



Measuring Food Insecurity: Applying the Food Abundance Index to the Mid-Mon Valley

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Introduction

In 2019, Food21 commenced a development partnership with InCity Farms to establish a regional food production center in the City of Duquesne, one of the principal communities along the Mon Valley in Allegheny County. The effort is to be situated on the site of the former Duquesne Works which included the famed “Dorothy Six” furnace. Upon completion of phase one InCity Farm will have launched a state of the art, vertical farm and aquaculture facility employing over 150 associates in the new world of Controlled Environment Agriculture. Because of this investment, Food21 began to look into the role that food plays and can play in the economic revitalization of the Mid-Mon Valley. We are characterizing this as a “district” approach so that partnerships in the public, private, academic and nonprofit sectors can be formed and aligned to create change.

Proposed Food District – Duquesne InCity Farms



This paper is the first step in developing tools to assist the communities in this region to establish a plan for a food abundant community. The paper extends the work initially done by a team at the University of Pittsburgh in 2011 to build a comprehensive way to score and evaluate a community’s relative abundance, access and opportunities around food.

For readers and active members of other communities who wish to know more about how Food21 and the Center for Data Analytics and Strategy can help you evaluate and determine your overall strengths, assets and opportunities for an improved and sustainable food economy, please contact us.

Joseph Bute, President, Food21

Key Findings from the Analysis

The issues outlined in this report on the Mid-Mon Valley Food District are reflective of many communities in the former industrial communities of Southwest Pennsylvania. Based on applying the tools of the Food Abundance Index we offer the following findings – in terms of challenges as well as opportunities for the Mid-Mon Valley communities.

Key Gaps and Issues Identified in the Mid-Mon Valley

- Collapse of industrial era economic infrastructure has left a legacy of unsustainable, or environmentally damaging industrial practices.
- There is an absolute gap in availability of, and reasonable access to healthy affordable food within the district. This includes significant disinvestment in the district's food infrastructure such as retail grocery locations as well as other food businesses including manufacturing and processing.
- There is a disproportionate representation of lower income, lower levels of business ownership and employment by the age and race/ethnicity demographic groups in this district.
- Based on recently reviewed health data, the community was significantly impacted by the current global pandemic, including a higher infection and mortality rate. The diet and overall health of the residents in the district has made them more susceptible to Covid-19. Also, the workforce has a higher rate of frontline workers in the health field such as nursing homes and hospitals.

Key Assets and Opportunities in the Mid-Mon Valley

- A greater metro region marketplace of over 1.2 million people¹, with a total of 537,000 households², spending approximately \$3 billion plus per year combined on food and beverage needs.³
- A “foodshed” region⁴ with the soils, water, people and production capable of supplying an estimated potential of at least 25% (\$750 million in sales) or more of the annual total food and beverage market demands of the greater metro area this district resides within.
- Greater Foodshed region contains over 7 million acres in production is already in the top ten agriculture producing regions in the US.⁵
- A capable workforce with embedded historical experience in industrial production, that can be evolved and adapted to in region food production.
- An extensive network of transport tied to former and existing industrial and retail sites well suited for growing a food economy in the district.

¹ US census 2020

² ibid

³ US census 2020

⁴ https://www.canr.msu.edu/news/what_is_a_food_shed

⁵ US agriculture census 2017

Recent research by Food21 has established⁶ that local and regional-based food supply chains, including seasonal production and controlled environment agriculture, are found to have less of an impact on carbon emissions release than food produced and transported 1000 or more miles away from the region. There is an opportunity for increasing specialty food crop production for the Foodshed region. Producing this food in the region tends to be a better use of overall supply chain resources than large scale, mono-crop production toward animal feed or biofuels, or export of staple crops. The majority of food crop production in the Western Atlantic Food Shed Region is found to be large monocrop soybean and corn production, according to the US agriculture census, 2017⁷. Much of this mono-crop production is exported to points around the world, contributing to global carbon emissions. Due to its location and the availability of development zones along the Mon River, the Mid-Mon Valley has the potential to act as a catalyst for this environmentally friendly, integrated method of farming and supply chain optimization. This is very much in evidence with the master plan by InCityFarms for the Duquesne site which would become a 25 acre food enterprise hub, anchored by a state of the art year-round growing center.

Moving Toward Abundance: Focusing Food Outlet Development

In order to capitalize on insights from ongoing analysis of food abundance, it is necessary to focus on effective strategic solutions to gaps in a given community's food economy that limit food abundance. Based on the analysis in this report, these areas of opportunity for investment are apparent:

- Accessible, full-service grocery retail locations within the community.
- Re-use of former industrial sites in the Mid-Mon Valley that can host a wide range of food businesses, including controlled environment agriculture.
- Introducing job development in the food industry to the residents of the Mid-Mon Valley.
- Expanding the connections between food accessibility and health and wellness outcomes.

