nutrition, such as local clubs, schools, and family gatherings, has exacerbated this issue, leaving a void in practical knowledge that was once passed down through generations.

One participant in the study highlighted this challenge as both a significant obstacle and an area ripe for potential solutions. He expressed that one of the greatest opportunities lies in

improving the dissemination of information and education on existing resources. For instance, many residents are unaware of the Fairgrounds Farmers Market, despite it being one of the oldest in the area. This participant emphasized that a key challenge is finding better ways to communicate and make this information accessible to the community. By enhancing awareness of available educational tools and resources in Winston-Salem, there is an opportunity to empower residents to make healthier choices and strengthen the overall food resilience of the community.

While many residents highlighted the lack of education on healthy eating and nutrition as a critical barrier to making informed dietary choices, institutional and community partners were split on this issue. Some larger organizations reported that their participants did not express a strong interest in education specifically focused on nutrition or label reading. These organizations observed that their clients were more concerned with immediate access to food rather than learning about nutritional content or healthy eating practices.

On the other hand, a few smaller organizations, particularly those involved in providing food pantry resources, believed there was indeed a need for education on how to prepare the foods they distribute. These organizations noticed that many recipients were unfamiliar with some of the ingredients offered and could benefit from guidance on how to incorporate them into healthy meals. This split in perspectives suggests that while the demand for nutrition education may vary across different segments of the population, there remains a significant opportunity for targeted educational efforts that address specific needs, such as meal preparation for pantry items. By aligning educational initiatives with the diverse preferences and requirements of different community groups, these efforts can be more effectively tailored to support food resilience.

Community Continuity & Funding

Discussions around community partners, food assistance programming, and even community gardens often came back to **stability and funding**. It was noted that many smaller organizations “pop up and die”, even if they are good ideas. They may die to loss of funding, particularly when a grant runs out, or when key people leave.

One partner described grassroots organizations as “hemorrhaging” people and funds because people move on, and the neighborhoods do not have a stable population. It may also be a changing picture between one street and the next. This can make it difficult for larger organizations to work with them, as well as difficult to provide stability. Despite this, there is a strong belief that “the solutions lie within those communities”. People and leaders in the community need to be tapped into.

The problems with the SHARE Co-op. were brought up as a key example as a highlight to the challenges of stability and funding. The SHARE Co-op received some funding from the City of Winston-Salem to operate Harvest Market, a cooperative grocery store in the south side of town but shut down at the end of 2023. The community did not access and use this cooperative style grocery, which focused on some higher end, healthier foods.

Adding to this is the overlap in resources, and the discrepancies between large organizations and smaller ones. While smaller organizations may be mired with **short-lived projects** that may not offer long-term stability, larger organizations also have robust funding needs that can be limiting as well. Even more, smaller organizations may not be considered reliable in the long term due to their unstable nature in funding and limited personnel, but in contrast, large organizations are often **seen as "outside of the community"** and can have challenges narrowing down close-knit community connections. This limited ability to connect deeply with a community can often led to a distrust of outside resources and may create a narrative of "of us in the community vs. those outside the community". This dynamic lends itself as well to duplicated resources in certain instances, word of mouth knowledge of who to contact for what resource, and even at times competition on what organization is most suited for leading specific programming and most suited for funding opportunities.

As a result, this assessment illuminated challenges of the organizational stability in Winston-Salem which translates into issues that limit funding, communications, and collaboration.

Another significant challenge facing efforts to improve food resilience **the transient nature of the populations they serve**. Many participants and community leaders emphasized that while there is tremendous potential for solutions to be found within communities, the constant movement of residents and the ebb and flow of funding for small organizations create significant obstacles. One participant captured this sentiment, stating, "I'm convinced that the solutions lie within those communities," emphasizing the importance of engaging residents and community leaders in developing and implementing sustainable solutions. As residents move on, whether due to economic pressures, housing instability, or other factors, the community's population becomes less stable. This instability makes it difficult for grassroots organizations to maintain consistent support and engagement. The situation is further complicated by the fact that each neighborhood is different, with unique needs and challenges that can vary dramatically from one street to the next. As a result, efforts to create lasting change must be adaptable and sensitive to these shifting dynamics.

The transience of both residents and small organizations often leads to a fragmented approach to addressing food insecurity and other related issues. Without a stable base of long-term residents and consistent funding, it is challenging for community-based organizations to build the deep, lasting relationships needed to create meaningful change. Participants stressed that no solution will be effective until there is a threshold of sustained engagement with the community. This requires not only financial stability for organizations but also a concerted effort to connect residents with local initiatives in ways that resonate with their needs and experiences.

Moreover, there is a growing recognition of the need to strengthen connections between organizations focused on healthy food and the healthcare system. By fostering collaboration between these sectors, communities can better address the root causes of food insecurity and related health issues. However, achieving this requires stable and continuous funding, as well as a commitment to long-term engagement with the community. Only by tapping into the deep knowledge and leadership within these communities can we hope to create lasting, resilient solutions that truly address the challenges of food insecurity.

Insufficient Food Assistance

A significant barrier to food security within communities is the inadequacy of existing food assistance programs like SNAP/EBT, WIC, and senior dollars. These programs, while vital for many low-income residents, do not provide enough financial support to enable individuals and families to consistently purchase healthy and nutritious foods. The limited benefits often force recipients to choose cheaper, less nutritious options, which can contribute to long-term health issues. The insufficiency of these programs is a critical concern, particularly as the cost of food continues to rise.

The situation has been further exacerbated by cuts in services that many of these programs have experienced since the COVID-19 pandemic. Reductions in benefits and services have left even more residents struggling to make ends meet, widening the gap between what these programs offer and what is needed to maintain a healthy diet. These cuts have placed additional strain on families who are already facing challenges in accessing adequate food, leading to increased food insecurity in vulnerable populations.

Compounding these issues are the strict eligibility requirements that prevent some low-income residents from accessing these benefits. Even those who meet the requirements often face barriers in the application and documentation process, which can be complex and time-consuming. This bureaucratic red tape can deter eligible individuals from applying, or cause delays in receiving benefits, further limiting their ability to purchase healthy foods.

Immigrant families face even greater challenges in accessing food assistance benefits. Language barriers and a lack of familiarity with the benefit system can create significant obstacles for these families, leaving them underserved and struggling to access the support they need. This deficit is particularly concerning given the growing diversity of many communities, where immigrant families represent a substantial portion of the population. Without targeted efforts to improve access to food assistance for these groups, disparities in food security are likely to persist or even worsen. These known challenges are also clearly correlated in data and numerous feedback points received, noting that increasingly that immigrant families are one of the leading demographics in the utilization of food pantry resources.

Type of Food Assistance

There is inconsistency with response on what type of food assistance is needed in the community, but it was clear that one size does not fit all.

A major concern was the **Inconvenience of Cooking**. For many residents, cooking at home is seen as too inconvenient or time-consuming. Community partners agreed that many residents lack the necessary resources, such as adequate kitchen facilities or cooking knowledge, to prepare meals. This is particularly true of the un-housed population. Another key population that was pointed out was children under 18 who must feed themselves while a parent is working. Therefore, convenience foods often outcompete home-cooked meals due to time and resource constraints; however, SNAP/EBT assistance and food pantry assistance often assume the ability, knowledge, and time to cook.

Another concern was the difference between providing choice and providing healthy food, aka questions of **Food Sovereignty**. Partners of one food pantry, for example, said "If we had 100 boxes of Snickers bars, they would say 'Thank you'." There was a belief that many people in need do not want what organizations believe is healthy. Another organization called it a fine balance between prepared foods, desires, and the need for nutrition. Other reasons for differences between food assistance availability and desirability include differences in what food is understood and accepted culturally. For example, it was mentioned in two different organization meetings that the Hispanic community did not find a lot of canned food acceptable, although it is how a lot of food pantry food is provided.

One resident and some of our organizational partners emphasized that food assistance needed to address specific food diet requirements. At places like Atrium Health, they are assisting with prescriptions of healthy produce boxes to meet specific dietary requirements. This type of program seemed to be what one resident, who identified as having high blood pressure, wanted since she was concerned with local food pantries and Meals on Wheels delivering food with too much salt. She noted that many residents in her building area received assistance but threw it away because they couldn't eat it due to their restrictions. Other community partners confirmed that seniors often have more issues understanding and accessing food that fits their conditions, such as diabetes, either because of limited choices or limited finances.

Like the timing of transportation needs to work hours, the **hours of food assistance** can also be problematic. Assistance for food, like food pantries, often occur during working hours; therefore, people must choose between working and eating.

Disparity between Land Access, Time, and Local Food

Access to land for growing local food presents a challenge according to some participants. Participants noted the lack of available land for local food production, which limits opportunities for residents to engage in gardening or small-scale agriculture. One participant shared that her daughters, who are eager to grow their own food, lack access to even a small space, saying, "They don't have access to no balcony," and "don't have access to nothing." This lack of space restricts their ability to produce their own fresh food, a sentiment echoed by many others who wish to cultivate gardens but find themselves without the necessary resources.

Nostalgia for a time when local produce was more readily available was a recurring theme in participant feedback. One resident reflected fondly on her childhood memories of a "watermelon man" who would drive through neighborhoods selling watermelons, providing

seasonal, fresh produce directly to the community. She lamented the loss of this kind of access, noting that the city has removed many local food sources, such as apple and peach trees, which used to be more common in East Winston-Salem. This decline in local food availability has left residents with fewer opportunities to access fresh, locally grown produce.

Another participant spoke extensively about the **broader loss of agriculture** in the country and its impact on communities like Winston-Salem. He emphasized the benefits of local gardens and the need to increase access to garden space in urban settings. However, he also acknowledged a cultural shift that has made agriculture a less desirable career path, partly because society no longer values this kind of work as it once did. This participant suggested that encouraging people to "get in the dirt again" and fostering respect for agricultural work could help change the perception of farming and gardening, especially among younger generations. He noted that children are more likely to eat what they grow, highlighting the importance of reconnecting people with the land.

During a partner meeting, differing views emerged regarding the need for more community gardens. While some partners argued that there is no need for additional gardens and that the focus should be on increasing volunteer participation and care for existing spaces, others suggested that creating fruit forests or more accessible gardens could be beneficial. These would be spaces where the rules about who can take food are relaxed, making fresh produce more freely available to everyone. However, a key issue identified was the need for reliable access to water for community gardens, which is essential for maintaining healthy, productive growing spaces.

Overall, there is a strong desire among participants to see an increase in local food production and access to land for gardening, coupled with a cultural shift that restores the value of agriculture and reconnects communities with the process of growing their own food.

Communication Gaps

Communications gaps were identified both between community organizations and between community organizations, county health operations, and the public. Residents during in-person meetings were often unaware of food resilience programs and efforts from organizations like those provided by Second Harvest and the City of Winston-Salem. Residents often suggested lists of community gardens, which exist with the Forsyth County Agricultural Extension Service and somewhat in the County GIS system—indicated the need for additional awareness.

Statistics provided by community organizations showed a significant gap due to language. According to Novant Health, their Spanish-speaking patients answering screening questions of food insecurity have a food insecurity rate of 23%, 14% more than English-speaking patients at 9%. Many documents and information are not provided in Spanish, and if they are, they may not be translated accurately or with cultural considerations.

Community partners were unaware that the County was still working with Healthy Corner Stores. Community partners at the online meeting discussed how during COVID, there were more online meetings that helped organizations partner better than in the past. However, these meetings have slowly decreased. In-person meetings, such as Forsyth Food Chats, however, were often too hard to attend. While the solution of regular organization gatherings online was brought up, it was also brought up with the understanding that it could be a burden to organize and gather such a group. Success seemed uncertain, although desired.

Proposed Solutions from Feedback

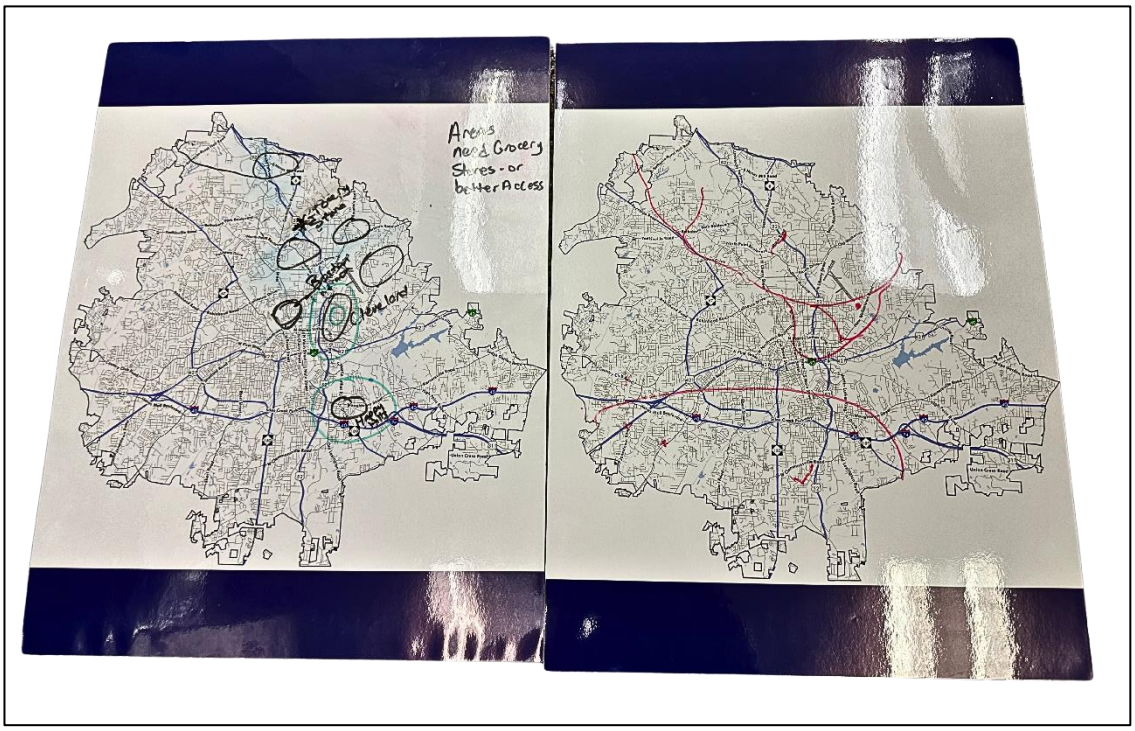
Support Grocery Stores & Alternatives

Addressing the lack of grocery stores in low-access areas is a critical step toward improving food security. One community member suggested that the city

could **evaluate and encourage the development of grocery stores** in underserved areas. Considerations would involve a review of the planning process, including a review of zoning, to better work with developers. This policy could help ensure that all residents have equal access to fresh, healthy food options, regardless of where they live.

