



# FOOD DESERTS IN ALABAMA

Certified Public Manager® Program

Solutions Alabama 2020



Certified Public **Manager**® Training

## Table of Contents

Introduction .....	4
Background .....	4
Food Deserts Contribute to Food Insecurity.....	4
Who is affected? .....	5
How many are affected?.....	5
Rural Vs. Urban – Challenges faced by each .....	5
How Alabama Compares to Surrounding States.....	6
Barriers that Prevent Access to Healthy Food .....	7
Lack of Grocery Stores .....	7
Transportation Issues.....	7
Limited Income .....	9
Limited Skills, Tools, and Space for Growing Fresh Foods .....	10
Impacts of Food Deserts .....	12
Current Efforts to Combat Food Deserts .....	14
Farm-to-School Program.....	14
Tuskegee University Urban Farm Program .....	15
Community Gardens .....	15
Mobile Food Market .....	16
Healthy Food Financing Act .....	16
Recommendations .....	18
Expand Farm to School Programs .....	18
Increase Community Gardens.....	18
Redesign Transportation Routes.....	19
Expand Accessibility of Mobile Food Markets .....	19
Healthy Food Education.....	20
Expand Food Co-ops .....	21
Establish Municipally Owned Grocery Stores .....	21
Conclusion.....	23
Addendum .....	24
Covid-19 Impacts on Food Insecurity in Alabama.....	24
References .....	25

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*The research, findings, and recommendations presented in this white paper do not represent the views of any agency or organization, but rather the collective educational research and analysis from a diverse group of participants in the Certified Public Manager training program.*

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## Introduction

A food desert is defined by the USDA as a low-income census tract where at least 500 people or 33% of the tract population residing more than one mile from a supermarket or grocery store in urban areas, and more than ten miles in rural areas (ers.usda.gov). For those living in food deserts, it can be a struggle to get healthy food. Not having access to healthy food leads to increased obesity rates, increased health problems, and increased financial struggles. Food from convenience stores is more expensive than grocery stores, but it may be a person's only option due to the location of the nearest grocery store. If Alabama can reduce the number of food deserts, our state will be on the road to helping its citizens be more food secure, healthier, and better off financially.

The CPM Solutions Alabama Food Deserts team was tasked with discovering the major barriers that prevent Alabama communities and citizens from access to fresh, affordable, healthy food, and researching the impact of these barriers. We were also tasked to find the primary areas of our state where food deserts exist, compare Alabama to other states with food deserts, and find out what those states have done to address their food desert problem. Finally, we are to recommend strategies and solutions for reducing Alabama's food deserts.

## Background

### Food Deserts Contribute to Food Insecurity

Food deserts are a major contributing factor to food insecurity. The United States Department of Agriculture (USDA) defines food insecurity as a household-level of limited or uncertain access to adequate food (Alisha Coleman-Jensen, Christian A. Gregory, and Matthew P. Rabbitt, 2019). As of 2017, 16.3% of Alabama's total population is considered food insecure (Feeding America Research, 2019). Urban food deserts are places where most of the residents live at least one mile from a source of healthy food, while rural food deserts are those living more than 10 miles from a healthy food source (Economic Research Service; Food and Nutrition Service; Cooperative State Research, Education, and Extension Service of the U.S. Department of Agriculture, 2009). The distance that must be traveled by those living in food deserts contributes to the likelihood of those residents becoming food insecure.

### Who is affected?

According to a report by the USDA's Economic Research Service, there are over 6,500 food desert tracts in the United States. Tracts that are considered Food Deserts usually have smaller populations than those in other tracts, have more abandoned or vacant homes, and the people who reside in these areas tend to have less education, lower incomes, and higher unemployment rates. People who live below the federal poverty line are also more likely to live in a food desert. In rural tracts, family income is about 18% lower in food deserts than in areas that are not considered food deserts (Dutko, Ver Ploeg, & Farrigan, 2012). A study using data from the Nielsen Homescan Panel found that 55% of families with a median income below \$25,000 lived in food deserts (Florida, 2018).

### How many are affected?

The USDA reports that there are about 23.5 million people living in the US that reside in a food desert. This includes over six and a half million children. Close to two million Alabama residents live in a food desert, and almost 150,000 of those people live in Birmingham. This is 69% of Birmingham's population. There is at least one area identified as a food desert in each of Birmingham's nine City Council Districts (Grocery Store Update , 2019).

### Rural Vs. Urban – Challenges faced by each

Challenges faced by people living in rural food deserts differ slightly from those living in urban food deserts. As stated before, rural food deserts are those that are more than 10 miles from the nearest grocery store ([ers.usda.gov](http://ers.usda.gov)), and this distance poses extraordinary challenges for those that do not have a vehicle or cannot drive. These people usually depend on the help of others due to the lack of public transportation options in rural areas. Furthermore, people that live in rural areas often suffer the added challenge of living below the poverty line. Not only do they have to worry about getting transportation to the nearest grocery store, but they often lack the money to buy nutritious foods. Food pantries are usually not an option as they are typically located in more populated areas (Move for Hunger, 2017). Often, the nearest place to buy food is at a convenience store or a dollar store. These stores rarely have any fresh produce. If they do offer produce, it is usually more expensive than what it would cost at the much further away grocery store. Also, fresh produce does not last very long, so it can be difficult to stock up on

large amounts given the infrequent number of times they are able to get to a regular grocery store (Povich, 2018).

Urban food deserts face other challenges. Though people living in urban areas may have more access to buses or other forms of public transportation, a grocery store may not be on the route. Some routes do include grocery stores, but only during work hours. People who work standard shifts may get few opportunities to get a ride to a grocery store.

Another challenge faced by people residing in urban food deserts is that they are more likely to have easy access to fast food restaurants. Though one might assume that having more places to eat is a good thing, most fast food is unhealthy. It can be difficult for someone to make a healthy food choice when they have a limited food budget, and there are no close grocery stores, but there are several fast food restaurants offering many cheap options. The availability of fast food and the lack of low-cost, healthy alternatives has contributed to the rise of diet-related health problems.

### How Alabama Compares to Surrounding States

The population of Alabama residents living in food deserts is similar to the population of residents living in the states that surround it. In fact, the southern region of the United States is where most food deserts are located. States where five percent or more of the population is without a car and resides more than a mile from the nearest grocery store include Alabama, Mississippi, Georgia, Louisiana, Kentucky, Virginia, West Virginia, North Carolina, and South Carolina (Virginia Sisiopiku, 2014).

As of 2018, Mississippi has been identified as the most food insecure state in the country for eight straight years, with approximately 20% of its population having limited access to healthy food (Rozier, 2018). Nearly two million residents in Georgia live in food deserts, with about 500,000 of these people being children. Over 35 food deserts are in the densely populated area of Atlanta (Werner, 2017). South Florida has 326 food deserts (Lade), and Northeast Florida has 55 food deserts, (Feeding Northeast Florida - Finding Data-Driven Insights in the Fight against Hunger) with more than 2.8 million total Floridians considered food insecure (Feeding Florida).

