

**Food Insecurity in Pittsburgh, Pennsylvania: A Case Study of the Lawrenceville Farmers Market**

by

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Submitted to the Graduate Faculty of the  
Department of Health Policy and Management  
Graduate School of Public Health in partial fulfillment  
of the requirements for the degree of  
Master of Public Health

University of Pittsburgh

2020

UNIVERSITY OF PITTSBURGH  
GRADUATE SCHOOL OF PUBLIC HEALTH

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2020

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Elisabeth Clauss, MPH

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## **Abstract**

This essay is an evaluation of the Lawrenceville Farmers Market’s ability to impact food insecurity, particularly during the COVID-19 pandemic. Food insecurity is a public health problem in the United States, with millions of people being food insecure. Food insecurity rates in Pittsburgh, Pennsylvania, are even higher than that of the national average. Many neighborhoods in Pittsburgh are considered food deserts, where it is difficult for residents to access healthy and affordable food. These issues have been exacerbated by COVID-19. The Lawrenceville Farmers Market, located in a food desert, has expanded its programming and altered its protocols during the pandemic. Using the Lawrenceville Farmers Market as a study site, this essay explores the public health significance of COVID-19 on food insecurity, food deserts, and how farmers markets have become an integral tool in food procurement throughout this pandemic. Best practices are identified, such as: implementing public health practices to keep the community safe, increasing diversity amongst vendors, and bringing in social services. Additionally, recommendations such as increasing community partnerships, offering an “ugly” produce program, improving the infrastructure of Arsenal Park, and expanding access to additional target populations are made to expand this essential part of the community.

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## 1.0 Introduction

Food insecurity, as defined by the United States Department of Agriculture (USDA), is a household and community-level social and economic condition of limited or uncertain access to adequate food (United States Department of Agriculture, 2020). Food insecurity is a public health issue because people experiencing it often consume a nutrient poor diet. Poor nutrition contributes to chronic diseases, such as heart disease, hypertension, diabetes, obesity, and depression. Food insecurity often forces affected households to choose between paying for food and paying for other expenses such as rent, prescriptions, and heat, and is most often associated with low-income communities (Healthy People 2020, 2020). Food insecurity is a longstanding problem that is exacerbated by the COVID-19 pandemic. As a result, the rate of food insecurity is expected to increase due to job loss, poor health, and lack of governmental support.

As advocated for by the Project for Public Spaces, farmers markets are able to introduce healthy, fresh produce to low-income and food insecure areas. The vast majority of farmers markets also accept federal nutrition benefits allowing low-income individuals and families to further stretch these benefits and create links to other community development organizations and other resources (Love & Storrington, 2020).

Additionally, the Project for Public Spaces has long argued that farmers markets play a vital economic role in the communities they serve. Farmers markets are able to offer a food supply chain that benefits the local economy and supports neighborhood revitalization (Love & Storrington, 2020). Farmers markets are now able to bring food to all neighborhoods and are available nationwide. In many of these neighborhoods, particularly food deserts, these open-air farmers markets are the main source of food. Farmers markets support the neighborhoods where they are



located, and those neighborhoods support local farmers in return. This is of particular importance this year as many farmers likely lost their main source of income when restaurants were shut down because of COVID-19.

### **1.1 National Food Insecurity Rates**

Food insecurity rates are different across the United States. According to the USDA, 35.2 million people in the American population lived in food-insecure houses in 2019, just under 11% of all households in the United States (Coleman-Jensen et al., 2020). This problem is even more pronounced for households with incomes below the federal poverty line as 49% of this population is food insecure. Rates of food insecurity are substantially higher in low-income neighborhoods and single parent, Black, or Hispanic households (United States Department of Agriculture, 2020).

In addition to differences based on income, food insecurity rates also vary from state to state according to the USDA National Research Service. For example, in New Hampshire in 2019, the food insecurity rate was 2%, well below the national average of 11%. Conversely, states like Mississippi and Louisiana had food insecurity rates exceeding 15% in 2019, or four percentage points higher than the national average (United States Department of Agriculture, 2019).

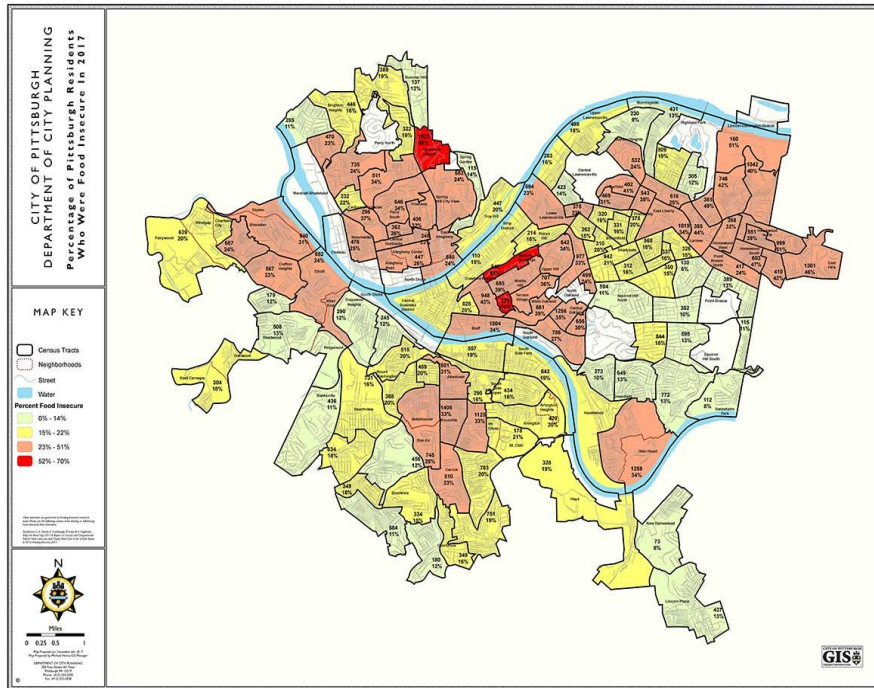
Food insecurity can be long-term or temporary and is impacted by a variety of social determinants including income, employment, race/ethnicity, and disability status (Food Security Information for Action, 2018). Once the COVID-19 pandemic began in the United States, high unemployment rates, fear of shopping in person, and poor food distribution created significant difficulty in acquiring basic household needs, especially in households with children. Food insecurity is more prevalent in homes with at least one child. According to Feeding America, it is

estimated that more than 12.5 million children were affected by food insecurity in 2019 (Feeding America, 2019).

## **1.2 Food Insecurity Rates in Pittsburgh, Pennsylvania**

Pittsburgh, Pennsylvania, is a city of 301,000 people located in Allegheny County. The median age in Pittsburgh is 34, and the median household income in Pittsburgh is \$47,417. The population is 64.8% White, 23.2% Black, 5.7% Asian, 3.1% Hispanic, 3.5% two or more races, and .2% American Indian (Data USA, 2020).