Within the report it is clear that the area presents residents with genuine challenges in getting routine access to fresh, affordable and full-service grocery locations. In November of this year, the last full-service grocery store ceased operation in Duquesne, as the Sav-a-lot was closed and there is currently no new operator coming into this 16,000 square foot retail center. Clairton lost all of their full-service grocery stores years ago and is now served by a limited line of groceries in convenience, dollar stores, and a small fresh produce market that the community opened three years ago. The challenge becomes one of both a “desert” where the full spectrum of grocery products is unavailable and a “swamp” where the community's choices are in the form of shelf stable food items of limited nutritional value and which fall far short of meeting nutritional requirements, and/or expensive prepared and potentially less nutritious restaurant or fast-food meals.

The Importance of Measuring Food Insecurity

⁶ Kukovich, B., 2020. *Food21: Food And Climate – The Coming Crisis*. [online] 79bc646f-3ec4-4925-a027-747f4d567fa5.filesusr.com. Available at: <https://79bc646f-3ec4-4925-a027-747f4d567fa5.filesusr.com/ugd/6fbd24_7677970109e3423ea074d316920dd69e.pdf> [Accessed 13 October 2020].

⁷ <https://www.nass.usda.gov/AgCensus/>

Food insecurity is a multifaceted issue that focuses on the varying degree of access to and availability of healthy and nutritious food in communities.⁸ An understanding of food insecurity is vital to determining if members of a community are at risk of hunger, starvation, and dietary health issues like obesity and diabetes⁹. Food insecurity and a lack of food abundance have been a major issue throughout the Allegheny County region in Pennsylvania, even prior to the current COVID-19 pandemic. During the pandemic, these food system issues were accentuated by the thousands of cars lined up at Pittsburgh Food Banks, each representing a family in desperate need of their next meal. The Greater Pittsburgh Community Food Bank experienced a significant influx of families in need of food during the pandemic, and extensive daily lines at their Duquesne center exposed the urgent need for support.

Duquesne, a community located in the Mid-Mon Valley region, is one of the communities observed in this report. The report aims to assess the levels of food insecurity in the Mid-Mon Valley region using the updated Food Abundance Index toolkit, a toolkit to measure regional food insecurity developed by researcher at the University of Pittsburgh in 2011. Measuring food insecurity is necessary to drive project-based intervention and solution development by directly revealing the specific food insecurity issues within individual communities.

By incorporating this multidimensional approach, organizations like Food21 and our partners will be better equipped to address these issues at the grassroots level once they've been identified.

The Food Abundance Index

Food21 has coordinated several distinct, yet integrated and complementary food economy development efforts in this region, and in greater Pittsburgh, as part of a larger effort throughout Western Pennsylvania and Eastern Ohio. These development efforts cannot be achieved without clear statistical support, and this report will showcase the efforts of Food21's Center for Data, Analytics and Strategy, in partnership with University of Pittsburgh, to measure food abundance in communities, beginning with the Mid-Mon Valley Region. The method capitalizes on principles from the Food Abundance Index. Using the key dimensions to measure food insecurity created by the Food Abundance Index, researchers from Food21 and the University of Pittsburgh incorporated modern data analytics and data collection methods to effectively develop an application to assess levels of community food insecurity. The output of this Food Abundance Index data application is combined with contemporary regional data on the demographics of the area, and statistics on the local food economy, to inform policy, food enterprise and infrastructure investment, and community development efforts. A primary goal of these efforts is to move toward more food-abundant communities and build resilient food systems. The following report demonstrates the analysis by assessing food abundance in the Mid-Mon Valley region under two dimensions of the Food Abundance Index, effectively addressing key areas in need of support. A discussion of Food21's current efforts to implement these recommendations, which have already begun, will follow the assessment.

⁸ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7177314/>

⁹ibid

The Food Abundance Index (FAI) was originally developed and tested in 2011 by Dr. Raymond Jones, Dr. Audrey Murrell, Greg Boulos, and Jasneet Charma through the David Berg Center for Ethics and Leadership at the University of Pittsburgh.¹⁰ The trial testing encompassed seven areas in the Pittsburgh region and students from the Certificate of Leadership and Ethics program collaborated on the widespread data collection. The Food Abundance Index was created to expel traditional one-dimensional approaches to measuring food insecurity, by determining the food system classification through five different dimensions: Access, Affordability, Diversity, Density, and Quality.¹¹ The FAI adopted a scorecard methodology to assess locations holistically and compare their score output to a set of different classifications, with the most food insecure areas categorized as “food deserts.” In addition, each of the five dimensions includes three different levels: required, suggested, and innovative elements. Communities that incorporate many innovative elements into multiple dimensions of their food systems are recorded as “food bounties.”¹²

By incorporating a multi-dimensional approach to measuring food insecurity, the Food Abundance Index effectively avoids creating generalizations or undervaluing key dimensions of food insecurity within a specific geographic region. This approach also helps to recognize that the key factors contributing to food insecurity may differ in different communities, even if those communities exist within the same city or geographic region. Once these key factors are identified, it effectively lays the foundation for addressing and reducing communities’ issues related to food insecurity, which ultimately helps improve overall well-being (TOOLKIT).

