Food Access in Sunbury, PA
ENST 411 Final Report

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Introduction

Our project is comprised of geographical representations and data analysis of the food accessibility in Sunbury, Pennsylvania. There are economic and geographic components that make up food access. An individual’s access to food is determined by their economic situation and where they live geographically in relation to food sources. Typically there are equity issues when looking at income levels and the types of food available, which is measured in terms of food deserts. The main aspects of food access that we considered were distance and selection of food in regards to nutrition. We categorized food access in terms of selection by separating grocery stores from convenience stores and quick grocery marts. Using statistics and maps, we compared access to all convenience and quick grocery stores, access to the two Weis markets, and then we considered the hypothetical food access situation if the downtown Weis closed. We worked out realistic walking and driving limits that determined physical accessibility of food. We calculated how the percentage of the Sunbury population within an accessible range changed as they moved farther away from the food sources. All of these things aided us in determining Sunbury’s food access and over all food health.

When planning out our semester long community project for our senior synthesizing environmental studies course, all the group members gravitated towards issues of food. We began by exploring the idea of installing a farmer’s market in Sunbury. However as we discussed the feasibility and demand for a farmer’s market, our ideas shifted and we got more curious about the current food access situation in Sunbury. As a so called ‘suburb’ with no larger city nearby, we anticipated finding some food access issues, just as you would expect in any city across the United States.

To get a basic visual representation of the layout of Sunbury’s food environment, we made an interactive Google Map. For our original project we had thought it would be a useful tool for the community and decided to make a website with healthy eating tips, how to make healthy and budget-conscious choices at the supermarket, and other food related information. Realizing that Sunbury residents already knew where to go grocery shopping and go out to dinner, we chose to head in a more analytically based direction.

Upon our statistical and graphical assessment of food access for Sunbury residents, we learned that Sunbury is not a food desert at all. They have two excellent grocery stores and a number of other, less fresh, but still life-sustaining food sources. Knowing that the general populations of Sunbury had good food access, we considered certain sectors of the populations that would be more vulnerable to food access issues. These ‘vulnerable populations’ included single mothers, racial minorities, and elderly people. Readily available census data helped to produce the statistics concerning these vulnerable populations. The census data was in blocks rather than individuals, so it was not as specific as we would have like, but it still added a lot of detailed information to our findings.
Research

The Healthy Food Financing Initiative defines a food desert as “a low-income census tract where a substantial number or share of residents have low access to a supermarket or large grocery store” (USDA, 2012). Access to quality food decreases as distance from supermarkets increases. This in turn affects nutrition and health. Michimo found that obesity prevalence increased and fruit and vegetable consumption decreased with increasing distance to supermarket in metropolitan areas (Michimo, 2010). Reduced consumption of healthy foods, along with increased consumption of energy-dense (unhealthy) foods in food deserts may cause poor nutrition, increased obesity, and increased prevalence of lifestyle diseases such as type II diabetes in people who consistently lack sufficient access to nutritional foods. This chronic nutritional deficiency is especially detrimental to the health of children and the elderly (Michimo, 2010).

Through the research we found we were able to better define what the direction of the project would be. We knew that for a small town like Sunbury, some residents would be walking to the supermarket, not all residents would have use of a car, and the distance for each resident varied by their location in town. Thus, we decided that we must look for food deserts on a very small scale. In the official definitions of a food desert, census data was determined on a country basis. It would not be sufficient to simply determine if Sunbury as a whole would be classified as a food desert; that would provide little helpful information to town officials. Studying food accessibility on a street-level scale, however, would result in data that town officials could use to pinpoint exact neighborhoods with food access issues. Learning that insufficient access to nutritional foods was especially harmful for children and the elderly led us to indicate both as “vulnerable populations” that we could study the food accessibility for in Sunbury.

To determine if Sunbury contained any food deserts, we first tried to find food desert databases; we knew some (including one through the HFFI) existed, but we needed to find one that would address Sunbury itself. However, we could not find one that fit our data needs. All of the databases we could find displayed food deserts on a county, school district or township level; this was far too generalized for our study. We needed to know if there were food deserts within Sunbury. It may be true that the county overall is not a food desert, but that does not mean there are food deserts within each town. Just looking at county-level databases was far too generalized. Thus, we realized that we would have to determine the food deserts based on our own data collection and mapping to ensure accurate and detailed results.

Methodology

Our research methodology required gathering food access data from the internet, field research, and compiled databases. We hoped to uncover some important information on the food environment of Sunbury. Initially our goal was to create a food access website that included our food access map as well as links to other nutritional websites. We wanted to address the following issues: 1.) Is there equal access to sustainable food in Sunbury? 2.) Is Sunbury a food desert? 3.) How are vulnerable populations affected by Sunbury’s food access? We began
collecting our food access data by mapping all food businesses on Google maps. This included restaurants, grocery stores, and convenience stores in Sunbury. After plotting our data on Google maps we realized that it would be more beneficial to remove restaurants and only map food stores. We also realized that Google maps, while easy to use and understand, is limited in what it can show us in terms of data. Much of the data was incorrectly placed and we found it necessary to physically visit Sunbury and confirm the addresses and map locations of each store. We walked into each store and had to ask ourselves ‘Could I survive off of the food sold at this store?’ This information was then compared to the original Google Map and updated so that each placemarker was located over the door to the store. This was necessary for when we decided to input our data into arcGIS and create buffer zones surrounding each location. Our maps worked on a small scale measured in meters making it necessary to have the placement of the stores on our map as accurate as possible. Once we had grocery and convenience stores in GIS we were able combine our data with census data to draw conclusions about the total population in Sunbury as well as vulnerable populations. To do this we plotted data for single female head of households and comparatively looked at minority populations and people aged 65 and older.