Additionally, there was support for the idea of the city **supplementing online grocery delivery services** for residents who are unable to travel to stores. By subsidizing these services, the city could help bring fresh food directly to those who need it most, especially seniors, individuals with disabilities, and those living in food deserts. Regular delivery of fresh produce and groceries would not only improve access but also contribute to better overall health outcomes in these communities.

RESIDENTS WERE ASKED TO DRAW ON A MAP DURING OUTREACH MEETINGS TO MARK WHERE THEY FELT FOOD RESOURCES SHOULD BE PLACED



Food Options & Increased Food Choices

Expanding food options and enhancing food sovereignty, i.e. food choices, are essential for fostering a more equitable food system. One proposed solution is **to provide more prepared, hot foods** through SNAP programs and food pantries, making it easier for individuals and

families to access nutritious meals without the burden of cooking from scratch. [25] It is also crucial to ask people what they want and whether they have specific dietary needs when providing or preparing food. Offering culturally relevant food options can ensure that food assistance programs are respectful of and responsive to the diverse backgrounds of the community.

One institutional partner suggested a more radical approach: giving every household $500 to use as they see fit, based on the understanding that financial flexibility can significantly improve food security and other well-being indicators, such as children's test scores. This approach emphasizes trust in residents to make the best choices for their families without imposing restrictions on how they spend their money. This approach is supported by some research that shows a factor payment system may reduce food insecurity. [26]

Urban Agriculture

Building on the premise of food sovereignty, which in principle hinges on community choices, it is also apparent that some focus may be spent on **locally grown foods**. Food choices can pertain to culturally appropriate, desirable, and accessible foods, but it also can pertain to growing and sharing foods from within our local community.

A repeated theme among residents and partners was the desire to build more community gardens or to implement more local farmers' markets to ensure access to locally grown foods. However, some partners and residents expressed skepticism about the broader impact of locally grown food on improving community food security. For example, one participant noted that community gardens require significant physical and time investment, making it difficult for individuals with limited resources to grow enough food to meaningfully address their needs. Cooperative Extension and others have also highlighted several limitations of community gardens, including the high input of resources, time, and ongoing maintenance they require; their relatively low impact on robustly addressing

[25] Many respondents believed that SNAP benefits should be updated to reflect these foods; however, that is a federal program and beyond the scope of this report.
[26] Berkowitz, et.al. 2024

food insecurity; and challenges related to securing accessible, stable land and necessary infrastructure, such as water access. Over time, many gardens face difficulty sustaining themselves, resulting in too many gardens with too few resources to operate effectively. Nevertheless, despite these challenges, locally grown foods offer other valuable benefits, such as creating educational opportunities, fostering community partnerships, and demonstrating a municipality's commitment to supporting local food systems. These advantages can help strengthen community ties and promote food awareness, even if the direct impact on food insecurity is limited.

And yet, it is worth noting that some benefits of support for locally grown foods may have a deeper impact. The development of a localized food economy has the opportunity to provide economic mobility by increased opportunities for entrepreneurship. With more access to locally grown food, there are also more business opportunities, from farmers, to processors, to distributors, to retailers, and even prepared local foods and restaurants. Rising tides raise all ships, and as such a growing localized food economy stands to improve individual income and access to healthier foods.

Lastly, by supporting local agriculture and locally grown foods, another beneficial impact is improved community resilience. As seen during the COVID-19 pandemic, people's access to food was severely impaired for all within the city. And yet, the impacts were not evenly shared, with less safety nets available to some communities, demonstrating the need for resilience planning for our food system. Support of locally grown foods has the potential to be a powerful tool in addressing resilience and sustainability for our whole community.

While the municipality itself may not be able to carry support for local agriculture alone, we do have the opportunity to support, coordinate and fund projects that organizations across Winston-Salem have and will lead.

Education & Residential Engagement

Enhancing education and engagement around food assistance programs can empower residents to make healthier choices. One key suggestion was to educate families **on how to spend their SNAP benefits** effectively. Notably, there are education services currently in existence from various entities including the County Health Department, Forsyth County Cooperative Extension Consumer and Family Sciences Program, and Second Harvest Food Bank. While it would not be a direct city function to provide education on how to manage SNAP benefits, there are partnership opportunities to better promote existing services. Examples of promotion may include distributing flyers at grocery stores that highlight sales promotions and provide guidance on selecting and preparing nutritious foods could help residents maximize the value of their benefits. There was also an emphasis on the need for community-driven efforts, with a call to "do the work" of creating these educational materials and directly assisting marginalized members of the community. Additionally, teaching people **how to use pantry**

resources, particularly when cross-cultural differences are involved, can help bridge gaps in knowledge and ensure that all residents can benefit from the available food resources.

Improve Transportation Options to Grocery Stores

Many solutions outlined in the report will require collaboration with external stakeholders, but transportation stands out as uniquely positioned under the city's authority. This provides a valuable opportunity to align the values of WSTA and the Food Resilience Program that include a safe and efficient transit system and the improvement of food accessibility across the city. By carefully reimagining these transportation policies and systems, the city can significantly enhance food access and strengthen community resilience.

Improving transportation options to grocery stores is vital for ensuring that all residents can access fresh food. A key recommendation was to revisit and revise the current bus policy that limits riders' number of bags, which can be a significant obstacle for those relying on public transportation to do their grocery shopping. Removing or adjusting this limit would allow residents to purchase and carry more food, making their trips more efficient and reducing the frequency of grocery runs, while also maintaining efficient, safe, and working transit system.

Another proposed solution was to create **an express bus route** to key grocery stores, such as Walmart, during times when people are most likely to shop, like after work and on Saturdays. This dedicated route could make it easier for residents to access large, affordable stores without the lengthy and inconvenient detours that currently exist. Notably, there are ongoing consideration on building out micro transit routes, but efforts will be long ranging.

Community Partner Engagement & Funding

A key message from partners and institutions was to be mindful of how solutions were implemented and **keep the community engaged**. Many organizations expressed the idea that community organizations are already engaging and have pre-existing relationships with residents. Notably,

many of the actions and recommendations discussed in this report will be conducted by external organizations. Rather, the city may be a supportive and collaborative partner. By doing so, the city can avoid reinventing new systems, and "stretch a little bit together". The suggestion repeated by partners consistently throughout our assessment process, was to "find out where the energy already exists" and help organizations meet their goals and expand.

To counter the challenges of instability and transience among small organizations and the communities they serve, several potential solutions have been proposed by participants and community leaders. These solutions aim to enhance communication, increase funding, and foster deeper connections between residents and the organizations working to improve food resilience.

One suggested approach is the establishment of **regular online community meetings**. These meetings would provide a platform for residents, community leaders, and organizations to come together, share updates, and discuss ongoing challenges and opportunities. By creating a consistent space for dialogue, these meetings could help build stronger relationships and maintain engagement, even as residents move in and out of neighborhoods. They would also allow for real-time feedback and collaboration, making it easier to adapt to the changing needs of different communities.

Another proposed solution is the creation of a **community newsletter** that organizations can use for outreach and information dissemination. This newsletter could serve as a centralized resource for residents, providing updates on local events, available services, and opportunities for involvement. By making information more accessible, the newsletter could help bridge the gap between residents and the resources available to them, ensuring that more people are aware of and can participate in initiatives aimed at improving food security and overall community health.

In addition to improving communication, participants emphasized the need for **more funding for small organizations** that are doing valuable work in communities. These organizations often operate on limited budgets and rely heavily on volunteers, making it difficult to sustain their efforts over the long term. Increased financial support would enable these groups to expand their reach, enhance their programs, and maintain a consistent presence in the neighborhoods they serve.

Finally, **the development of an app** with information for residents was highlighted as a potential tool to improve access to resources and services. This app could provide a convenient, user-friendly platform where residents can find information about local food sources, community events, health services, and more. By leveraging technology, the app could help ensure that residents have the information they need at their fingertips, making it easier for them to connect with local organizations and take advantage of available resources.

Benchmarks

Food Resiliency Efforts Benchmarks

City of Baltimore, MD:

Baltimore was one of the first cities to use and test the John Hopkins Center for a Livable Future tool for Food Resilience Planning beginning in 2017. Their method included interviewing 26 stakeholders across the city's food and emergency preparedness sector as well as including several community members and food system practitioners. With a reported 1 in 4 Baltimore residents noted as food insecure, their strategies include increasing urban agriculture on public land through leases on City-owned land, conducting a land tenure analysis to increase long-term land security, and enacted several urban agriculture-friendly policies aimed at animal husbandry, hoop houses, and farmers markets. In addition, they note that they are working with government agency partners to incorporate formal protocols for food distribution and access during times of emergency and helping to support community-led food pantries.

State of Maryland:

The Maryland Department of Emergency Management and the Maryland Food System Resiliency Council published a report with recommendations on food systems in 2023. This report notes that 1 in 3 are food insecure in the state, and food insecurity increased due to COVID-19. While stakeholders were engaged, they do not outline exactly how many

participants or meetings were held. Some of the recommendations include increasing food composting support, establishing a network of cold storage for rescued and donated food, and increasing the state's agricultural apprenticeship program.

State of Arkansas:

The State of Arkansas organized the Governor's Food Desert Working Group in 2022 to provide recommendations on food deserts. 15% of Arkansas is considered food insecure. The recommendations from this report asked for allocation of funds for pilot programs in areas with low-to-no access to fresh foods and to establish a public process for measuring and tracking the success of interventions that includes long-term health outcomes, school test scores, and crime rates.

City of Little Rock, AR:

Following the State of Arkansas recommendations, Little Rock surveyed residents to determine which strategies to engage. 40% of respondents in identified food desert wards responded that the distance they needed to travel to get to food was challenging, but 63% identified the cost of food as the biggest challenge. Based on survey results, the City of Little Rock has allocated $1 million for a mobile food truck to service the food deserts in the city. The $1 million is expected to fund the unit for 3 years and will service 2 locations a day for ½ day each.

Austin & Travis County, TX

Austin began creating its food plan when City Council passed a resolution in June 2021 to develop a 5-year food plan. In December 2022, Travis County voted to join the planning process. Austin engaged a Community Advisory Committee with Community Food Ambassadors to engage in listening sessions, tabling events, and presentations in the community.[27] They also engaged planning and equity consultants to draft their food system plan. Their draft plan in July 2024 focuses on an accessible, just food system. It talks about 9 goals, starting with land and ownership regarding agriculture to disaster preparedness, access to healthy foods, food recovery and "pro-climate" foods.

Atlanta, GA

"Aglanta" has been considered a leading city in urban agriculture work, which has grown from its Resilient Atlanta plan. The Aglanta vision is for all residents to live within a half mile of affordable fresh food. The program is working on this by expanding community gardens, food forests, and other urban agriculture opportunities.

Food Access Models

Food access models provide frameworks for understanding how communities can obtain sufficient, nutritious food despite various challenges. These models consider factors such as geographic proximity to food sources, economic affordability, and social equity. Traditional models often highlight the importance of local food systems, emphasizing community-

[27] https://www.austintexas.gov/page/improving-food-access

supported agriculture, farmers' markets, and urban gardening as means to improve access. However, emerging models incorporate innovative technologies and policy interventions to enhance food security. For example, digital platforms for food distribution, mobile markets, and subsidies for healthy foods are being explored to address gaps in access. As we delve into the discussion of proposed solutions for food resilience, it is essential to examine these models to identify effective strategies that can be implemented to strengthen food systems.

Medical/Prescription Food Distribution

In Winston-Salem, some of the medical providers screen for food insecurity and have programs in place to either provide emergency food if patients do not have food at the time of being seen and/or to provide food specifically for medical conditions, “prescription food boxes.” The prescription food program provides delivery of regionally sourced produce and prepackaged meals for patients identified as food insecure. Research gives preliminary support to the idea that this can decrease food insecurity and increase the intake of fruits and vegetables (Zimmer 2022).

Grocery Distribution Hub

Drew, Mississippi hosts a Grocery Online Ordering Distribution Service (GOODS) in conjunction with local businesses and non-profits. It allows for online ordering, whereby members order from Walmart and have the goods delivered to a closer, local designated location where it can be picked up.

Online and Delivery Expansion

Opelika, Alabama has a local, family-owned grocery store that uses grant funding sources to help provide shuttle and delivery sources to customers.

CSA Supported Fresh Foods Delivery

Community supported agriculture (CSA) programs provide members with a box or a “share” of goods including fresh, local fruits and vegetables, eggs, bread, and other farm products that are in harvest at the time of distribution. Traditionally, CSAs are programs in which consumers commit to supporting a local producer or group of producers for a growing season, paying up front for a share or membership that provides the producers with needed financial support at the beginning of the growing season. In return, the members receive a box of fresh local produce weekly throughout the season. Members pick up their produce boxes weekly at predetermined times and locations. Municipalities or community organizations may partner with CSAs to address affordability to subsidize the programs and or use coupon programs such as Double-Up Bucks to increase low-income consumers’ produce purchasing power.

Grocery Store as Public Utility

The city of Erie, Kansas owns and owns a local grocery store that is run by an experienced manager hired by the city. The grocery store is treated as a public utility.

This model has been highly criticized in Chicago, where the Mayor announced municipally owned groceries in 2023 to combat racial injustice. Criticisms include the lack of incentives to keep costs down and poor management due to lack of specialized knowledge.