Traditionally, this data has been collected manually via a pen-and-paper scorecard, and much of the data collection requires researchers to enter and assess food retailers within a community. This methodology, while effective when the Food Abundance Index was originally piloted, has the potential to capitalize on advancements in data programming and processing tools to provide a more efficient, and ultimately more effective, analysis. The new FAI incorporates automated processes to calculate scoring for two of the dimensions so far, with future plans to fully automate all five dimensions. The following, original guiding principles of the 2011 Food Abundance Index were retained, and they set the stage for this data collection tool and the recommendations for regional development that follow:

- *“Feel empowered through direct participation in the evaluation process, motivate community members to participate in shaping the local food system and seek solutions to increase food sovereignty through local resources/channels.”*
- *“Undertake sustainable policies and market-based enterprises that allow equitable food access and improve food distribution and access within the communities that have been designated as a food desert.”*

¹⁰ <https://www.business.pitt.edu/sites/default/files/FOOD%20ABUNDANCE%20INDEX%20TOOLKIT.pdf>

¹¹ Ibid

¹² Ibid

- *“Use food as an economic driver to implement workforce development and entrepreneurial opportunities for residents.”*
- *“Strengthen the relationship between producers and consumers and provide a catalyst for local economic development by putting into practice policies and business models that provide quality, locally grown produce to communities designated as a ‘food desert’.”*

Current Project: Updating the FAI

Beginning in late 2019 and continuing through the summer of 2020, Sam Rose, the Director of Food21’s Center for Data, Analytics, and Strategy (CDAS21), and Alex Firestine, a student researcher in the Food Scholars Community in the University of Pittsburgh Honors College, collaborated on the development of an updated FAI application. The goal of this update was to leverage modern data analytics programs to transform the data gathering, processing, and representation within the tool, effectively enacting a dissemination of FAI findings into a digital platform. The first iteration of this has been realized (<https://fai.cdas21.com/>) and it includes the following developments:

- A comprehensive, cloud-based food security survey to be used to collect data from community members.
- An interactive GIS map database that displays the region’s food outlets, which is updated monthly by the Western Pennsylvania Regional Data Center.
- A developed methodology to calculate survey sample size for research based on the US Census.
- An automated process to calculate the score of two of the original FAI dimensions.

This new design provides numerous additional benefits. The sheer cost and contributed effort to conduct and maintain this program have been significantly reduced from the original concept, both by innovations in the data collection method and by incorporation of newly available data. In addition, the incorporation of the qualitative survey champions an original FAI principle of empowering community members through direct participation, as members now have the opportunity to convey issues they face. The responses to this survey will have implications in the calculation of the FAI score, and this updated data combined with the relatively frequent surveying approach allows the Food Abundance Index to have more data and information available about rapid changes in a community. Relevant data is especially crucial during disasters and public health emergency events, such as the COVID-19 pandemic. Catastrophic events like these can often have the consequence of quickly changing the patterns and habits of food producers, processors, and consumers. In turn, researchers, policy makers, community investors and other stakeholders are often left unable to understand the scope and nature of these rapid changes in communities, pertaining to the food economy and public health issues.

The updated Food Abundance Index will provide more clarity on these factors, regardless of what the conditions are on the ground. The new surveying-oriented method complements this data by collecting more data directly from people in communities affected by these events. This data will give a better reflection of the nuances of the polled factors in each community, providing a

grassroots view of food insecurity issues. An overall need for this type of data is evident, as CDAS21 has found that gaps related to these dimensions to measure food insecurity exist in current publicly available data sets, such as the US Census on a monthly or annual temporal scale, and particularly on the level of ZIP codes, or census tracts. By centralizing this data from multiple sets in one application, and incorporating proprietary community survey data, many of these gaps can be addressed when surveying achieves a recurring cadence. Coordinating collaboration on the ongoing monthly collection of this data will help fill this gap in the greater Pittsburgh region.

The new overarching goal of both CDAS21 and the evolved Food Abundance Index is to create and maintain a foundation for pooling, sharing and using influential data, and to combine, share and use resources to collect, analyze, and employ this data, pertaining to local and regional food abundance and economies, in service of the community. CDAS21 is currently collaborating with diverse group regional partners on this effort, including food banks, municipalities, policy groups, researchers, public health institutions, food producers, and food enterprises. This collective effort effectively corresponds with one of the aforementioned original goals of the Food Abundance Index by leveraging food to drive economic and workforce development, effectively providing entrepreneurial and sustainable opportunities for residents of communities plagued with food insecurity.