## Barriers that Prevent Access to Healthy Food

### Lack of Grocery Stores

As the number of people residing in urban areas declines, so does the number of grocery stores in those areas. Wealthier people tend to move out of city centers and into suburban neighborhoods, and the grocery stores follow them. Retail developers are cautious about pursuing businesses in areas that have demonstrated income or population loss over time. This could indicate that the area won't have enough support to keep a grocery store profitable. Also, according to the article *Fresh Food for All: Improving Access to Healthy Food in Alabama* (Barriner II), store developers are less likely to invest in areas where there are issues with land availability. Land can be scarce in the urban areas, and it tends to be more expensive (Barriner II). Developers who construct in older urban areas tend to experience higher costs of environmental repairs such as removal of lead paint, zoning laws that may require project delays and legal fees, and employee training. Studies have shown that grocery stores operate by volume. The success of the stores or markets is predicated on the population surrounding the stores or markets. Stores with higher sales volume can remain in service longer than the stores that may operate in an area where sales volumes are the lowest. Also, stores could resort to generating more revenue through higher priced goods for the consumers. As a result, the lower-income people that remain in the cities are left with little to no access to affordable fresh produce or other whole foods (Mead, 2008).

### Transportation Issues

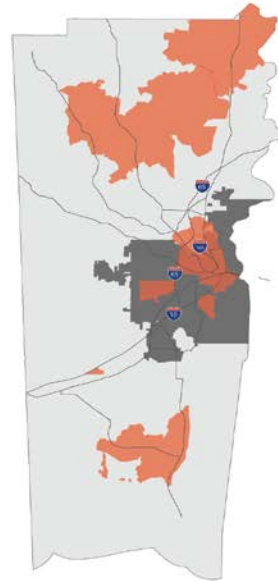
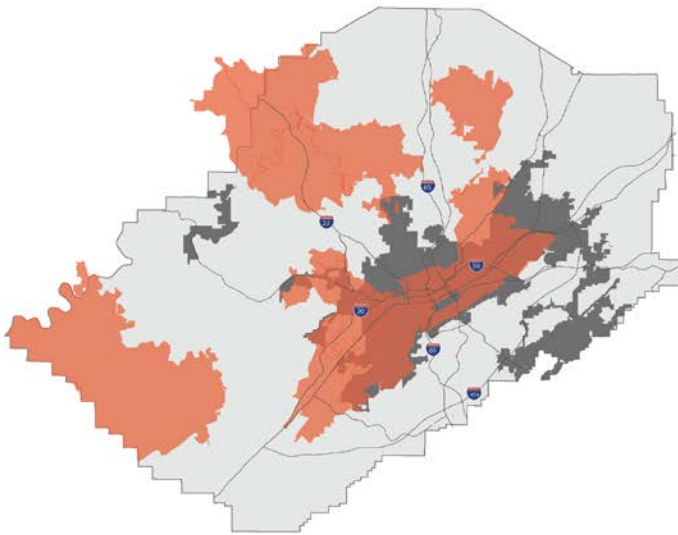
Some people who live in food deserts lack reliable transportation. Many residents of food deserts do not own a vehicle, are unable to drive, or lack access to public transportation. For those who do have access to public transportation, the routes may not include grocery stores. Residents without a way to get to a grocery store usually shop at neighborhood convenience or corner stores (Food Empowerment Project). Convenience stores are closer and more easily accessible, but groceries sold in these stores are usually more expensive than the food sold in grocery stores or markets (foodispower.org). Not only is the cost of goods sold at convenience stores more expensive, but most of the food offered is also unhealthy. If the store does offer healthier food



options, they are a lot more expensive to purchase. For example, a three pound bag of Gala apples (approximately ten apples) can be purchased from Walmart for less than \$3.00 (Walmart.com, 2020) while the nearest MapCo convenience store sells apples at a cost of two for a \$1.00.

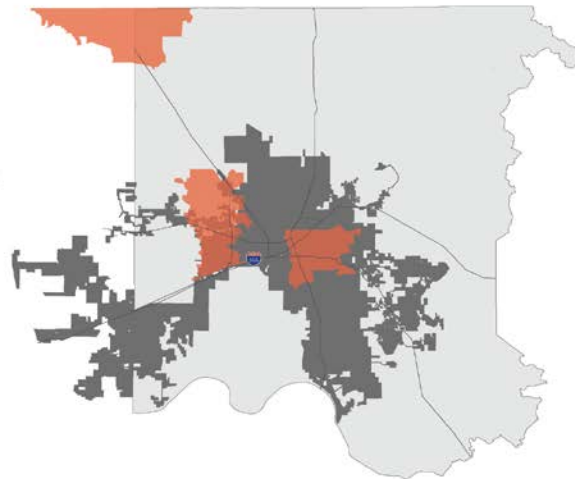
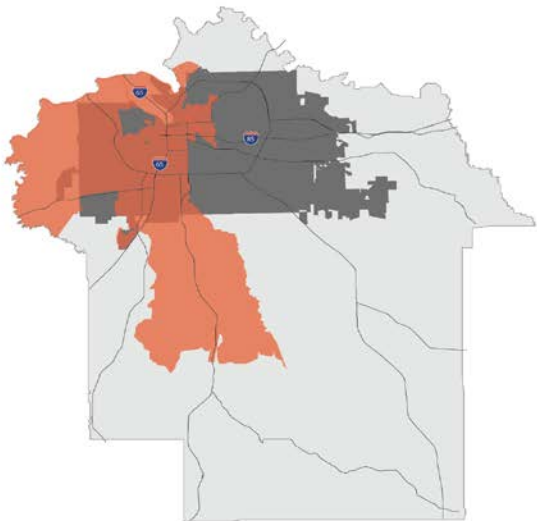
Birmingham and Jefferson County

Mobile and Mobile County



Montgomery and Montgomery County

Huntsville and Madison County

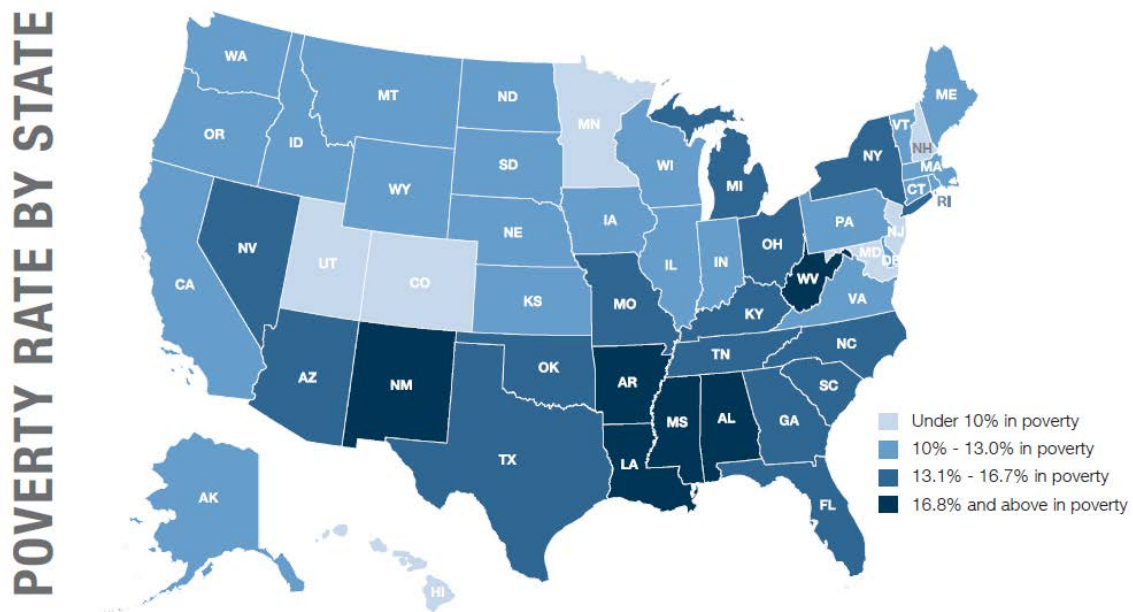


According to the Infogroup Business Listing, the map above shows images of two major urban