Government Supported Produce Market

In West Virginia, SNAP Stretch was used to let SNAP/EBT users buy more fruit and vegetables that support local farmers at the same time. SNAP Stretch supports both farmers markets and local farm stores and roadside stands, provided the retailer signs up for SNAP. An experimental study that placed farm stands in a community found that this intervention did increase participants consumption of fruits and vegetables (Evans, et. Al 2012).

Subscription and Self-Service Market

Evansille, Minnesota has a self-service storefront owned by two residents that features 3 shopping days open to the public but offers 24 hours service for subscription members. It is funded from donations and subscription fees. A key consideration for this model is the possibility of theft and other crimes.

Food Trust Model

Pennsylvania operates a Food Trust through USDA and U.S. Treasury Community Development Financial Institutions (CDFI) Healthy Food funding to operate a program across that state that includes Healthy Corner Stores and providing local grants to offer recipes and cooking tips for available produce. The Forsyth County Health Department already supports Healthy Corner Stores. 2024 locations included in the Forsyth County program are: El Jacal, Los Juanes, Los Primos, La Perlita, La Victoria and Tienda Mexicana La Fe.

Mobile Food Truck Unit

Growing High Point is a non-profit in High Point, North Carolina that runs a mobile food truck grocery “Growdega”. The vehicle was donated by the city; however, the non-profit runs the mobile grocery unit to reach food deserts. The organization uses an old transit bus and provides access to farm shares, while allowing the use of SNAP/EBT. Memphis also runs a mobile food grocery. Memphis’s version is run by The Works, a community development corporation. It operates out of a 20-foot trailer that acts like a one aisle grocery and complies with the ADA Act. They operate 4 days a week at one location between 11 and 3.

Zoning Changes

Several cities have made zoning changes to make agriculture easier, removing challenges from urban growers.[28] For example, allowing on-site sale of produce can reduce costs of markets. Kansas City allows for the direct sale of “whole, uncut food and/or horticultural products grown in home gardens, community gardens, and land managed under a community supported agricultural model.” Philadelphia waives permitting requirements for temporary agricultural structures that will be up for 180 days or less in order to allow for temporary greenhouses for winter crops.

[28] Hervey 2021

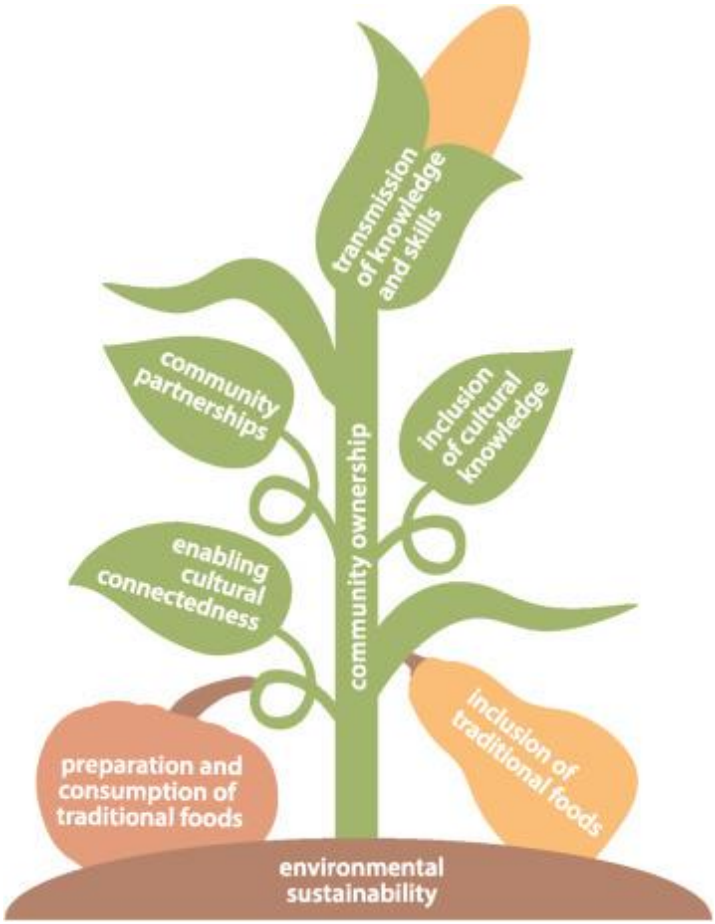
Strategies & Key Takeaways

Working on Food Resilience is an ongoing process of listening to feedback and intervening in the food system. The City recognizes that a single program or action will not solve food security issues. Acting in the food system space requires the cooperation of multiple departments in the city working with community partners and individuals in the region. In addition, many of the gaps and weaknesses in the food system cannot and should not be addressed from interventions by the city. In these cases, **the city may be a supportive and encouraging partner**.

The City of Winston-Salem recognizes that there are key tensions in food resilience. One of these is the tension between human agency and system integrity. For example, although access to healthy, nutritious food is a goal of food resilience planning, individuals and households have the right to access the food of their choice, even if it is unhealthy. The City recognizes that food sovereignty, i.e. food choices, is important, and therefore, interventions should be collaborative and based on partnerships. Future partnerships should also include inclusion of cultural knowledge, inclusion of traditional foods, and environmental sustainability of interventions.

SOURCE: GUTIERREZ, ET. AL (2023)

While it is important to measure outcomes and successes, many of the interventions or actions from the city may do little to change the overall statistics and measurements currently in place. For example, improving transportation and adding non-grocery store food access points will not change the geography of the food deserts. Therefore, the City will have to find other ways to measure and map strategies and outcomes.



References

Alfini, M. (2024). Growing drought impacts crops across North Carolina. *WSOC-TV*. Retrieved from https://www.wsoctv.com/news/local/growing-drought-impacts-crops-across-north-carolina/

American Farmland Trust. Farms Under Threat 2040. (Accessed: 2024). Farms Under Threat - Future Scenarios (farmland.org)

Arkansas Governor's Food Desert Working Group. (2022). Addressing Food Access in Arkansas. Food-Desert-Working-Group-Report.22.pdf (arhungeralliance.org)

Athans, E. and Perchick, M. (January 19, 2022). 'We Can't Get Any More': Stores Struggle to Restock Shelves for Another Winter Storm. Eyewitness News 11. Supply chain: Stores struggle to restock shelves for another winter storm - ABC11 Raleigh-Durham

Austin/Travis County. (2024, July). *Food plan*. Retrieved from https://austin-travis-county-food-plan-austin.hub.arcgis.com/pages/get-involved

Berkowitz, S.A., Seligman, H.K., and Palakshappa, D. (2024). Understanding food insecurity risk in the United States: A longitudinal analysis. SSM-Population Health 25. https://doi.org/10.1016/j.ssmph.2023.101569

Biehl, E., Buzogany, S, Huang, A., Chodur, G. and Neff, R. (August 2017). Baltimore Food System Resilience Advisory Report. baltimore-food-system-resilience-advisory-report.pdf (jhsph.edu)

Biesecker, M. (2018). "3.4 million poultry, 5,500 hogs drowned in Florence Flooding." AP News. 3.4 million poultry, 5,500 hogs drowned in Florence flooding | AP News

Billings, J. (2024). *Food desert map of Winston-Salem by ward* [Map]. City of Winston-Salem GIS; Forsyth County data.

City of Little Rock. (2023). Food Desert Survey Findings (Presentation slides)

DePaolis, J. (2024, Mar). 3 Insights into the Future of Food Production. *Planning Magazine*. 3 Insights into the Future of Food Production (planning.org)

Evans, A. E., Jennings, R., Smiley, A. W., Medina, J. L., Sharma, S. V., Rutledge, R., Stigler, M. H., & Hoelscher, D. M. (2012, September). Introduction of farm stands in low-income communities increases fruit and vegetable consumption among community residents. *Health & Place, 18*(5), 1137-1143. https://doi.org/10.1016/j.healthplace.2012.04.007

Farmers markets, mobile markets, and CSAs. (2018). Health Care without Harm. Program: Farmers markets, mobile markets, and CSAs | Healthy food playbook (noharm.org)

Feeding America. (2019). *Food insecurity in Forsyth County*. https://map.feedingamerica.org/county/2019/overall/north-carolina/county/forsyth

Forsyth County Neighborhood Atlas. (n.d.). *SNAP food stamp changes*. Retrieved September 3, 2024, from https://fcnoa.org/snap-food-stamp-changes/

Hervey, G. (2021, Aug 5). 4 Zoning Changes that Boost Local Food Security. *Planning Magazine*. 4 Zoning Changes That Boost Local Food Security (planning.org)

Holdback-Moorman, G. (2024, August 8). Predicting grocery access after a hurricane. *Journal of the American Planning Association, 90*(3).

Gutierrez, B. V., Kaloostian, D., & Redvers, N. (2023, September). Elements of successful food sovereignty interventions within Indigenous communities in the United States and Canada. *Current Developments in Nutrition, 7*(9). https://doi.org/10.1016/j.cdnut.2023.101973

Jacobson, P. (Sept. 20, 2023). The Problem with a Chicago Municipal Grocery Store. Foundation for Economic Education. The Problem with a Chicago Municipal Grocery Store (fee.org)

Khojasteh, M. (2022, Aug 9). Unplanned Food Access. Journal of the American Planning Association. 89:2:210-224. https://doi-org.libproxy.uncg.edu/10.1080/01944363.2022.2094450

Macdonald, C. (Sept. 25, 2023). Chicago Mayor proposes government-owned grocery stores for 'racial justice'. Timcast. Chicago Mayor Proposes Government-Owned Grocery Stores for 'Racial Justice' | TIMCAST

North Carolina Department of Environmental Quality. (n.d.). *Use the Food NC*. Retrieved 2024, from Use the Food NC | NC DEQ

Piedmont Triad Regional Food Council. (2021). *Regional food system assessment*. Piedmont Triad Regional Council. Retrieved August 30, 2024, from https://www.ptrc.org/services/regional-planning/food-council/regional-food-system-assessment

Smith, C. (2021). Worst Effects of Hurricane Florence on crops, livestock yet to come. AgUpdate: Messenger. Worst effects of Hurricane Florence on crops, livestock yet to come (agupdate.com)

Snap Stretch. (Accessed: 2024) WVU Extension. HOME | SNAP Stretch

Stricland, R.J. and Bruskin, H. (Nov. 1, 2023). 2023 Report to the General Assembly. State of Maryland. Microsoft Word - FSRC_GAReport_2023[1.1] (maryland.gov)

Tendall, DM, et. Al. (Oct. 2015). Food system resilience: Defining the concept. Global Food Security. 6: 17-23. https://doi.org/10.1016/j.gfs.2015.08.001

U.S. Department of Agriculture, Economic Research Service. (2023). *Food Access Research Atlas*. https://www.ers.usda.gov/data-products/food-access-research-atlas/

Veteto, J.R. and Carlson, S.B. (2014). Climate Change and Apple Diversity: Local Perceptions from Appalachian North Carolina. Journal of Ethnobiology 34(3): 359-382. Climate Change and Apple Diversity: Local Perceptions from Appalachian North Carolina (sagepub.com)//

Wassenaer, Lan & Oosterkamp, Elsje & Asseldonk, Marcel & Ryan, Mark. (2021). Food system resilience: ontology development and impossible trinities. Agriculture & Food Security. 10. 10.1186/s40066-021-00332-7.

"What are food deserts, and how do they impact health?" Medical News Today. Accessed 8/1/2024. Food deserts: Definition, effects, and solutions (medicalnewstoday.com)

"'When Agriculture Hurts, Everybody Hurts': Florence caused $1.1B in NC Agriculture Losses." (2018). WRAL. 'When agriculture hurts, everybody hurts:' Florence caused $1.1B in NC agriculture losses | AP News

WVU Extension. (n.d.). *SNAP Stretch*. Retrieved 2024, from https://extension.wvu.edu/family-health/food/nutrition/snap-stretch

Zimmer, R. P., Moore, J.B., Yang, M., Evans, J., Best, S., McNeill, S., Harrison, Jr., D., Martin, H., and Montez, K. (Apr-Jun 2022). Strategies and Lessons Learned from a Home Delivery Food Prescription Program for Older Adults. J Nutr Gerontol Geriatr 41(3): 217-234. doi: 10.1080/21551197.2022.2084204

Zuckerman, J. et al. (August 2021). North Carolina Food System Resilience Strategy. NCFoodResiliencyStrategy-August-2021-1.pdf (ncsu.edu)

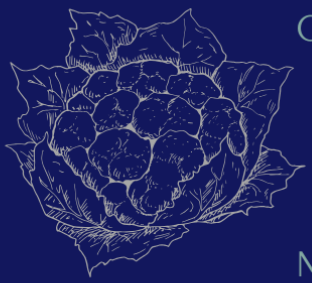
Appendices

Winston-Salem Previous Food Resilience Efforts

- Triad Food Symposium
- Liberty Street Urban Farmers Market
- The Think Orange Campaign
- Other Food Resilience Efforts Undertaken by the City of Winston-Salem
  - Food Donations & Food Pantry Support
  - Community Garden & Urban Agriculture Support
  - City Funded Organizations (and their relationship to the Food System)
  - Other Food Access Efforts
  - Internal Department Efforts: Key Takeaways

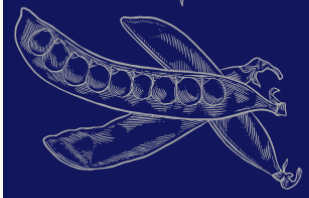
Methodology

- Resident Surveys
- Resident Feedback Community Meetings
- Community Partner Surveying
- Community Partner Online Surveys
- Community Partner Feedback Meetings
- Institutional Interviews
- Surveying Analysis



Community Partner Acknowledgements

- Institutional Level Partners
- City Wide Partners
- Community Level Partners
- Neighborhood Level Partners
- Individual Level Partners