The food insecurity rates in Pittsburgh, Pennsylvania, are higher than the national average at 14.3%. Various neighborhoods in Pittsburgh face different levels of food insecurity. The four most affected neighborhoods in Pittsburgh are low-income and house majority Black, Indigenous, and People of Color (BIPOC) individuals. These neighborhoods are Northview Heights, Bedford Dwellings, Crawford-Roberts, and the Lower Hill District. According to *Figure 1*, these neighborhoods range from 52%-70% food insecure.



**Figure 1 Percentage of Pittsburgh Residents Who Were Food Insecure (2017)(Food Access Programs, 2020)**

(permission to reproduce from Allegheny County GIS Department)

Unemployment surged since the pandemic began. The unemployment rate in Pittsburgh as of June 2020 was almost 13%. Prior to the pandemic, the unemployment rate was 4.4%. The inability to work consistently coupled with delays in receiving unemployment benefits from the state placed additional utilization demand on the one food bank in Allegheny County (Pennsylvania Office of Unemployment Compensation, 2020).

Many factors contribute to food insecurity in Pittsburgh, including transportation issues. Hills, bridges, and one-way streets affect the ease of getting around the city. While there was a wide variety of bus routes around the city prior to COVID-19, managed by the Port Authority of Allegheny County, it has been difficult for people who do not have private modes of transportation to navigate the transportation system since the pandemic. At the start of the COVID-19 pandemic,

many bus routes were affected by as much as 50% and were not running at times they were scheduled to be (The Pitt News, 2020). Low-income individuals who are dependent on public transportation and, especially those with limited time available to shop for food for their families, are often negatively impacted by the inadequacies of the Port Authority of Allegheny County.

The lack of reliable transportation also impedes participation in the National School Lunch and School Breakfast programs. In response to the pandemic, schools across Allegheny County were closed. However, many schools, despite having no in-person classes, expanded their school breakfast and lunch programs and continued providing meals for students. However, in order to pick up food on-site, parents or other guardians must have their own vehicles or borrowing capability or risk being unable to participate (Signorini, 2020).

Seniors were also severely impacted by the shutdowns. Prior to the COVID-19 pandemic: it was documented by Feeding America that senior food insecurity had not reached pre-recession levels and up to six million additional seniors could become food insecure because of the COVID-19 pandemic (Feeding America, 2020). Meals on Wheels was created to help assist low-income or older individuals who are homebound or unable to prepare their own meals daily. For a few months, the Pittsburgh the Meals on Wheels Program was not running frequently, which negatively impacted seniors who opted to stay in their homes instead of taking trips to the grocery store or accessing food in other ways.

### **1.3 The COVID-19 Pandemic and Food Insecurity**

Before the start of the COVID-19 pandemic, the food insecurity rate of the United States was 11%. Researchers at Northwestern University have been studying the patterns of food

insecurity since COVID-19 began and determined that the rate of food insecurity doubled because of the crises brought on by the pandemic, affecting up to 23% of households in the United States (Silva, 2020). The COVID-19 pandemic has contributed to food insecurity throughout the United States; however, it is still too early to determine the final number of people who became food insecure or more food insecure throughout the pandemic.

The COVID-19 pandemic caused changes in the structure of people's daily routine, including the way food is purchased (Martin-Neuninger & Ruby, 2020). This has contributed to food insecurity throughout the United States as reported by Feeding America: increases in social distancing and closures limiting the spread of COVID-19 extended throughout the country affecting communities in large cities and small towns. These changes are disrupting the lives of most Americans, but those who are food insecure are facing additional challenges (Feeding America, 2020).

Once cases of COVID-19 were confirmed in the United States, "panic buying" began. Panic buying occurs when consumers are scared or uncertain of future availability and, therefore, overbuy certain goods resulting in the scarcity of these items. Many national supermarket chains had to change the ways in which they were doing business after COVID-19 caused massive shutdowns across the country. The role of supermarkets in the midst of a pandemic shifted from being a provider of basic needs to a recognized essential business, offering delivery and pick-up options, and facing an increased demand for necessary items (Centers for Disease Control and Prevention, 2020).

Higher food prices also resulted from the pandemic. Meat, fish, and dairy saw increases of between 5% and 57%. These are only some of the products that saw changes in prices because of economic changes during the COVID-19 pandemic (United States Bureau of Labor, 2020).

Not only were retail food providers affected, but wholesale food producers were affected as well. There were reports of farmers throwing away food that they were unable to sell because restaurants and school cafeterias were closed. Prior to COVID-19, almost 60% of food was sent to institutions such as schools, hospitals, and restaurants. With these closures, farmers' profit margins were significantly reduced (United States Department of Agriculture, 2020).

As of May 19, 2020, unemployment has soared (Feeding America, 2020). As a result, individuals who cannot afford to purchase their groceries utilize food pantries, which are suffering from a shortage of both donations and volunteers. Urban and rural food pantries have seen a sharp increase in food pantry utilization over the past eight to ten months. Food pantries that have served less than 100 people per day in recent years had 900 people show up in the beginning of the COVID-19 pandemic. Additionally, employees of food pantries open after Hurricane Katrina noted that they had never seen such need, scarcity, and anxiety in the people served (Kulish, 2020). The quantity of food available for food pantry distribution nationwide has significantly decreased because of increased utilization. Feeding America, which has more than 200 food pantry affiliates, projected a \$1.4 billion-dollar shortfall in the first six months of the pandemic alone (Kulish, 2020).

The COVID-19 pandemic has severely affected Pittsburgh, Pennsylvania. As of December 8, 2020, Allegheny County has tested 285,335 individuals for COVID-19, resulting in 32,651 positive test results, and 575 deaths with a significant spike in cases in April, July, and again in October, November, and December (Allegheny County, 2020). Job furlough and loss, school closures, and other economic and societal impacts of the COVID-19 pandemic are associated with the sharp increase in food insecurity throughout Allegheny County, and in Pittsburgh specifically. According to Jane Clements-Smith, Executive Director of Feeding Pennsylvania, economic crises associated with COVID-19 could increase food insecurity rates in Allegheny County to more than

19% by years end (Heyl, 2020). On March 30, 2020, drone footage was shared of a miles-long line of cars waiting for food distribution at the Greater Pittsburgh Community Food Bank (GPCFB). Charlese McKinney, Network Development Director of the GPCFB noted that in the first six weeks of the pandemic, the GPCFB distributed one million pounds of food to families in need (Morrison, 2020).

#### **1.4 Governmental Response to Food Insecurity (Before and During the COVID-19 Pandemic)**

The Supplemental Nutrition Assistance Program (SNAP) is a federally funded state program that is designed to help American families buy food. More than 580,000 households in Pennsylvania receive SNAP benefits (The Food Trust, 2020). This program existed before the COVID-19 pandemic but has become increasingly important in terms of ability to provide food for individuals and families. People in eligible low-income households are able to obtain food for more nutritious diets because SNAP increases their purchasing power at grocery stores, supermarkets, and some farmers markets (Pennsylvania Department of Human Services, 2020).

Food Bucks is a matching program, administered jointly by the Food Trust and Just Harvest in Western Pennsylvania, in which SNAP participants get additional support to purchase fresh fruits and vegetables at farmers markets and other grocery outlets. This year, due to additional funding, SNAP beneficiaries were eligible for a \$2/\$2 match in Food Bucks for the months of June, July, and August. Since every \$2 spent on a SNAP card was matched with another \$2 in Food Bucks, shoppers had twice the buying power for fresh produce (Just Harvest, 2020).