Many of these development projects are currently targeting the Mid-Mon Valley region and its residents. In 2020, CDAS21 engaged in a baseline profiling and measuring effort of the Mid-Mon Valley, using the evolved Food Abundance Index analysis, in order to give strategic and evidence-based insight into the conditions of this particular region. The following section will highlight important insights from this analysis. It is important to note that the research presented in this report is only a “snapshot” in time of the conditions in this location. CDAS21 has determined that in order to make an effective impact on food abundance initiatives, ongoing sampling, analytics, review, and strategic foresight recommendation cycles are required on at least a quarterly basis to give an accurate outlook of the food economy of the region. This initiative will be the next step in the process of further developing a regional profile, both pertaining to the Mid-Mon Valley and other future profiling assessments.

The Mid-Mon Valley

The Mid-Mon Valley region was selected for this particular analysis due to its unique history of rapid growth and sudden decay. It is evident that the decline of the steel industry had a substantial negative socio-economic impact on the region, and with the collapse of the steel industry came a systemic shock to the infrastructure of the region. Poverty, job loss, and fragmented public infrastructure insinuate that the region may be experiencing high levels of food insecurity. In addition, the presence of revitalization projects specifically addressing food insecurity, most of which experienced significant volume increases during the COVID-19 pandemic, adds further evidence for the presence of widespread food insecurity.

The Mid-Mon Valley region was one of the largest and most complete steel making regions in the world for a period of nearly one hundred years. Uniquely situated for access to coal, limestone and iron ore, it became one of the largest vertically integrated production centers in industrial history. At any one time every facet of steelmaking was going on continuously along the river. Duquesne, McKeesport, Clairton, and many other towns within the Valley were home to

steel mills, tube factories, and other manufacturing plants. Prominent manufacturing giants, like U.S. Steel and Westinghouse Electric, employed thousands of workers in the Valley throughout the 20th century. By the early 1970s U.S. Steel alone employed nearly 30,000 workers across the Mid Mon Valley factories.¹³ As a result, the local economies and every other aspect of the community was directly tied to the manufacturing facilities in the area.¹⁴

Pittsburgh's presence as a global player in the steel industry peaked in the early 1970s, and with the energy crisis in 1980, the steel and energy industries that had been driving the Valley's economies began to face challenges. With U.S. Steel reporting over \$561 million in losses in 1980, mills in the Valley began shutting down, which led to significant job and tax revenue loss.¹⁵ U.S. Steel laid off 6,100 workers following its losses, and in 1984 the Duquesne Works factory closed along with 15 other steel manufacturing facilities in the area. Among the communities most affected were Duquesne and Braddock, both of which experienced severe loss in tax revenue, income, and population. During this time, unemployment rose to 20%, and it was estimated in 1986 that since 1979, 113,000 people in the Pittsburgh Area had lost their jobs due to the decline.¹⁶ The Financial Recovery Act of 1987 and the Mon Valley Initiative (MVI), which seeks to uplift economic activity in the region, have had a significant impact on working towards a recovery in the region. From a food security perspective, the Greater Pittsburgh Area Food Bank has used 11 acres of the former Duquesne Works site for food provision.¹⁷ It is evident that the decline of the steel industry had a detrimental impact, however a series of revitalization projects spark the potential for a resurgence of economic growth in the area for the future.

For the size of the population, several of the ZIP codes within the Mid-Mon Valley have a significantly lower average income per household than the Allegheny County average of \$59,899.¹⁸ This region also has a higher minority population compared to Allegheny County as a whole.¹⁹ A Food Economy business, Giant Eagle, is one of the top ten employers in the region, and this region employs a significant number of people in food production sectors. These specific sectors, as well as overall employment in the region, has been significantly negatively impacted by COVID-19. According to the U.S. Bureau of Labor Statistics, the average food at home/away from home budget is approximately \$8,000 per year per household.²⁰ However, the US census published that 12% of households are enrolled in SNAP benefits.²¹ Households receive an overall average of \$337.00 in SNAP benefits per month when enrolled.²² The average household income based on the lowest incomes in Mid-Mon Valley is \$32,666.00. SNAP benefits in the Mid-Mon Valley pay for approximately half of a family's total food budget per year on average. This leaves these families with an additional expense of approximately \$4,000 per year, which can translate to close to 25% of their income.