Conclusions & Analysis

In analyzing Sunbury’s food access we discovered that Sunbury’s food environment is quite healthy and that there is relatively good food access coverage for the entire city. When identifying food resources it was necessary to differentiate between a life-sustaining food source and a Dorito-mart. A Dorito-mart is a convenience store or gas station food mart that provides snack/junk food, but not the variety of food necessary to sustain life for a significant period of time. However within the life-sustaining food source category, there are some necessary distinctions. A small store like the PA Dutch Market in Sunbury can provide enough food for a person to live off of if they do not have access to any other food sources, but they will not receive the full range of nutrition necessary to maintain themselves in good health. Whereas a supermarket like a Weis Market can provide the full nutritional range to maintain a healthy lifestyle indefinitely. Restaurants, fast food, and specialty stores like bakeries were not considered because they do not provide food services applicable for daily and long-time use. In arcGIS we created a series of maps to get a visual idea of the relative position of the various life-sustaining food sources in Sunbury. It became very self-evident just how critically important the two Weis Markets are to Sunbury’s food access.

Weis Markets was founded in Sunbury in 1912 by the Weis brothers, Harry and Sigmund, as Weis Pure Foods. (Weis Markets, 2012) Weis Pure Foods was located on Market Street. While the original store is no longer there, a downtown Weis Market remains on Market Street at the northwestern end of Cameron Park. Weis has expanded rapidly through the years and now operates 159 stores in over five states, and yet Weis is still headquartered in Sunbury today. In the past decade Weis has revamped their image and is dedicated to buying local. The current downtown Weis is one of a handful of stores to retain the older historic Weis styling whereas the one on North Fourth Street showcases the current style.
Weis Markets corporate headquarters was founded and has stayed in Sunbury because of its ideal location in the Susquehanna River Valley and because of Sunbury’s rich history. Sunbury’s history is filled with Iroquois chiefs, Mozart’s librettist, Thomas Edison, and Fort Augusta – the frontier outpost.

In analyzing Sunbury’s food access, we first created a map of all of the life-sustaining food sources (Figure 1), which gave us an indication that Sunbury has a very healthy food environment. Located around each store are radiating buffers in 200 meter rings that indicates an individual’s relative food access. 200 meter buffer rings were used as an estimation of how far the average person would be able to walk to a grocery store. Walking distance was used because there are discrepancies in access to cars in all populations. Since Weis Markets are the ideal for food access nutritionally and the company has such a rooted history and presence in Sunbury, we decided to create a similar map with only the two Weis Markets denoted (Figure 2). When isolating the Weis Markets, it becomes blatantly obvious how important the stores are for Sunbury’s food access. These buffers are extremely important because it is easy to imagine how food access could change if the current food environment of Sunbury is altered.
There is a current trend in many cities “similar to that of many downtown communities across the country—the migration of essential goods and services from the city center to the suburbs and outer regions of the area.” (PolicyLink, 2012) Were this to occur in Sunbury, and the downtown location was closed in favor of concentrating on boosting the periphery location, the health of the food environment would decrease drastically. A majority of the population would lose their primary supermarket. This is not a distant issue. This exact scenario occurred in Lewisburg, a mere 10 miles away. “In the 1970s the strip development trend was accelerated with the move of Weis Markets from downtown Lewisburg to Route 15. A petition of nearly a thousand signatures opposed to the relocation was presented to the locally owned supermarket firm, but to no avail; and in 1974 Weis Markets left its downtown location.” (Snyder, 2000) The Lewisburg Weis used to be located in the heart of the downtown, where Cole’s Hardware now resides. Weis is now over a mile away down a bustling highway with no easy access for Lewisburg residents, downtown or otherwise.

When evaluating the percent of the total Sunbury population within .5 mile increments in relation to a life-sustaining food source, just the two Weis Markets, and if the downtown Weis Market were removed, it became remarkable the percentage of residents affected (Figure 3). The distance between each line represents the proportion of the population affected by the change in food resources.
Additionally, compared to the relative abundance of life-sustaining food sources in nearby cities and towns such as Northumberland, Selinsgrove, and Lewisburg, Sunbury’s great food access is even easier to see. In every other town there are visible gaps in food access that decrease their overall food environment health. Furthermore, these food resources are not all the ideal for proper nutrition access, but rather what could sustain a life.

In looking at the relative frequency of food sources in Sunbury vs Northumberland in comparison to population density, the excellent condition of Sunbury’s food environment is once again made clear (Figure 4). We were able to create .25 and .5 mile buffers around major grocery stores and smaller food sources. This gives a great idea of the high quality of coverage Sunbury has.
Next in our analysis, we looked at those populations vulnerable to having disadvantaged food access through census data in comparison to the data we had previously collected for Sunbury. We decided to look at several categories of vulnerable populations that are typically found in any city: minorities, people aged 65 years or older, and single moms, known as female head of household in census data (*Figures 5, 6, & 7*).
65 + Age Group

Figure 6

Female Head of Household

Figure 7
All of our vulnerable populations demonstrated diminished food access in relation to our three perspectives: all food resources, both Weis locations only, and the removal of the downtown Weis.

In conclusion, our assessment is that Sunbury’s food access is in very good condition due to two contributing factors: the presence of Weis Markets headquarters as well as both stores, and Sunbury’s zoning. Zoning laws determine everything about how a city is designed and how it changes into the future. The maintenance of these two factors is what will keep Sunbury’s food environment healthy. There is always a little room for improvement when it comes to helping vulnerable populations improve their food access. Typically this is done through the aid of community service religious organizations that help to provide transportation on a small scale. In towns like Sunbury that do not have a public transportation system, this becomes particularly important.
Works Cited