Two additional programs - the Women, Infants, and Children (WIC) Farmers Market Nutrition Program (FMNP) and Senior Farmers Market Nutrition Program (SFMNP) - also existed prior to the COVID-19 pandemic. These programs provide WIC beneficiaries and low-income senior citizens with resources to purchase fresh, nutritious, unprepared, locally grown fruits, vegetables, and herbs from approved farmers in Pennsylvania (Pennsylvania Department of Agriculture, 2020). Through FMNP and SFMNP, WIC beneficiaries and low-income senior citizens receive \$26 in farmers market vouchers that can be used at local farmers markets to purchase these items. However, not all farmers accept FMNP and SFMNP vouchers; only farmers authorized by the state agency may accept and redeem these vouchers (Pennsylvania Department of Agriculture, 2020).

An additional government-funded program created by the Pennsylvania Department of Human Services (DHS) and the Pennsylvania Department of Education (PDE) as a result of COVID-19 is Pandemic-EBT benefits (P-EBT). This program provides households with at least one child eligible for free and reduced-price meals under the National School Lunch Program with varying amounts of P-EBT benefits. The amount received per school day and per child in the household is \$5.70, covering each of the school days missed because of COVID-19 related school closures (Pennsylvania Department of Human Services, 2020). Additionally, P-EBT benefits are provided to families regardless of if they currently receive SNAP benefits to ensure that children will not go hungry.

Finally, the federal Coronavirus Food Assistance Program provides additional resources to farmers who were negatively impacted by COVID-19. The USDA will allow funds created by the CARES Act to maintain and support the continued growth of row crops, livestock, dairy, and other



farming products (United States Department of Agriculture, 2020). This program also has the potential to keep food provided by farmers affordable.

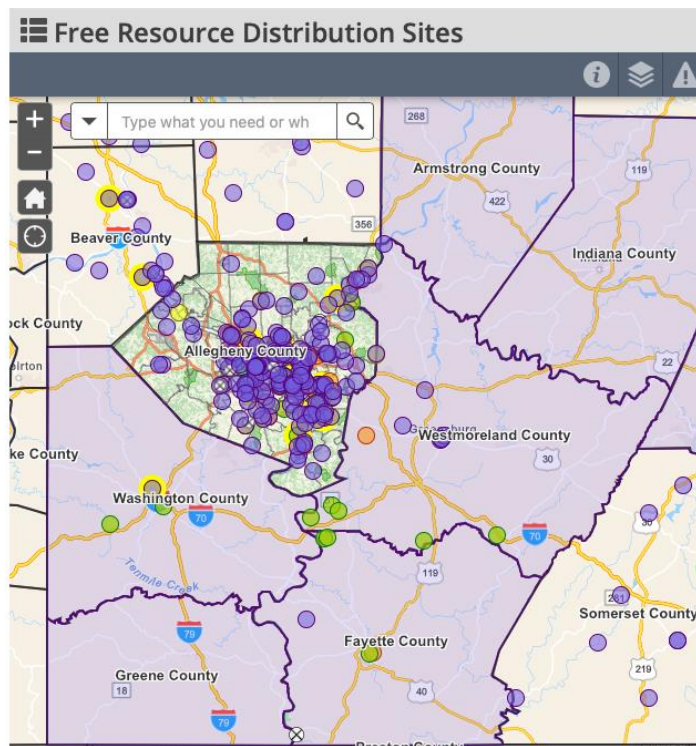
### **1.5 Community Response in Pittsburgh, Pennsylvania**

Food procurement in Pittsburgh has been significantly affected by the COVID-19 pandemic, and community agencies responded to the increase in food insecurity. In the Pittsburgh area, there is only one established food bank. The Greater Pittsburgh Community Food Bank is located in Duquesne, a town in the Monongahela Valley area. In response to COVID-19, the GPCFB expanded operation and opened additional locations.

The GPCFB has partnered with community hunger-relief organizations such as Just Harvest for many years. Just Harvest is a “nonprofit organization that reduces hunger through sustainable, long-term approaches that lift up those in need. It gets at the root causes of hunger by using public policy and programs to reduce poverty and improve food access (Just Harvest, 2020).” The GPCFB’s partnership with Just Harvest has allowed the GPCFB to expand its SNAP programs and prepare pre-packed boxes. It also allows the Food Bank to accept P-EBT. Additionally, the state has expedited the processing of SNAP applications and benefits.

Just Harvest has been able to garner state support for the Families First Coronavirus Act. This Act provides an additional \$400 million for food, food storage, food distribution, expansion of SNAP and P-EBT benefits, and increased flexibility of programming. By receiving additional support from the Families First Coronavirus Act, the GPCFB is able to provide, store, and distribute additional food to the ever-increasing number of families in need.

As shown in *Figure 2*, the Pittsburgh Foundation helped create an up-to-date interactive map of food distribution sites in and around Allegheny County prior to COVID-19 so consumers know where the closest food bank or food pantry is. The foundation has continued to add additional sites throughout the pandemic and has documented benefits at each location. *Figure 2* allows users to enter their address to locate the closest distribution center while filtering for person-specific results. The map includes, but is not limited to, grab-and-go sites, food pantries, churches, and schools (Rosenberg, 2020). It clearly explains cost and eligibility requirements, if any, and announces pick-up times in advance.



**Figure 2 Map of Food Distribution Sites in Allegheny County (TribLive, 2020)**  
(permission to reproduce from Allegheny County GIS Department)

Community agencies such as 412 Food Rescue and the Free Store 15104 have been providing food and continuing to strengthen their programs throughout the pandemic. 412 Food

Rescue was founded in 2015, is located in East Liberty, and works with various food merchants to avoid food waste and provide rescued food to people who are food insecure (412 Food Rescue, 2020). The Free Store 15104 is located in Braddock and was founded by Gisele Fetterman in 2012. The Free Store obtains donated goods from grocery stores, supermarkets, and clothing retailers and reallocates them to those in need (Free Store 15104, 2020). While the Free Store 15104 was initially created to serve the population of Braddock, it has quickly expanded to include all of Allegheny County. When people started adjusting to wearing masks to be safe in public because of COVID-19, 412 Food Rescue jumped into action to start delivering to people's homes, something that had not been done in the past. According to Jen England, 412 Food Rescue's Senior Program Director, "The first week we made three hundred deliveries, but now, we have about 1,000 deliveries to make each week. Luckily, we have also had a three hundred percent increase in volunteers as well (Jones, 2020)."

In addition to the organizations mentioned above, the University of Pittsburgh initiated services at the beginning of the shutdowns and through the COVID-19 pandemic to provide health, food, and housing resources. It provides options to help vulnerable Pitt colleagues with shopping and maintains the Pitt Pantry that helps address food insecurity for the entire Pitt community. No-contact pickup for groceries is available on Wednesdays (Pitt Sustainability, 2020).