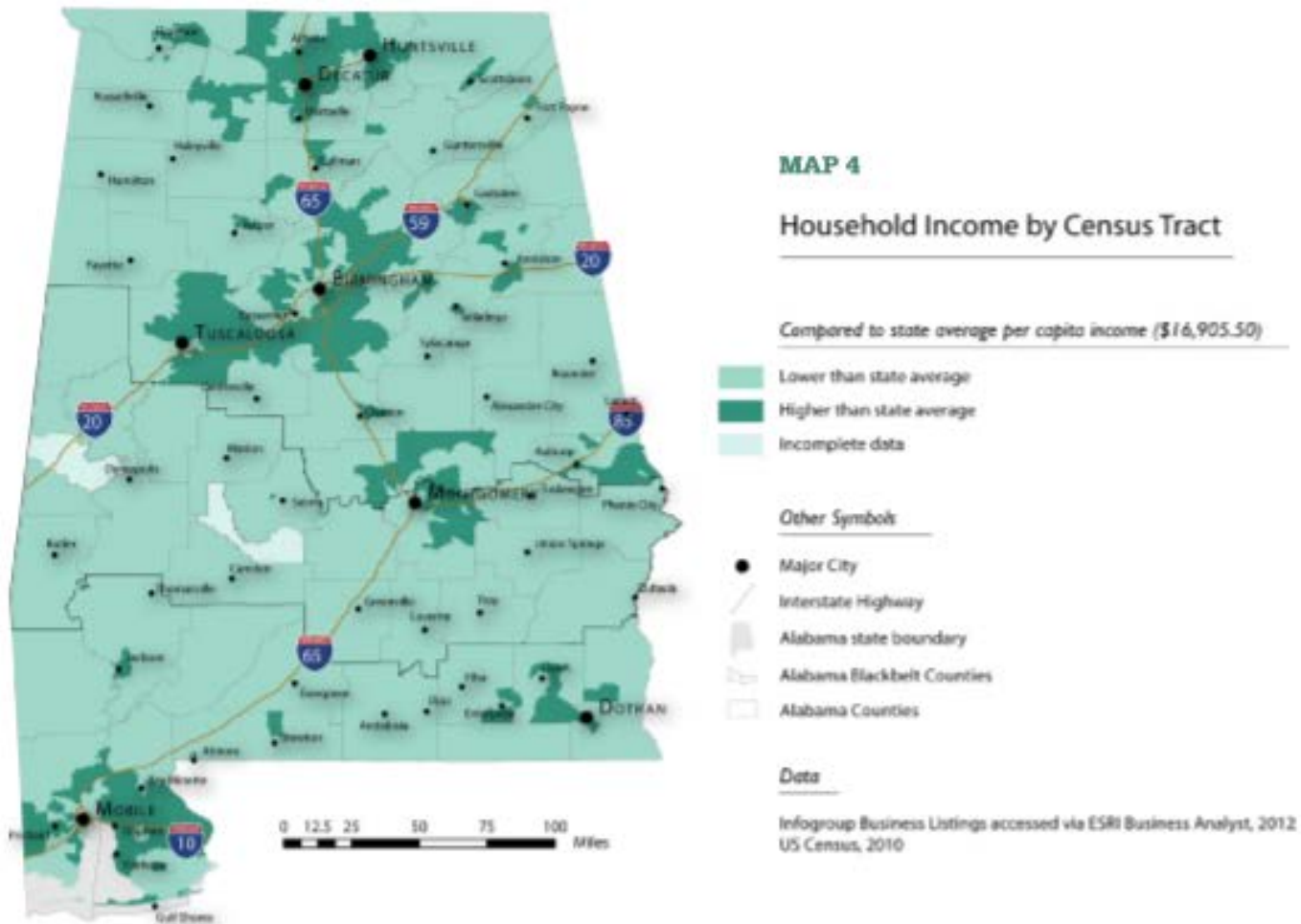
centers in the state of Alabama, Montgomery and Madison Counties, respectively. The dark, orange shaded areas are listed as having high mortality rates, residents with lower incomes, and lower sales for the stores that are in these communities. The gray shaded areas represent communities that have faster access to the interstate highways. As the maps show, Montgomery county has a large portion of the city that is at risk for a food imbalance.

### Limited Income

Another major barrier that prevents some Alabama communities from access to fresh food is limited income. The U.S. Census bureau completed a study in 2012 that researched the household income tracts of Alabama residents. The study concluded that the residents who earned higher than the state average income make up only small areas throughout the state. The lower income residents make up a larger portion of the state, and most of these residents live in food deserts (foodispower.org). Alabama is the fifth poorest state in the U.S., with 16.8% of Alabamians living below the federal poverty level. This is a larger percentage than the national average of around 13%. The federal poverty level rate ranges from \$12,488 for a household of one person to \$25,094 for a family of four (Barriers to Prosperity Data Sheet, 2020).



Healthier foods usually cost more, so low-income residents are more likely to purchase the cheaper processed foods, which are typically high in fat, salt, and sugar. Even though the processed, high-fat foods seem like the least expensive option, the healthcare risks contributed to the overconsumption of these foods mean these foods are really the more expensive option.



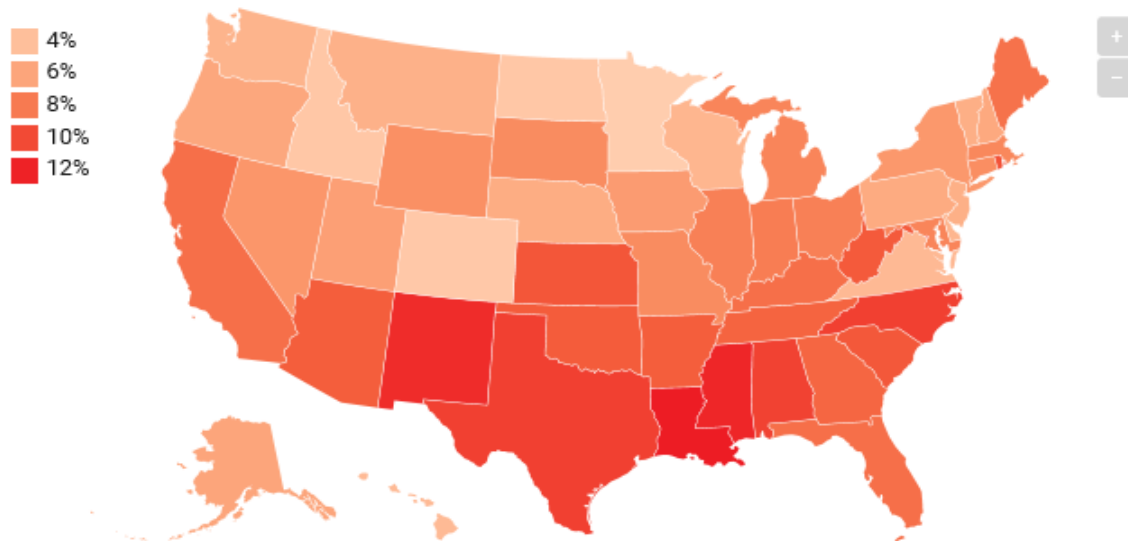
### Limited Skills, Tools, and Space for Growing Fresh Foods

While growing produce on one’s own property may seem like an easy solution to the problems faced by those living in food deserts, for most residents, this is just not possible. While Alabama is considered a rural state, with over 95% of its land in rural areas, as of 2010, 59% of the population live in the urban areas (Watters, 2012). Most people living in urban areas are limited in their growing space. If a resident does live in a rural area, growing food may still not

be a viable option. The cost to start growing your own food can be high. Tillers used to break up the ground can cost anywhere from a few hundred to over a thousand dollars. Garden tools can cost from \$10 to over \$50 each (Lowe's, 2020). Another cost could be amendments for the soil. Depending on how large the garden is, soil amendments can get expensive. With poverty being a key factor for those living in food deserts, spending money on a home garden may not be feasible. Another drawback to growing food at home is that 14% of Alabama's population are seniors, and 28% of those seniors live alone (Alabama Senior Guide). Growing food at home can be physically demanding. Also, adults that are over the age of 50 have increased risks of diabetes, high blood pressure, and other chronic health conditions (Feeding America, 2020). Gardening chores can be even more difficult for those that suffer from these health impairments or disabilities, such as arthritis.