Results of the Mid-Mon Valley Project

¹³ https://monvalleyinitiative.com/wp-content/uploads/2019/03/MVI_Valley-Vision-three-year-report-FINAL_LR.pdf

¹⁴ <https://explorepahistory.com/hmarker.php?markerId=1-A-23B>

¹⁵ https://monvalleyinitiative.com/wp-content/uploads/2019/03/MVI_Valley-Vision-three-year-report-FINAL_LR.pdf

¹⁶ https://monvalleyinitiative.com/wp-content/uploads/2019/03/MVI_Valley-Vision-three-year-report-FINAL_LR.pdf

¹⁷ <https://explorepahistory.com/hmarker.php?markerId=1-A-23B>

¹⁸ Ibid

¹⁹ Ibid

²⁰ <https://www.bls.gov/news.release/cesan.nr0.htm>

²¹ <https://www.census.gov/library/stories/2020/07/most-families-that-received-snap-benefits-in-2018-had-at-least-one-person-working.html>

²² <https://fns-prod.azureedge.net/sites/default/files/snap/COLAMemoFY19.pdf>

Mid-Mon Valley FAI Analysis

Altogether there are five dimensions of the FAI: Diversity, Density, Access, Affordability, and Quality. Currently, the CDAS21 application is capable of calculating the Access and Density dimensions, and future development will incorporate the remaining three dimensions once effective community sampling has been achieved. Each dimension is measured by three levels: Required, Suggested, and Innovative. If the study area meets the required criteria, it is awarded one point, and if not, it is penalized one point. Meeting the suggested or innovative requirements awards two or three points respectively, and do not subtract points if not present. For each dimension, the highest obtainable score is a 7, and the lowest is a -1.

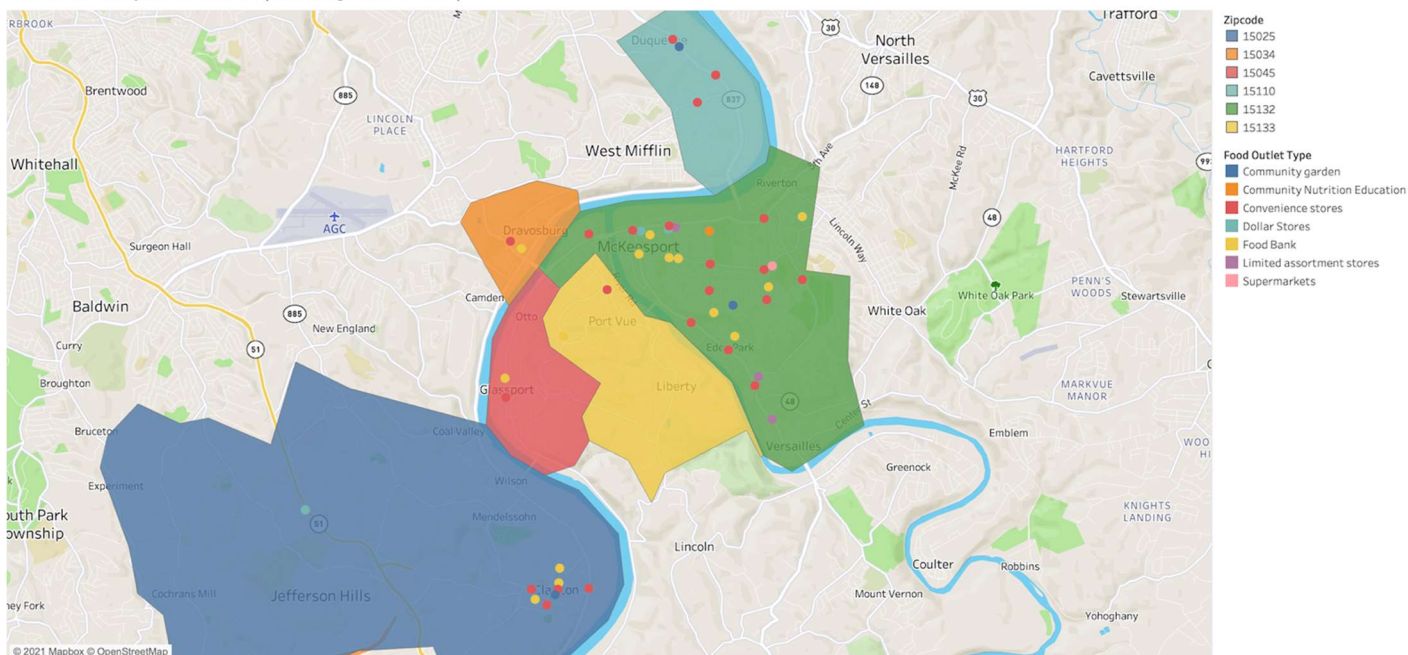
Density Evaluation

The Density dimension of the Food Abundance Index focuses on the proportion of nutritious, healthy food outlets to non-nutritious alternatives within the study area.²³ For this analysis, we calculated a series of ratios that corresponded with the three levels of analysis in the Food Abundance Index. The factors, point assignments, and raw ratios are described in the table below. The outlets used to calculate the ratios are also visualized in the map.