### **1.6 Lawrenceville (Food Desert, Gentrification, and Population)**

Prior to the COVID-19 pandemic, Lawrenceville was lauded locally and nationally as a hip, thriving, foodie neighborhood. However, Lawrenceville is a USDA-designated food desert (Wright et al., 2017). Up to 59% of Lawrenceville's population has experienced food insecurity

according to the City of Pittsburgh’s Department of City Planning Map (see *Figure 3*). Shop N’ Save is the only grocery store option in the two Lawrenceville zip codes. It is located at the most eastern section of Lawrenceville, 56<sup>th</sup> and Butler, making it difficult for Lower Lawrenceville residents, who are more than two miles away, to get there easily and/or without a vehicle. This is particularly true for older adults who live in one of the three high rises in Lawrenceville and do not have vehicles.



**Figure 3 Map of Lawrenceville (Google Maps, 2020)**

(permission to reproduce from Google Maps)

In 2019, Pittsburgh was recognized by one source as the eighth most gentrified city in the United States, more gentrified than cities like San Francisco, Austin, and Denver (Deto, 2020). Lawrenceville played a key part in Pittsburgh’s gaining this status. According to Ernie Hogan, the Executive Director of the Pittsburgh Community Redevelopment Group, the clearest case of gentrification is Lower Lawrenceville. Compared to other locations throughout the city of Pittsburgh, Lower Lawrenceville saw the average income rise by 25%, the doubling of college attainment, and the home values increase by 126 percent between 2000 and 2013 (Deto, 2020).

*Table 1* shows some of the most significant changes in Lawrenceville.

**Table 1 Lawrenceville Data (2000 and 2013)(Planet Geo, 2018)**

<b>Identifying Factor</b>	<b>2000</b>	<b>2013</b>
Average Home Value	~\$70,000	~\$278,620 (and increasing)
College Attainment	15%	55.4%
Average Income	~\$40,000	~\$85,000 (and increasing)

### **1.7 Lawrenceville United and the Lawrenceville Farmers Market**

Lawrenceville United (LU), a non-profit community action neighborhood organization, has operated the Lawrenceville Farmers Market (LFM) for the last ten years. LU is the creator of a wide variety of programs that support different populations throughout Lawrenceville. It is important to provide context about an organization that works so hard to provide a better quality of life for all Lawrenceville residents.

Youth programming in Lawrenceville has always been a priority for LU. However, LU was impacted by the COVID-19 pandemic. Darrell Kinsel, the Community Organizer at LU, has

worked tirelessly to maintain the programs, including distributing hundreds of backpacks full of school supplies, shelf-stable food boxes, and dozens of tablets/laptops/hot spots for low-income families in need of support for remote learning.

Helen Gerhardt, the LU Community Engagement and Program Manager, coordinates all outreach and other communication, manages programs, serves as the direct contact to membership and several resident-led volunteer groups, and is the primary point of interaction for general inquiries from residents. Since LU has stopped having in-person events and fundraisers due to COVID-19, she now helps recruit and manage volunteers for LU's food distribution programs. Additionally, a substantial amount of her time is spent as a Resource Navigator with RentHelpPGH, helping Lawrenceville residents find and apply for housing/rental/utility payment assistance, legal aid, medical and dental services, or other needed resources.

LU's Executive Director, Dave Breingan, was one of the driving forces contributing to the first mandatory inclusionary zoning policy in Western Pennsylvania. This policy requires new large development projects to include a certain percentage of affordable housing.

Breingan has also focused on programs that provide food and other assistance to at-risk and low-income populations throughout Lawrenceville. He was integral in scaling up LU's food distribution programs to meet a ten-fold increase in demand for food during the COVID-19 pandemic. In the past year, LU has served 30,000 meals to residents, which is a significant contribution for such a small organization. Most of these meals were provided in partnership with 412 Food Rescue.

The LFM launched "LFM To-Go", a curbside pick-up program in July. The program, created by the market manager, Sara Draper-Zivetz, was designed for those who did not feel comfortable attending the market in person due to COVID-19. However, since the farmers market

has significant safety precautions in place, very few people utilized this program. The program was ultimately suspended in August.

Draper-Zivetz also recognized an opportunity for a Pay-It-Forward program with a focus on P-EBT benefits. The LFM wanted to provide an opportunity for families who did not need the P-EBT benefits to donate those dollars to LU, who would then use the resources to support other, more needy families. This program would enable lower-income families to purchase more food through the generosity of their neighbors. In order to mitigate any stigma associated with food-based support, the LFM provided these donated funds to families in need outside of the market.

COVID-19 has impeded in-person shopping for school supplies. In response to this barrier, LFM provided children of market shoppers and market vendors with free backpacks filled with school supplies.


To increase the number of shoppers and reach target populations such as low-income families, the LFM launched a media campaign that included an easy-to-read flyer that focused on family benefits at the market (see *Figure 4*).

Every Tuesday 3-7pm Arsenal Park

# LAWRENCEVILLE FARMERS MARKET

## Family Benefits





SAFE ACCESSIBLE INCLUSIVE




Our mission is to make fresh, local food accessible and affordable for you and your family.

Join us to shop with your:


- SNAP benefits
- P-EBT benefits
- WIC & Seniors FMNP Vouchers








**And double your dollars!** For every \$2 you spend with your SNAP or P-EBT benefits, you get \$2 in foodbucks to spend on fruits & veggies! No limit!



**Other family services at LFM:**

 **LFM To Go** - pre-ordering + curbside pick up from 5-7 at Arsenal Park - no in-person shopping required!

 **Free backpacks** - grab a backpack full of school supplies for your school-aged kids!

 **P-EBT Pay it Forward** - Need some extra funds to shop for groceries? Ask about our P-EBT Pay it Forward program.

*visit our website or the info tent at the market to learn more!*

WWW.LUNITED.ORG/LAWRENCEVILLE-FARMERS-MARKET  
412-802-7220 | MARKET@LUNITED.ORG

**Figure 4 LFM Family-Focused Flyer**

Arsenal Park, the location of the LFM, has some accessibility issues because of decaying infrastructure. This disproportionately affects seniors. LU has requested sidewalk repairs from the City of Pittsburgh, but, as of December 10, 2020, these repairs are still pending. The Buddy System was created to serve at-risk seniors and other groups at the beginning of the pandemic. In response, LU encouraged seniors to tap into the Buddy System, a system that provides individuals to either shop for seniors or to be a support system to a senior while at the market.



The LFM has established other ways to make the shopping experience easier for senior citizens. These include providing a shopping cart that can be used if bags are too heavy to carry, offering a station to store bags of food for later pick-up, identifying a special drop-off location close to the 40<sup>th</sup> Street LFM entrance to avoid walking long distances from a parking spot, and using a volunteer to provide a safe crossing space at the crosswalk on 40<sup>th</sup> Street.

## 2.0 Literature Review

Since the pandemic is still unfolding, there are few peer-reviewed studies on the impact of farmers markets on food insecurity during COVID-19. The number of related peer-reviewed studies prior to COVID-19 is also scarce. The following is a review of the studies that generally assess the impact farmers markets have prior to COVID-19.