Maps of Forsyth County Food System & Assets

- Forsyth County Asset Map
  - Grocery Services,
  - Fresh Food Services
- Forsyth County Community Resource Map
  - Community Assets: Food Retailer
  - Community Assets: Food Pantries
  - Community Assets: Community Garden
- Forsyth County Neighborhood Opportunity Atlas
  - Grocery Store Distance to Residents
  - Resident Participation in SNAP/ EBT Program
- North Carolina Local Food Infrastructure Inventory Map
  - Statewide Map
  - Winston-Salem Forsyth County Map

Notes from Resident & Community Partner Meetings

- Resident Notes, June 14 at Hanes Hosiery Community Center
- Resident Notes, June 20, Rupert Bell Neighborhood Center
- Resident Notes, June 26, Sprague St. Community Center
- Resident Notes, July 11, City Hall
- Community Partner Notes, July 29, Second Harvest Food Bank

Developing Food Resiliency Strategies

Winston-Salem

Winston-Salem Previous Food Resilience Efforts

Triad Food Symposium

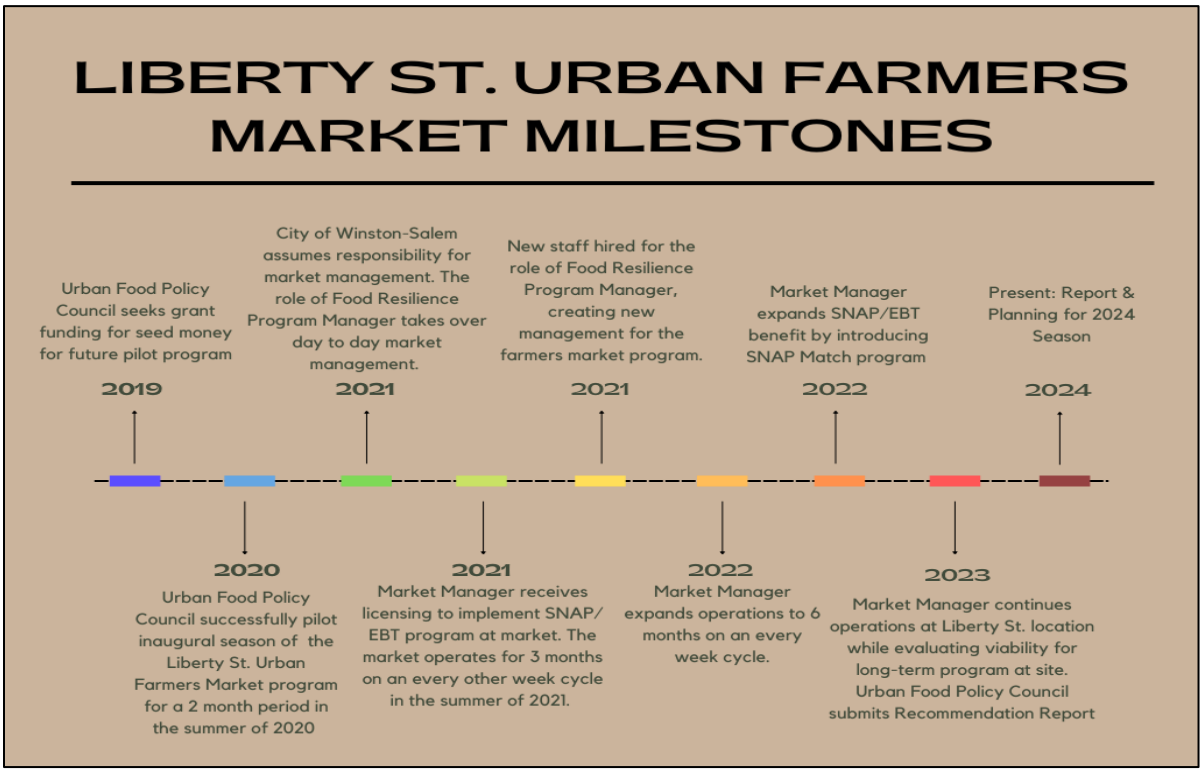
CULTIVATE RESILIENCE
A TRIAD FOOD SYSTEM SYMPOSIUM

Cultivate Resilience: A Triad Food System Symposium was a daylong conference event that took place on Tuesday September 26th, 2023, at the NCA&T University farm pavilion. The event was sponsored and co-hosted by the Piedmont Triad Regional Food Council (PTRFC) and the City of Winston-Salem Urban Food Policy Council. The event was centered on bringing together stakeholders from across the food system in the Piedmont Triad 12 country region to collaborate, network, and coordinate regional efforts to develop our local food system.

The day included over a dozen speakers representing different areas of expertise in the food system, and dozens of volunteers supported the planning and implementation of the event. PTRFC in 2024 is currently moving forward with the development of workshops for local growers and local food hubs to support their ongoing development needs in the Piedmont Triad region. In total the event hosted 114 participants with Forsyth County individuals and organizations.

Liberty Street Urban Farmers Market

Originally founded in the summer of 2020 by the Urban Food Policy Council (UFPC), the Liberty St. Urban Farmers Market completed its 4th year of operations in 2023 under City management. In early 2020 when COVID-19 spread across the country, the UFPC focused on pursuing increasing food access in a food insecure area of Winston-Salem in line with their mission. They envisioned a program that could accomplish many outcomes through a common thread – both increasing food access and supporting urban and local farmers at the height of the growing season. The group sought grant funding from NC State and successfully secured a small grant to help get the program off the ground. Their goal was to pilot a grassroots farmers market program that would better connect residents to local and healthy foods and better support urban farmers who often struggle to break into larger and more competitive marketplaces. In total, the pilot program ran for 2 months in 2020 and succeeded in establishing connections with the local farmers and residents. Considering the program's potential, the City of Winston-Salem assumed responsibility of operating the farmers market as an investment in the Think Orange program. Under the direction of the Food Resilience Program Manager from 2021 to 2023, the Liberty St. Urban Farmers Market transitioned to a fully City operated program that included SNAP/EBT matching.



The Think Orange Campaign

The Think Orange campaign was launched with a 2018 grant of $115,500 from the National League of Cities and the Food Research and Action Center. The City collaborated with this grant and another combined with a $50,000 grant the Urban League received for senior citizens regarding SNAP as well as a Second Harvest pilot program to deliver hot meals. The effort's main goals were to expand participation in summer feeding programs, assist in hot meals after-school program, expand SNAP participation, and provide more fresh food for H.O.P.E recipients.

In 2019, Think Orange reported that the partnership had served 66 Summer Meal Program sites in 2018, for a total of 192,055 meals. In addition, the Child Nutrition Department sponsored 27 afterschool sites, with an average of 1,215 children per day.

Other Food Resilience Efforts Undertaken by the City of Winston-Salem

The City of Winston-Salem's commitment to food resilience extends beyond the initiatives directly managed by the Food Resilience Program. A recent internal survey revealed that over 27 City departments are actively engaged in efforts that contribute to the broader goals of food security, health, and sustainability. Although these initiatives are not always explicitly labeled as food resilience, they demonstrate the values of the organization to foster and support service opportunities that address food security. This section highlights the diverse and impactful projects reported by these departments, illustrating a City-wide commitment to building a resilient and equitable food environment for all residents.

Departments that participated in the internal survey had the opportunity to report on the following categories:

- Food Donations & Food Pantry Support
- Community Gardens & Urban Agriculture Support
- Funding Opportunities for Food Related Enterprises and Community Partner Organizations
- Other Food Access Efforts

We thank all departments for their work and for their time reporting on food resiliency efforts.

Planning and Development Department
Property and Facilities Management Department
Vegetation Management Department
Winston-Salem Fairgrounds Department
City Manager's Office
Employee Safety Department
Human Relations/DEI Department
Fleet Services Department
Winston-Salem Police Department
Budget & Performance Management Department
Information Systems Department
Recreation & Parks Department
Neighborhood Services Department
Engineering Department
City Link Department
Office of Community Assistance
City Attorney's Office
Transportation Department
Business Inclusion & Advancement Department
Utilities Department
Emergency Management Department

Food Donations & Food Pantry Support

Ten City departments reported being involved with food donation activities. The City of Winston-Salem's approach to food donation and support initiatives varies widely across its departments, reflecting different levels of engagement, scope, and success. These efforts, while collectively contributing to the community's food resilience, show notable contrasts in terms of frequency, target populations, collaboration, and impact measurement.

Some departments engage in food donation efforts more occasionally, often centered around annual events, particularly during the holiday season. These drives are generally aimed at supporting the broader public or specific groups, such as low-income residents or non-profits. However, these initiatives tend to lack comprehensive data collection, making it difficult to quantify their impact. For instance, while certain departments participate in annual food drives, there is often no record of how many individuals were served or the total volume of food distributed. The absence of such metrics limits the ability to evaluate these programs' success effectively.

In contrast, other departments, particularly those with a more direct connection to community services, demonstrate a more frequent and structured approach to food donation. For example, some departments engage in multiple food drives throughout the year and incorporate feeding programs as part of their regular operations. These efforts often include targeted initiatives for at-risk groups such as children and seniors, highlighting a more strategic approach to addressing food insecurity. Quantifiable data, such as the number of meals served or food items distributed, is more commonly collected in these cases, offering a clearer picture

of their impact. For instance, through collaborative efforts with local organizations like food banks and health departments, these programs have been able to measure the distribution of thousands of meals and food items to residents in need.

The level of collaboration with external organizations also varies significantly. Some departments work closely with partners like food banks, local non-profits, and community organizations, enhancing the reach and effectiveness of their efforts. These partnerships often allow for more substantial and sustained impact, as they can leverage additional resources and expertise. The coordinated efforts are typically better at tracking the outcomes, providing valuable data on the number of individuals served and the effectiveness of the food distribution.

Overall, while all departments contribute to the community's food resilience in some capacity, the effectiveness and reach of these efforts differ widely. Departments with more frequent and strategically targeted programs, bolstered by strong partnerships and thorough data collection, tend to have a more measurable and significant impact. In contrast, those with less frequent initiatives and limited data collection struggle to fully assess their contributions, highlighting areas where improvements could be made to enhance the community's overall food security strategy.

Community Garden and Urban Agriculture Support

The City of Winston-Salem demonstrates a multi-faceted approach to supporting urban agriculture and community gardens, with various departments contributing in distinct ways. These efforts, though varied in scope, collectively aim to enhance food security, educate the community, and promote sustainable practices.

Some departments, such as Vegetation Management, focus on providing essential resources, like mulch, to support community gardens. Their role, while crucial, is more supplementary, as they do not engage in the ongoing management or direct educational activities within the gardens themselves. This approach contrasts with that of the Recreation & Parks Department, which takes a more active role by not only supporting but also cultivating and managing multiple community gardens. These gardens serve as educational platforms, particularly targeting at-risk children and the public through summer camps and after-school programs. The Recreation & Parks Department’s hands-on involvement is further bolstered by partnerships with organizations like the Forsyth County Health Department, which help to amplify the impact of their efforts. The Recreation & Parks Department actively tracks attendance, and the number of individuals served to measure the success of their initiatives.

On the other hand, the Office of Community Assistance engages in urban agriculture by directly participating in the harvesting and maintenance of school and community gardens, such as those at Moore Elementary School and Happy Hills Garden. Their focus is on supporting low-income residents and those facing food insecurity.

In comparing these efforts, the primary difference lies in the level of direct involvement and the approach to measuring success. While Vegetation Management provides essential but limited support, Recreation & Parks and the Office of Community Assistance take a more engaged approach, with the former also focusing on tracking and evaluating their impact. These varying levels of involvement and data collection reflect the diverse strategies employed by the City to address food resilience, each tailored to the specific strengths and capacities of the departments involved. The departments actively participating in these urban agriculture efforts include:

City-Funded Organizations (and their relationship to the Food System)

The Budget & Performance Management (BPM) department plays a pivotal role in facilitating the community agency application process each year.[29] However, their efforts are more generalized, with no specific focus on food security. The agencies funded under this program are diverse and not necessarily aligned with food-related objectives, although food related objectives are not necessarily excluded. Nevertheless, agencies receiving funds are required to submit quarterly reports detailing performance metrics and budget utilization, ensuring accountability and the tracking of their impact.

In contrast, the Business Inclusion and Advancement (BIA) department offers more targeted financial support through its small business loan program. This program provides loans of up to $100,000 to for-profit enterprises, many of which include restaurants and food service businesses. These recipients are often located in underserved or disinvested areas of the city, such as Neighborhood Revitalization Strategy Areas. BIA also administers a building rehabilitation loan program, aimed at assisting commercial properties in blighted or disinvested areas with aesthetic or building code improvements. This program indirectly supports food-related businesses by enhancing the viability of spaces they occupy. The success of BIA's programs is typically measured by job creation and capital investment, metrics that reflect their focus on economic revitalization within the community.

Other Food Access Efforts

The City of Winston-Salem has developed several food access programs through various departments, each with distinct objectives and target recipients. These initiatives aim to improve food availability, especially for low-income residents and those facing food insecurity, while also promoting local agriculture.

The Winston-Salem Fairgrounds department supports food access through its Supplemental Nutrition Assistance Program (SNAP) and Women, Infants, and Children (WIC) programs. At the Farmers Market, customers can use SNAP benefits to purchase tokens, which can then be spent on fresh and local produce from market vendors. Additionally, some vendors at the market are authorized to accept WIC vouchers. These programs provide recipients with an alternative to traditional grocery shopping, enabling them to access fresh, locally grown produce. The primary

[29] https://www.cityofws.org/335/Community-Agencies

objective is to improve access to nutritious food for low-income residents, those experiencing food insecurity, at-risk children, the general public, and farmers/growers. The program is funded through the departmental budget, and its success is measured by the number of individuals served. While the department does not collect extensive data on the program's impact, the number of participants is a key indicator of its effectiveness.