### Hunger Among Seniors is Highest in Southern States

An estimated 5.5 million Americans 60 and older faced "food insecurity" in 2017, meaning they lacked consistent access to enough food for an active, healthy life. Many states in the South and Southwest experienced rates far higher than the 8% national average.



Map: Kaiser Health News/TIME • Source: State of Senior Hunger in America in 2017, Feeding America • Created with Datawrapper

## Impacts of Food Deserts

Food deserts contribute largely to America's obesity epidemic and to chronic disease. According to the USDA, counties with the highest percentage of residents living in food deserts had nine percent higher rates of adult obesity (Patchwork Nation, 2011). Food deserts tend to be in places that lack amenities that support physical activity, and this could be another contributing factor of increased rates of obesity.

Because there are those that want to be more physically active, but their communities lack safe places for all ages and abilities to engage in physical activity, the Centers for Disease Control and Prevention (CDC) is leading a national



<https://www.cdc.gov/physicalactivity/activepeoplehealthynation/>

initiative to help 27 million Americans be more physically active by the year 2027. They feel this initiative will reduce healthcare costs and improve quality of life by reducing the risk of at least 20 chronic diseases and conditions, provide effective treatment for many of these conditions, and for children, improve school performance and improve military readiness (About Active People, Healthy Nation). Some of their efforts include rezoning policies that encourage walkability, safe routes to school programs, Complete Streets policies, bicycle and pedestrian improvements, and new and expanded public transit (Lack of Physical Activity).

Often, dependence on food assistance can result in alternating periods of overeating and hunger, and this lifestyle can also contribute to obesity and chronic disease (Ganong & Harmon, 2019). Other negative outcomes, besides a higher incidence of disease, that are caused by poor diets are disruptive cognitive functioning and reduced productivity. People with lower incomes tend to eat lower quality diets (Darmon & Drewnowski, 2008). When people are hungry, they are less

likely to worry about the health effects of the food they are eating. Lacking the ability to acquire fresh fruits and vegetables while fast food is readily available has increased obesity in adults and children. Almost 18% of U.S. children are obese, and over one-third of them are overweight. Alabama has the third highest obesity rate among high school students at 17.1% (Lang & Koprak, 2015). A study completed in rural Pennsylvania found that school-aged children living in food deserts were more likely to be overweight. Other researchers have found that the higher the prices are for fruits and vegetables, the higher the body mass index numbers were for the people living in those areas. They concluded that the affordability of fresh food might be a key factor in maintaining a healthy weight (Barriner II). The overall price of produce has increased by almost 75% between 1989 and 2005, while the price of fatty foods dropped by more than 26% over the same period. This has led to people eating more unhealthy diets, which has resulted in increased incidences of diabetes. The number of people with type II diabetes has almost doubled among US adults between 1996 and 2007. Alabama's adult diabetes rate is the highest in the country at 13.8% (Lang & Koprak, 2015). Research has found that restricted access to healthy food while high-calorie fast food is readily available not only increases the risk of developing type II diabetes, but it also makes it harder for the disease to be managed properly once it has been diagnosed. Cardiovascular disease is another health concern that is linked to living in food deserts. Diets high in unhealthy fats and cholesterol are one of the main causes of heart disease. With heart disease causing more than 2.4 million deaths a year in the US alone, healthier diets need to be made a priority (Food Empowerment Project, n.d.). Mari Gallagher, of Mari Gallagher Research & Consulting Group, has researched food deserts in Chicago and Detroit. She has found that areas with the highest Body Mass Index (BMI) are roughly the same areas that were determined to be food deserts (National Research Council, 2009).

## Current Efforts to Combat Food Deserts

### Farm-to-School Program

Alabama participates in the Farm-to-School program, which is a nationwide program to combat food deserts. This program provides opportunities for Alabama farmers to sell their products, in addition to providing school children with fresh produce. The Fresh Fruit and Vegetable Program's (FFVP) goals are to introduce elementary school children to a wide variety of fruits and vegetables, increase their consumption of fresh produce, and promote nutrition education at the same time. Nutrition education comes with every FFVP meal, and farmers are invited to visit and provide agriculture education to the students. The program is not limited to the school year, as they have a Farm to Summer program as well. This program involves learning about nutrition, local food, and agriculture education. Students get the chance to visit farm stands or farmers markets, non-profit community gardens, and food banks where they participate in educational activities that increase interest in fruits and vegetables. Summer feeding sites held near farmers markets or edible teaching gardens encourage parents and children to increase their consumption of fresh produce (Farm-To-School). The Farm-To-School program also encourages schools to start gardens. School gardens provide ways for students to learn nutrition education, understand the process of growing healthy foods, and learn about the environment. School gardens can also be integrated with other subjects providing a hands-on, educational resource. Studies have shown that children are more aware of their health when they experience growing their own food. They also learn about responsibilities in care-taking and gain confidence in themselves by learning they have the capacity to achieve their goals (Action for Healthy Kids, 2019).

Schoolyard Roots (formerly The Druid City Garden Project) establishes gardens in local elementary schools to teach kids where their food comes from, and according to Lindsay Turner Trammell, the program's executive director, the program is especially effective in schools situated in food deserts. They are currently operating in 11 Tuscaloosa area schools. The project also sponsors a program called Budding Entrepreneurs, where students set up their own produce stands outside of their schools and sell the vegetables that they have grown to their parents and

other community residents. The cost is subsidized, so parents can afford to purchase food from the stands regardless of their income. According to Turner, the only way to prevent obesity and other diet-related health problems in the future is for children to learn about healthy eating at an early age (Williams, 2014). The program is independently evaluated to determine if it is creating real and measurable change, and also to improve the curriculum, methodology, and expansion plans (Schooyard Roots). The program has been very successful, and after making the curriculum available online, it now reaches 300 teachers across seven states (Tuscaloosa City Schools).

### Tuskegee University Urban Farm Program

Tuskegee University and the city of Montgomery have collaborated to introduce an urban agriculture cooperative extension program. As part of the university's Urban Outreach and Extension program, this collaboration is aimed at educating students and residents on how to reduce the food deserts in their communities. The project's focus is to increase access to healthier fruit and vegetable options in urban Montgomery, Alabama. Montgomery Mayor Steven Reed stated, "this program is just the beginning of the work that is being implemented to reduce food deserts and food insecurity in Montgomery's urban communities." An old, dilapidated furniture store in downtown Montgomery is being reconstructed into an outdoor classroom. The classroom is part of the collaborative effort by the city of Montgomery and Tuskegee University to provide an off-campus learning experience (wsfa.com, 2020).