In 2010, the *Journal of the Academy of Nutrition and Dietetics* published a study of the implications of farmers markets on nutrition-related outcomes in adults. Specifically, the authors surveyed the impact of farmers market programs for 1,500 SFMNP and WIC recipients. The study concluded that farmers markets have a positive impact on the consumption of fruits and vegetables (McCormack et al., 2010). According to the study, farmers market participants receiving the SFMNP and WIC vouchers increased their daily intake of fruits and vegetables to  $2.23 \pm 1.18$  as compared to participants not receiving vouchers  $1.91 \pm .98$  (McCormack et al., 2010). A significant gap in this research was the omission of SNAP beneficiaries.

A study published in the *Journal of Community Health* in 2012 looked at the role of farmers markets in low-income, urban communities in East and South Los Angeles. In this study, 1,789 utilizers of the farmers markets were surveyed about how often in the past 30 days they were not able to purchase food, especially items contributing to healthier meals. They were also asked open-ended questions concerning their opinions about farmers markets. The research revealed that more than 80% of farmers market utilizers rated the new farmers markets as good or excellent, with 95% of utilizers reporting an intent to return (Ruelas et al., 2012). As with the above referenced study, respondents reported that farmers markets positively impacted their fruit and vegetable intake.

Identified gaps in the study include a lack of funding to complete more research to compare the impact of these farmers markets to those in affluent neighborhoods.

Another study of the role of farmers markets in low income communities and how they affect food security was published in the *Journal of Community Development*. This study discussed community-level determinants, federally funded food assistance programs such as SNAP and FMNP/SFMNP, and strategies for long-term durability (Young et al., 2011). It was concluded that farmers markets contribute to the overall health and well-being of the community while also having a positive impact on the farmers' long-term sustainability. The researchers mention that, although published studies examining strategies to sustain markets in low-income communities are scarce, the provision of bonus vouchers would make a substantial difference in improving access to healthy food in these communities (Young et al., 2011). A noted limitation in the study was the absence of community-based strategies to increase the longevity of farmers markets in these low-income areas.

The 2009 book, *Remaking the North American Food System: Strategies for Sustainability*, discusses the idea that farmers markets should be utilized as community institutions to create a localized food system. The researchers focused on farmers markets in New York, Iowa, and California. The authors identified four processes that are the main functions of farmers markets: 1) making local food products and producers visible in public settings; 2) encouraging and enabling produce diversification; 3) incubating small, local businesses; and 4) creating environments where market transactions and non-market interactions are joined (Lyson & Hinrichs 2009). These processes work because they are able to support the farms and the community alike. It was argued that farmers markets have the ability to initialize and rebuild the local food systems by offering additional options and practices in addition to grocery stores and supermarket chains.

A potential limitation of this research was the lack of testing these approaches in every state. The states chosen are vastly different and may not be representative of the country as a whole.

### 3.0 Methodology

The case study on the impact of LFM before and during the COVID-19 pandemic used a mixed methods approach that obtained and analyzed both quantitative and qualitative data. The data were gathered by observing the market environment, having structured conversations with community leaders and LU staff, utilizing anecdotal evidence from market participants and farmers, and accessing qualitative data counts from the LU staff.

Prior to the start of the LFM season, conversations were had with LU staff and anecdotal evidence was gathered from May 18 – May 31, 2020. Additionally, there were 25 structured conversations had with market customers, LU staff, farmers, other vendors, and social services staff throughout the regular LFM season, June 2 – October 27, 2020. In all conversations, questions about the following topics were asked:

1. Public health practices of the market as they relate to COVID-19;
2. Social services provided at the market;
3. Transportation to and from the LFM;
4. Accessibility while at the LFM; and
5. Product availability.

There were a wide variety of questions asked to LFM customers, LU staff, and vendors throughout the market season. The questions that were always asked were the following:

1. Is this your first time coming to the LFM?
2. Are there any problems that you see in the LFM that you want staff to fix?
3. What form of transportation do you use to get to the LFM each week?
4. Do you feel as though there was an increased amount of product availability this year?

5. Do you feel safe at the LFM? Why or why not?

These structured conversations occurred at the information tent at the LFM or at various points throughout the market. These conversations were integral in shaping the recommendations for the LFM, changing key aspects of the LFM mid-season, and identifying best practices for other farmers markets.

## 4.0 Case Study of the Lawrenceville Farmers Market

### *The Impact of COVID-19 on Utilization*

LFM utilization as represented by number of patrons and certain representations of customer spending was reviewed for the 2019 and 2020 market seasons. It is important to note that the methods for measuring attendance used in 2019 and 2020 are different as LFM leadership changed. Both of the methods provide approximation of utilization rather than exact counts.

### *Number of Visitors and Patterns of Utilization*

In 2020, the LFM uses an in-person tally of the number of patrons who attended the market over a 20-minute period then multiplies it by 12 to cover the four hours of the market to get a rough estimation of the number of visitors. LFM tracks the number of weekly patrons to determine how best to meet community needs and to determine special programming for better community engagement. When looking at the point(s) during the market when volume is the highest, programmatic activities are considered for this time (e.g., the Halloween Costume Contest) to promote additional community engagement.

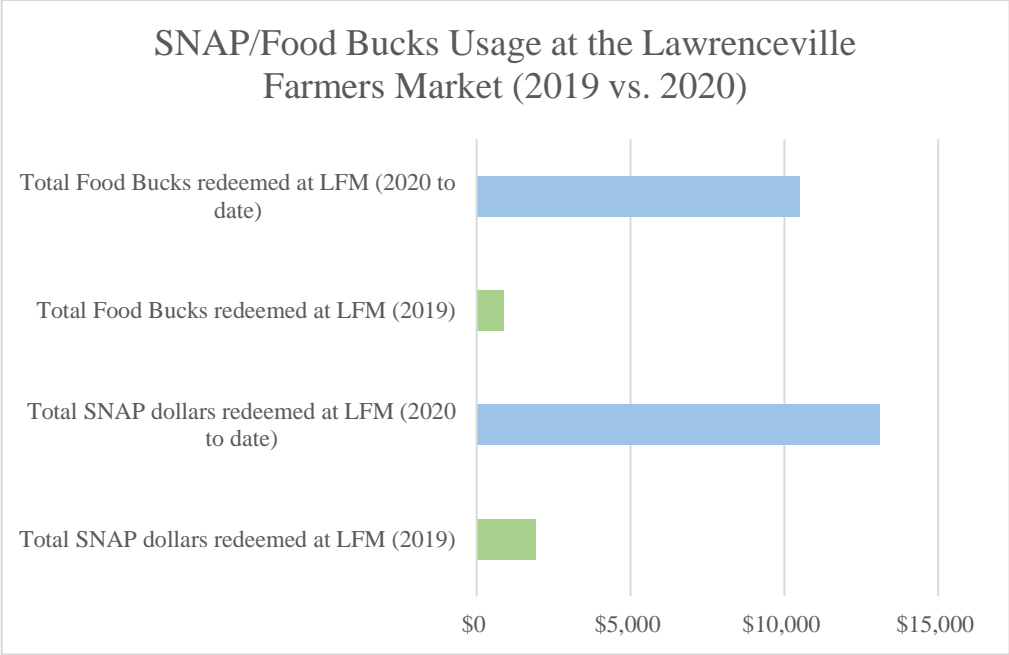
The average weekly market attendance in 2019 was estimated to be between 700-750 people per week. The 2020 market data is tracked weekly and staff monitor the market entrances and pre-registration. In the first 22 weeks of the 2020 season, it is estimated that weekly attendance increased by 25% over last year. To date, the LFM is averaging 900-950 customers each week of the 2020 season. LFM staff observed that the busiest time of the market is between 5:00pm and 6:30pm. Based on evidence gathered at the information tent, of these customers, an estimated 5%-10% increase of new customers occurs weekly.