In contrast, the Planning and Development Services department focuses on facilitating urban agriculture through specific permitting processes. The Urban Agriculture permitting program in Winston-Salem allows citizens to grow food on undeveloped urban and suburban lots and supports indoor agriculture practices such as hydroponics and aquaponics within the city. Additionally, the Bona Fide Farm permitting in Forsyth County enables farms that meet certain conditions to be exempt from specific building and zoning regulations. This status also allows these farms to engage in value-added activities such as hosting wedding venues, corn mazes, or wineries, even if their zoning doesn't typically allow for such uses. These programs' objective is to make agriculture more feasible and economically viable in Winston-Salem and Forsyth County. These initiatives primarily target the general public, farmers, growers, and non-profits. Although these programs do not have a designated funding source or data collection system, their impact is observed through the increased feasibility and economic viability of local agriculture.

In comparing these efforts, the Winston-Salem Fairgrounds' programs are directly focused on providing food access to vulnerable populations, with clear metrics in place to measure success, such as the number of individuals served. The Planning and Development Services department, on the other hand, takes a regulatory approach, aiming to facilitate and expand agricultural opportunities within the city and county. This department's initiatives are more indirect in their impact on food access but are crucial for creating a sustainable food system by supporting local agriculture.

Internal Department Efforts: Key Takeaways

The feedback collected from various City departments on their involvement with food resiliency and access programs reveals several common themes and opportunities for additional efforts:

Communication and Awareness:
Many departments expressed a need for enhanced communication regarding food-related initiatives. Lack of awareness about existing opportunities and programs was a recurring challenge. Several departments suggested that better dissemination of information and more proactive outreach could increase participation and support for food drives and related activities.

Resource Constraints
Resource limitations were frequently cited as a significant barrier. Challenges included securing funding for specific programs, such as providing healthy food snacks for youth out-of-school

programs, and the need for additional food banks or pantries. Some departments highlighted difficulties in managing and utilizing available resources effectively due to financial constraints.

Operational Limitations:
Certain departments reported operational constraints that impact on their ability to support food programs. This includes logistical issues such as insufficient facilities for hosting food drives and limited scope of services that restrict their involvement. There was an acknowledgment of the need for better infrastructure and support systems to facilitate food distribution and related activities.

Employee Engagement and Participation:
Engaging employees and increasing participation in food-related initiatives was a noted challenge. Some departments struggled with low participation in food drives and other activities, attributing this to limited time, competing priorities, and insufficient methods for promoting involvement. Suggestions included improving outreach efforts and creating more engaging platforms for participation.

Suggestions for Improvement:
Feedback included specific recommendations for enhancing food resiliency efforts. Suggestions encompassed increasing the frequency of City-sponsored food drives, expanding public information campaigns through various media channels, and developing a tracking app to monitor food donations and needs. Additionally, there were calls for increasing the number of community food distribution points and supporting local food production through more garden spaces.

Overall, the feedback highlights a shared need for improved communication, better resource management, and more strategic engagement to strengthen food resiliency efforts across City departments.

Methodology

Our approach was guided by the Johns Hopkins Tool for Municipal Governments on Food Systems & Resilience, a comprehensive framework rooted in research-driven methodologies. This tool helped establish a solid foundation for gathering essential data from partners and stakeholders and facilitated community engagement through strategic, targeted meetings.

The process officially began in early spring, marked by in-depth research and benchmarking against other urban centers with innovative municipal strategies for food resilience. This phase also included the creation of pivotal resources such as the Resident Online Survey and the Community Partner Online Survey, designed to capture a broad spectrum of insights.

Launched in late April, these surveys have proven instrumental in collecting vital data, and they have remained open throughout the summer to ensure that all voices—especially those of residents and key community partners—are represented. By incorporating this resident feedback, we ensured that diverse perspectives were considered, providing a well-rounded and inclusive approach to food resilience strategy development.

Resident Surveys

Our resident surveying efforts utilized a multi-faceted approach, including an online survey that remained open for three months over the summer. To complement the online survey, we held five feedback meetings—four conducted in person and one virtually via Zoom. A strategic effort was made to promote and advertise the survey across the community. Flyers and posters were distributed in libraries, Goodwill locations, recreation centers, and the offices of key organizations in Winston-Salem. Surveying materials were also made available at several community events to further encourage participation.

Additionally, public health interns and Community Assistance Liaisons engaged in direct outreach, assisting residents with survey completion when needed. The goal was to offer multiple avenues for residents to provide feedback, ensuring inclusivity and accessibility across different platforms.

The resident online survey was developed using a framework based on benchmark assessments conducted in Little Rock, Arkansas, and Saginaw, Michigan. The key objectives of the survey were to:

1. Identify Top Priorities: Understand the main factors influencing residents' decisions when accessing grocery resources.

2. Assess Food Security: Measure how secure or insecure residents feel about their access to healthy and affordable food in Winston-Salem.
3. Gather Insights on Needs and Solutions: Collect information on the top needs and potential solutions residents suggest.

To further enhance the survey, we included an interactive map feature that allowed residents to pinpoint areas in Winston-Salem where they felt additional food resources were needed. A comments section was also provided for residents to share their direct feedback, personal experiences, or opinions regarding food security needs and potential strategies.

Resident Feedback Community Meetings

Our approach to planning resident partner meetings was notable for its focus on equity and inclusivity. The process began by referring to the USDA food desert map for Winston-Salem to identify low-access, low-income areas. While our goal was to include all voices in Winston-Salem, we prioritized holding in-person feedback meetings in these low-access spaces.

To achieve this, we:

1. Utilized GIS Maps: Referred to a Rec & Parks GIS map to identify Recreation Centers that overlapped with low-access areas of the city.
2. Selected Strategic Locations: Chose specific Recreation Centers dispersed across various wards. Although we could not hold a meeting in every ward, we picked centers near the borders of several wards to capture multiple audiences from across the city.
3. Collaborated with Rec & Park Staff: Worked with Rec & Park staff to finalize the locations and identify a variety of times and dates to ensure a good spread of options, providing an equitable process.

As a result, three of our five resident meetings were held at Recreation Center locations, one at City Hall as a central location, and one virtually. This approach ensured that we reached a diverse range of residents, including those in underserved areas.

Community Partner Surveying:

We adopted a comprehensive approach to surveying our community partners, launching two online surveys and hosting multiple feedback meetings to gather detailed insights and encourage collaboration. Outreach was conducted through key workgroups and established communication channels to engage a wide range of stakeholders.

Additionally, participating organizations were encouraged to share the survey resources with other stakeholders they deemed important, helping to extend the survey's reach and ensure broad participation across the community

Community Partner Online Surveys

First Survey: Our initial survey was designed to collect essential data about the organizations involved in the food system. This survey focused on:

1. Organizational Information: Gathering details about each organization's mission, services, funding, and collaborations.
2. Scope of Services: Understanding the range and reach of services provided by non-profit organizations in Winston-Salem.

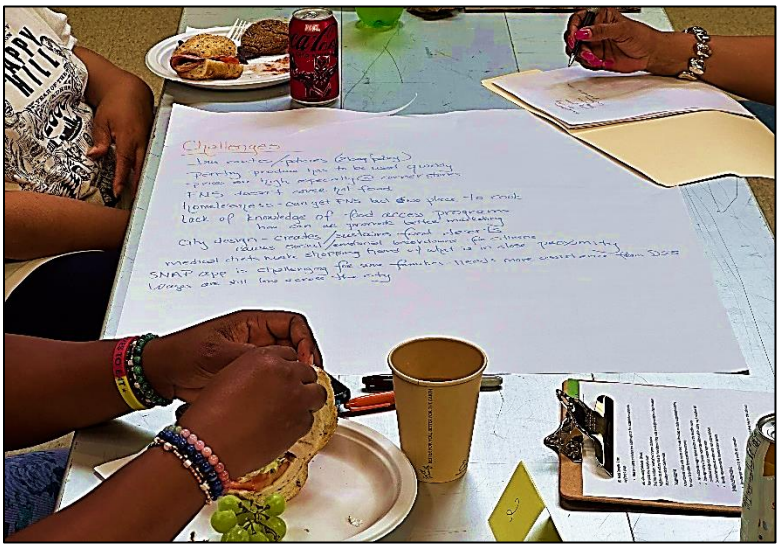
The goal of this survey was to compile relevant information about the organizations contributing to the food system, particularly from the robust non-profit sector.

Second Survey: The second survey aimed to delve deeper into the challenges and needs within the current food landscape. It focused on:

1. Identifying Gaps and Challenges: Pinpointing the areas where the food system is lacking and understanding the primary challenges faced by these organizations.
2. Feedback on Strategies and Needs: Soliciting input on the top strategies and needs that organizations believe should be prioritized to improve the food system.
3. Collaboration Insights: Assessing how collaborative organizations are with one another when providing services in Winston-Salem.

Community Partner Feedback Meetings

To complement our online survey tools, we hosted three community partner feedback meetings:



1. In-Person Meeting: An in-person feedback meeting provided a platform for direct interaction and discussion among community partners.
2. Virtual Meeting: A virtual feedback meeting ensured inclusivity, allowing those who could not attend in person to participate and share their insights.
3. Piedmont Environmental Alliance Roundtable Event: At this event, we hosted a breakout table focused on Food Resiliency Assessment. This provided an additional opportunity to engage with partners and gather feedback in a collaborative setting.

At all three feedback meetings, the conversation structure centered on:

1. Identifying Strategies: Discussing and pinpointing effective strategies to enhance food resilience.
2. Analyzing Strengths and Weaknesses: Evaluating the strengths and weaknesses of the current food system and the proposed strategies.
3. Key Partners and Funders: Identifying crucial partners and funders that could support the implementation of these strategies.

Institutional Interviews

We also conducted interviews with key institutional partners to gain deeper insights into top strategies and vulnerabilities affecting food resilience. The institutions involved in these interviews include Second Harvest Food Bank, Forsyth County Public Health Department, Atrium Health, Novant Health, and Winston-Salem Forsyth County Schools Nutrition Program.

The purpose of these institutional interviews was to engage in more in-depth discussions for feedback from key institutions that play a major role in impacting healthy food outcomes in Winston-Salem. The structure of these conversations focused on the following four elements:

1. Identifying Vulnerable Groups: Understanding which groups in the community are most vulnerable and at great risk of food insecurity. This includes assessing demographic factors, socioeconomic status, and geographic locations that contribute to vulnerability.
2. Major Shocks and Stressors: Identifying the primary shocks and stressors to the food system. This could include economic challenges, supply chain disruptions, environmental factors, and other systemic issues that impact food resilience.
3. Impact of Hazards and Emergency Events: Exploring how hazards or emergency events, such as natural disasters or public health crises, impact the food system and subsequently affect food security for residents. This element focused on understanding the preparedness and response mechanisms of the food system during such events.
4. Review and Input on Strategies: Reviewing key feedback from residents and soliciting input on what the top strategies should be for the city's food resiliency program. This included discussing potential solutions, priorities, and collaborative efforts that could enhance the overall resilience of the food system.

Surveying Analysis

Our surveying efforts for the Food Resiliency Strategic Planning Effort is anchored by three primary pillars: Residents, Community Partners, and Institutions. While the procedure for surveying these key demographic groups was unique and tailored to their specific vantage point, the overarching goals of all surveying efforts were consistent and aimed at achieving three main objectives:

1. Gather Stories and Listen to Voices: One of the primary goals was to understand the food experiences of our community members in Winston-Salem. A key feature of our resident and partner feedback meetings was to listen first to the perspective, insights, and at times personal experiences shared by participants. Our intent was to provide a platform to engage community, to ensure a comprehensive assessment of the local food landscape.
2. Quantify Current Assets and Resources: Another crucial objective was to assess and quantify the existing assets and resources within the city’s food system. This included identifying strengths and resources already in place, as well as pinpointing areas where gaps exist. Understanding these elements is essential for developing a resilient food system that can effectively support the needs of all residents.

3. Solicit Feedback on Key Strategies: The final objective was to gather feedback from stakeholders on the strategies they believe are most important for the city to engage in. By involving residents, community partners, and institutions in this process, we aimed to identify and prioritize actionable strategies that will have the greatest impact on enhancing food security and sustainability in Winston-Salem.

Community Partner Acknowledgements

Thank you to all participating organizations in joining our Food Resiliency efforts. The following include a full list of organizations and the scope & level of their work in Winston-Salem.

Institutional Level (works with recipients who receive services from their organization)

Organization Name	Website	Contact
Crossnore Communities for Children	www.crossnore.org	336-721-7600 info@crossnore.org
Forsyth County Cooperative Extension	http://forsyth.ces.ncsu.edu/	336-703-2750
Forsyth County Department of Social Services	https://www.forsyth.cc	336-703-2020
Forsyth County Health Department, WIC	https://forsyth.cc/hhs/wic/aspx	336-703-3336 grundsma@forsyth.cc
HARRY Veterans Community Outreach Services, Inc.	www.harry4you.org	336-725-3410
Mobile Integrated Health division of Forsyth County Emergency Services	https://www.co.forsyth.nc.us/EmergencyServices/EMS/ems_mih.aspx	336-703-2750
Novant Health Office of Health Equity & Community Health	https://www.novanthealth.org/about/our-commitment/health-equity/	n/a
Wake Forest School of Medicine, Public Health	https://www.wakehealth.edu/	n/a
WellCare of NC	https://www.wellcarenc.com/	n/a

City Wide Level (works across the city and serve a range of stakeholders)

Organization Name	Website	Contact
Bethesda Center for the Homeless	www.bethesdacenter.org	336-722-9551
Christ Rescue Temple Apostolic Church	n/a	336-723-9841
Cobblestone Farmers Market	https://thecobblestonefarmersmarket.com	cobblestonefarmersmarket@gmail.com
Community Care Clinic	www.carectr.org	336-723-7904
Earthwood Urban Farm	https://android.nextdoor.com/pages/earthwood-urban-farm-and-nature-school-winston-salem-nc/	earthwood.ws@gmail.com
Forsyth County Public Library	https://www.forsyth.cc/library/	336-703-2665
Goodwill Industries	https://www.goodwillnwnc.org/	336-714-3060
Grace Presbyterian Church	https://gracechurchwinston.org/	336-767-7530
Latent Designs	https://latentdesigns.com/	336-406-3686 laurenfrye@latentdesigns.com
Love Out Loud	https://www.loveoutloudws.com/	336-747-3067 serve@loveoutloudws.com

Open Arms UMC	openarmsumc.org	336-724-0850 OR 336-618-7719
Piedmont Environmental Alliance	peanc.org	https://www.peanc.org/contact
Salvation Army	salvationarmyws.org	336-723-6366
Samaritan Ministries	samaritanforsyth.org	336-748-1962
Second Harvest Food Bank of Northwest NC	www.secondharvestnwnc.org	336-784-5770
Senior Services Inc.	www.seniorservicesinc.org	336-725-0907
St. Peter's, We Care House Food Pantry and Garden	https://www.spwoc.com/we-care-house	336-650-0200
Sunnyside Ministry	sunnysideministry.org	336-724-7558
Triad Buying Co-op	www1.tbcoop.org	membership@tbcoop.org
Winston-Salem Rescue Mission	wsrescue.org	336-723-1848
Winston-Salem State University, Spatial Justice Studio	http://cdiwsnc.org/project/spatial-justice/	n/a

Community Level (works with a range of stakeholders tied by a certain geographic location within the city).