Density Factor Requirement	FAI Points for region	Mid-Mon Valley Ratio
Higher number of grocery stores to convenience stores	-1	1 grocery store to 7 convenience stores
Higher number of grocery stores and produce vendors to convenience stores	0	2 grocery stores/organic food outlets to 7 convenience stores
Higher number of local organic food source outlets to fast food and convenience stores	0	1 organic food outlet to 94 fast food/convenience stores

²³ <https://www.business.pitt.edu/sites/default/files/FOOD%20ABUNDANCE%20INDEX%20TOOLKIT.pdf>

Mid-Mon Valley Food Outlets (Omitting Restaurants)



From the analysis, this region was awarded the lowest possible score for the Density dimension, earning a -1, as the ratio calculated between grocery stores and convenience stores was below the required threshold. In addition, there is a low quantity of organic food outlets and grocery stores in the communities in the Mid-Mon Valley region compared to fast food and convenience stores. The majority of food outlets in the Mid-Mon Valley are restaurants, as full service and fast-food restaurants account for 84.57% of food outlets.²⁴ Excluding restaurants, there is a high concentration of convenience stores, corner stores, and food bank distribution centers in the area. This district also has a geographic challenge of food outlets being distributed on both sides of the Monongahela River, with limited bridge access between the district communities. This exacerbates the problem of a smaller amount of accessible healthier food outlets like limited assortment stores, supermarkets, grocery stores. While physical distance from these sparse stores may be minimal, the travel times can be extended due to heavy bridge traffic at rush hours. The following expands on the Access dimension to explore this congestion issue.

Food Abundance Index Access Evaluation

The Access dimension of the Food Abundance Index focuses on the ability to contact healthy, nutritious food with ease.²⁵ The required level for this dimension is the presence of a mainstream grocery store within walking distance of a public transportation stop. The suggested level awards two points for the presence of a farmer's market or organic store, and the innovative level requires members of the community to have access to community-based nutrition education

²⁴ FAI 2020 Data/wprdc.org/Allegheny County Health Department 2020

²⁵ Ibid

and support. An analysis of the Mid-Mon Valley region reveals it has all these qualities, and thus earns six of six possible points. However, additional findings from the application reveal there may be underlying issues despite the positive performance. The latest Food Abundance Index application data shows nine locations in this region lacking public transportation stops within 0.25 miles out of a total of 61 known food outlets (14.75%).²⁶ In addition, seven of the census tracts in the district have an estimated less than 30% of households owning at least one car.²⁷ For households with vehicles, auto congestion may inhibit access, as it is relatively high throughout this district.²⁸ This high rate of congestion may also increase travel times for residents that have to take a bus to their primary food outlet. Food outlets reside on both sides of the river that splits this district, which poses a challenge to people traveling across bridges to access them. The sparsity of bridges, high congestion, and presence of food outlets without nearby transportation stops act as barriers for residents to acquire healthy food.

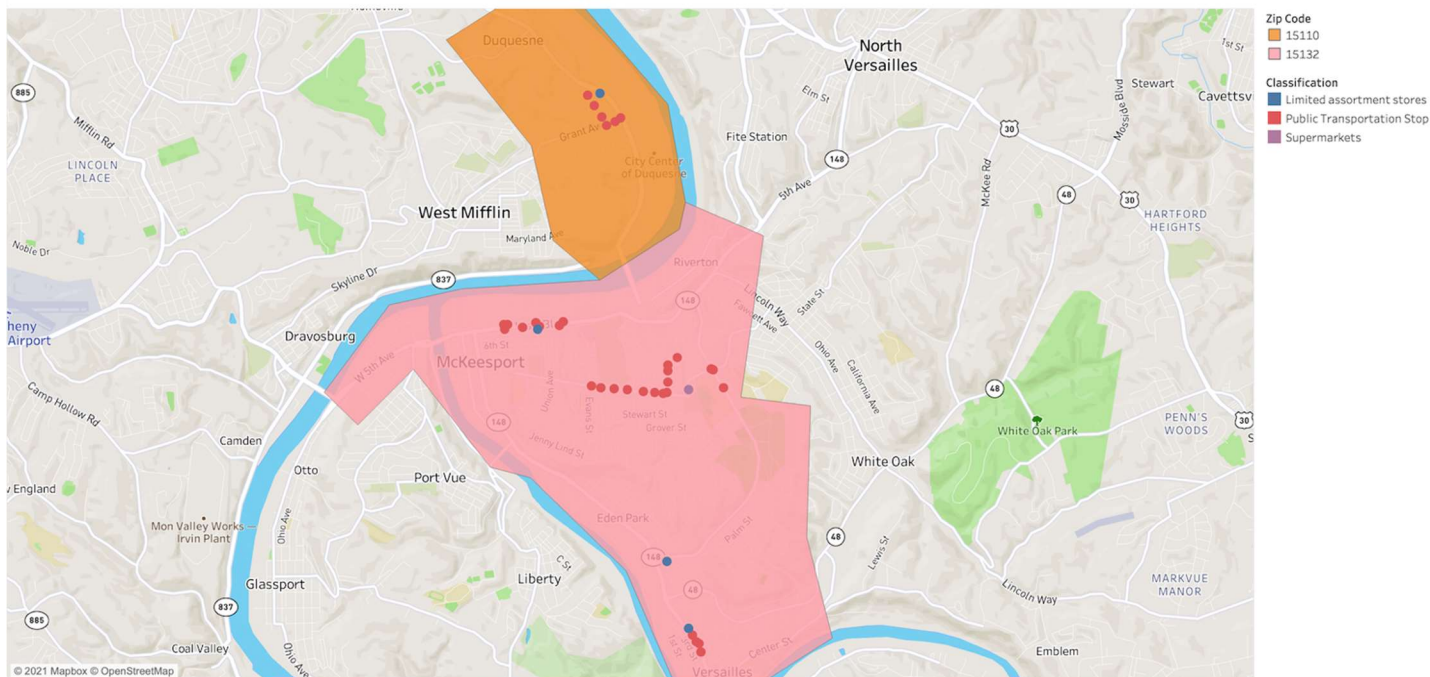
Access factor requirement	FAI Points for region
Presence of a mainstream grocery store within walking distance of a public transportation stop in the region	1
Presence of a farmer's market or organic store in the region	2
Presence of community-based nutrition education support in the region	3

