Access to Healthy Food in Prince George’s County

An initial exploration of food access and food deserts in the Developed Tier of Prince George’s County, Maryland
Access to Healthy Food in Prince George’s County:
An initial exploration of food access in the Developed Tier of Prince George’s County, Maryland

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Executive Summary

This report details a study of food access in Prince George’s County, Maryland, conducted during the summer of 2010 by graduate students in the Urban Studies and Planning program at the University of Maryland, College Park. It is a preliminary exploration of food access issues and identification of food deserts in the most developed portion of Prince George’s County. The county, abutting Washington, DC, comprises rural, suburban, and urban areas, defined by the County planning department as the Rural, Developing, and Developed Tiers. Researchers found that residents living in three selected portions of the Developed Tier of the county likely face some barriers to accessing healthy food.

The specific objectives of this study are to:

- Explore issues that impede residents’ physical access to fresh, healthy food and identify where food deserts exist in the Developed Tier;
- Assess the severity of the food deserts by estimating the number of residents in these areas who are more vulnerable to food access limitations;
- Provide a review of best practices for addressing food access issues in urban communities and make county-specific policy recommendations that address the main challenges and leverage existing opportunities in the areas studied; and
- Evaluate the research methods and tools used to explore food access issues in the Developed Tier, and provide recommendations to the County for future studies.

According to the Food, Conservation, and Energy Act of 2008, a food desert is an “area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities” (H.R. 6124, 110th Cong. Record H3409-3700, enacted, Sec. 7527). This study concentrated on a specific definition of food deserts: any area outside a half-mile to a full-service food outlet. Special attention was paid to areas with higher concentrations of vulnerable populations, such as individuals who do not own personal vehicles, live in low-income households, or elderly residents.

Census and map data showing grocery store locations indicated that food deserts likely existed in Prince George’s County. To confirm the location of food deserts, as defined for the purpose of this study, two specific approaches were used to identify and explore these potential food deserts:

- Maps were made which measured the distance around stores as areas of potential effect, and
- Three separate community survey tools were used to assess what existed in these potential food desert areas and what local residents thought about their food environments.

The initial study areas were identified as areas with relatively high population density, high numbers of low-income households, high numbers of auto-less households, and low numbers of food outlets. Three areas, Bladensburg, Capitol Heights and Suitland—representing the north, central, and southern portions of the Developed Tier—were chosen as study areas because their demographic characteristics and the local distribution of food outlets suggested that food access concerns were likely to be more prevalent in these areas.

Community survey tools were used in three ways. Physical surveys of all food outlets within the study areas were conducted to
verify the availability of foods that comprise a complete and healthy diet. Shopper surveys provided information on how area residents obtained their groceries, and their feelings and attitudes about the foods available to them. Key informants within each area, including elected officials and leaders of community organizations, provided additional information about food access.

Finally, maps were used again to determine areas (buffers) around full-service food outlets that were within a one-half mile walk of the food outlet. Portions of the study areas outside of these one-half mile buffers were identified as probable food deserts. This information was used to determine the possible impact on the population within the study areas.

A total of 81 food outlets were studied in or near Bladensburg, Capitol Heights, and Suitland, but only 13 of them were found to supply an adequate selection of healthy food. Most stores that met the criteria to be a full-service food outlet were supermarkets; additionally, many international markets came close to fulfilling the minimum criteria set by the researchers. Convenience, general merchandise, and liquor stores do not meet the criteria for full-service food outlets, and should not be considered adequate to serve the dietary needs of populations. Despite instances where stores are considered full-service, access to these stores is often a concern due to the lack of pedestrian amenities, safety, or uninviting store appearances.

While gauging resident perceptions of their food environments, many valuable insights were gathered on how people use and react to their local food outlets. Most of the residents in the three areas choose to drive for their grocery shopping, traveling up to 20 minutes to purchase their food. Surveyed residents were generally positive or neutral in their assessment of the quality and variety of food available to them. Some desired better selection, better prices, better stores, better transportation options, and a better range of markets. Many people reported driving beyond a half-mile from their homes in order to obtain quality foods at lower prices, which they preferred. Those who walked to their nearest food outlets often reported lower quality produce and a smaller selection of foods.

All three study areas had sections that were more than one-half mile from a food outlet selling a complete selection of healthy food. These food deserts often have residents who are lower income, do not own automobiles, or are over the age of 65; these groups of individuals are most likely to face difficulty accessing healthy food.

Other areas of the country have tackled the issue of access to healthy food through a variety of mechanisms and programs, including policy changes as well as partnerships between public and private enterprises. Best practices from these programs can be adopted by Prince George’s County, which already has some programs that can be bolstered to help alleviate the problems associated with food deserts. Recommendations range from initial steps that the County can take, such as engaging in further research and expanding farmers markets, to broader recommendations, such as improving sidewalks and crosswalks or requiring stores to use advertisements that promote healthy eating and living. Additionally, recommendations are provided on ways to improve the methodology employed in this study.
While this study considers access to fresh, healthy food in the Developed Tier, some consideration is given to the potential to connect the food producers in the Rural Tier to the areas in the Developed Tier that lack sufficient healthy foods. Agriculture has long played an important role in many aspects of the county. The County is committed to preserving agriculture, and linking rural farming with urbanized areas may be a way to preserve agriculture while providing produce to urban communities.

Access to healthy food is a growing concern for planners, and an area of interest that challenges planners to consider how many different systems—transportation, economic development, and others—work together to bring about basic necessities such as fresh fruits and vegetables. Just as much as communities and municipalities need storm water management facilities, public transportation, or quality educational facilities, people need to be able to get to places where they are able to purchase healthy foods. Aligning research with the best possible management strategies, initiatives, and programs is essential to combating the issues that arise from limited food access. This study provides a basis for further research, and outlines practices that might be effective in addressing the challenges of food access and food deserts in Prince George’s County.
Food Planning and Food Deserts

Human experience with food and food systems is simple and complex, personal and detached. Food is, quite simply, essential to life. From hunter-gatherers working in concert to sustain their families, to modern agricultural advances that allowed for the advent of cities, human communities have centered around the basic need for food. The modern methods by which food is produced and consumed are complex, and frequently involve mechanization, transportation, and tremendous resource expenditures.

Food is incredibly personal. Food is at the center of many cultural traditions and celebrations, and often one of the enduring traditions carried on by immigrants when they move to their new homes. The nature of food as sustenance causes many people to feel deep emotion when faced with an individual who lacks food. At the same time that food is very personal, people and their food systems are increasingly detached, leading to an impersonal relationship with food and its production. As the world continues to urbanize, more and more people are less familiar with agriculture and where their food comes from.

These are just a few examples of both the simplicity and complexity of the notion of “food.” Its necessity connects the world’s human population as well as the world’s flora and fauna. It is a rare thing in the modern world for an individual to produce or hunt all of his or her food. Thus, food systems involve coordination and communication in order for many to eat from the work of a few. Increasing populations, declining natural resources and loss of prime agricultural land require decision makers to turn their attention to the study of food systems.

Why Should Planners Be Interested in Food Systems?

The central role food plays in sustaining individuals and communities compels city and regional planners to be interested in food systems. From farm to table and back again, food systems impact communities in ways having to do not only with the health of individuals but also with public health more broadly, social justice concerns, and environmental issues (Hodgson, 2009; Pothukuchi, 2004; Raja et al., 2008a).

Those who believe planning focuses mostly on land use and the built environment may find it strange that planners are involved in matters relating to agriculture, nutrition, and healthy eating. Food systems, however, can involve the integration of other support structures traditionally within the purview of planners, among them: zoning regulations affecting the location of retail food outlets; transporta-
tion networks that support the production, distribution, and consumption of food products; and economic development and land use policies that must balance urban growth with preservation of the very farmland that sustains us (Raja et al., 2008a).

These issues are all areas in which planners operate and food systems are affected. Planners have a significant role to play in ensuring that our food systems work—and work well—to build vibrant and healthy communities, and that they do so in economically, socially, and environmentally sustainable ways. But like any other basic infrastructure, our food systems are subject to failure in ways that leave some people out and ultimately undermine the strength, vitality, and resilience of our communities. Planners can learn to recognize these failures and to develop tools to mitigate their negative effects.

**What Are Food Deserts, and Why Are They Important?**

Of the many ways in which our complex food systems can fail to meet the needs of our communities, those that prevent individuals from consuming a healthy and nutritious diet can have a significant and direct effect on the health and well-being of individuals as well as society as a whole. In rural and urban communities throughout the U.S., many people simply do not consume enough of the right types of food necessary to maintain good health.

The USDA and other non-governmental organizations have identified key food groups and minimum serving amounts required to meet the basic nutrition needs of the human body. Those who do not consume proper foods in the right quantities risk developing condi-

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### Increasing Attention on Healthy Food

Academic researchers, nutritionists, public health practitioners, and urban planners are conducting significant research on access to healthy food and creating healthy community food systems.

- Some communities are creating food system plans or including food planning in their comprehensive plans. Notable examples include the community food component of the Marin County, California, comprehensive plan; the Community Gardens plan of Madison, Wisconsin; and “A Healthy Community Food System Plan for the Waterloo Region” in Ontario, Canada (Raja et al., 2008a).

- The U.S. Department of Agriculture (USDA) launched the “Know Your Farmer, Know Your Food” program in 2009 to strengthen regional food systems, create economic opportunities for farmers, and to connect consumers to the sources of their food (2010).

- First Lady Michelle Obama’s *Let’s Move!* Initiative seeks to increase health among kids, including increasing access to healthy, affordable food. The Obama Administration introduced a $400 million yearly investment in tackling the problem of food deserts called the Healthy Food Financing Initiative (2010).

- Access to farmers markets is increasing, both in number of markets and in acceptance of SNAP and WIC benefits.

- Planners’ awareness of food issues continues to grow. The 2005 American Planning Association (APA) conference had the first track featuring food issues (Raja et al., 2008a). In 2010, many attendees of the APA conference expressed interest in a developing Food Interest Group specifically designed to bring together planners interested in community food systems and healthy food access.
tions such as heart disease, diabetes, hypertension, osteoporosis and certain cancers. In addition, a poor diet combined with physical inactivity can lead to increased obesity (U.S. Department of Health and Human Services, U.S. Department of Agriculture, 2005).

People who either go hungry or consume too many of the wrong foods may do so for any number of reasons—some may be unable to pay for nutritious food, some may lack the time required for grocery shopping and in-home food preparation, some may not know about healthier alternatives or how to prepare them, or there may be too much competition from unhealthy alternatives like fast food. But some people do not consume enough of the right types of food because they simply do not have physical access to food outlets that supply such things as fresh fruits and vegetables, basic milk and dairy products, a quality meat selection, and foods made with whole-grains. Other people may have good physical access to food outlets, but the availability and quality of healthy foods at those outlets may be limited.

Most people in the United States have relatively easy access to grocery stores and other food outlets, and likely take this access for granted. A USDA survey from 2001 showed that 81% of Americans self-reported always having the food they wanted. The same survey showed only 5.7% of Americans reported either not having the foods they wanted or not having enough food to eat because they weren’t able to get to food stores (U.S. Department of Agriculture, 2009). In particular, those who do not own or have access to a private vehicle, have low incomes, or have difficulty affording transportation costs face a burden in accessing fresh, healthy food. In academic and professional planning literature, the term “food desert” has been coined to describe neighborhoods or areas where people lack physical access to food outlets that sell the basics required to maintain good health.

According to the Food, Conservation, and Energy Act of 2008—passed by the U.S. Congress and known more widely as the 2008 Farm Bill—a food desert is an “area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities” (H.R. 6124, 110th Cong. Cong. Record H3409-3700, enacted, Sec. 7527). The metaphor of a desert paints a vivid picture that illustrates the desolation and isolation likely felt by those who live in such areas and who cannot access nutritious food, even if they want to. In food deserts, people often rely on convenience stores, corner groceries, or fast food restaurants to meet their dietary needs. Diets consisting primarily of food often found in such stores are unlikely to contain the types of foods the USDA has determined are important for maintaining good health and avoiding the onset of chronic and/or life-threatening illnesses.