### Community Gardens

Community gardens can reduce the impacts experienced by people living in food deserts by providing residents with access to nutritious food. By increasing access to fresh produce, dietary habits will improve, leading to reduced risks of obesity and other diet-related diseases. Community gardens also help improve air and soil quality, increase biodiversity of plants and animals, reduce food miles (the distance food travels between the source and the consumer), improve water infiltration, reduce neighborhood waste through composting, and provide positive impacts to the urban micro-climate. An added benefit of community gardens is the utilization of vacant space that might otherwise be used for illegal activities, and by the creation of social ties within the community, crime rates are often reduced (DeMuro, 2013). Geiger, a



small community in Sumter County, Alabama, is one example of how a community garden has been a great help in reducing the impacts of living in a food desert. The nearest grocery store is more than 20 miles away, and over 35% of the county's residents live below the poverty line. As a result, about 40% of the population is obese. In an effort to provide the town with fresh produce, residents partnered with the ALProHealth Program; a program started to help engage Alabamians with long-term health by preventing and reducing obesity (Lawrence, 2018). The program's strategies include increasing availability and appeal of healthy foods, increasing access to and affordability of places for physical activity such as playgrounds and parks, and providing education to children and adults (Struempfer & Brock, 2019). Since working with ALProHealth, Geiger residents now have a flourishing community garden that provides fresh fruits and vegetables to its residents. Jimmy Williams, one of Geiger's community leaders, says that the garden provides more than just healthy produce, it has also brought the town together (Lawrence, 2018).

### Mobile Food Market

The Community Food Bank of Central Alabama opened the Corner Market in August of 2017. The Corner Market acts as a mobile grocery store that serves low-income families, disabled people, and senior citizens living in neighborhoods that lack grocery stores. The Corner Market brings a 24ft trailer filled with fresh fruits, vegetables, lean meats, dairy products, pasta, bread, and more to Pratt City, Tarrant, Dora, Fountain Heights, and Oakman. About 150 people per month take advantage of the service, and the food bank plans to increase that number as their budget allows. In addition to the groceries, customers can also access health screenings, information about SNAP benefits, Medicare, Farmers Market vouchers, cooking demonstrations, and more (Community Food Bank of Central Alabama).

### Healthy Food Financing Act

In 2015, the Alabama Healthy Food Financing Act was passed by the Alabama Legislature. The goal of the financing program, which is managed by the Alabama Department of Community and Economic Affairs (ADECA), was to incentivize grocers to open stores with healthy food or increase the offerings of healthy food in their existing stores (Associated Press, 2015). Jessica James, the

Alabama Advocacy Chair for the American Heart Association, stated to the Alabama Political Reporter that “Healthy food financing initiatives are proven components of comprehensive public health models that help combat severe and costly illnesses such as diabetes and cardiovascular disease. Reversing these negative health trends can position Alabama to save millions in health care costs while improving health outcomes across the state” (Healthy Food Financing Program is a reality for Alabama, 2017). Food retailers had until December 20, 2017, to apply for grants or loans. Governor Ivey awarded the first grants in April of 2018 to recipients in food deserts. They included the following: Africatown Community Development Corp. in Mobile, Children of the Village Network, Inc. in Sumter, the City of Birmingham, Jones Valley Teaching Farm in Birmingham, Peoples Piggly Wiggly in Cherokee, the West Alabama Food Bank in Northport, and Wright’s Market Inc. in Opelika (Alabama State & Local Policy Efforts).

## Recommendations

We recommend that the following solutions be implemented in order to reduce the number of food deserts in Alabama: Expand the Farm to School Programs across the state, increase the number of community gardens, redesign transportation routes, expand the accessibility of mobile food markets, and expand or establish food cooperatives and municipally owned grocery stores.

### Expand Farm to School Programs

Alabama currently participates in a successful farm to school program, but increasing it, even more, could go a long way towards teaching children to eat better. Alabama's public schools have a combined total of 745,668 students enrolled (Local School Directory), but only 325,730 students currently participate in the Farm to School program. That is only 31% of Alabama's school districts (Alabama Districts). The districts that participate in the program report numerous benefits, including improved economic development, improved public health, better education, environmental improvements, and increased community engagement. By improving students' food and nutrition knowledge, they improve their attitudes and behaviors towards food as well. They will be more likely to choose healthier options at school meals, eat more fruits and vegetables at home, decrease their preference for less healthy foods, and increase their physical activity. Children who participate in the Farm to School program also impact their families by asking for healthier food, thereby changing the ways families purchase food (Farm to School, 2020). The hope is that children who participate in the Farm to School program will benefit from a lifetime of healthy eating patterns. Every school in Alabama that does not currently participate in the Farm to School program should be encouraged to join.

### Increase Community Gardens

Community gardens have proven to be a great resource for those living in food deserts. We recommend expanding these into as many areas of the state as possible. People that have the physical ability to work in a garden, but lack the space or tools, will be able to use the space and tools offered by shared community gardens. Additional benefits to increasing access to fresh fruits and vegetables include encouraging physical activity in those that might not otherwise get

any, making use of vacant lots, and improving the social well-being of residents through increased social connections (Community Gardens, 2010). The state of Alabama and local municipalities need to ease bureaucratic requirements in order to reduce barriers such as liability expenses, code restrictions, and lack of resources that often prevent the establishment of community gardens. They should also provide the use of public lands and create financial incentives that encourage gardening activities and ensure consistent funding sources (State Statutes and Programs Concerning Community Gardens, 2014).

### Redesign Transportation Routes

As one of the major barriers for residents' access to healthy food is lack of transportation, we recommend public transportation routes be redesigned with this issue in mind. Grocery stores need to be added to those routes that currently do not include any. Some routes may include stops at or near a grocery store, but only during daytime hours. For those people that work during the day, this leaves them with no opportunity to take public transportation to a grocery store. The operating hours of buses need to be expanded to allow people an opportunity to visit a grocery store after they get off work or get out of school. Another option is for modes of public transportation to offer dedicated trips to grocery stores at free or discounted rates to low-income residents.

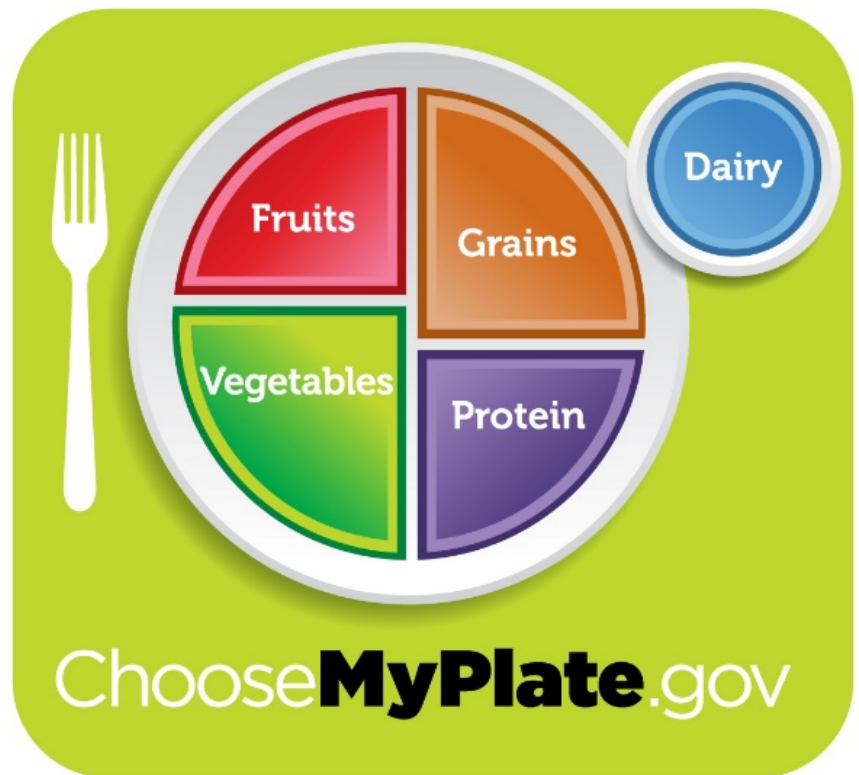
### Expand Accessibility of Mobile Food Markets