²⁶ FAI 2020, with data sourced from WPRDC in 2020

²⁷ <https://www.bts.gov/latch/latch-data>

²⁸ <http://access.umn.edu/research/america/auto/2018/maps/congestion/>

Access to Food Outlets by Public Transportation



According to the U.S. Department of Transportation: “The ability to reach everyday destinations is critical to public health.”²⁹ Access to food outlets is vital to improving and sustaining public health, and this analysis has revealed that the Mid-Mon Valley is susceptible to experiencing significant adverse effects of a public health crisis. Factors contributing to this are a lack of walkable public transportation to area food outlets, lack of vehicle ownership, and traffic congestion in the area. These challenges present a multifaceted lack of access to local food outlets; however, the access calculation reveals that these resources are available within the Mid-Mon Valley communities. The presence of community-based food education programs and limited organic stores reveal potential for further community-based agricultural development. While some outlets did not have adequate access to public transportation, this accounted for a relatively small proportion of the outlets in the area. External data revealed other access challenges, such as congestion, and thus the access challenge may be defined by factors outside of the specific FAI score calculation. This further reveals the necessity for qualitative community surveying as a complement to the FAI in order to account for issues that may not be apparent in the scoring.

Key Findings from the Analysis

The issues outlined in this report on the Mid-Mon Valley Food District are reflective of many communities in the former industrial communities of Southwest Pennsylvania. The following will make assessments based on the data presented to identify gaps and issues. Using the same data, and additional research conducted by Food21, the following will also present key opportunities for economic development and assets in the Mid-Mon Valley.

²⁹ <https://www.transportation.gov/mission/health/connectivity>

Key Gaps and Issues Identified in the Mid-Mon Valley

- Collapse of industrial era economic infrastructure.
- Legacy of unsustainable, or environmentally damaging industrial practices.
- Gap in availability of, and reasonable access to healthy affordable food.
- Diminished regional food infrastructure.
- Lack of investment on the regional level in food systems infrastructure.
- Disproportionate representation of lower income, lower levels of business ownership and employment by the age and race/ethnicity demographic groups in this district.
- Community significantly impacted by the current global pandemic.
- Higher number of health problems associated with poor nutrition, and typically associated with lack of access to health food options.

Key Assets and Opportunities in the Mid-Mon Valley

- A greater metro region marketplace of over 1.2 million people³⁰, with a total of 537,000 households³¹, spending approximately \$3 billion plus per year combined on food and beverage needs.³²
- A “foodshed” region³³ with the soils, water, people and production capable of supplying an estimated potential of at least 25% (\$750 million in sales) or more of the annual total food and beverage market demands of the greater metro area this district resides within.
- Greater Foodshed region contains over 7 million acres in production is already in the top ten agriculture producing regions in the US.³⁴
- A capable workforce with embedded historical experience in industrial production, that can be evolved and adapted to in region food production.
- An extensive network of transport tied to former and existing industrial and retail sites well suited for growing a food economy in the district.