The concept of food deserts has garnered increasing attention among those in the planning profession over the past decade. Academics and practitioners alike have conducted numerous studies to establish protocols for identifying where food deserts exist, what effect such food environments have on residents, which groups are especially prone to living in areas that lack adequate access to healthy food, and what steps can be taken to alleviate the problem. These studies have
revealed that our food distribution systems do, in fact, leave some people out, and that planners have a role to play in closing these gaps and making sure everyone has access to fresh, healthy food.

What is the role of the planning profession?

Traditional tools of planning can assist in combating food deserts and creating healthy food environments. These include zoning for community gardens, farmers markets and urban agriculture; encouraging economic development of healthy food outlets; and creating agricultural preservation programs, among others. While other disciplines are fundamentally involved in planning for food systems, it is essential that those in the planning profession are also involved. Planners know about communities and how to study them, possess specialized spatial analysis tools and skills, are adept at organizing and presenting information to a range of audiences, already make policy recommendations and are connected to decision-makers, lead community processes and serve as facilitators, are interdisciplinary, and care about umbrella concerns such as health and sustainability (Pothukuchi, 2004).

Planners work in a wide variety of settings, and often partner with professionals from other disciplines. It is vital that many different stakeholders work in concert to address hunger, food security, agricultural land conservation, environmental degradation, and health. Therefore, planners should not be the only professionals responsible for conducting studies of food deserts or community food assessments. But because of the tools and the skills that planning practitioners often possess, it is important for municipalities and organizations to include planners in studies of food systems.

Food Access in Prince George’s County

This study provides an introductory exploration of food deserts in Prince George’s County, Maryland, one of two Maryland counties bordering Washington, DC. While much of the county’s development pattern is urban or suburban in nature—especially in the western portions that border the District of Columbia—a significant land base in the eastern and southern part of the county is rural. The Prince George’s County 2002 General Plan divided the county into three regions to guide policies for future growth and development: the Developed Tier, the Developing Tier, and the Rural Tier (Maryland-National Capital Park and Planning Commission). The county represents an interesting venue for studying food deserts because of the close proximity of its urbanized areas to its rich farmland, and the potential linkages that could be made between the rural farms and urban neighborhoods. Four key factors make the county prime for study:

- **Agriculture has played, and continues to play, an important role in the economic, political and social life of the county.** Though agriculture is no longer the dominant sector of the county’s economy, nearly one-third (32%) of the county’s land area is located in the Rural Tier, where policies exist to promote farmland preservation and agricultural land uses. The potential to link the Rural and Developed Tier is an important consideration in planning for the local food system (Maryland-National Capital Park and Planning Commission, 2002).
• Healthy food is of special concern in the Developed Tier where there are high proportions of residents who are especially vulnerable to physical access limitations. Low-income individuals, auto-less households, and senior citizens are all at increased risk of having limited access to food outlets that sell healthy food. Many of these individuals live in typical low-density, auto-dominated suburban patterns, characteristic of the Developed Tier, that make it difficult to get anywhere on foot. Additionally, racial, ethnic, and cultural minorities in the county are at increased risk of being low-income and auto-less, and thus more susceptible to food access issues.

• There is political support for healthy food initiatives. Numerous political leaders have shown an interest in food-related issues. State Senator David Harrington recently proposed Maryland House Bill 561, which sought to ban any new licenses for fast-food restaurants in Prince George’s County. Colmar Manor Town Council member Sadara Barrows is heavily involved in a community health initiative working to promote healthy eating and active living programs in the Port Town communities outside of Washington, DC. Further, the Prince George’s County Planning Department has recently engaged in food planning.

• There is community support for healthy food initiatives. Citizen interest and involvement in healthy food initiatives is growing. In June 2010, Engaged Community Offshoots, an urban agriculture organization in the county, hosted a regional urban agriculture summit. Healthcare giant Kaiser Permanente has provided grant money to local community groups to fund numerous health initiatives, including the “Healthy Eating Active Living” program in Suitland and the Community Health Partnerships program with the Port Towns Community Development Corporation.

Current Planning Efforts in Prince George’s County

The Developed Tier lies between the District of Columbia and, more or less, the Capital Beltway, and holds more than half of the county’s households and almost half of the employment. The County’s main goal for this area is to strengthen existing communities by stimulating increased density, capitalizing on transportation investments, and promoting more mixed-use, pedestrian-friendly development.

The Developing Tier occupies roughly 51% of the county’s land area. It contains a mix of development patterns, including subdivisions, employment parks, and farms. Almost half of the county’s households and half of its employment are found in this rapidly growing area. The County wishes to reinforce existing residential, commercial, and employment areas, and to support new growth. At the same time, the County also wants to focus on encouraging transit- and pedestrian-oriented development in this area.

The Rural Tier comprises mostly the southern and eastern portions of the county and occupies roughly 32% of all county land. For the Rural Tier, the County sees opportunities in preserving agricultural land and limiting new development. The County’s goals for the Rural Tier include designing future developments to retain and enhance the area’s rural character and limiting the use of public funds to encourage further development.

These highlighted policies demonstrate the County’s commitment to preserving agricultural enterprises and limiting development where agriculture can thrive. The County recommends that the Developed and Developing Tiers assume 99% of new housing units until
2025 as the most effective way for protecting rural and agricultural land as well as focusing development where much of the required infrastructure already exists (Maryland-National Capital Park and Planning Commission, 2002).

**What are the interests of the Planning Department?**

The Prince George’s County Planning Department is preparing to address food and agriculture related issues through a county-wide plan and suggested five possible areas of exploration for this study that might provide a starting point for the plan. These five areas of study include:

- Identifying retail food outlets and food deserts in Prince George’s County
- Exploring opportunities for urban agriculture
- Exploring creation of community gardens
- Exploring utilization of agricultural land and agri-business in creative ways to provide jobs, add value to the land, and help support urban centers
- Researching best practices of urban agriculture around the nation that can be replicated in the county

Proponents of urban agriculture assert that it has the potential to fulfill two important tasks related to limited food access in the county’s Developed Tier: creating jobs and providing a source for fresh produce to residents in urban communities. Urban agriculture is becoming increasingly prevalent throughout the U.S. While community gardens do not have the same job creation power as urban agriculture, they do offer a potential source of fresh produce for county residents. Urban agriculture and community gardens together represent two possibilities to provide sources for fresh produce to segments in the county that do not otherwise have access to stores with good variety and quality of fresh produce. Time constraints prohibited this study from analyzing the capacity for increased urban agriculture and community gardens, but the County should be encouraged by efforts al-
ready underway, such as the Engaged Community Offshoots program in the Port Towns area and an Urban Agriculture Initiative in Suitland.

The recommendations portion of this study offers some suggestions for finding ways existing farms in the Rural Tier can meet the food access needs of urban neighborhoods in the Developed Tier. Preliminary findings on the potential that exists for a mutually beneficial relationship between the two tiers are provided in Appendix A: Agriculture in Prince George’s County.

Goals and Objectives

The breadth of the existing body of academic work related to food deserts and food planning demonstrates the vastness and complexity of studies of food access. Prince George’s County is a geographically large area in which to conduct a study of regional food systems; to accomplish a study of such a broad topic in a substantial, diverse study area, the research team chose to focus on studying food deserts in three communities in the Developed Tier. Additional research in the Rural Tier provided insight into how the two tiers may be linked.

The goal of this research is to provide an initial exploration of food accessibility within the Developed Tier of Prince George’s County. This report provides information on food deserts within the county and an assessment of appropriate methodology with which to conduct further research of food deserts and food access issues.

The specific objectives of this study are to:

- Explore issues that impede residents’ physical access to fresh, healthy food and identify where food deserts exist in the Developed Tier;
- Assess the severity of the food deserts by estimating the number of residents in these areas who are more vulnerable to food access limitations;
- Provide a review of best practices for addressing food access issues in urban communities and make county-specific policy recommendations that address the main challenges and leverage existing opportunities in the areas studied; and
- Evaluate the research methods and tools used to explore food access issues in the Developed Tier, and provide recommendations to the county for future studies.
SECTION 2 | Background

In this section...

- Food Desert Concept and Previous Studies
- The Complexity of the Definition

Food Desert Concept and Previous Studies

This study attempts to identify food deserts in Prince George’s County. The concept of food deserts is fairly new to academic literature, and has evolved quickly over a short period of time.

In the mid-1990s, the term “grocery store gap” was coined to describe the lack of access to grocery stores in low-income inner-city areas (Sparks et al., 2009). Grocery store gaps in the U.S. were thought to be the result of population decline in inner cities during the 1960s and 1970s; as middle-income families fled to the suburbs, so did supermarkets and other businesses (Giang et al., 2008). Around the same time, the United Kingdom was in a political debate over the disinvestment of health related issues in low-income urban neighborhoods (Wrigely et al., 2003). One of these issues was access to healthy and affordable foods (Fulfrost & Howard, 2006; Wrigely et al., 2003). In response, the Low Income Project Team of the government’s Nutrition Task Force coined the term “food desert,” which they defined as a low-income urban area where residents do not have sufficient access to a food outlet that provides affordable and nutritious food choices via walking (Wrigely et al., 2003).

Research from the Planning Community

Studies of food deserts in planning are an increasing focus of planners. Pothukuchi and Kaufman (2000) studied the prevalence of food systems in the planning profession and literature, noting that even with the historic context of food systems in planning (i.e. Ebenezer Howard’s Garden City), planners and academics have failed to look at food systems comprehensively. However, the field of planning has recently put an unprecedented focus on food systems and food deserts (Campbell, 2004; Clifton, 2004; Dunkley et al., 2004; Raja et al., 2008a; Raja et al., 2010). In 2007, the APA adopted the Policy Guide on Community and Regional Food Planning, which highlighted ways professionals can build and sustain a strong food system (American Planning Association, 2007). Furthermore, the entire August/September 2009 issue of APA’s magazine, Planning, was dedicated to food systems and how planning practitioners can be involved in food system planning (American Planning Association, 2009).

Research on Minority and Low-income Communities

With an early focus on health and health-related diseases, such as diabetes, obesity and other chronic conditions, much of the literature and policy documentation extend from health and social justice disciplines (Morland et al., 2002; Treuhaft & Karpyn, 2010). Communities and policymakers have long fought to eliminate discrepancies in access to grocery stores, particularly in low-income neighborhoods and neighborhoods of color (Treuhaft & Karpyn, 2010). A 2009 study by the USDA found that an estimated 11.5 million low-income people live more than one mile from a supermarket (Treuhaft & Kar-
pyn, 2010; U.S. Department of Agriculture, 2009). Treuhaft and Kar-
pyyn (2010) reviewed more than 132 studies on food related issues;
their report found that of the 113 articles examining location of super-
martks, 89 found uneven allocations of supermakets in low-income,
urban, and minority areas. Morland et al. (2002) studied four U.S.
states, including Maryland, and found a correlation between income,
race, and the type of food outlet present in a given neighborhood.
More recently, Bodor et al. (2010) found that African American
neighborhoods in New Orleans had less access to supermarkets and
fresh produce than other neighborhoods.

**Local Food Desert Studies**

A study by the Johns Hopkins University Center for a Livable
Future (2010) provided a preliminary identification of food deserts in
Baltimore, Maryland. The distance from the center of census block
groups to supermarkets was measured; parks and unpopulated areas
were excluded from evaluation (Center for a Livable Future, 2010). A
number of block groups scattered throughout the city—though clus-
tered to the east and west of the downtown—were found to be food
deserts.