Organization	Website	Contact
Ardmore Gateway Garden/Sustainable	www.ardmoregatewaygarden.org	sustainableardmore@gmail.com
H.O.P.E. of Winston-Salem	www.hopews.org	336 750-7964
Island CultureZ	https://www.islandculturez.org/	info@islandculturez.org
National Birth Coalition	https://www.thenationalbirthcoalition.com/	n/a
S.G. Atkins Community Development Corporation	www.sgacdc.org	(366)734-6900 Sgatkinscdc4@gmail.com
Wake Forest University, Office of Civic & Community Engagement	https://communityengagement.wfu.edu/	336-758-4070 communityengagement@wfu.edu
Christ's Beloved Community - Comunidad Amada de Cristo	WWW.BELOVEDWS.ORG	336-893-5677
Morning Star Missionary Baptist Church	https://www.morningstar-wsnc.org/	336-418-2003
The Black Collective	https://www.theblkcollective.org/	n/a
Winston-Salem Permaculture Collective	wspc.info	248-938-2386 WSPERMACULTURE cOO wspermaculturecooperative@gmail.com

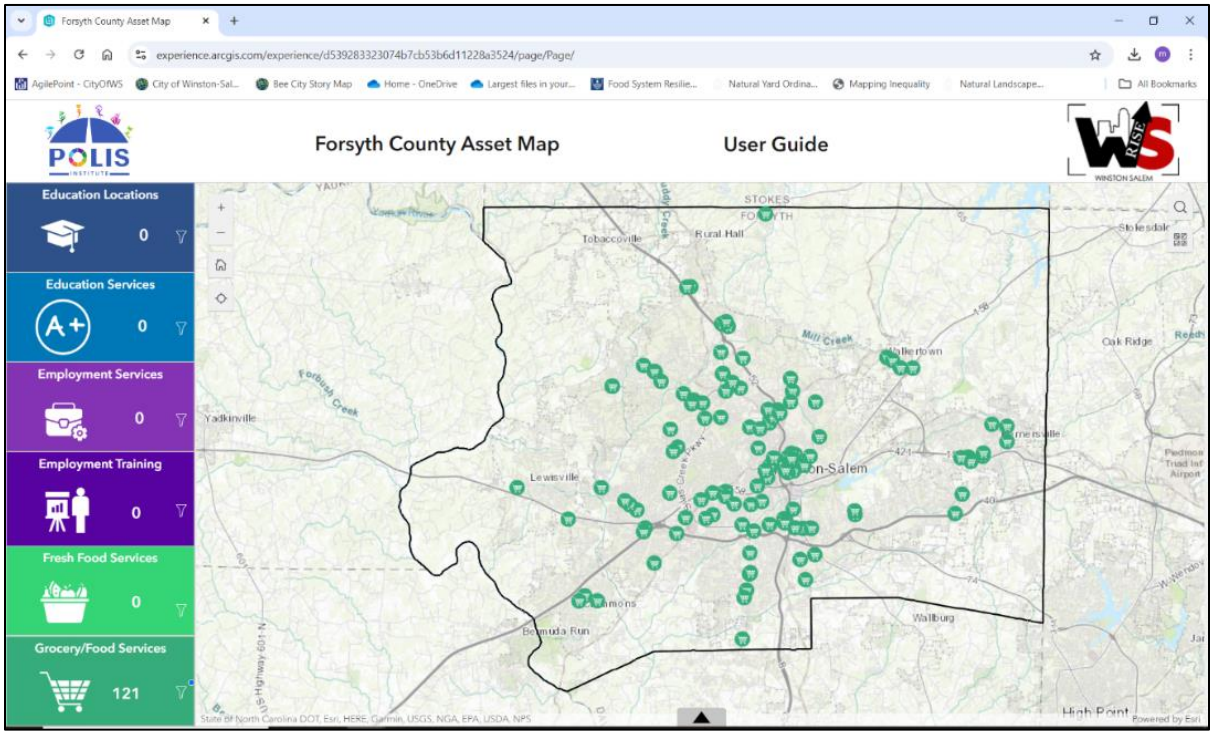
Individual Level (works with residents on a 1 on 1 basis)

Organization Name	Website	Contact
American Red Cross - Humanitarian Services - North Carolina Region Volunteer Services	https://www.redcross.org/local/north-carolina.html	704-376-1661
Cancer Services, Inc.	cancerservicesonline.org	336-760-9983
Centenary UMC - Loaves & Fishes	https://centenary-ws.org/	336-724-6311
City With Dwellings	https://www.citywithdwellings.org	336-790-9766
Compass Group	https://www.compass-usa.com/	n/a
Crisis Control Ministry, Inc	www.crisiscontrol.org	336-996-5401
Legal Aid of North Carolina	https://legalaidnc.org/	lancinnovates@legalaidnc.org
Mountain Valley Hospice	mtnvalleyhospice.org	888-789-2922
The PLANT Provider	https://plantproviders.org/	info@plantproviders.org

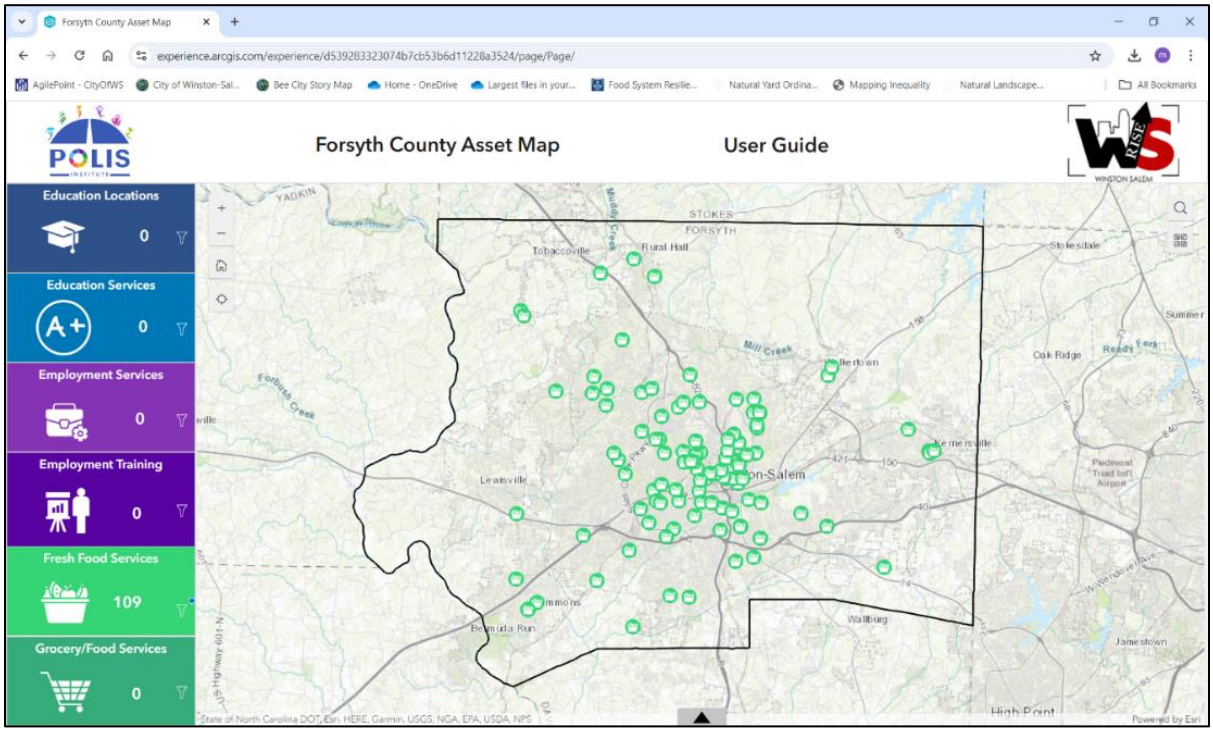
Forsyth County Asset Map

https://experience.arcgis.com/experience/d539283323074b7cb53b6d11228a3524/page/Page/

GROCERY FOOD SERVICES MAP



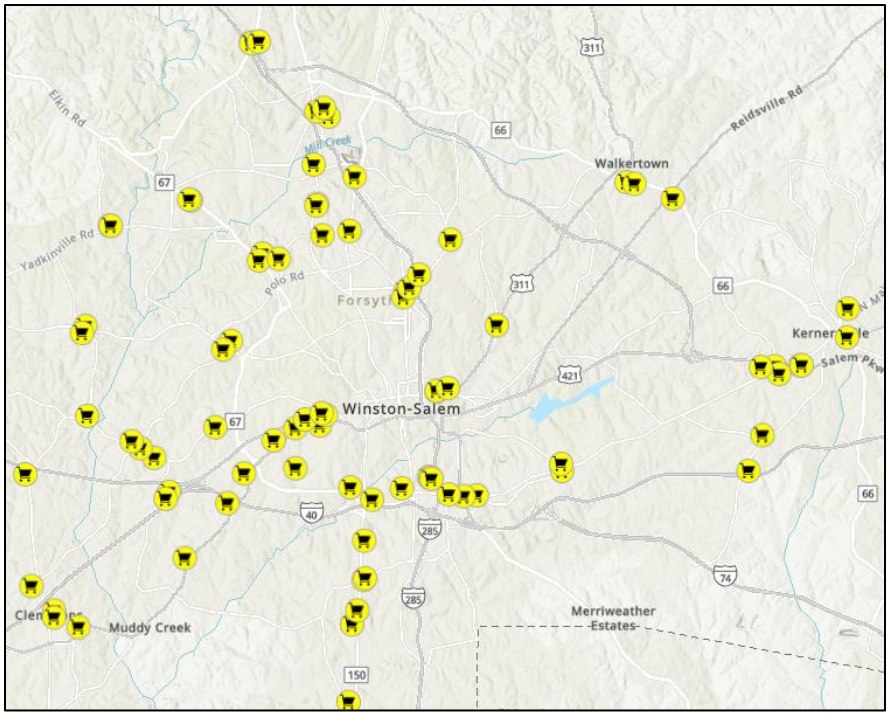
FRESH FOOD SERVICES MAP



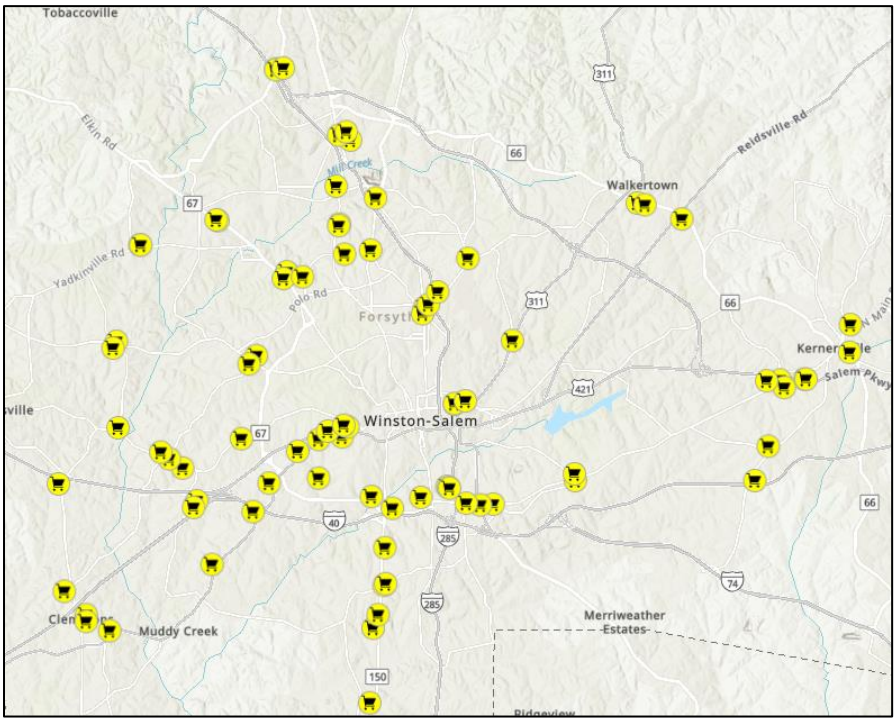
Map Forsyth, Forsyth County Community Resource Map

https://experience.arcgis.com/experience/47af3d29e16345a29dbbc55f3e2cd910/page/Food-%26-Clothing/