Mobile food markets have proven very successful in the areas they operate (Slocum, 2019). If more cities in Alabama offered this service, more residents would be able to take advantage. Not only would we like to see more mobile food markets in the state, but we also recommend increased advertisements for them. Posting flyers in churches, convenience stores, schools, and other areas frequented by residents in food deserts would let more people know about the services. Also, giving participants the capability to opt into emails and text messages alerting them of when and where the markets will be will ensure that they won't miss out on their opportunity to visit the market.

## Healthy Food Education

In some areas of the country where new supermarkets have been built, researchers have not seen the great improvements in health that they were expecting. Part of the problem is that people don't always understand the importance of nutrition and how it relates to disease. The Federal Reserve Bank of San Francisco and Low-Income Investment Fund proposed to create or support community workshops that teach residents about food nutrition. They understand that just providing residents living in food deserts access to affordable food isn't enough. They also need to be educated as to why choosing healthy food is important (Fidler, 2015). New York City recognized that residents must learn why making healthier choices is important. The city now provides promotional and educational material to encourage healthier purchases and encourage bodegas (urban grocery stores) to increase their offerings of low-fat milk and fresh produce. All the participating bodegas experienced increases in sales of the healthier options (Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences, 2009).

The USDA recognized that food nutrition can be a complicated matter, so in 2011 the 19-year old food pyramid was replaced by a new icon called "MyPlate." Agriculture Secretary Tom Vilsack explained that the food pyramid was too complex for American Families. MyPlate was described by first lady Michelle Obama as "a wonderful, kid-friendly tool" that is more practical for families (DeNoon, 2011). Mrs. Obama has endorsed MyPlate as an integral



tool to her *Let's Move!* initiative. The goal of her initiative is to solve the problem of obesity, and

MyPlate will help by serving as an easy reminder to make healthy choices from each of the five food groups.

While accessibility to nutritious food is an important step, getting residents to buy and eat the food is another hurdle. Families that have already developed unhealthy food buying habits won't necessarily start eating healthier just because the food is now available. They need to be taught not only the importance of eating healthy, but also how to prepare nutritious meals. (Correll, 2019). Nutrition education should be provided with SNAP (Supplemental Nutrition Assistance Program) benefits, at farmers markets, at grocery stores, with meals provided by food banks, and by doctors.

### Expand Food Co-ops

Food cooperatives (co-ops) are those owned by the people that shop there. There are several different types of food co-ops. A simple one is when a group of people places orders together to receive a bulk discount and distributes the food amongst the members. The distribution can be done with or without a physical building. Another type is where anyone can shop at the co-op, but shoppers have an option to pay a yearly fee and become a part-owner receiving further discounts and voting rights regarding the store's operations. Many community food co-ops are operated by volunteers, while others have paid workers. A Community food co-op usually saves its members money and increases their access to healthy food (Karen). The USDA Rural Development provides financial assistance to cooperatives. Additional food co-op initiatives are needed to increase funding for starting food co-ops in areas of the state that are considered food deserts.

### Establish Municipally Owned Grocery Stores

In 2008, after going more than 20 years without a grocery store in the town, the city of St. Paul, Kansas opened The St. Paul Supermarket. The newly elected Mayor Rick Giefer understood that they needed a food source other than a convenience store if they wanted to draw people to the town. Mayor Giefer, other elected officials, and the town's residents believed that access to groceries was a vital public good, and that like access to water, was something that should be supported by the city and the community. Kelly Voorhies, St. Paul Supermarket's current

manager, stated that you must have your community behind you in order to succeed. The local citizens, community groups, and businesses demonstrate community support every time they patronize the store. (Rural Grocery Initiative).

Another successful municipal owned grocery store is The Baldwin Market. It was opened on September 20<sup>th</sup>, 2019. The town needed a grocery store to replace the IGA that had closed in 2018 leaving almost 1,500 people without a nearby market. While there is some debate over whether towns are better off having grocery stores owned by the government, as opposed to a non-profit or a food cooperative, one pro of having a municipally owned store is that government entities tend to be more stable due to having more resources according to Brian Lang, Director of the National Campaign for Healthy Food Access at The Food Trust. Lang further states that this means the municipally owned grocery store could have more longevity than one operated by a community group. According to a report by the Center for Rural Affairs in Nebraska, “the characteristics and circumstances of the community and its needs will determine which model will work best.” So far, Baldwin’s experiment has been a success with sales exceeding expectations set by the town’s council (Farzan, 2019).

Based on the success of these two stores, our team recommends the establishment of municipally owned grocery stores in Alabama’s food deserts.

## Conclusion

After researching food deserts in Alabama, we found that the major barriers include lack of grocery stores, transportation issues, income limitations, and limited abilities to grow fresh food. Impacts include high rates of obesity, increased health problems, and increased financial problems, with each of these problems increasing the other. We recommended the solutions based on our findings, and we feel that by implementing these solutions, the health and well-being of Alabama's citizens will be improved as the number of food deserts in our state are reduced.



## Addendum

### Covid-19 Impacts on Food Insecurity in Alabama

The coronavirus pandemic has made the problems of food insecurity for Alabama, and the rest of the country, even worse. Stay-at-home orders and social distancing rules have caused grocery stores to limit their operating hours and public transportation to be reduced (Meyersohn, 2020). The COVID-19 epidemic has depleted stores' inventories and made food staples even more difficult to obtain than normal (The Impact of COVID-19 on Food Deserts, 2020). Courtland, Alabama in Lawrence County saw its only grocery store, Food Valu, close due to the coronavirus. The next closest grocery store is in Moulton, which is 12 miles away (Parker, 2020).

Congress added 8.8 billion dollars in additional funding for child nutrition programs to help families during the COVID-19 pandemic. Flexibilities were added to the National School Lunch Program and School Breakfast Program so that food can now be distributed to children's homes. Also, the Summer Food Service Program, which normally provides meals to low-income students during the summer break, is now being used to provide meals to students. Another program being used to ensure vulnerable students are receiving meals is through the Pandemic EBT. With this program, all students that qualify for free or reduced-price school meals received Electronic Benefit Transfer cards with the value of the daily reimbursement rate of free school breakfast and lunch. The USDA has also enacted several other child nutrition program waivers to ensure children do not go hungry (Walsh, 2020).