In 2010, the District of Columbia Department of Health and
the Community Health Administration, along with a number of private
organizations, examined access to full-service grocery stores contain-
ing a variety of healthy and nutritious foods in the nation’s capital (DC
Hunger Solutions & Social Compact, 2010). The study showed that
portions of four of the District’s eight wards could be considered food
deserts. The study made several recommendations, including a
Healthy Food Access Initiative and enhancing the Women, Infants and
Children (WIC) program in grocery stores where the benefits are ac-
cepted. Both the Baltimore and Washington, DC studies helped guide
and inform portions of this study.

**The Complexity of the Definition**

Defining food deserts and establishing what specific criteria
should be used to identify them varies across studies. Acceptable walk-
ing distance, store size, and quality of the food in the retail outlets in
the study area have all been used to measure food access in the com-
munities studied.

The DC Hunger Solutions and Social Compact study in Wash-
ington, DC looked at characteristics of store quality but did not assess
whether the store was within safe walking distance or located conven-
iently to public transportation (2010). The Center for a Livable Future
study in Baltimore also looked at the location of supermarkets, and
defined food deserts to be low-income areas where a supermarket is
more than a quarter-mile walk, via the street network, from the center
1,000 meters as the farthest distance people would walk to a food out-
let.

**Physical Accessibility**

DC Hunger Solutions and Social Compact (2010) and Kowale-
ski-Jones et al. (2009) defined food deserts as low-income neighbor-
hoods and communities that have limited access to affordable and nu-
tritious food. Shigley (2009) also identified food deserts as low-income neighborhoods, but added a racial dimension to identify vulnerable populations. Treuhaft and Karpyn (2010) defined a food desert as an area that has limited or no access to healthy affordable food choices; they also defined grocery gaps as areas with “below-average square feet of grocery retail space per person; above-average distance to a grocery store; and above-average grocery sales leakage” (p. 16).

While some researchers focus on pedestrian access to food outlets, others point out that many large grocery stores currently exist because private vehicles provide easy access and are far more prevalent today than they once were (Dunkley et al., 2004). Handy and Clifton (2001) noted that people are unlikely to substitute walking for driving to the grocery store.

**Types of Food and Food Outlets**

Many accessibility studies have used food store types as proxies of what food is available in those stores, rather than attempting to inventory available foods at individual stores. The Public Health Effect of Food Deserts (Institute of Medicine of the National Academies, National Research Council, 2009) sorted food outlets into the following categories: convenience stores, grocery stores, chain supermarkets, and “other” supermarkets. The study also classified other minor outlets, including: farmers markets, vending machines, vendor carts, small stores, distributors, restaurants, home, school, and work. (Raja et al., 2008b) used Standard Industrial Classification (SIC) codes and Reference USA Codes to define food outlets as: "Supermarkets, Grocery stores, Convenience stores, Meat and Fish stores, Fruit and Vegetable stores, Candy and Nut stores, Dairy, Bakery, Natural Food, [and] Specialty and Restaurants.” These classification systems allow researchers to assume that all the stores in any given category sell the same types of food, thereby dramatically simplifying the process of mapping which stores sell healthy foods.

Other studies have used store size to classify outlets. DC Hunger Solutions and Social Compact (2010) defined full-service grocery stores as retail establishments of no less than 5,000 square feet with a primary business of selling food for in-home preparation and consumption. Bodor et al. (2010) classified food outlets as part- or full-time grocery stores depending on what percentage of their total sales were food sales: stores with 60% or more of total sales that were food sales were considered full-time grocery stores. The study also classified grocery stores by relative total sales volume: small (less than $1 million in sales), medium (between $1 and $5 million), and supermarkets (more than $5 million) (Bodor et al., 2010).

A 2009 USDA report to Congress, Access to Affordable and Nutritious Food, defined food outlets as "supermarkets and large grocery stores" and assumed these stores offer the best and most appropriate variety of affordable healthy food. The report classified supermarkets as outlets that have annual sales of at least $2 million and maintain the following departments: fresh meat and poultry, produce, dairy, dry and packaged foods, and frozen foods (U.S. Department of Agriculture Economic Research Service, 2009). The study did acknowledge, however, that this classification does not capture many other outlets that may provide healthy, affordable food, including: small gro-

Other researchers and studies have defined food outlets based on the specific foods they offer. In a study of accessibility in New Orleans, Rose et al. (2009) defined food outlets as stores in which an individual can purchase all the components of a well-balanced meal. According to the study, these components include fresh fruits and vegetables, unprocessed meats, and whole-grain food items. Similarly, the DC Hunger Solutions and Social Compact report (2010) identifies food outlets by the types of food sold. The report indicates that a store must have eight or more types each of fresh fruits and vegetables, and five or more types of fresh meat, dairy, and bread items.

**Food Quality**

Food quality has also been used to identify which stores should be considered acceptable food outlets. Sallis and Glanz (2006) found that fruits, vegetables, and low-fat dairy products are less accessible and of a poorer quality in low-income and minority neighborhoods, which in turn may lead to health issues among children in those communities. Bodor et al. (2010) measured the quality of food by shelf space allocated to specific food types, including fruits, vegetables, and energy-dense snacks. The report argued that increasing shelf space for healthier foods would increase sales of those foods based on the assumption that supply could influence what was bought, as opposed to demand determining what was sold.

A similar method was employed in a study in New Orleans by Rose et al. (2009). The study included in-store data from surveys as well as metadata collection from the researchers. To distinguish between healthy food and unhealthy food, Rose et al. (2009) looked at the presence of six groups of fruits and vegetables that are part of the USDA’s Thrifty Food Plan (TFP), which is the basis of a healthy diet that the USDA estimates can be acquired on a Supplemental Nutrition Assistance Program (SNAP) budget. Rose et al. (2009) measured the shelf space for these foods. In order to make comparisons across store type, Rose et al. (2009) created an arbitrary threshold of half the store’s shelf space to be dedicated to healthy fruits and vegetables. Unhealthy foods were labeled “energy-dense” and fell into five categories: salty snacks, cookies and crackers, doughnuts and pastries, candies, and carbonated beverages (Rose et al. 2009). Ratios of healthy foods to unhealthy foods were calculated and used in a discussion of “food swamps,” or areas saturated with unhealthy food outlets.

In further discussion of issues of quality, the USDA study mentioned that the distance to the nearest outlet may not be the best measure of access since individuals may choose other outlets that are farther away yet offer cheaper food or better variety (U.S. Department of Agriculture Economic Research Service, 2009). The study also measured outlet density, or the number of stores in a certain geographical area, in order to account for variety (U.S. Department of Agriculture Economic Research Service, 2009).
Income and Other Demographic Considerations

Many reports focus on vulnerable groups in their discussions of food deserts. For example, Clifton (2004) examined income, mobility, gender, non-White racial and ethnic groups, auto availability, household composition, number of dependents, immigrant status, and civil status when measuring food access. Marital status was included as a demographic variable because of its possible effect on mobility, particularly the likelihood of automobile ownership. As incomes can be combined to buy an automobile, it was expected fewer married people would walk to grocery stores. Dunkley et al. (2004) included these variables but also analyzed the effects on housing units built after 1990 and the percentage of persons 65 years or older. It was assumed that higher percentages of housing units built before 1990 are typically collocated with new, larger grocery stores.

DC Hunger Solutions and Social Compact (2010) also considered vulnerable groups and looked at parallels between low-income communities, race, and health challenges, including increased rates of obesity and “nutrition-related chronic illnesses (particularly type 2 diabetes)” (p. 17). Conversely, Kowaleski-Jones et al. (2009) compared grocery store presence in low- and higher-income neighborhoods. They defined low-income neighborhoods as a census block group where the median household income was below the 25th percentile of the county.

Finally, the 2009 USDA study made distinctions between area-based and individual-based measures of access, noting that not all residents in a low-income or otherwise vulnerable area have the same access limitations. By focusing on low-income areas, the study noted vulnerable individuals in higher income areas may be missed (U.S. Department of Agriculture Economic Research Service, 2009). The study went on to define low-income areas as those with 40% or more of households earning less than 200% of the federal poverty level (U.S. Department of Agriculture Economic Research Service, 2009).

Overall

Even though the food desert concept is young, much research has already tested different parameters of access and quality on different definitions of food outlets and low-income areas and populations. Due to the sensitive nature of the implications and complexity of food deserts, researchers must be careful to derive their own methods and definitions to identify most effectively the populations and conditions within their unique study areas. Additionally, further knowledge of the effects of low access to healthy food is the next step toward creating progressive plans to mitigate the negative impacts of food deserts.
SECTION 3 | Methodology

Measuring access to healthy food and identifying areas where people have little or no access are extremely difficult tasks. No two people experience access in the same way; there are simply too many variables that influence individuals’ dietary choices and food shopping behavior. Nevertheless, this study provides a first attempt to explore food access issues and identify food deserts in the Developed Tier of Prince George’s County.

The research methodology employed in this study was composed of two primary approaches. One approach used community survey tools to explore a broad range of factors influencing food access for residents in three specific study areas in the Developed Tier. The community survey methods were designed to begin to paint a picture of the local food environment in each community by engaging local residents and community leaders, as well as by observing the physical environment near local food stores and what types of foods those stores sold.

The second approach used mapping software to identify what portions of each of the three study areas were located more than an acceptable walking distance away from food outlets selling healthy food. Physical surveys of food stores in the community survey portion of the research were used to identify those food stores that stocked an ample variety of foods necessary for a healthy diet.

Choosing a Study Area

Overview of the Developed Tier of Prince George’s County

Prince George’s County is divided into three separate zones or “tiers” for the purpose of planning for future growth in the county. The Developed, Developing, and Rural Tiers of the county are each characterized by the intensity of residential and employment development” in that tier, with the Developed Tier being the most urbanized (Maryland-National Capital Park and Planning Commission, 2002). More than half of the residential dwelling units in the county are located in the Developed Tier, and 33% of the county’s residential growth through 2027 is expected in this area (Maryland-National Capital Park and Planning Commission, 2002).

The Developed Tier occupies roughly 86 square miles to the east of the District of Columbia and generally inside I-495, the Capital Beltway. In 2000, more than 425,000 people lived in the Developed Tier, a figure which represented more than 53% of the total county population. The median household income in the Developed Tier in
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2000 was $46,128, while approximately 10.8% of the population reported incomes below the federal poverty level.

The Developed Tier was identified by County planners as the preferred study area for this research because of its urban character and the number of low-income individuals who live there. The area is also slated for future growth focused on making walking and biking more practical for local residents, a consideration that made the area more appealing for a study of food accessibility, especially for residents with limited mobility.

**Selecting Bladensburg, Capitol Heights and Suitland**

Three communities in the Developed Tier were chosen as case study areas to allow more focused exploration of food access issues and identification of food deserts. The towns of Bladensburg and Capitol Heights and the unincorporated community of Suitland were chosen because their demographic characteristics and the local distribution of food outlets suggested that food access concerns were likely to be more prevalent in these areas.

Geographic Information Systems (GIS) software was used to map population density and the density of two vulnerable populations—auto-less households and individuals with incomes below the federal poverty level—throughout the Developed Tier. The maps generated for the northern, central, and southern portions of the Developed Tier (See Appendix E) revealed several areas with high population densities, high concentrations of auto-less households and persons with incomes below the federal poverty level, and a relatively low number or uneven distribution of food outlets.

These areas were of particular interest for an initial study of food access and food deserts in the Developed Tier because of the richness of data that could be collected in areas where food access con-
cerns were thought likely to be more prevalent. However, areas without high concentrations of vulnerable populations are still home to individuals especially at risk of having limited access to food. Future studies should be mindful of the fact that low-income and auto-less individuals in middle- and high-income areas or areas with high car-ownership rates are still at risk, and may be at greater risk of being forgotten in efforts to plan for better food access.