### *Customer Spending*

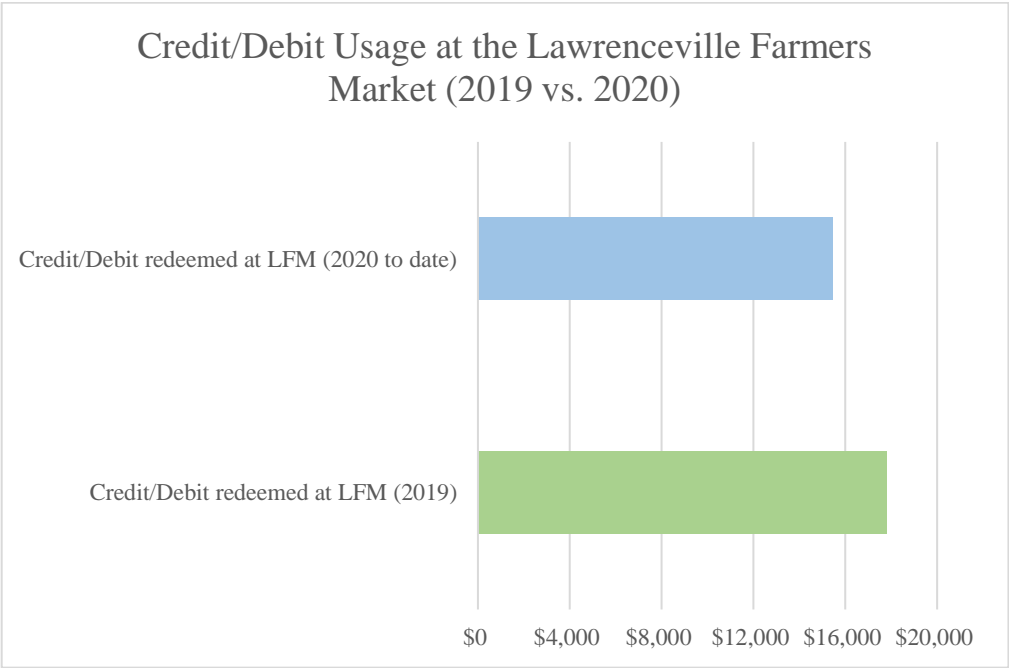
SNAP usage at the market in 2019 was limited. Throughout the 22-week season, a total of \$1,929.00 SNAP dollars were spent at the LFM. Usage of Food Bucks was correspondingly limited. Only \$884.00 Food Bucks, which were being matched at \$2 for every \$5 spent, were disbursed at the market throughout the entire 2019 season. The credit/debit usage at the LFM was higher than SNAP usage (see *Figure 5* and *Figure 6*). Over the span of the 2019 season, \$17,096.00 of credit/debit tokens were spent at the market, with an average of \$777.09 credit/debit tokens being spent each week. In 2019, many farmers did not have the ability to accept credit/debit cards and shoppers had to use a centralized LFM process of purchasing tokens from the information booth to pay the farmers. In response to COVID-19, many farmers acquired the ability to accept credit/debit cards.

Thus far in 2020, SNAP usage has increased significantly (see *Figure 5*). In the first 22 weeks of the market, SNAP usage increased 600%. The number of SNAP dollars redeemed at the market as of December 9, 2020 is \$13,090.50. Additionally, \$10,512.00 Food Bucks were redeemed at the market during this same time frame. Credit/debit token redemption at the market is at \$17,797.00 overall even with vendors becoming able to accept credit/debit cards themselves (see *Figure 6*). There was also an increase in the number of vendors in 2020 which aided in driving these numbers up. The average amount of credit/debit tokens redeemed each week is \$684.50, trending much lower than the 2019 season.





**Figure 5 SNAP/Food Bucks Usage (2019 vs. 2020)**



**Figure 6 Credit/Debit Usage (2019 vs. 2020)**

As shown in the market data comparisons from 2019 to 2020 and in *Figure 5*, the LFM was able to successfully expand outreach to the SNAP population. LFM staff attributes the promotion of the \$2 for \$2 match with the Just Harvest Food Bucks program, distribution of free backpacks of school supplies, and additional family friendly parts of the market, as influencing the increase in the number of SNAP recipient participation as well as an increase in overall spending at the LFM. Additionally, there was more need because of the COVID-19 pandemic, and with P-EBT, there were likely more dollars available to spend among more people.

Spending was also studied to assess utilization. At the end of each market, vendors submit credit/debit tokens, SNAP, and Food Bucks receipts to Draper-Zivetz. Draper-Zivetz tracked these totals weekly in 2020 as her predecessor did in 2019. The calculations do not include cash spent at the market or the credit/debit card swipes; therefore, the total amount spent is higher than the amount reported in *Figure 6*.

#### *Public Health Practices Implemented as a Result of the COVID-19 Pandemic*

Health and safety precautions were implemented in response to the COVID-19 pandemic. Qualitative data concerning the implementation of public health practices were gathered through structured conversations with LU staff and observations made while at LFM. These conversations were had with LU staff because they were aware of all required health department protocols. When meeting with Draper-Zivetz on May 28, 2020, prior to opening day of LFM, she mentioned how important it was to create a safe shopping experience in a time when so much is uncertain. In a conversation with Breingan on June 9, 2020, he mentioned that while the possibility of pushback from market visitors was possible because of the new, strict protocols, LU's and LFM's ability to keep people safe was of the highest importance. Observations of the newly adopted practices include the following:

- Advance registration for assisting the health department with contact tracing if there is a COVID-19 case reported at the market;
- A request that customers attend the market alone;
- A ban on non-service animals (since revised to request that pets are left at home);
- Mandated face masks;
- Restrictions on movement within the farmers market;
- Requirement of safety protocol signs to be on display at each vendor tent; and
- Required six-foot social distancing.

The implementation of new public health practices has proven to be beneficial as no cases of COVID-19 have been reported at the market. The signage, physical distancing measures, and mask mandate have helped to keep the LFM community safe. The updated guidelines are evident throughout the market. By creating large one-way signs, having strategically placing volunteers throughout the busiest parts of the market, and having vendors hang safety protocol signage at their tents, customers are constantly reminded of how important these changes are and why they are in place.

Adherence to the new guidelines were monitored by market staff and volunteers. Any updates that needed to be made to these protocols were most often discussed during weekly market debriefs. In these meetings, the Market Manager, Executive Director, Community Engagement and Program Manager, and Market Intern discussed what worked and what did not the previous week, allowing adjustments to create positive change. For example, halfway through the season access to the larger portion of the market was made two-way since the path is wide, and the change allowed for better customer flow.