## References

- (n.d.). From [ers.usda.gov](https://www.ers.usda.gov):  
[https://www.ers.usda.gov/webdocs/DataFiles/80591/archived\\_documentation.pdf?v=41332](https://www.ers.usda.gov/webdocs/DataFiles/80591/archived_documentation.pdf?v=41332)
- (n.d.). From Schooyard Roots: <https://schooyardroots.org/numbers/>
- (n.d.). From Tuscaloosa City Schools:  
<https://www.tuscaloosacityschoools.com/site/default.aspx?PageType=3&DomainID=4&ModuleInStanceID=633&ViewID=6446EE88-D30C-497E-9316-3F8874B3E108&RenderLoc=0&FlexDataID=5021&PageID=1>
- (n.d.). From Community Food Bank of Central Alabama: <https://www.feedingal.org/how-we-help/programs/mobile-fresh/>
- (2020, 07 02). From Walmart.com: <https://www.walmart.com/ip/Organic-Gala-Apples-3-lb-bag/46491702>
- About Active People, Healthy Nation.* (n.d.). From Centers for Disease Control and Prevention:  
<https://www.cdc.gov/physicalactivity/activepeoplehealthynation/about-active-people-healthy-nation.html>
- Action for Healthy Kids.* (2019). From <https://www.actionforhealthykids.org/activity/school-garden/>
- Alabama Districts.* (n.d.). From the Farm to School Census:  
<https://farmtoschoolcensus.fns.usda.gov/find-your-school-district/alabama>
- Alabama Senior Guide.* (n.d.). From Senior Care: <https://www.seniorcare.com/directory/al/>
- Alabama State & Local Policy Efforts.* (n.d.). From [healthyfoodaccess.org](https://www.healthyfoodaccess.org):  
<https://www.healthyfoodaccess.org/alabama>
- Alisha Coleman-Jensen, Christian A. Gregory, and Matthew P. Rabbitt. (2019, September 4). *Economic Research Service*. Retrieved 06 25, 2020 from United States Department of Agriculture:  
<https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/definitions-of-food-security.aspx>
- As America ages, hunger pains grow.* (2020). From Feeding America:  
<https://www.feedingamerica.org/hunger-in-america/senior-hunger-facts>
- Associated Press. (2015, December 7). *Grocery Store Chains avoid opening in Alabama Food Deserts.* From Al.com:  
[https://www.al.com/news/2015/12/grocery\\_store\\_chains\\_avoid\\_ope.html#:~:text=According%20to%20the%20federal%20data%2C%2015%20Alabama%20census,Jefferson%2C%20Mobile%2C%20Montgomery%20and%20Lowndes%20counties%2C%20among%20others.](https://www.al.com/news/2015/12/grocery_store_chains_avoid_ope.html#:~:text=According%20to%20the%20federal%20data%2C%2015%20Alabama%20census,Jefferson%2C%20Mobile%2C%20Montgomery%20and%20Lowndes%20counties%2C%20among%20others.)
- Barriers to Prosperity Data Sheet.* (2020). From [Alabamapossible.org](https://alabamapossible.org): [https://alabamapossible.org/wp-content/uploads/2020/05/AP\\_PovertyFactSheet\\_2020\\_Web.pdf](https://alabamapossible.org/wp-content/uploads/2020/05/AP_PovertyFactSheet_2020_Web.pdf)
- Barriner II, L. (n.d.). *Healthy Food for All: Improving Access to Fresh Food in Alabama.* 11-12.

- Community Gardens*. (2010, June 03). From Centers for Disease Control and Prevention: <https://www.cdc.gov/healthyplaces/healthtopics/healthyfood/community.htm>
- Correll, R. (2019, November 28). *Food Deserts*. From Very Well Health: <https://www.verywellhealth.com/what-are-food-deserts-4165971>
- Darmon, N., & Drewnowski, A. (2008). Does social class predict diet quality? . *The American Journal of Clinical Nutrition*, 1107.
- DeMuro, K. (2013, July 11). *The Many Benefits of Community Gardens*. From Greenleaf Communities: <https://greenleafcommunities.org/the-many-benefits-of-community-gardens/#:~:text=Recently%2C%20there%20has%20been%20a%20resurgence%20of%20community,and%20allow%20them%20to%20reduce%20their%20food%20bills.>
- DeNoon, D. J. (2011, June 2). *USDA Ditches Food Pyramid for a Healthy Plate*. From WebMD: <https://www.webmd.com/diet/news/20110602/plate-replaces-pyramid-as-diet-guideline-icon#1>
- Dutko, P., Ver Ploeg, M., & Farrigan, T. (2012, August). *Characteristics and Influential Factors of Food Deserts*. From [https://www.ers.usda.gov/webdocs/publications/45014/30940\\_err140.pdf?v=7382.9](https://www.ers.usda.gov/webdocs/publications/45014/30940_err140.pdf?v=7382.9)
- Economic Research Service; Food and Nutrition Service; Cooperative State Research, Education, and Extension Service of the U.S. Department of Agriculture. (2009, June). *Access to Affordable and Nutritious Food: Measuring and Understanding Food Deserts and Their Consequences*. From [ers.usda.gov](https://www.ers.usda.gov): [https://www.ers.usda.gov/webdocs/publications/42711/12716\\_ap036\\_1\\_.pdf?v=1125.8](https://www.ers.usda.gov/webdocs/publications/42711/12716_ap036_1_.pdf?v=1125.8)
- Farm to School. (2020, May). *The Benefits of Farm To School*. pp. 1-2.
- Farm-To-School*. (n.d.). From <http://alabamafarmtoschool.org/>
- Farzan, A. N. (2019, November 22). *Washington Post*. From [Washingtonpost.com](https://www.washingtonpost.com/nation/2019/11/22/baldwin-florida-food-desert-city-owned-grocery-store/): <https://www.washingtonpost.com/nation/2019/11/22/baldwin-florida-food-desert-city-owned-grocery-store/>
- Feeding America*. (2020). From <https://www.feedingamerica.org/hunger-in-america/senior-hunger-facts>
- Feeding America Research. (2019, May 2). *Map the Meal Gap - County Level Food Insecurity*. From [https://public.tableau.com/profile/feeding.america.research#!/vizhome/2017StateWorkbook-Public\\_15568266651950/CountyDetailDataPublic](https://public.tableau.com/profile/feeding.america.research#!/vizhome/2017StateWorkbook-Public_15568266651950/CountyDetailDataPublic)
- Feeding Florida*. (n.d.). From Feeding Florida: <https://www.feedingflorida.org/staying-informed/hunger-food-insecurity>
- Feeding Northeast Florida - Finding Data-Driven Insights in the Fight against Hunger*. (n.d.). From Florida Data Science for Social Good: <https://dssg.unf.edu/2019program.html>

Fidler, J. (2015, July 19). *Education, Access to Healthy Food is Key in Ending Junk "Food Deserts."*. From Natural Society - Transform your health naturally: <https://naturalsociety.com/education-is-just-as-important-in-ending-food-deserts-as-access-to-healthy-food/>

Florida, R. (2018, January 18). *It's Not the Food Deserts: It's the Inequality*. From Bloomberg CityLab: <https://www.bloomberg.com/news/articles/2018-01-18/are-we-thinking-about-urban-food-deserts-the-wrong-way>

*Food Empowerment Project*. (n.d.). From <https://foodispower.org/access-health/food-deserts/>

*Food Empowerment Project*. (n.d.). From Food Empowerment Project: <https://foodispower.org/access-health/food-deserts/>

Ganong, L. M., & Harmon, A. P. (2019). CPE Monthly: Food Deserts - Understanding Inequity, Seeking Solutions. *Today's Dietitian*, 40.

Grocery Store Update . (2019, March 26). Birmingham, AL.