A meeting with planners from Prince George’s County helped the research group identify the three communities that would serve as case study areas for in-depth research. The planners shared their specific knowledge about the areas of the Developed Tier that the preliminary map analysis had identified as being especially at risk of having prevalent food access limitations. Bladensburg, Capitol Heights, and Suitland were ultimately chosen to be the focus of this study. In addition to their demographic suitability for an initial study of food access issues, the three study areas were also chosen to represent the northern, central, and southern portions of the Developed Tier.

Defining Key Terms

The two approaches that were used to explore food access issues in the three study areas relied heavily on clear definitions of several key terms. These terms and their definitions informed the design of the research methodology and provided a vocabulary for discussing food access in the study areas. The following list of terms and definitions were developed after review of several existing academic and governmental studies of food deserts and food access.

Food Desert

For the purposes of this study, a “food desert” was defined conceptually as any area where residents do not have adequate access to a food outlet that sells an ample variety of fresh, healthy food items. This definition was derived primarily from the 2008 U.S. Farm Bill (H.R. 6124, 110th Cong. Cong. Record H3409-3700, enacted, Sec. 7527), which refers to food deserts as “area[s] in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower-income neighborhoods and communities.”

In order to map where food deserts existed in the three study areas, an operational definition of food deserts was developed by establishing clear definitions of the terms “food outlet,” “adequate access,” and “ample variety of fresh, healthy food” that were central elements of the conceptual definition. These definitions are essential for understanding how food deserts were identified in the study areas.

Food Outlet

The term “food outlet” was used in this study to describe any retail outlet where individuals can buy food for in-home preparation and consumption. For this study, food outlets fall into one of five categories: grocery stores and supermarkets, markets and international markets, convenience stores, general merchandise stores, and liquor stores.

Adequate Access

Adequate access to food outlets that sell healthy food is an essential component of the operational definition of food deserts developed for this study. Adequate access for an individual is defined in this study as living within an acceptable walking distance of a food outlet, a definition based on the work of Glanz et al. (2007) and designed to focus on those individuals with limited mobility due to age or socioeconomic situation.

A distance of one-half mile was used to define an accept-
able walking distance for the purposes of this study of food access, although other studies have used shorter or longer distances, or have measured access in terms of minutes spent traveling to food outlets. A study from the New Jersey Department of Transportation (1994) provided the basis for selecting a half-mile as an acceptable walking distance.

During the map analysis portion of the research, both a half-mile aerial access buffer (“as the crow flies”) and a half-mile network access buffer (along the street network) were used to identify areas not within an acceptable walking distance of food outlets that sell healthy foods. The two different access buffers were used in order to provide “high end” and “low end” estimates of the size and extent of food deserts. The details of the map analysis methodology are outlined later in this section, entitled “Identifying Food Deserts Using Map Analysis.”

**Ample Variety of Fresh, Healthy Foods**

Living within walking distance of a food outlet is not enough to ensure adequate access to fresh, healthy food. Instead, one must live within walking distance of a food outlet that sells enough of the right kinds of healthy food in order to be thought to have adequate access.

In this study, an “ample variety of fresh, healthy foods” was defined as a minimum of five types each of 10 specific fruits and 10 specific vegetables, as well as at least one type each of dairy, protein, whole-grain, and 100% fruit juice food items. This definition is referred to elsewhere in the study as the “5-5-1-1-1-1” standard, which represents the minimum number of items for each of the designated categories.

The requirements for the 5-5-1-1-1-1 standard were adapted from the Nutrition Environment Measures Survey in Stores (NEMS-S), originally developed by Glanz et al. (2005). NEMS-S is a survey tool also used for assessing food variety, selection and quality (among other attributes) as part of food access studies similar to this one. The 10 specific fruits and 10 specific vegetables on the NEMS-S checklist make up a core group of produce items that meet a person’s dietary needs. The requirements for the dairy, protein, whole-grain, and 100% fruit juice categories of the “ample variety” checklist were also based on the NEMS-S tool, but also reflect categories in the USDA’s Thrifty Food Plan (TFP) (Carlson et al., 2007).

This study did not assess the relative degree to which different items in each category were healthy; that is, no distinction was made between stores that met the protein requirement by selling processed lunch meats and stores that sold several varieties of lean poultry. For the purposes of this study, both stores would be classified as selling food items that are acceptable sources of protein.

**Establishing Vocabulary**

A few additional key terms were developed or used in this study to provide a common vocabulary for discussing food access issues in the three study areas.

**Full-Service Food Outlet**

Food outlets in or near the study areas that were found to sell an ample variety of fresh, healthy foods were described in this study as “full-service” food outlets. Full-service food outlets sell at least five types each of 10 specific fruits and 10 specific vegetables; at least one type each of dairy, protein, whole-grain; and 100% fruit juice food items. Only those persons living within a half-mile of a full-service food outlet are thought to have adequate access to healthy food; any area outside a half-mile from a full-service outlet is identified as a food desert.

**Limited-Service Food Outlet**

Limited-service food outlets are those food outlets in or within a half-mile of the three study areas that do not meet the
5-5-1-1-1-1 standard for carrying an ample variety of fresh, healthy food. Limited-service food outlets include all outlets that fall short of the standard, which means there is wide variation in the number and types of items these outlets carry. These differences are highlighted in the physical survey results of this research.

**Aerial Access Buffer vs. Network Access Buffer**

Measuring what a half-mile walking distance means in the areas around full-service food outlets is difficult, as individuals rarely follow direct paths to the nearest store or follow sidewalks along the existing street network. In some cases, the local streets do not have sidewalks, making it even more difficult to predict the travel patterns of pedestrians.

This study uses two different measures of pedestrian access to full-service food outlets in attempting to identify areas that are food deserts. The first is an aerial access buffer around full-service food outlets that depicts a half-mile, “as the crow flies” radius around those stores. This measure provides a high-end estimate of the size of the area that is within a half-mile walking distance of full-service food outlets.

To provide a more realistic measure of pedestrian access, however, a network access buffer that follows the local street network was mapped around each full-service food outlet. This measure provides a low-end estimate of the size of the area that is within a half-mile walking distance of full-service food outlets.

Together, these two measures provide a realistic range of estimates of the size of food deserts in the three study areas. They may be referred to throughout the remainder of this report as aerial access buffers, network access buffers, aerial buffers, or network buffers.

**Vulnerable Populations**

One of the objectives of this study is to measure the impact of food deserts on vulnerable populations within each study area. Vulnerable populations are those groups of people who, in general, can be expected to be at greater risk of experiencing access limitations to food outlets selling fresh, healthy food.

This study focuses on three key vulnerable populations that are most likely to have limited mobility and therefore are more prone to having limited access to healthy food: individuals who live in households that do not own a car, individuals with incomes below the federal poverty level, and seniors age 65 and older.

Those who live in auto-less households must walk, rely on public transit, or get rides from family, friends, or taxi cabs in order to get to the store. Individuals with incomes below the federal poverty level are less likely to own a car and may have extra difficulty affording the cost of public transit or taxi cabs. And, for many seniors age 65 and older, walking to the nearest food store—no matter how close it might be—can be difficult, dangerous, or even impossible.

**Exploring Food Access Issues Using Community Surveys**

The factors that can affect one’s access to fresh, healthy food are many. Some of those factors include, but certainly are not limited to: one’s proximity to food outlets; variations in the quality, selection, and prices of food items across stores; the presence or perception of physical barriers to access, like unsafe parking lots and missing sidewalk connections; the frequency and coverage of local public transit routes near food outlets; and the unique dietary needs or customs of individuals with different cultural backgrounds.

A three-part community survey approach was developed to begin to explore the ways in which such factors impact food access in
the three communities being studied. Semi-structured interviews with key community leaders, opinion surveys of local residents, and physical surveys of food outlets in and near the study areas were carried out in order to learn more about the unique local food environment in each area and to paint a better picture of food access in these communities.

**Key Informant Interviews**

Interviews of key figures in each of the three communities—including elected officials and community advocates—were carried out in order to get a “lay of the land” in each study area. The semi-structured interviews were developed to provide information that would aid in understanding the history and context of the three study areas, what challenges local leaders saw in their communities, and what opportunities might exist to address local food access obstacles.

In particular, some interview questions were designed to help the researchers understand what, if any, unique shopping habits or food needs were present in the study areas, and to assess the extent to which existing and future plans for the community addressed issues of healthy living. The interviews were also carried out in order to find other connections in the community that might provide the researchers with easier access to residents willing to participate in the shopper survey portion of the research. A copy of the questionnaire is available in Appendix B: Key Informant Survey Instrument.

The names and contact information of key informants in each community were collected from Prince George’s County planners familiar with the chosen study areas, colleagues at the University of Maryland who had performed other research in the communities of focus, and planning professionals in the Washington-Baltimore region who had previously studied similar food access issues.

Making contact with some key informants was difficult at first, while others were very quick to respond to initial phone calls and emails. Eventually, in-person interviews were set up and conducted with most of the contacts. While a detailed questionnaire was developed for use in the interviews, individual researchers were encouraged to deviate from the specified questions as they saw fit based on the availability and particular interests of key informants. As such, interviews with key informants were not intended to provide statistical validation or quantitative results to the study as much as to provide insight and local perspective that might aid in further exploration of food access issues in the communities that were studied.

**Shopper Surveys**

The shopper survey portion of the research was developed to understand shoppers’ perceptions of the local food environment in each study area. In particular, the survey instruments were designed to evaluate shoppers’ perceptions of the quality, selection, and prices of food at the outlets they visited most often, as well as their perception of their own ease of access to healthy foods.

Surveys asked numerous questions designed to allow the researchers to understand more in-depth the relationship between shoppers’ perceptions and their actual behavior. Asking whether respon-


ents shopped at the food outlet nearest to them and also asking them to evaluate the quality of produce available at that outlet, for example, enabled the researchers to determine whether residents who shop at the food store nearest to them perceive that they have access to higher or lower quality produce than those who choose to shop at more distant outlets.

The goal for each study area was to administer at least 20 shopper surveys to individuals who both lived inside the boundaries of the study area and who reported being the primary grocery shopper in their household. Surveys were designed to be administered by the researchers rather than to be self-administered by respondents. This was intended to ensure that questions were not misinterpreted by survey respondents and that respondents gave complete and appropriate answers to the questions being asked.

Neither the way in which the survey was designed nor the way it was administered was meant to provide scientific or statistically valid results. Instead, the survey questions were designed to begin to understand shoppers’ perceptions of food quality, selection and prices, and their own access to healthy food, as well as to begin to understand the strengths and weaknesses of such a survey instrument. A copy of this survey is available in Appendix C: Shopper Survey Instrument.

**Physical Surveys**

Physical surveys of food outlets in or near the study areas were designed to provide the most insight into local food environment conditions in each of the study areas. The physical surveys served two important purposes in this study: (1) to observe and look for attributes and characteristics of local outlets and the food they sold that might affect an individual’s real or perceived access to healthy food, and (2) to discover which outlets sold what types of foods, for the purpose of identifying “full-service” food outlets for use in the mapping portion of the research.

**Assessing Real and Perceived On-site Access Barriers**

The physical survey was designed to capture information about site and store characteristics that might affect shoppers’ real or perceived access to certain food outlets. This portion of the physical survey sought to identify specific conditions that might make physical access more difficult, especially for shoppers on foot or arriving by public transit, as well as to evaluate certain store characteristics that might serve as psychological barriers to access.

The primary site and store characteristics that might impede physical access and that were part of the physical survey included limited hours of operation, missing sidewalk connections with the local street network, large parking lots, and lack of exterior lighting for nighttime safety. These characteristics make it unsafe, difficult or impossible to access food stores on foot or by public transit.