*Social Services Provided During the COVID-19 Pandemic*

The COVID-19 pandemic is a barrier for people to complete important tasks. Structured conversations were conducted with the staff of State Representative Sara Innamorato's office, voter registration, and the Medicare Sales representative. The purpose of these interviews was to understand the utilization of the social services provided at LFM. Participants were surveyed throughout the season about the addition of social services to the market.

Social services provided to the customers of the market have been utilized and have created an environment where residents feel comfortable voicing their concerns. Ease of access to these resources is increased by having these social service resources available at the market. The LFM created partnerships with community-based organizations and was able to provide services that were previously not available onsite, including the following: voter registration; assistance in completing the 2020 census; Ecotones LLC; Grounded Strategies; Big Brothers Big Sisters; notary services; Narcan distribution; and, Medicare enrollment. In addition, LFM staff encouraged a State Representative's office to attend the market weekly to provide support for visitors and answer questions about policies and programs.

Social service agencies report participant utilization of these services. Anecdotal information shows that the availability of social services onsite encourages a feeling of safety and instant access to problem resolution. Representatives of the social service providers report that their time spent at the LFM is worthwhile.

#### *Diversity of Vendors*

By promoting diversity among vendors, the LFM wants to create a more inclusive environment for shoppers and vendors alike. Farmers markets are able to bring people of different cultures and backgrounds together and create a new diversified space in one place. In conversations

on August 20 and 21, 2020, Draper-Zivetz explained the importance of seeking out diverse vendors.

Prior to and during the market season, Draper-Zivetz approved applications for a range of vendors including several representing marginalized populations. These included a vegan Trinidadian vendor, a Somali vendor, a Black-owned gluten-free bakery, a Turkish vendor specializing in prepared Mediterranean foods, a Hispanic-owned farm, a woman-owned butcher shop, and a woman-owned distillery for LFM. This outreach to diversify the profile of vendors has been successful, both for market participants and vendors. Out of 32 total vendor stalls, 16 vendors identify as woman-owned, immigrant-owned, or BIPOC-owned businesses.

#### *Products and Quantities Available*

Four farmers from Harvest Valley, Old Tin Roof Farm, Windy Hill Farm, and Freedom Farms were surveyed on July 21, August 4, and October 13, 2020. The surveys revealed that there was an increase in the variety of products available throughout the market and a significant increase in the types of food and amounts of food farmers sold over last year. Farmers representing Harvest Valley Farms and Freedom Farms noted that there was a large decrease in their wholesale business as restaurants and other local food providers closed due to the pandemic, and farmers markets allowed increased distribution of their harvests. Observations of market vendors throughout the 2020 season revealed an increase in the number of vendors that specialized in different products including caramels, fresh, locally grown produce, dairy products, meat products, and freshly baked gluten and gluten-free bread.

The variety of food options at the LFM in the 2020 season was greater than in previous years, particularly because of the growth of the market. This allowed customers to try items that

had not previously been found at the LFM. It also brought in additional customers who were interested in purchasing these diverse products from the new vendors.

### *Transportation and Accessibility*

Five bus routes serve the farmers market and they have mostly resumed complete service as of October 2020 according to LU volunteers and market visitors. When interviewing customers at LFM, transportation issues were one of the most frequently noted barriers, especially for those who are disabled, a senior citizen, or a parent with children.

The LFM is held in Arsenal Park, a city park that is located in the middle of a steep hill between Penn Avenue and Butler Street in the City of Pittsburgh. Some sidewalks desperately need repair. In brief, structured conversations with senior citizens at the market conducted on October 6 and 13, 2020, many mentioned the hazards the market poses for them because of the location of the site and the disrepair of the environment.

Transportation to Arsenal Park, the home of the LFM, is limited. Since public transportation is still relatively limited due to the COVID-19 pandemic, the LFM should consider partnering with other community organizations to create additional methods of transportation to the market so it can serve additional members of target populations.

Accessibility is another dilemma that faces the patrons of the LFM. On October 27, 2020, one interviewed customer noted that because the sidewalks throughout Arsenal Park are crumbling, it discourages her to visit the part of the market located in a steeper part of the park. To address this issue, the LFM strategically placed volunteers throughout the market for assistance.

## 5.0 Discussion

To meet the needs of vendors and shoppers, the LFM has implemented COVID-19 safety processes to meet health department protocols, recommendations from public health officials, and changes suggested by market volunteers and vendors. In the first 22 weeks of the 2020 market, the market manager identified best practices for the highest levels of accessibility and safety. In addition, the LFM instituted convenience programs to increase healthy food access for a diverse community. The LFM implemented safety rules that were not required by the health department but were suggested to increase overall safety. These include a mask requirement while within market boundaries, one-way walking that allows for physical distancing, markers for waiting and purchasing at each vendor, vendors spaced between eight and 12 feet apart, and safety procedure reminders at each vendor tent. Since the LFM started the season with strong safety protocols in place, community attendance has increased.

Farmers are key to the success of the LFM. Many of the farmers who attend the LFM likely saw a significant increase in purchasing from all populations. Their success not only provides food to city-dwelling shoppers but enables them to return to their rural communities with increased revenue. Sustainability is necessary in a farmers market system. When farmers participate in ecological farming practices that yield healthy food to provide to local communities, the communities provide the money needed to support the farmers. This results in a mutually beneficial relationship between the farmer and the consumer that creates a new standard for sustainability (Farmers Market Coalition, 2020).

In spite of some infrastructure issues, the LFM has quickly become a safe community site during the COVID-19 pandemic, enabling expanded community and social services. By providing

voter registration services, a notary, composting, census completion assistance, and State Representative office staff to answer citizens' questions, people feel comfortable attending the market in person to complete activities that have become more difficult amid a global pandemic.

The needs of senior citizens have been better met through expanded services at the LFM. A consistent flow of people asking questions about how to use their SFMNP vouchers is a good indication that the market has effectively reached this target demographic.

It is unlikely that a new grocery store will be established in Lower or Central Lawrenceville; therefore, it is projected that the majority of the area will continue to be a food desert. As mentioned throughout this paper, residents who live in food deserts have a harder time eating a nutrient-dense and healthy diet because of their limited access to essential resources (Brace et al., 2016). Community food security focuses on the entirety of the community within the food desert designation instead of focusing on individual households. Community food security requires participation from many different individuals and sectors while drawing from community food resources. Community food security focuses on solutions to reduce food insecurity and increase the quality of life for the entire affected community (Winne, 2008). The United States Department of Agriculture recommends farmers markets as a community-based intervention for food security. Farmers markets are a key strategy to address food insecurity. If the LFM continues to focus on meeting the needs of diverse vendors, communities, and marginalized groups, its impact on food insecurity in Lawrenceville should expand and its commodities and social services will continue to reach populations in need.



## 6.0 Recommendations

LU and the LFM have many programs that help meet residents' needs, and expansion should be considered. Recommendations include increasing community partnerships, offering an “ugly” produce program, improving the infrastructure of Arsenal Park, and expanding access to additional target populations (see *Table 2*).