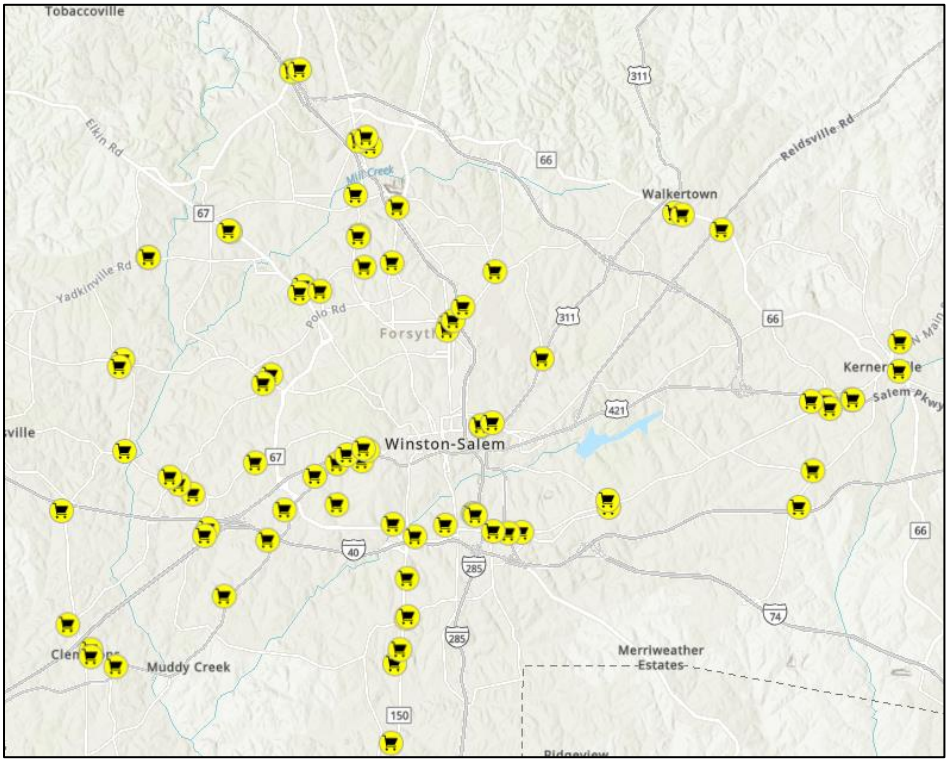
COMMUNITY ASSETS: FOOD RETAILER



COMMUNITY ASSETS: FOOD PANTRIES

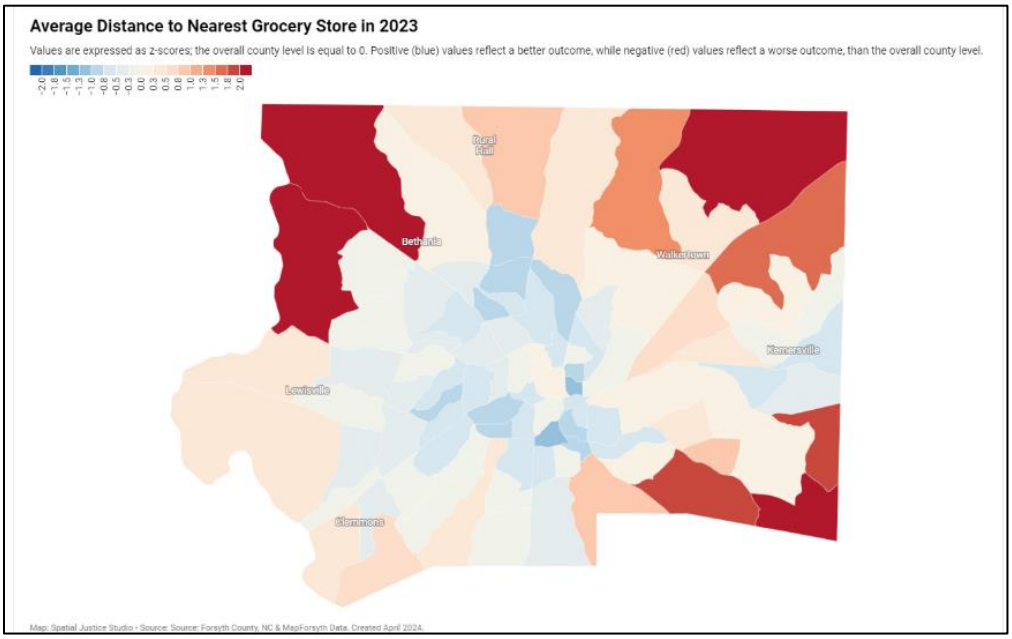


COMMUNITY ASSETS: COMMUNITY GARDEN

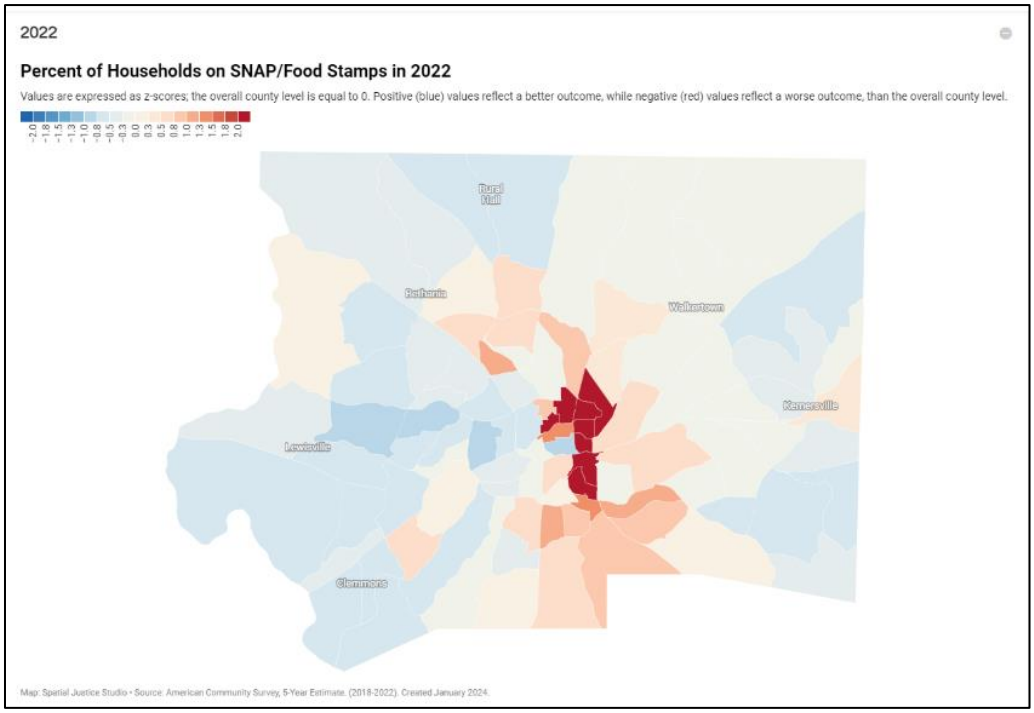


Forsyth County Neighborhood Opportunity Atlas
https://fcnoa.org/

GROCERY STORE DISTANCE TO RESIDENTS



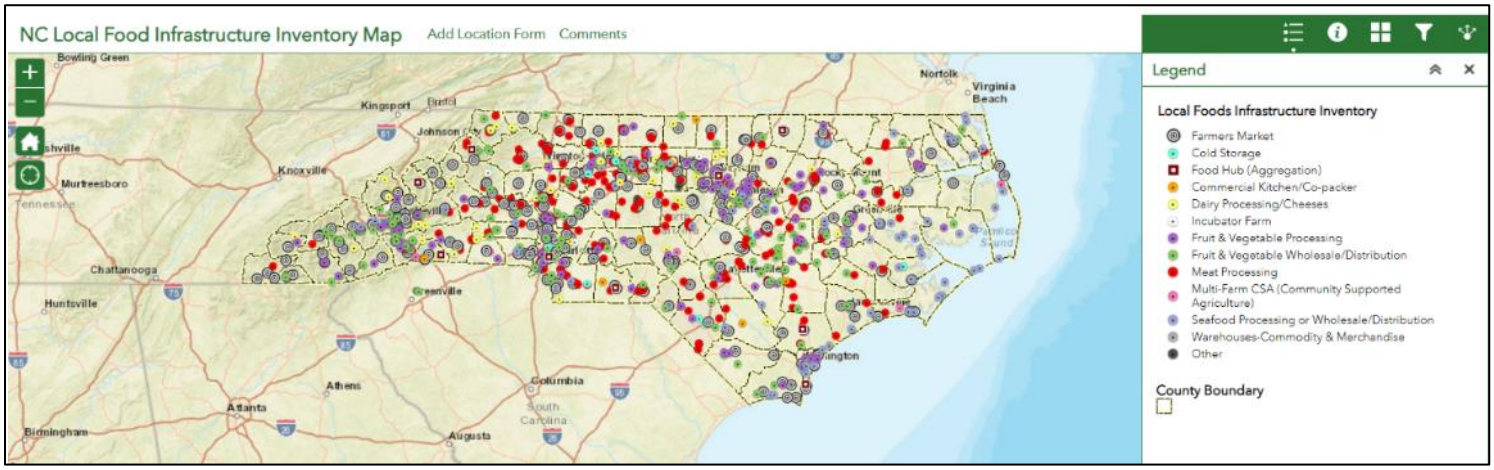
RESIDENT PARTICIPATION IN SNAP/EBT PROGRAM



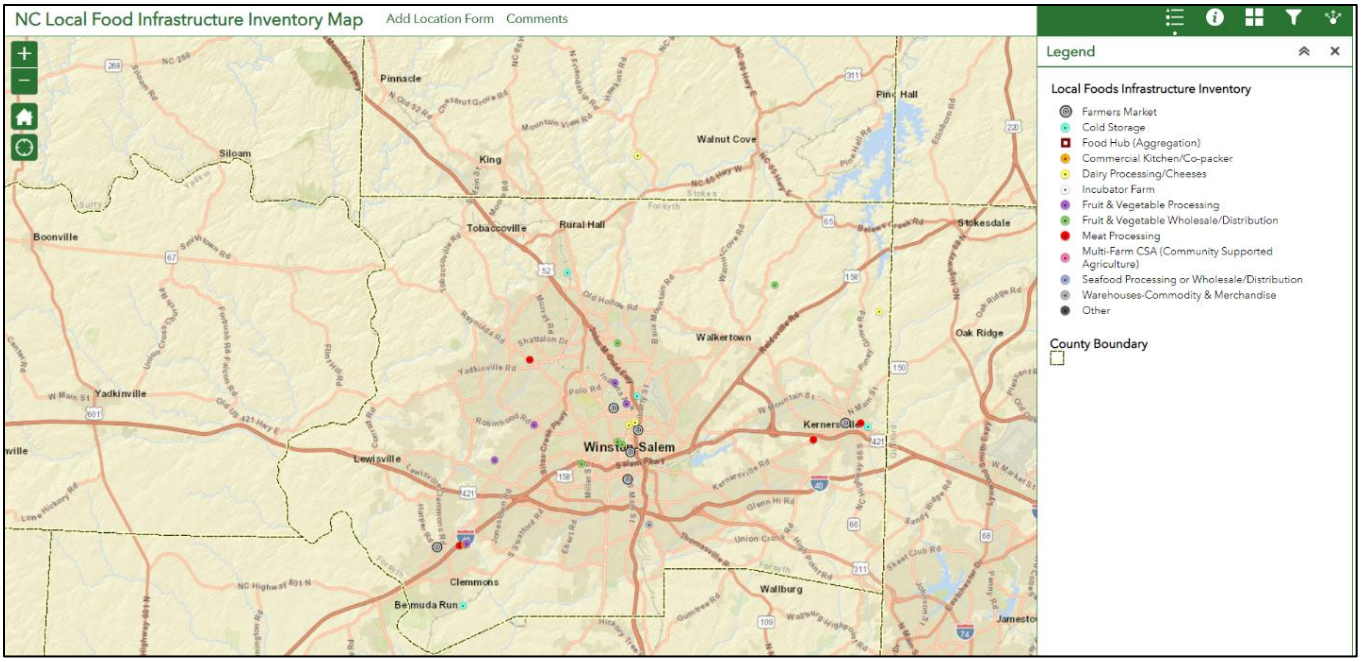
North Carolina Local Food Infrastructure Inventory Map, Piedmont Triad Regional Food Council

https://ptrc.maps.arcgis.com/apps/webappviewer/index.html?id=f62735865c1c4d0f83ad40baeb66d864