The physical survey also asked researchers to determine
whether stores participated in government assistance programs like Women, Infant and Children (WIC) and Supplemental Nutrition Assistance Program (SNAP). Whether an outlet accepts assistance vouchers for these programs impacts the ability of low-income individuals to buy healthy food. The observations made on-site were later cross-referenced with lists from the County and the USDA of outlets that accepted WIC and SNAP benefits.

As for psychological barriers to access in and near food outlets, the physical survey included questions asking the researchers to evaluate such characteristics as exterior and interior appearance and maintenance of stores, the number of cash registers present in each store, and whether cash registers were located behind a protective glass barrier. Although these characteristics do not physically impede access to healthy food, they can serve as psychological barriers to access to healthy food.

Measuring the Availability and Quality of Healthy Foods

Measuring food availability at individual stores was a key component of the research methodology for this study. Whereas other studies often use store types (i.e., categories like “supermarkets” or “grocery stores”) as proxies for the availability of healthy foods, this study surveyed all stores to ensure that outlets that aren’t traditionally viewed as being healthy food outlets were still identified as full-service outlets if they met the designated criteria. This was especially important for this study because of the prevalence of non-chain, locally-owned markets and international markets that might not be included in traditional supermarket or grocery store categories.

The portion of the physical survey that provided the data necessary for identifying which outlets met the criteria for being designated “full-service” food outlets was based on the definition of an “ample variety of fresh, healthy food,” outlined previously under “Defining Key Terms.” For the purposes of this research, an ample variety of fresh, foods was defined as a minimum of five types each of 10 specific fruits and 10 specific vegetables, as well as at least one type each of dairy, protein, whole-grain, and 100% fruit juice food items. These requirements were adapted from NEMS-S developed by Glanz et al. (2006) and from the USDA’s TFP (Carlson et al., 2007).

The 5-5-1-1-1-1 standard for identifying “full-service” food outlets in and near the study areas was used to develop the portion of the physical survey that surveyed the availability of fresh produce and dairy, protein, whole-grain, and 100% fruit juice food items. Both the availability and quality of each of the 20 produce items on the NEMS-S checklist were observed and evaluated as part of the physical survey, as was the total number of varieties of fruits and vegetables. The quality of produce was rated on a scale of 1 to 5, with 1 reflecting “poor” quality produce and 5 reflecting “good” quality produce. (More detailed descriptions of each of the rating categories can be found on the physical survey instrument, available in Appendix D: Physical Survey Instrument.)

For the dairy, protein, whole-grain, and 100% fruit juice requirements of a full-service food outlet, several sub-categories of specific items were included in the checklist on the physical survey instrument. For example, the checklist for the dairy products portion of the
survey included the following sub-categories: whole milk, whole milk yogurt and/or cream, reduced-fat (skim, 1% or 2%) milk, reduced-fat milk yogurt and/or cream, cheese, and milk drinks and milk desserts. Similar types of sub-categories were included for the protein and whole-grain categories of the survey.

For dairy and protein items, expiration dates were checked to see if they were generally at least five days out from the date the survey was conducted. Aside from freshness, no other measures were made of the quantity or quality of items in the non-produce categories. A copy of the survey that was used is available in Appendix D: Physical Survey Instrument.

Identifying Food Deserts Using Map Analysis

Identifying food deserts in the three study areas using GIS map analysis consisted of two important steps: (1) locating and determining which food outlets in or near the study areas sold an ample variety of fresh, healthy food, and (2) mapping access buffers around each of these outlets that show the areas within which individuals can reasonably be expected to access the food outlet on foot.

Locating Full-Service Food Outlets

The locations of food outlets in or within a half-mile of each of the three study areas were determined by accessing GIS databases from the Maryland-National Capital Park and Planning Commission, the Prince George’s County GIS department, and the District of Columbia’s Data Clearinghouse/Catalog website. GIS data for stores located in the District of Columbia were obtained in order to account for food outlets that were located across political boundaries, but that were still accessible by foot for some residents of Capitol Heights and Suitland, the two study areas that border the District.

Food outlets were classified as belonging to one of the following five categories, based on their primary retail use or function: grocery stores and supermarkets, markets and international markets, convenience stores, general merchandise stores, and liquor stores. In total, 145 food outlets were found to be located in or within a half-mile of the three study areas.

In order to identify which parts of each of the three study areas did not have adequate access to a food outlet selling an ample variety of fresh, healthy foods, results from the physical survey of stores in or near the study areas were used to identify stores that met the criteria outlined earlier in this section in “Establishing Vocabulary: Full-Service Food Outlet.” Stores that met the 5-5-1-1-1-1 standard were determined to be full-service food outlets, and half-mile buffers drawn around these food stores would show the areas within which residents would have adequate access to healthy food.

Mapping Half-Mile Access Buffers

Using GIS map analysis to show which portions of each of the three study areas were located inside and outside of an acceptable walking distance of full-service food outlets relied on mapping half-mile access buffers around these stores.

Measuring what a half-mile walking distance means in the
areas around full-service food outlets is difficult, however, as individuals rarely follow either direct paths to the nearest store or follow sidewalks along the existing street network. In some cases, the local streets do not have sidewalks, making it even more difficult to predict the travel patterns of pedestrians.

This study uses two different types of access buffers mapped around full-service food outlets in order to measure pedestrian access to outlets that sell healthy food. The first is an aerial access buffer that depicts a half-mile, “as the crow flies” radius around those stores. This measure provides a high-end estimate of the size of the area that is within a half-mile walking distance of full-service food outlets.

To provide a more realistic measure of pedestrian access, a network access buffer that follows the local street network around each full-service food outlet was mapped using the Network Analyst Tools in the ESRI ArcGIS software suite. The software was first used to populate a network of streets in and within a half-mile of each study area. Then the software was used to plot a distance of a half-mile from each full-service food outlet along these street segments. This measure provided a low-end estimate of the size of the area that is within a half-mile walking distance of full-service food outlets.

Together, these two measures provide a realistic range of estimates of the size of food deserts in the three study areas. Both buffer types were plotted on the maps that were ultimately used to identify food deserts; areas outside of the aerial access buffers were considered known food deserts, those inside the network access buffers were considered not to be food deserts, and the areas in between may or may not be food deserts depending on the possibility of other, non-road pedestrian access routes such as trails, shortcuts, or informal paths.

The census block and block group area within a half-mile distance of a full-service food outlet was used to estimate the number of vulnerable people and households, assuming the population was equally distributed within the census-defined geographies. The geographic area of the census block or block group that fell inside of the half-mile buffers was divided by the geography’s entire area. This ratio of covered area to entire area was multiplied by demographic information for vulnerable populations within each geography.

This was done for each type of buffer and totaled for all census blocks and block groups within each study area. The total number of people and households within the half-mile access buffers was subtracted from the total population and number of households for the case study area to yield the number of people and households living in the food desert areas. The results show estimated numbers of the total population, low-income people and auto-less households outside the half-mile aerial access and network buffers for each area.
The community survey methods that were developed for the purpose of exploring food access issues were deployed by teams of three to four researchers in each study area. Interviews with local community leaders, opinion surveys of local shoppers, and physical surveys of local food outlets were all conducted as part of the community survey approach in Bladensburg, Capitol Heights, and Suitland.

The information gleaned from these survey methods helped to paint a more complete picture of food access in the three study areas, and provided the data necessary for identifying food deserts using GIS map analysis. The following narratives describe the ways in which the community survey methods were deployed in each of the three study areas, as well as the findings of the research in each case. The narratives also provide additional details and insights into food access issues that were gleaned from the fieldwork conducted in each study area.

Following the case study narratives is a summary of the aggregate results of the community survey methods, and a brief discussion of the results of the map analysis.

Case Study Narratives

The three case study areas had many similar characteristics related to demographics and location. Maps of food outlets contrasted with demographic data were used to identify areas that had higher population densities, higher concentrations of auto-less households and individuals with incomes below the federal poverty level, and fewer or unevenly distributed food outlets. County planners confirmed these areas would be valuable places for further exploration of food access issues. Since maps can only paint so much of a picture, on the ground surveying and insights from community members completed the picture of food deserts in Prince George’s County. While these areas had many similarities, they also all provided unique and valuable contributions to the study of food desert concepts.
BLADENSBURG

Bladensburg is the northern-most area in this food desert study. It is often noted as a crossroads, referring to the busy intersection of Annapolis Road (MD 450) and Baltimore Road (Alternate Route 1). At this intersection stands Bladensburg’s most recognizable symbol, the Peace Cross Memorial that commemorates the soldiers who died in World War I.

Bladensburg has recognized the Annapolis Road corridor as a market area in its Approved Bladensburg Town Center Sector Plan and Sector Map Amendment Plan (Maryland-National Capital Park and Planning Commission, 2007). This plan, as well as the Approved Port Towns Sector Plan and Sectional Map Amendment (Maryland-National Capital Park and Planning Commission, 2009a), has built recent momentum to revitalize the town with a focus on redeveloping existing structures and shopping centers along main routes around the Peace Cross Memorial and the intersection of Landover Road (MD 202) and Annapolis Road further east.

Bladensburg functions as part of the Port Towns, along with neighboring Colmar Manor, Cottage City, and Edmonston. The Port Towns is one area where Prince George’s County focuses redevelopment efforts as a whole. In efforts to revitalize and enhance quality of life, the Port Towns work collectively to create objectives and strategies toward these ends.

The Lay of the Land

Bladensburg’s main east-west thoroughfare, Annapolis Road, is characterized by commercial, institutional and residential land uses. There are three shopping centers along Annapolis Road, with a variety of businesses such as grocery stores, ethnic restaurants, clothing stores, and automotive related businesses, to name a few.

Single family, detached homes are predominant north of Annapolis Road. The houses are modest in size and appearance and were built during the post-war housing boom in the 1950s and 1960s. One third of the housing stock in the Town of Bladensburg was built before 1960 (U.S. Census Bureau, 2000). The eastern portion of the town north of Annapolis Road is primarily renter occupied. This is also the densest area of Bladensburg and the majority of the public and private schools are located here. The area south of Annapolis Road is primarily residential, institutional, or forested. The western section of Bladensburg, bounded by the Anacostia River, is primarily land use classified as industrial and commercial. Many small businesses in this area support construction and automotive services. On the opposite end of the town, the Baltimore-Washington Parkway defines the eastern border.
Demographic and Economic Information

In 2000, Bladensburg had an estimated total population of 7,661 residents living in 3,121 occupied housing units, of which 74.2% were renter occupied (U.S. Census Bureau, 2000). Of the study areas, Bladensburg is also the densest, at 12.1 people per acre (U.S. Census Bureau, 2000). In 2000, 70.9% of the town’s population was African American and 13.1% was Hispanic (U.S. Census Bureau, 2000). There is also a large immigrant population in the area who report origins mostly from Nigeria, Sierra Leone, Jamaica, El Salvador, and Mexico (Maryland-National Capital Park and Planning Commission, 2007). The average household size in Bladensburg is 2.23 persons per household (U.S. Census Bureau, 2000). The town reported 8.7% of the population was over the age of 65, which translates into 670 individuals, compared to 7.7% in the county (U.S. Census Bureau, 2000).

According to the 2000 U.S. Census, Bladensburg had a median household income of $34,996, compared to $55,256 in the county. Among all households, 11.8% fell below the poverty line. In 2007, the town reported that 56.5% of the population aged 65 and older earned less than $15,000. Almost 21% of Bladensburg households did not own cars, which was the highest among the three study areas (U.S. Census Bureau, 2000).

Transportation and Access

Kenilworth Avenue (MD 201) and Annapolis Road are busy thoroughfares serviced by many bus lines operated by the Washington Metro Area Transportation Authority (WMATA) and the Prince George’s County Department of Public Works and Transportation (DPW&T) “The Bus.” All of the bus routes provide citizens with access to Washington, DC and the nearby Green and Orange Metrorail lines. Sidewalk access, however, is a major concern to many residents, as many streets have sidewalks that end abruptly and do not connect to more heavily traveled routes; specifically, Annapolis Road and the neighborhood streets of Edmonston Road and Quincy Street lack sufficient crosswalks and sidewalks.