Recent research by Food21 has established³⁵ that local and regional-based food supply chains, including seasonal production and controlled environment agriculture, are found to have less of an impact on carbon emissions release than food produced and transported 1000 or more miles away from the region. There is an opportunity for increasing specialty food crop production for the Foodshed region. Producing this food in the region tends to be a better use of overall supply chain resources than large scale, mono-crop production toward animal feed or biofuels, or export of staple crops. The majority of food crop production in the Western Atlantic Food Shed Region is found to be large monocrop soybean and corn production, according to the US agriculture census, 2017³⁶. Much of this mono-crop production is exported to points around the world, contributing

³⁰ US census 2020

³¹ ibid

³² US census 2020

³³ https://www.canr.msu.edu/news/what_is_a_food_shed

³⁴ US agriculture census 2017

³⁵ Kukovich, B., 2020. *Food21: Food And Climate – The Coming Crisis*. [online] 79bc646f-3ec4-4925-a027-747f4d567fa5.filesusr.com. Available at: <https://79bc646f-3ec4-4925-a027-747f4d567fa5.filesusr.com/ugd/6fbd24_7677970109e3423ea074d316920dd69e.pdf> [Accessed 13 October 2020].

³⁶ <https://www.nass.usda.gov/AgCensus/>

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Within the report it is clear that the area presents residents with genuine challenges in getting routine access to fresh, affordable and full-service grocery locations. In November of this year, the last full-service grocery store ceased operation in Duquesne, as the Sav-a-lot was closed and there is currently no new operator coming into this 16,000 square foot retail center. Clairton lost all of their full-service grocery stores years ago and is now served by a limited line of groceries in convenience, dollar stores, and a small fresh produce market that the community opened three years ago. The challenge becomes one of both a “desert” where the full spectrum of grocery products is unavailable and a “swamp” where the community's choices are in the form of shelf stable food items of limited nutritional value and which fall far short of meeting nutritional requirements, and/or expensive prepared and potentially less nutritious restaurant or fast-food meals.

Addressing Density and Diversity Issues with InCity Farms

From the Density analysis of the FAI, it is evident there is a lack of organic food outlets relative to convenience stores and fast-food restaurants. In 2019, Food21 enlisted InCity Farms LLC to evaluate the opportunity for establishing a food campus to be located at the Duquesne Industrial Park. Now in the final stages of planning prior to breaking ground, the first phase of this effort would be a \$30 million state of the art, year-round aquaponics production center. Upon completion, phase one would include an indoor growing compound that would be the equivalent of over 2,000 acres of fresh produce production alongside an aquaculture plant that would yield over 500,000 pounds of fresh fish annually. This approach is detailed in *Building a Resilient and Sustainable Food Economy for the Pittsburgh Region*, the Food21 report released in 2018. The facility is the first of several planned for this site that ensure that the plant results in a zero-waste operation. It also will create a need for over 150 full-time associates to work in this new and exciting new industry. The community goal, however, is to use this investment to leverage more innovations and new enterprises throughout the Mid-Mon Valley.

Food and Public Health

Increasingly as we have noted, key metrics for wellness and health are being recognized as having direct connections to food access – particularly healthy and balanced diets. The pandemic has ripped away any illusions that our health is not interdependent. Mortality rates in food insecure communities and populations were measurably higher than all other groups. Chronic illnesses – many of which are driven by poor diet and eating habits – constituted the leading cause of serious illness and death during the pandemic. Several of our region’s health organizations have expressed a strong interest in providing an ongoing link to communities and the focus on food, diet and health. This is a key area that can be included in a food abundance strategy and enables the integration of important parts of the total wellbeing measure that we advocate here. Our plan in 2021 is to achieve this by accessing specific data on health and wellbeing related to food consumption issues, and analyzing it against our existing data sets on food abundance in communities.

Ongoing Food Security Measurement and the Center for Data, Analytics, and Strategy

Lastly, the Food Abundance Index is a tool that should be viewed not as a one-time snapshot but as a way of measuring continued progress. CDAS21 will work with the communities of the Mon Valley to ensure that applied data in real time can be an integral part of a proposed comprehensive Abundant Communities project in collaboration with the communities. CDAS21 will achieve this through a cycle of collecting data, analysis, and feeding back both the analysis and recommendations for policy, investment, and coordinated action back to the communities on an ongoing basis.

CDAS21 was formed by Food21 to provide a solid, data-centered platform that is a requirement to meet our dual goals of establishing a resilient and sustainable regional food economy. CDAS21 brings together data from a multitude of sources and then integrates it at the point of execution of a strategy – whether it is in our region’s agricultural economy, mapping the value chains in our region and identifying the gaps or educating us about all the points that touch our food system in some way. CDAS21 is available to conduct similar assessments and bring the tools that are under the Food21 umbrella – new models in sustainable and resilient food production, food business development and coordination of community assets to unify our region’s food economy – together for communities throughout the region.