Increasing the number and types of community organization partnerships can help. Some examples to be considered are the Boys and Girls Club, local restaurants (Round Corner Cantina, Industry Public House, Walter’s Southern Kitchen), and Tree Pittsburgh. These three types of organizations can help create community programming, plant gardens, and provide food-based support to Lawrenceville residents. These partnerships can increase the impact of the farmers market and other LU programs, give all involved the ability to share expertise and ideas, and can further bring the community together through involvement in programming and projects. These new partnerships can also provide additional spaces for outreach and information circulation on what is available to Lawrenceville residents.

Reducing the cost of produce and enabling the sale of “ugly” produce could help consumers and farmers alike. A program to consider is one similar to the national Misfits Market and Imperfect Foods programs, where “ugly” produce that is deformed in some way, but otherwise safe and tasty, is sold at a lower cost. This enables farmers to sell “unsellable” produce and shoppers to purchase ugly but healthy food that would otherwise go to waste. The LFM could establish a booth where farmers could sell the misshapen fruits, vegetables, and other products at a lower cost to the customer. This way, SNAP beneficiaries, seniors, and other market customers could purchase more fresh fruits and vegetables at a discounted price. Not only could this increase

the buying power of people who have limited dollars to spend, it might also increase farmers' selling capacity.

Accessibility in Arsenal Park is problematic. Crumbling sidewalks, speeding cars, and only one handicapped-accessible entrance are the most significant problems. While it is not realistic to fix the infrastructure of a park overnight, it would be worthwhile for LU and the LFM to engage in talks with the City of Pittsburgh and, perhaps leverage the power of the State Representative, to fix the most pressing issues. This would allow additional people with disabilities and a greater number of seniors to attend the farmers market.

Another strategy is hosting the farmers market on a different day of the week. While Tuesdays have worked well during the time of a global pandemic, a weekend day may work better as it allows working parents and non-parents more time to shop. A market analysis could determine need and assess competition from other farmers markets. The effect of a change in the hours of operation should be assessed. The LFM is currently open from 3pm-7pm. Anyone who is not available during that limited time frame is unable to attend. A survey of both of these issues in the weekly LFM newsletter or through the LU monthly newsletter would be helpful to consumers and vendors.

A further increase in vendor diversity, including expanding offerings of ethnic prepared food at the market would be beneficial. By introducing customers to vendors from different backgrounds, people are able to find new things to enjoy and promote while also possibly finding more culturally relevant items for their own families. Some suggestions would be Crabs R Us, Dana's Bakery, Kilimanjaro Flavor, Live Fresh Cold Pressed Juice and Smoothies, Power Bites, Uncle Jammy's, and Blakbird Jewelry. These vendors provide additions like baked goods, seafood

meals, Tanzanian food, juices and smoothies, organic/healthy treats, sauces/marinades, and jewelry.

Transportation issues are common amongst populations who are less likely to attend LFM. Providing transportation to the market from within Lawrenceville could help increase attendance in the senior and disabled populations. Promoting use of the Buddy System for seniors and younger adult residents of Lawrenceville for deliveries or rides to/from the market would be beneficial if LFM is unable to divert money to transportation needs. These recommendations are summarized in *Table 2*.

**Table 2 Recommendations for the Lawrenceville Farmers Market**

<b>Recommendation</b>	<b>Why it would make a difference</b>	<b>Limitation(s)</b>	<b>Mitigation of Limitation(s)</b>
Community Partnerships and Outreach	Increases impact of the LFM, builds community relationships, and creates an ability to share ideas and expertise	Lack of interest, resource pooling refusal, no commitment to support and continuation of growth	Strong community, likelihood of wanting to be involved is high, and can incentivize local partners
Deformed Produce Vendor/CSA Program	Provides more affordable produce to target populations, allows SNAP/SFMNP dollars to go further	Lack of vendor interest, limited interest from LFM customers	Promote program, remind customers that there is nothing wrong with the produce, can incentivize vendors
Accessibility in Arsenal Park	Lowers risk of injury, increases access for all populations	Too many asks of the City could make fixes less likely, changes mean more expenses for the City	Ask for small or most important changes first
Change the day of the LFM/extend hours	Increases access, ends the limited time frame, allows farmers to extend their impact	Arsenal Park not available, vendors unable to adjust or extend hours	Can try to extend hours in the beginning of the time frame, look for new/more accessible location
Vendor Diversity	Promotes diversity/equity/inclusion of all populations, introduces people/products of different backgrounds	Lack of vendor interest in promoting diversity, cannot find additional diverse vendors	Vendors who do not promote diversity will not be considered, maintain relationships with current diverse vendors
Transportation Issues	Increases access for people who do not have vehicles, promotes additional visitors to the market by providing transportation	No vehicles available for rent, not realistic to provide transportation	Create a delivery program, explore curbside pickup and online ordering, expand Buddy System

## 7.0 Conclusion

Food insecurity is a public health issue that affects more than 11% of the United States population each year. In Pittsburgh, Pennsylvania, the food insecurity rate is even higher, with 14.3% percent of the population bring food insecure. The COVID-19 pandemic further exacerbated food insecurity on both a national and local level. While there has been federal and local assistance during the COVID-19 pandemic, food insecurity is still rising. The impact of farmers markets on food insecurity, particularly during the COVID-19 pandemic is important to consider. By providing safe, open-air spaces for individuals and families to shop, access to food gets easier during an otherwise difficult time. The LFM has made a positive impact on SNAP users and other target populations during the COVID-19 pandemic.

The LFM contributes to food security in Lawrenceville. Farmers markets are a critical component of developing a more sustainable food system and lowering food insecurity. Diets full of healthy and nutrient-dense fruits and vegetables are proven to promote better health outcomes. Programs at the LFM have provided access to these foods to low income consumers. The ability to purchase food at farmers markets with SNAP dollars, particularly when matched with additional Food Bucks, increases buying power as well as farmer profits. Since Lawrenceville is a food desert, the impact of the farmers market is particularly magnified.

The impact of community programs like LFM must be valued and utilized moving forward. Katherine Alaimo, Head of Michigan State's Food Science and Human Nutrition Department, has focused on household and community food insecurity for a significant portion of her career. She emphasizes the contribution of farmers markets to community food security, especially during the COVID-19 pandemic. By drawing attention to the need for prioritizing food security and healthy

eating attitudes during the COVID-19 pandemic, we increase the likelihood of guaranteeing the current and future health and well-being of our population (Paslakis, Dimitropoulos, & Katzman, 2020). In this time of national and worldwide crisis, it is imperative that we not only focus on household food security, but community food security as well. As recognized by Alaimo, the LFM, a community-level intervention, allows the farmers and the Lawrenceville community to work in tandem to address the causes of food insecurity while creating a safe and healthy shopping environment for all customers.

Farmers markets were identified as essential businesses allowing them to remain open during the COVID-19 pandemic. By employing rigorous practices to make sure that farmers markets are safe not only for patrons, but for farmers as well, these markets are thriving. While the LFM has filled a health and economic gap for Lawrenceville residents during the COVID-19 pandemic, the overall effect of farmers markets throughout the COVID-19 pandemic still warrants further research to assess whether they are entirely able to fill indispensable health, economic, and food insecurity gaps during this unprecedented time.

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