Assessing Bladensburg

Food Environment and First Impressions

Initial observations of GIS maps of Bladensburg revealed a concentration of food outlets along Annapolis Road and Kenilworth Avenue. On the ground observations indicated a number of aging strip shopping centers along these two thoroughfares, containing several

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larger food outlets and a number of smaller stores which sold a limited variety of food. The western and southern portions of the town consist of parks and industrial and residential areas with no food outlets. The northeast portion contains only a small convenience store. Due to the distribution and number of food outlets throughout Bladensburg, it was initially difficult to speculate whether a food desert existed in this study area.

Collecting the Data

Collecting information on access to healthy foods was done using the physical survey and shopper survey and by interviewing key community informants. Individuals selected for the key informant survey were gathered from the Port Towns Community Health Project (PTCHP) monthly meeting on July 8, 2010. Store locations for the administration of the physical survey were gathered from GIS and on the ground observations. Finally, with the help of the PTCHP and researcher familiarity, key locations throughout the town of Bladensburg were selected to administer the shopper survey.

Key Informant Survey

The PTCHP provided valuable information on the physical environment and health related issues facing residents. It also provided local insight from knowledgeable individuals who been involved in the town for a number of years. Sadara Barrow, Colmar Manor Council Member and director of the Port Towns Community Development Corporation (CDC) suggested that the PTCHP monthly meeting would be a good place to interview key informants. The July 8, 2010, meeting provided several names:

- Carolyn Lowery–CommonHealth ACTION, Washington DC
- Celeste James–Community Health Initiatives, Kaiser Permanente
- Jessica Macauley–Port Towns Community Healthy Partnership
- Margaret Morgan-Hubbard–Engaged Community Offshoots (ECO), Edmonston, MD
- David C. Harrington–State Senator, District 47
- Suzanne Randolph–MayaTech Corp., Silver Spring

Due to time constraints, researchers were only able to interview Senator Harrington and Celeste James. They explained how Bladensburg is currently involved in encouraging healthier lifestyles.

Key Informant Insights

State Senator David Harrington, of District 47, sees Bladensburg as an incubator for progressive new programs that address community health disparities in new, creative ways. He is fully engaged in building Bladensburg into a “Wellness Opportunity Zone” where community health and well-being are integrated through community involvement and connections as well as healthy eating and active living initiatives. He is encouraged by the active Port Towns CDC, Port Towns Youth Council (PTYC), natural aesthetics by the Anacostia River, and the town’s walkable nature. Senator Harrington believes that local disinvestment and a decaying infrastructure have motivated local residents toward action. Using this newfound momentum, he is confident Bladensburg can be a national model for health initiatives that go beyond just bricks and mortar and work through community participation and personal investment toward community health goals (D. Harrington, personal communication, July 20, 2010).
Celeste James, Regional Program Director of Community Health Initiatives, Kaiser Permanente, believes existing local activism in Bladensburg can help improve eating habits to reflect healthier lifestyles. Kaiser Permanente, Consumer Health Foundation, and other organizations became locally involved because of the strengths and assets in the Port Towns communities that could be leveraged to address health issues. These organizations have partnered with the Port Towns CDC to create the PTCHP, a long-term, local initiative to improve health and livability. The major concern for this initiative is the below average health conditions and high rates of obesity in the county. James suggests the focus for the Port Towns should be on food quality because many residents have admitted they shop outside the town for higher quality products.

The PTCHP has made education on healthy living a priority. In addition to improving education about healthy habits, the health initiative has worked to make policy recommendations and improve local infrastructures to promote healthier lifestyles. Through the PTYC, efforts have begun to create awareness for obesity, diabetes, and healthy eating for the younger generation. James also mentioned working to promote the Wellness Opportunity Zone’ mentioned in the Port Towns Sectional Map Amendment. As the knowledge of eating healthy grows in conjunction with more full-service food outlets, healthier lifestyles will hopefully become the norm throughout the Port Town communities (C. James, personal communication, July 31, 2010).

**Physical Surveys**

Using GIS information and personal knowledge of Bladensburg, researchers conducted physical surveys of all food outlets in the Bladensburg town boundary and food outlets within a half-mile access buffer of the town border. In total, there were 37 food outlets within this area, which included nine international markets, ten convenience stores, four supermarkets, three general merchandise stores, two markets, and eight liquor stores.

**Shopper Survey**

Shopper surveys were administered through a surveyor digression technique, in which the surveyor asked people at public locations if they would be willing to answer questions related to access and quality issues affecting their shopping behavior. Locations included several WMATA bus stops, shopping plazas and commercial facilities along Annapolis Road and Kenilworth Avenue, and along a major neighborhood road in the northeast corner of the town. The majority of the surveys were administered in the afternoon between noon and 5:00 p.m. The majority of individuals approached declined to participate in the survey, but a total of 25 area residents agreed to be surveyed. During the survey, additional information about the respondent was gained as the surveyor took notes and talked freely with the interviewee, which added additional color to the study.
Findings in Bladensburg

Access to Food Outlets

Most of the food outlet stores in Bladensburg are located in aging strip malls along heavily trafficked Annapolis Road and Kenilworth Avenue. All provided ample parking, but not all had handicap parking spaces, or adequate disability access. All of the food outlet stores within Bladensburg are located in close proximity to bus transit, with a bus stop often a few feet from the front door. The interiors of the full-service stores tended to be clean and well-maintained, while many of the other store types, particularly liquor and convenience stores, were less inviting. All of the full service food outlets in Bladensburg maintained standard hours of operation. They were all open at least 11 hours a day throughout the week, which makes them typically accessible to residents with standard working hours.

Anecdotal evidence from the researchers noted that some residents are challenged by having to walk to shop for food. Three women were observed pushing a grocery cart filled with groceries up a hill in the northeast corner of the study area. A man and a woman were observed walking west along Annapolis Road carrying grocery bags from a full-service food outlet over a half-mile away. A number of people carrying grocery bags were also observed crossing Annapolis Road mid-block near a shopping plaza with two full-service food outlets. Taking shopping carts, lugging groceries long distances, and jaywalking are some examples of ways residents are currently adapting to access challenges while shopping for food.

One international market carried a variety of fruits, vegetables, fresh meat, and dairy even though it was not classified as a full-
service food outlet. It is located just outside Bladensburg, on the south side of Annapolis Road, requiring many residents to cross the street, which is difficult due to the lack of crosswalks. Pedestrians here have two options: they either walk a considerable distance to a crosswalk, or chance jaywalking against heavy traffic. This example is reflective of food access in Bladensburg; because most shopping centers are designed for cars, buying groceries by way of walking is often unsafe.

Jaywalking is an example of how people deal with limited food access.

Of the three full-service food outlets in the Town of Bladensburg, one caters to a specifically Latino clientele. This outlet is also generous enough to offer rides home to shoppers who purchase $50 or more of groceries. The other two are located in the same shopping plaza and offer a wide variety of healthy food options, although quality of produce, meats and dairy products were a concern, due to expiration dates and condition of produce.

The two full-service food outlets outside the town boundary are regionally recognized supermarket chains. Due to the fact that one is located across a bridge that spans the Anacostia River and the other is located beyond the Baltimore-Washington Parkway where there is a lack of sidewalks, access to either store is a major obstacle for shoppers travelling on foot. Neither store is within a half-mile network distance of residential areas in Bladensburg.

A number of the international markets in Bladensburg carry ethnic foods common to the Hispanic, West African, and Caribbean populations. Three of those markets come close to meeting the criteria to be considered full-service food outlets. Due to the specific ethnic foods these outlets offer, storeowners were happy to announce they do get shoppers travelling from a broader region outside of Bladensburg.

The physical surveys also indicated a number of limited-service food outlets, mostly convenience stores that sell some healthy food including meats, dairy, and some produce. Other convenience stores and all liquor stores tend to sell fewer healthy food products, often limited to 100% fruit juices, processed meats, and snacks such as whole-grain bars or nuts.

Physical Survey Results

Healthy food is available within a half-mile walk in many parts of Bladensburg. Three grocery stores in the town do offer a full variety of foods. Two other outlets outside the town boundary yet within a half-mile access buffer also met the criteria to be full-service food outlets.
Overall, a variety of food is available in Bladensburg, especially specific ethnic foods. Still, access can be an issue for many residents. The physical survey results, and the opinions of residents interviewed for the shopper’s survey, indicate the quality of locally accessible food is less than optimal. Without widely recognized supermarket chains, a heavy burden is placed on smaller markets and convenience stores to provide adequate healthy food options.

**Shopper Survey Results**

The local availability and quality of food is often a matter of resident perception. The lack of well-known chains within the town limits causes many residents, especially those with access to automobiles, to travel some distance in order to shop. The majority of the respondents surveyed had access to an automobile and shopped outside of the town. Of the 25 surveys, only five shoppers said that their primary and secondary food outlets choices were within the study area. Of those five shoppers, only three shopped at the nearest food outlet to their homes. Also, two shoppers who shopped inside Bladensburg gave the produce at their primary food outlet the lowest ranking. Only one person surveyed ranked the produce as “crisp, fresh, flavorful,” whereas ten people who shopped outside the study area gave produce the highest quality ranking for their primary shopping outlet. This confirms food quality issues in Bladensburg as predicted by Celeste James and the physical surveys.

Of the 25 shopper survey respondents, 16 reported shopping at major supermarket chains. Eight shoppers mentioned that they shopped at either of the two chain supermarkets within a half-mile of the Bladensburg town boundary. The majority of the rest of the respondents traveled some distance to nearby areas to shop at well-known chains. Quality, selection, and ease of getting to the store were some reasons given for food outlet selection. More than half of the respondents expressed some difficulty in shopping. Four respondents felt the distance they had to travel for their groceries was a challenge, while eight felt the method of getting to the store made shopping difficult. Three respondents felt both distance and method of transportation were a problem. Less than half of the shoppers went to farmers markets.

Personal information gathered from those surveyed provided a general description of who was willing to answer questions. Specifically, there were 16 African American women and three women who reported being of some Hispanic, Latino, or Spanish origin. While this survey was not statistically valid, it is worth noting that those surveyed were roughly representative of the town’s ethnic composition. Income varied from a low in the $10,000 to $19,000 range to a high in the $70,000 to $79,000 range. One person surveyed admitted she supported a household of seven people on an income of less than $20,000 per year. For obvious reasons, she cited affordability and the lack of a car as major impediments to her grocery shopping experience.

**Food Deserts in Bladensburg**

Fortunately, over 81% of Bladensburg’s land area is not a food desert. Within this area, 7,337 individuals (96% of the population) live within a half-mile aerial access buffer of a full-service food outlet. The
remaining 4% of the population, or 324 individuals, live in the north-east corner to the town where there are no full-service food outlets within a half-mile. This area currently has one market that offers more in the way of chips and carbonated beverages than healthy foods or produce. There are, however, a number of buses that serve this area.
and are able to transport residents to nearby shopping centers where they could purchase healthy foods. Since the northeast corner is the densest area in Bladensburg and contains many low-income and autoless households, there are presumably many vulnerable households that may be affected by the lack of full-service food outlets within walking distance from home.

On the corner of 57th Avenue and Emerson Street—the approximate geographic center of the food desert—is a commercial development. This development contains a market, which fails to meet the food outlet criteria. With this in mind, there is infrastructure in this area to accommodate a full-service food outlet in the future.

Another concern in Bladensburg is the presence of many elderly individuals. Since many are low-income and may have access issues due to limited mobility, ease of access to healthy foods will be a particular concern for this vulnerable population, particularly in the northeast corner of Bladensburg.