Gunderson, C., Dewey, A., Kato, M., Crumbagh, A., & Strayer, M. (2017). *Map the Meal Gap 2019*. Retrieved June 26, 2020 from [https://public.tableau.com/profile/feeding.america.research#!/vizhome/2017StateWorkbook-Public\\_15568266651950/CountyDetailDataPublic](https://public.tableau.com/profile/feeding.america.research#!/vizhome/2017StateWorkbook-Public_15568266651950/CountyDetailDataPublic): [https://public.tableau.com/profile/feeding.america.research#!/vizhome/2017StateWorkbook-Public\\_15568266651950/CountyDetailDataPublic](https://public.tableau.com/profile/feeding.america.research#!/vizhome/2017StateWorkbook-Public_15568266651950/CountyDetailDataPublic)

*Healthy Food Financing Program is a reality for Alabama*. (2017, November 3). From Alabama Political Reporter: <https://www.alreporter.com/2017/11/03/healthy-food-financing-program-is-a-reality-for-alabama/>

Karen, S. (n.d.). *Community Food Co-Ops (What They Are & How to Find One)*. From Traditional Cooking School : <https://traditionalcookingschool.com/raising-food/food-co-ops-what-they-are-and-how-to-find-one-near-you/>

*Lack of Physical Activity*. (n.d.). From Centers for Disease Control and Prevention: <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm>

Lade, D. C. (n.d.). *Sun Sentinel*. From The Hidden Hungry: <http://interactive.sun-sentinel.com/senior-food-deserts/>

Lang, B., & Koprak, J. (2015, February). *Food for Every Child: The Need for Healthy Food Financing in Alabama*. From [http://thefoodtrust.org/uploads/media\\_items/al-reportfinalweb.original.pdf](http://thefoodtrust.org/uploads/media_items/al-reportfinalweb.original.pdf)

Lawrence, M. (2018, December 06). *Community gardens change lives through healthy diets, community spirit*. From Auburn University: [http://ocm.auburn.edu/newsroom/news\\_articles/2018/12/061533-community-gardens.php](http://ocm.auburn.edu/newsroom/news_articles/2018/12/061533-community-gardens.php)

*Local School Directory*. (n.d.). From <http://www.localschooldirectory.com/state-schools/AL>

Lowes. (2020). From Lowes.com: <https://www.lowes.com/pl/Lawn-garden-hand-tools-Outdoor-tools-equipment->

Outdoors/4294612737?goToProdList=true&int\_cmp=LawnGardenHandTools:C:Outdoors:Merch :shop\_all\_copy

Mead, M. N. (2008, August). From NCBI Resources:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2516593/>

Meyersohn, N. (2020, June 9). *Groceries were hard to find for Millions. Now it's getting even worse.*

From CNN Business: <https://www.cnn.com/2020/06/09/business/food-deserts-coronavirus-grocery-stores/index.html>

Move for Hunger. (2017, June 8). *The Harsh Reality of Food Deserts in America.* From Move for Hunger:

<https://moveforhunger.org/harsh-reality-food-deserts-america#:~:text=In%20rural%20America%2C%20a%20food%20desert%20is%20defined,need%20and%20survive%20on%20donations%20to%20a%20>

National Research Council. (2009). *The Public Health Effects of Food Deserts: Workshop Summary.* . From

<https://www.ncbi.nlm.nih.gov/books/NBK208011/>

Parker, D. (2020, March 19). *Rural citizens concerned about limited resources during COVID-19*

*pandemic.* From WHNT News 19: <https://whnt.com/news/coronavirus/rural-citizens-concerned-about-limited-resources-during-covid-19-pandemic/>

Patchwork Nation. (2011, June 29). *The Socio-Economic Significance of Food Deserts.* From PBS :

<https://www.pbs.org/newshour/arts/the-socio-economic-significance-of-food-deserts>

Povich, E. S. (2018, July 17). *Mobile food banks roll through rural US transforming food deserts.* From The

Christian Science Monitor: <https://www.csmonitor.com/The-Culture/Food/2018/0717/Mobile-food-banks-roll-through-rural-US-transforming-food-deserts>

*Public education in Alabama.* (n.d.). From Ballotpedia:

[https://ballotpedia.org/Public\\_education\\_in\\_Alabama](https://ballotpedia.org/Public_education_in_Alabama)

Rozier, A. (2018). *Mississippi still the hungriest state.* Mississippi Today. From Mississippi Today.

Rural Grocery Initiative. (n.d.). From ruralgrocery.org: [https://www.ruralgrocery.org/successstories/St-](https://www.ruralgrocery.org/successstories/St-Paul-SuccessStory.pdf)

[Paul-SuccessStory.pdf](https://www.ruralgrocery.org/successstories/St-Paul-SuccessStory.pdf)

Slocum, C. (2019, August 22). *Getting by in Food Deserts: Mobile Grocery Stores, Neighborhood Farms*

*Help Residents Find Fresh Food.* From BirminghamWatch: <https://birminghamwatch.org/getting-food-deserts-mobile-grocery-stores-neighborhood-farms-help-residents-find-fresh-food/>

*State Statutes and Programs Concerning Community Gardens.* (2014, March 3). From National

Conference of State Legislatures: <https://www.ncsl.org/research/agriculture-and-rural-development/community-gardens-state-statutes-and-programs.aspx>

Struempfer, B. P., & Brock, R. M. (2019, March). *CDC High Obesity Program: ALProHealth.* From

[alabamapublichealth.gov](http://alabamapublichealth.gov):

[https://www.alabamapublichealth.gov/obesity/assets/otf\\_march2019\\_alprohealth.pdf](https://www.alabamapublichealth.gov/obesity/assets/otf_march2019_alprohealth.pdf)

- The Impact of COVID-19 on Food Deserts.* (2020, June 2). From Foodbank of Southeastern Virginia and the Eastern Shore: <https://foodbankonline.org/2020/06/02/the-impact-of-covid-19-on-food-deserts/>
- Tuskegee University and Montgomery to Collaborate on Urban Farm.* (2018, 02 18). From wsfa.com: <https://www.wsfa.com/2020/02/18/tuskegee-u-montgomery-announce-urban-farm-learning>
- Virginia Sisiopiku, N. B. (2014). Use of GIS Spatial Analysis to Identify Food Deserts in the State of Alabama. 1(2).
- Walsh, S. (2020, May 7). *Coronavirus (COVID-19) Response Child Nutrition & School Meals.* From National Conference of State Legislatures: <https://www.ncsl.org/ncsl-in-dc/publications-and-resources/coronavirus-covid-19-response-child-nutrition-school-meals.aspx>
- Watters, A. (2012, April 9). *University of Alabama News Center.* From Alabama: Rural or Urban?: <https://www.ua.edu/news/2012/04/alabama-rural-or-urban-it-depends-according-to-ua-analyst/>
- Werner, M. (2017, September 22). *Affinity Magazine.* From Food Deserts in Atlanta, Georgia: Lack of Resources Causing a Humanitarian Crisis: <http://affinitymagazine.us/2017/09/22/food-deserts-in-atlanta-georgia-lack-of-resources-causing-a-humanitarian-crisis/>
- Williams, E. (2014, September 07). *The Crimson White.* From The Crimson White: <https://cw.ua.edu/20667/top-stories/lost-in-the-food-desert/>
- wsfa.com.* (2020, 02 18). From WSFA: <https://www.wsfa.com/2020/02/18/tuskegee-u-montgomery-announce-urban-farm-learning>