STATEWIDE MAP

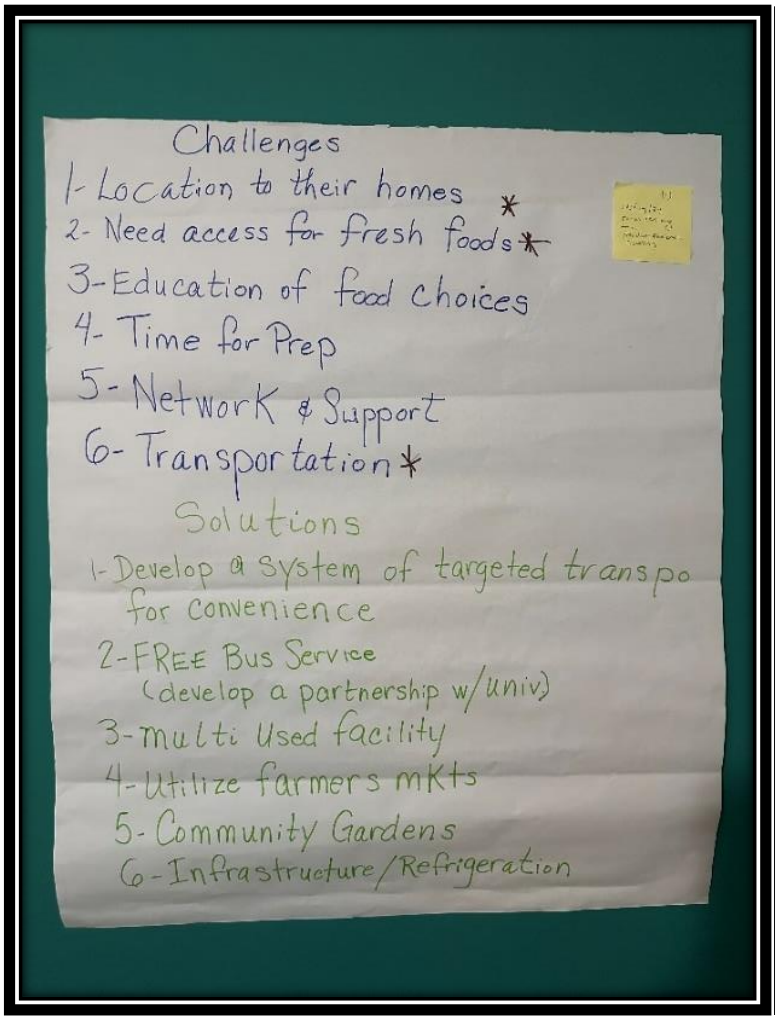


WINSTON-SALEM FORSYTH COUNTY MAP

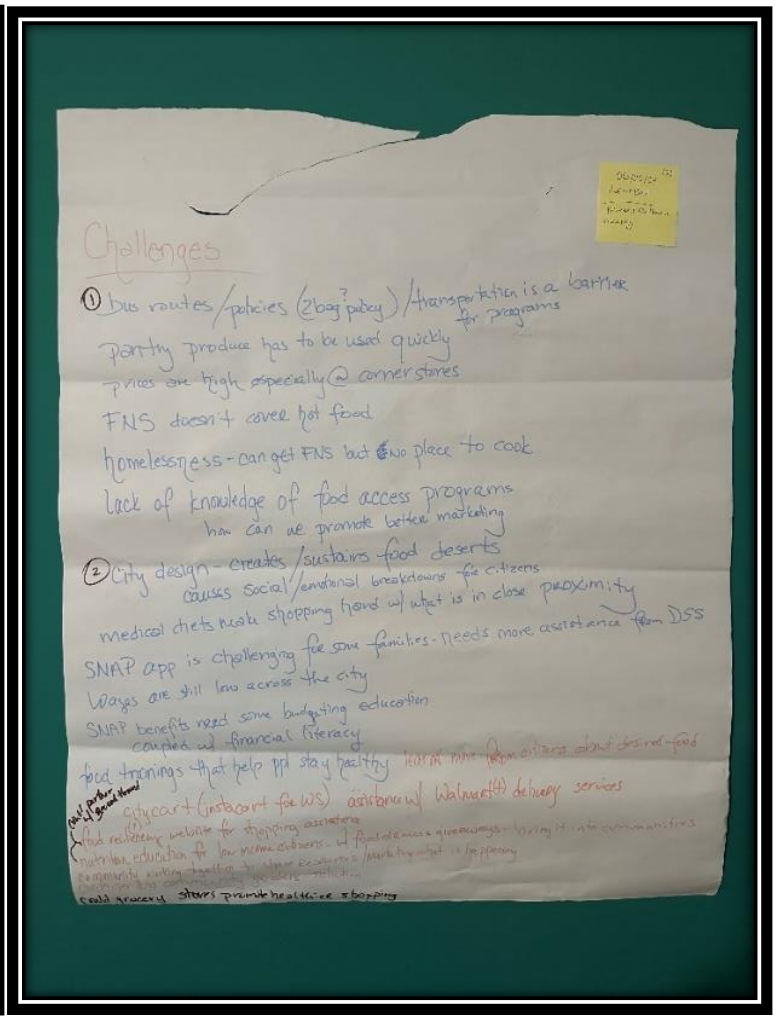


Notes from Resident and Community Partner Meetings (in-person)

JUNE 14, HANES HOSIERY, RESIDENT MEETING



JUNE 20, RUPERT BELL NEIGHBORHOOD CENTER, RESIDENT MEETING



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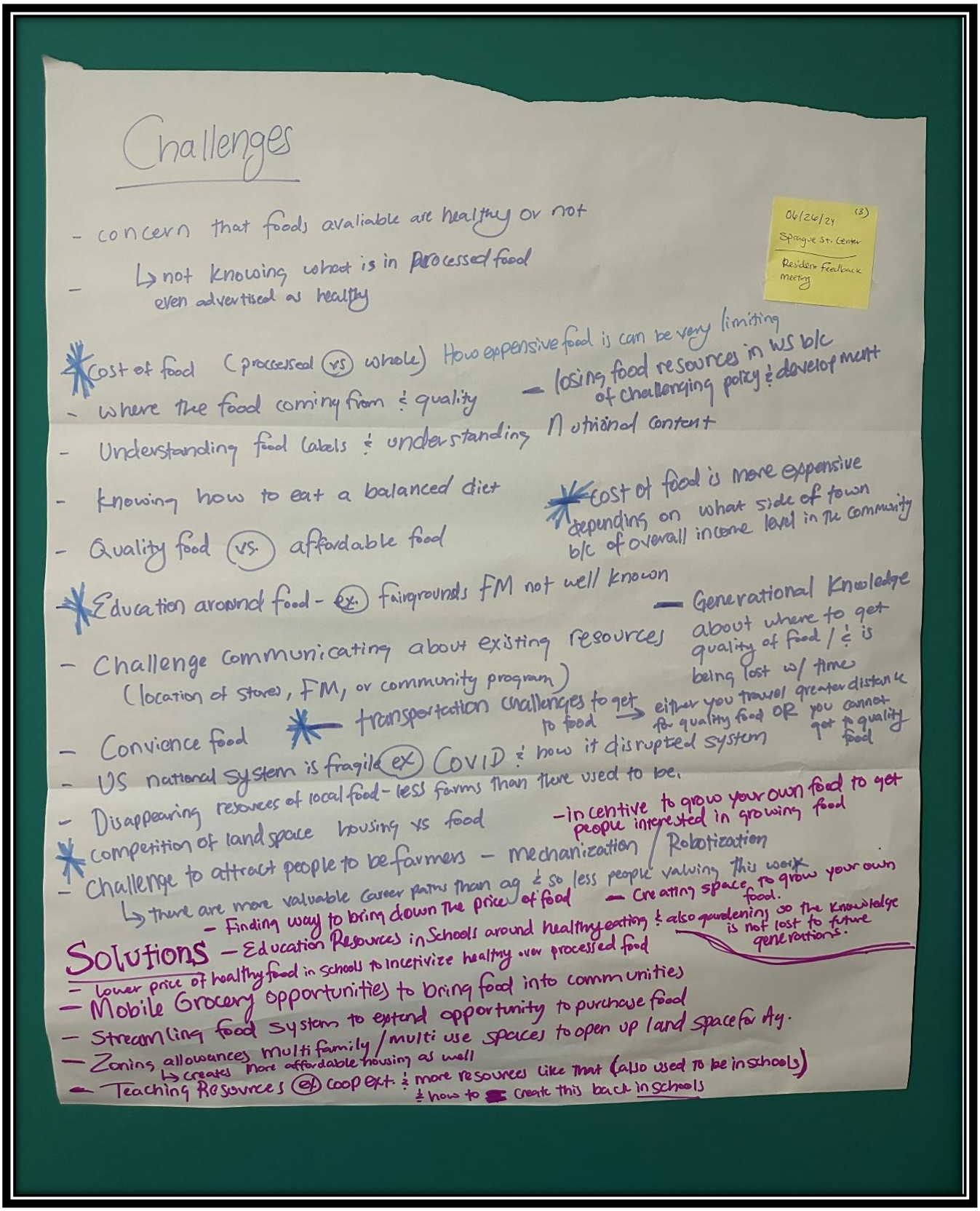
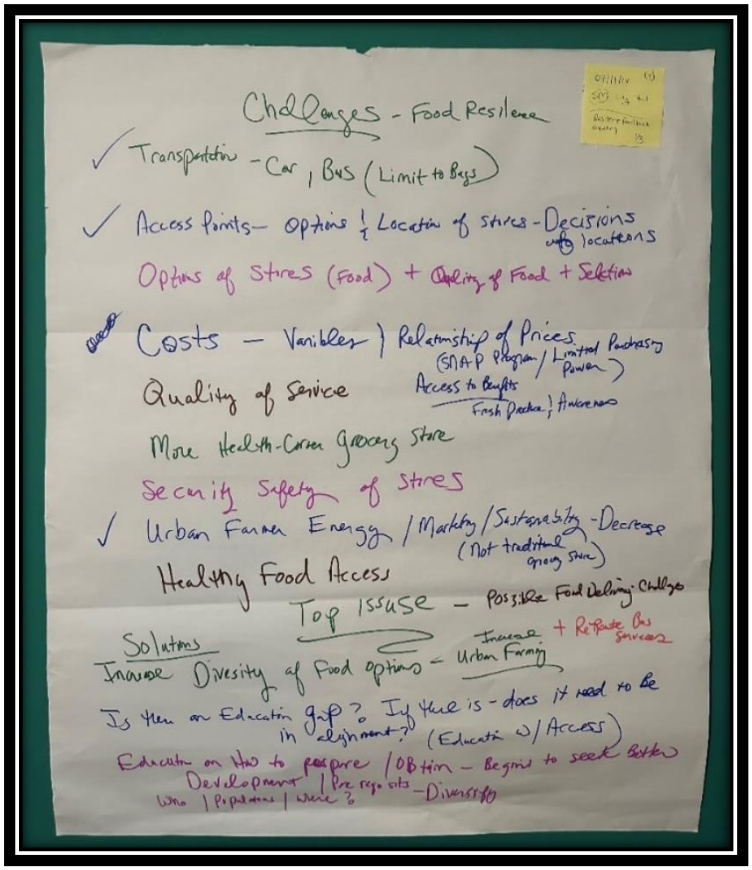
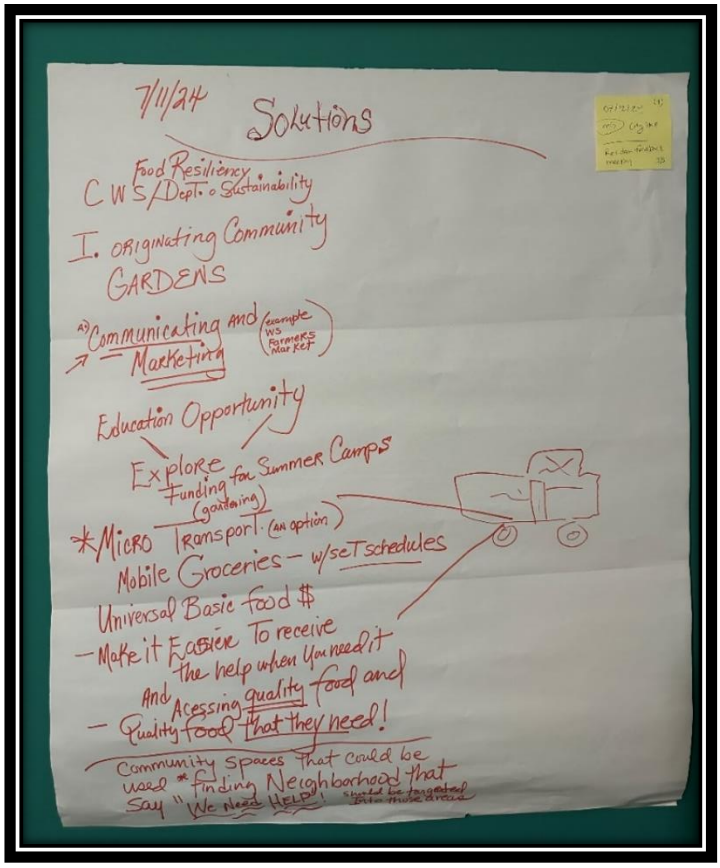
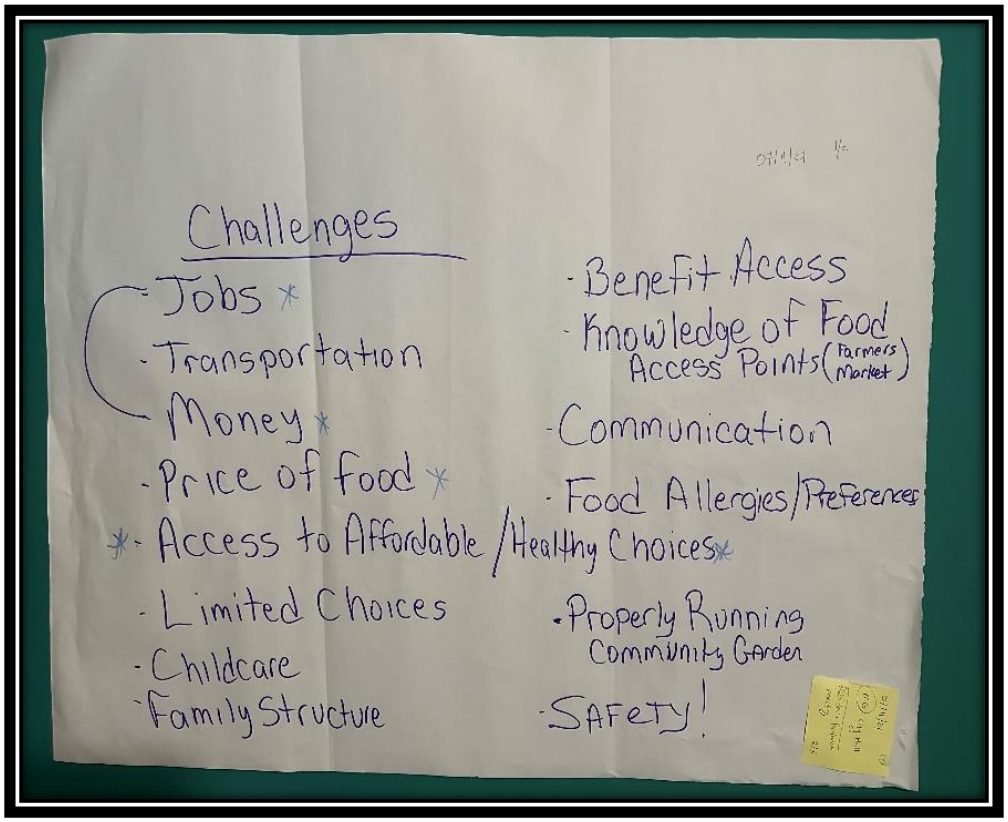
JUNE 26, SPRAGUE ST. COMMUNITY CENTER, RESIDENT MEETING



JULY 11, CITY HALL, RESIDENT MEETING







JULY 29, SECOND HARVEST FOOD BANK, COMMUNITY PARTNER MEETING