While Bladensburg does have many ethnic stores, some full-service food outlets, and adequate public transportation, there are still areas of the town that are affected by the spatial distribution of full-service food outlets, the lack of pedestrian amenities, and the presence of specific vulnerable populations. These factors make the food desert in Bladensburg something to focus on in future planning, infrastructure, and economic developments.
CAPITOL HEIGHTS

In Capitol Heights, residents appear to have a strong connection to both the area and to each other, as evidenced by a general concern about their community’s current standing and future. The council and community leaders are quite active, as indicated through meetings, community committees, and plans. In reference to the future well-being and direction of the community, residents seem to be supportive of the ideas put forth by the council and focused on the concepts of improvement, revitalization, and progress.

The Lay of the Land

Incorporated in 1910, Capitol Heights borders Washington, DC at Southern Avenue, encompassing a total area of 0.8 square miles. The town is bisected by Central Avenue running east to west. The other major thoroughfares are Larchmont Avenue and Capitol Heights Boulevard. It is a predominantly residential, working- and middle-class community. There is an aging strip mall in Capitol Heights that provides the sole shopping option for area residents.

Demographic and Economic Information

In 2000, Capitol Heights had a total population of 4,138 people living on 525 acres, or a density of 7.89 people per acre (U.S. Census Bureau, 2000). Roughly 93% of the residents of Capitol Heights were Black or African American. According to the 2000 U.S. Census, the median income was $46,667, and approximately 11.4% of the community lived below the poverty line. Additionally, the average household size was 2.87, which was greater than the nationwide average of 2.59. Approximately 79.6% of the population owned their homes in 2000, compared to 66.2% of the population throughout the country (U.S. Census Bureau, 2000).

Transportation and Access

Central and Southern Avenues are the main thoroughfares through Capitol Heights. There is adequate public transportation available in the form of bus lines operated by the County and by WMATA. All of the bus routes provide citizens with easy access to

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There are two Blue Line stations nearby, Capitol Heights and Addison Road-Seat Pleasant. While public transportation is available, pedestrian amenities are somewhat inadequate; many sidewalks do not connect to busier areas along Eastern, Southern, Larchmont, and Central Avenues.

Due to the street network and layout of the area, a vehicle is typically the best option for travel to shopping areas. This was likely a challenge for the 18.68% of Capitol Heights residents who did not own cars in 2000 (U.S. Census Bureau, 2000).

**Recent Local Action and Economic Development**

Planning efforts in Capitol Heights are centered on economic development. The desire to strengthen the Town’s economic base is evident in both a Community Development Block Grant (CDBG) application and area status as an Enterprise Zone. The most recent CDBG application for Capitol Heights (Town of Capitol Heights, Maryland, 2010) was prepared by the Town Administrator, James Booth and it captures eight goals:

- Stabilize and increase homeownership opportunities;
- Support development of new and existing affordable rental units;
- Provide housing subsidies;
- Support the Prince George’s County Continuum of Care goal of ending chronic homelessness by 2012;
- Assist in the provision of housing options for persons with special needs
- Support employment opportunities for low- and moderate-income persons, small business entrepreneurship, and the development of community revitalization activities in the Developed Tier;
- Improve the safety and livability of neighborhoods; and
- Improve the quality of life by providing needed public services.

The desired projects and goals of the CDBG application are geared toward housing, public safety, development, job creation, accessibility for the elderly, and infrastructure improvements. These goals speak to the interests and future plans for the town. Although not directly addressed in the application, given the conditions of the study area, food security and access can and should be part of future block grant goals. Improving food access is in line with current goals, such as “improving safety and livability in neighborhoods and improving quality of life” (Town of Capitol Heights, Maryland, 2010, p. 10-16). Additionally, the concept of improving food access is in line with observed interests in developing services to the elderly and low- and moderate-income persons in this area.

The land around the Capitol Heights Metro Station has been declared a state-designated Enterprise Zone, which encourages economic growth and supports local businesses through state and local incentives to encourage economic growth, including:

- Private sector investment for new development projects;
- Renovation and rehabilitation of existing commercial facilities;
- New business locations;
- Existing business expansions; and
- Creation of new jobs. (Prince George’s County Economic Development Corporation, 2010)

The desire to strengthen the town’s economic base is evident in both the CDBG application and Enterprise Zone status; implementing these tools may continue to be a challenge due to the current reces-
sion, limited tax income, and resulting budget restrictions. As stated above, the CDBG goals and incentives do not currently mention food access and security, but the concept is implied through neighborhood improvement and livability goals. Collectively, these goals and incentives may be the avenues for creating recommendations for improved food quality and access in Capitol Heights and will fall in line with plans for growth and increased economic capacity put forth by the Maryland Department of Planning and the Prince George’s County Planning Department.

Assessing Capitol Heights

Capitol Heights Food Environment

The first impression of the community’s food environment was poor. As evidenced by data gathered from the 2000 U.S. Census, Prince George’s County, and initial GIS mapping, the lack of full-service food outlets within the town was a strong indicator of the potential of a food desert.

Physical research proved that most stores were not accessible by foot and the few that were did not provide enough healthy, quality food. Many stores only provided a few of the NEMS-S qualifying food—nuts, dairy, whole-grain and non-whole-grain foods, as well as juice drinks. Fewer stores carried fresh produce, meats, and eggs. Of the other food outlets, particularly the liquor stores, the majority carried only nuts and juice drinks. Some of the convenience stores and small general merchandise stores carried a few more options, including some produce.

Collecting the Data

Capitol Heights was assessed using the physical surveys, shopper surveys, and through interviews. Community leaders served as key informants and were determined through web research, the Prince George’s County Planning Department, and from Dr. James Cohen. Initial community outreach was challenging, but a Town Hall meeting provided connections with welcoming and interested community leaders.

The food outlets located using GIS data were confirmed and surveyed. Additional outlets, not identified in the GIS layers, were determined during an initial community walk-through. To uncover specific community needs, community members were identified by key informants through the London Woods Homeowners’ Association Meeting on July 15, 2010 and a Seniors’ Committee Meeting at Gateway Village on July 17, 2010. More community members were surveyed on July 21, 2010. This third opportunity was an open house meeting held at the Town Hall during a time set aside specifically for surveying residents. Fliers were posted and emailed to community members in advance.

Key Informant Interviews

The Mayor, Town Council, and current and previous community leaders were helpful in assessing food access and security in Capitol Heights. At the initial Town Hall Meeting, the Capitol Heights research group members were introduced to Mayor Kito James and the Town Council. The parameters of the research were explained, as well
as the interest in communicating with residents. Community members indicated that they related to the apparent impacts of food deserts within Capitol Heights. Several community leaders volunteered assistance in approaching the at-large Capitol Heights community, including sharing invitations to attend committee meetings to survey residents and spreading the word about the research. Little skepticism was expressed toward methodology or the research itself. Most concerns brought forth by Council members and citizens surrounded how the research would be used and what kind of change the results would yield.

The following key informants offered valuable assistance in Capitol Heights:

- Kito A. James, Mayor
- Marnitta L. King, Mayor Pro Tem
- Monique I. Hunter, Council Member
- Victor L. James Sr., Council Member
- Kenneth D. Vinson, Council Member
- Tamil Perry, Council Member
- Renita A. Cason, Council Member
- Julius Ware II, Neighborhood Services Director
- James Booth, Town Administrator
- Darrell Miller, Mayor Emeritus
- Kenneth C. Williams, Administrative Assistant to the Prince George's County Council Administrator
- Officer Busby, Sergeant, Seat Pleasant Police Department
- Anton Johnson, Officer, Seat Pleasant Police Department
- Shawn Davenport, Sergeant, Prince George’s County Sheriff’s Department

Some of these individuals participated in key informant questioning or surveys, while others assisted with administering shopper surveys to residents. Given the challenge of community outreach, their preliminary identification of community events and meetings provided the most successful access to residents.

Findings in Capitol Heights

Physical Surveys Results

Using GIS data and initial walk-through observations, physical surveys were conducted for all food outlets in the political boundary of Capitol Heights as well as food outlets within a half-mile of the town borders. A total of 18 stores were surveyed including: a supermarket, markets, general merchandise stores, convenience stores, and liquor stores. In total, there were no full-service food outlets within Capitol Heights proper. Only one food outlet in the outlying half-mile access buffer provided all of the foods necessary to qualify as a full-service food outlet. Of the 21 people surveyed, eight shop at this supermarket, and additional respondents indicated that they would prefer not to shop there because of safety concerns, poor produce quality, expired milk products, and limited food variety.

In addition to the one full-service food outlet, the researchers surveyed eight convenience stores, four liquor stores, three general merchandise stores, and two smaller markets. Of these, the registers and some merchandise were behind protective glass in 12. Additionally, all but one of the 17 limited-service food outlets sold at least one 100% fruit juice item, but only four sold at least one fruit or vegetable.
Many outlets were not accessible to non-driving customers. Most stores are within proximity to the bus system, yet accessibility from the bus stop to the front door was not always safe or accessible due to a significant lack of Americans with Disabilities Act (ADA) compliant ramps and curb cuts. Capitol Heights residents, therefore, face challenges related to physical access to stores, regardless of the fact that most stores were limited-service food outlets.

Given the lack of full-service food outlets and inadequate access to existing food stores and access indicated through key informant and shopper surveys, healthy food is limited within Capitol Heights. Quality is a concern as well. Physical surveys indicated a lack of quality and access to healthy foods. Many of the stores offered poor quality produce and fresh food. Since all but one of the stores were not full-service food outlets, locally available quality, healthy food is limited.

**Shopper Surveys Results**

The shopper surveys were administered at two community meetings and in an open house setting per the recommendations of key informants. A homeowners’ association meeting, a seniors’ meeting, and a planned open house provided the venues for administering the surveys. The homeowners’ association and the seniors’ meetings attracted very specific groups of residents, with pointed interests and needs, while the open house meeting was planned as a means of inviting further, diverse participation. Although the open house was advertised through community-wide fliers and information sharing among residents, attendance was low, yielding few responses. The three survey experiences produced 21 completed surveys in total.

All of the 21 participants of the Capitol Heights shopper’s surveys were completed by residents. Many residents indicated a clear under-
standing of the lack of access to food outlets and quality, healthy and affordable foods within their community. This was noted on 21 surveys and through conversations before and after survey completion.

According to the responses from survey participants, many residents receive rides from others or use public transportation to get

<table>
<thead>
<tr>
<th>TABLE 4.</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CAPITOL HEIGHTS</td>
<td>Food Desert Characteristics</td>
</tr>
<tr>
<td>Land Area (acres)</td>
<td>511 — 527</td>
</tr>
<tr>
<td>% of Total Land Area</td>
<td>97.0% — 100%</td>
</tr>
<tr>
<td>Population</td>
<td>3,886 — 4,138</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>93.9% — 100%</td>
</tr>
<tr>
<td>Households</td>
<td>1,520 — 1,603</td>
</tr>
<tr>
<td>% of Total Households</td>
<td>94.8% — 100%</td>
</tr>
<tr>
<td>Vulnerable Populations Impacted</td>
<td></td>
</tr>
<tr>
<td>Auto-less Households (Outside Buffer)</td>
<td>262 — 265</td>
</tr>
<tr>
<td>% of Total Households</td>
<td>18.5% — 18.7%</td>
</tr>
<tr>
<td>Persons Below the Poverty Level (Outside Buffer)</td>
<td>452 — 459</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>10.9% — 11.1%</td>
</tr>
<tr>
<td>Seniors Age 65 and Older (Total)</td>
<td>343</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>8.3%</td>
</tr>
</tbody>
</table>
their groceries. Of the 21 respondents, 12 noted they do not shop at the store closest to their home. Of these respondents, nine individuals indicated that they travel farther due to the selection of food. Another nine individuals indicated that they travel farther due to the quality of food. The responses also indicated that food outlet options in adjacent areas are not satisfactory. Many respondents mentioned shopping at stores outside of the immediate area, with 17 traveling 10 minutes or more to other full service food outlets, farmers markets, international markets, and specialty stores.

Food Deserts in Capitol Heights

The quality of produce and the access to safe and affordable stores in Capitol Heights is a concern to area residents, which certainly indicates a lack of access to food in general. In Capitol Heights, the demand for quality, affordable, and safely accessible food outlets is high, as indicated by the physical and shopper surveys. The current landscape simply does not meet the demand.

A lack of public outreach to residents in Capitol Heights exists with respect to food access and security. One billboard indicates customers can go to Largo, approximately six miles away, for fresh food at Target. Largo is accessible via privately owned vehicles or several transfers on the WMATA buses and Metrorail. Additionally, the stores in Capitol Heights and within a half-mile of the town border do not provide materials or signage indicating healthy versus unhealthy eating habits. This type of marketing and outreach may aid in combating obesity and health issues in children and adults, especially in at-risk communities with profiles similar to Capitol Heights. The implementation of such materials and signage could support a community-wide effort toward a food renaissance.

Capitol Heights is, as a whole, a food desert. No full-service food outlets are within the Capitol Heights study area. Only one full-service food outlet lies within a half-mile aerial access buffer to the specified study area, in Seat Pleasant, which received poor reviews related to food quality and safety, both in the physical and shopper surveys. When considering the network access buffer, this supermarket no longer serves Capitol Heights residents. Within Capitol Heights and in the outlying areas, there are mostly limited-service food outlets, including liquor, convenience, and general merchandise stores that only carry some healthy foods, but not enough to adequately meet the needs of area residents.

With regard to food stores in Capitol Heights, it is important to note the food outlets located within the town borders and the half-mile aerial access buffer are those that provide the widest selection of food. One chain supermarket and two smaller markets offer a limited selection of food and are not as accessible or as preferred by most residents. These three food outlets are not located in pedestrian friendly locations, and shoppers on foot may encounter safety concerns due to traffic and lack of pedestrian amenities. As far as selection, some food in these three outlets is limited and of mediocre quality. Much of the produce, meat, dairy, eggs, and grains were over-ripe, expired, or not as plentiful as necessary for the area.
SUITLAND

In Suitland, a community in the southern portion of the Developed Tier of Prince George’s County, access to healthy food is a concern, as it is in other areas of the county. The approach to studying Suitland was similar to that of the other study areas, but the results were quite different. A key difference is that a sufficient number of shopper surveys were not collected, and thus, the depiction of food access in Suitland is limited by the absence of information from community residents. What follows is a description of the community and what was found by conducting the physical surveys and key informant interviews.

Suitland is an unincorporated area within Prince George’s County, situated just east of Washington, DC. It is bordered to the west by Southern Avenue, to the south by Branch Avenue, to the north by Pennsylvania Avenue and to the east by Donnell Road. Suitland is unique from the other study areas in that while it is a distinct and well-defined community, it is not an incorporated municipality. Therefore, in addition to not having a local base, the community does not have a mayor or other elected officials who serve the interests of Suitland residents exclusively.

### TABLE 5.

<table>
<thead>
<tr>
<th>Demographic Profile of Suitland</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Land Area</strong></td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
</tr>
<tr>
<td><strong>Total Households</strong></td>
</tr>
<tr>
<td><strong>Median Household Income</strong></td>
</tr>
<tr>
<td><strong>% Below the Poverty Level</strong></td>
</tr>
<tr>
<td><strong>% Auto-less Households</strong></td>
</tr>
</tbody>
</table>

The Lay of the Land

Despite its proximity to the District of Columbia, Suitland has a decidedly suburban feel. The residential areas of the community are a mix of low-density, single-family homes, and medium- and high-density condominium and apartment buildings dating from the 1940s-1960s. In 2000, 67% of the occupied housing units in Suitland were renter-occupied, a figure that is thought to be accurate today (S. Quinton, personal communication, July 13, 2010).

Commercial areas in the community consist mostly of strip-style development along arterial auto routes, with large parking lots
separating stores from the main roads. These developments are spread throughout the community and feature a preponderance of take-out restaurants, beauty and hair salons, and liquor stores. Most of the commercial development appears to be from the 1960s-1990s, and there is a noticeable lack of recent investment. Due to the especially suburban, “unwalkable” feel of the community, the grocery stores and other commercial establishments seem less accessible to those in the community who may not have access to personal vehicles.

Finally, the federal government has a strong presence in Suitland, with over 12% of Suitland’s 3,500 acres occupied by the Suitland Federal Center (U.S. Census Bureau, 2010). The Center is home to the U.S. Census Bureau and a division of the National Oceanic and Atmospheric Administration (NOAA); these two facilities are the most notable exceptions to an area that otherwise seems dilapidated and dated. A large, national cemetery also takes up a sizeable share of the western portion of the community.

**Demographic and Economic Information**

Of the three study areas, Suitland has both the largest land area and the highest population. In 2000, 33,515 people lived on more than 3,500 acres, a population density of 9.39 persons per acre. This density falls between that of the other two study areas. The median household income in 2000 was $41,870, but 10.7% of Suitland residents reported incomes below the federal poverty line. Approximately 18.4% of Suitland’s 13,131 households did not own a car, and roughly 5% of the population was 65 years of age or older (U.S. Census Bureau, 2000).

**Transportation and Access**

The major crossroads of the community are at Silver Hill Road and Suitland Road, a half-mile from the Suitland Metro station on the southern end of Metrorail’s Green Line. Numerous Metrobus and Prince George’s County Transit bus routes also serve the community. The town is proximate to several regional auto routes, including Pennsylvania Avenue (MD 4), Route 295, and the Capital Beltway. Widespread bus coverage, a centrally-located Metrorail station and proximity to several important auto routes means Suitland generally has good access to the regional transportation network.

**Assessing Suitland**

**Collecting the Data**

As in the other study areas, physical surveys, shopper surveys, and key informant interviews were carried out in Suitland to gather information about access to healthy food and to paint a better picture of the local food environment. For the physical survey component, teams of two or three researchers visited food outlets in the community to assess the availability of certain foods, the quality of fresh produce, the interior and exterior condition of outlets, and any other barriers that may have limited access to the outlet. The researchers compiled a list of 71 stores in and within a half-mile of Suitland using a GIS database of food outlets from the Prince George’s County Planning Department and a visual driving survey.
Key Informants Surveys

For the key informant interview portion of the research, two important community figures were interviewed in separate meetings on July 13. Sylvia Quinton, Executive Director of the Suitland Family and Life Development Corporation (known as the Suitland CDC), and Elsie Jacobs, President of the Suitland Civic Association, both helped provide a richer picture of food access issues and community initiatives. Dr. Sharon Desmond, a professor in the University of Maryland School of Public Health, and staff from the Prince George’s County Planning office were responsible for providing the group with initial contact information for Quinton, and Quinton then provided the research group with Jacobs’ name and contact information.

Physical Surveys

Physical surveys were conducted in 26 grocery stores, markets, international markets, convenience stores, and general merchandise stores in, and within a half-mile of Suitland. One grocery store on the GIS map was no longer open; an additional market was discovered through the visual driving survey. Liquor stores, of which there were 18, were not surveyed because of the high number of chain grocery stores in close proximity to the study area and the belief that, in the presence of so many grocery stores, liquor stores would not make a significant contribution to the overall availability of food for Suitland residents. Two supermarkets were missed in the survey; their half-mile aerial access buffers just touched the study area borders and did not have an impact on access to a grocery store for any residents in that portion of Suitland. Additionally, two small markets in Washington, DC, were not located during the driving survey, but their aerial buffers do touch a small portion of Suitland. The remaining outlets that were not surveyed were
convenience and general merchandise stores.

**Shopper Surveys**

The method used for distributing and collecting shopper surveys in Suitland differed from that used by the research groups in the other two study areas. Jacobs, one of the group’s two key informants, offered to distribute shopper surveys to residents of the Windsor Crossing Apartments complex in Suitland. Though the surveys were designed and intended to be administered by the researchers, Jacobs was concerned that residents of Windsor Crossing would not be as willing to complete surveys conducted by a group of outside researchers. The surveys were therefore self-administered, and many questions were either misinterpreted by respondents or left unanswered. Time did not allow additional surveys to be administered through a local church connection provided by Quinton.

**Key Informant Insights**

The key informant interviews with Quinton and Jacobs provided valuable insights into the Suitland community and initiatives currently underway to educate local residents about healthy living. Quinton described the work of the Suitland CDC to coordinate three major projects in the community: the Urban Farming Initiative; Healthy Eating, Active Living (HEAL); and the NOAA Climate Stewards program. Quinton explained that the CDC is especially interested in leveraging NOAA’s local presence in the community to develop new environmental and climate-change education programs for Suitland residents. As Quinton explained, one major component of climate-change education is what effect one’s food choices can have on the atmosphere. While she found the Urban Farming Initiative exciting, Quinton expressed an interest in a farmers market for Suitland, which she believed would also be supported by the Census Bureau.

The Suitland CDC has also partnered with the Suitland Community Center to design outreach programs focused on healthy eating. Currently, the program includes a culinary class for local residents and a vegetable garden for youth in the community. Quinton believes that there is a general lack of education among residents about healthy eating, and that these initiatives can begin to address this absence. Periodic health fairs are also held in the community, the latest of which was held in July 2010 at the new Giant supermarket on Silver Hill Road. According to Quinton, that particular Giant is the only one in the country with a dedicated “community meeting space” for such events as health fairs (S. Quinton, personal communication, July 13, 2010).

The interview with Jacobs provided additional insight into the local community, especially with regard to specific questions about some residents’ access to healthy food. In providing an initial overall assessment of food access in Suitland, Jacobs said that she believed there to be “plenty of access” to healthy food. However, she also pointed out that she knows many seniors have mobility issues and must rely upon friends and relatives for trips to the grocery store. For these individuals, accessing healthy food may be more difficult than for the rest of the population, an observation also later made by Quinton. As for actions that could be taken to improve food access in the
Findings in Suitland

Physical Survey

Of the total 45 food outlets found to be in or within a half-mile of Suitland, 26 grocery stores, markets, convenience stores, and general merchandise stores were surveyed. Of these, only two food outlets physically located within the Suitland boundaries were found to be full-service food outlets that provide an adequate variety of healthy food items. An additional five outlets just outside Suitland’s northern boundary were found to meet the full-service criteria. These five stores were included in the physical survey analysis and in the mapping analysis described below because they were located within a half-mile of residential areas inside the Suitland boundaries. Most of the seven total full-service food outlets were clustered together near the intersection of Pennsylvania Avenue and Silver Hill Road, leaving large swaths of the community outside of a half-mile access buffer, whether measured aerially or along the street network.

Grocery Stores

Among all the food outlets surveyed in Suitland, grocery stores were found to have the best variety of fresh produce and dairy, protein and whole-grain food items. All six of the grocery stores located in or within a half-mile of Suitland met or exceeded the criteria for being considered a full-service food outlet, carrying at least five each of the 10 fruits and 10 vegetables on the physical survey checklist, as well as one product each from the dairy, protein and whole-grain categories.

The quality of produce at grocery stores in Suitland was generally rated average or above-average, although there were a few exceptions and quality varied from store to store. Expiration dates on meat and dairy products were found mostly to be more than five days out, although there were some scattered exceptions to this finding.

The hours of operation and the proximity of the nearest transit stop for each of the grocery stores that were surveyed generally supported easy access: each grocery store was located within easy sight distance of a bus stop, and each of the grocery stores surveyed were open seven days a week. Additionally, all six grocery stores were open at least 11 hours a day on weekdays.

As far as on-site safety concerns and other real and perceived access barriers, parking lots were found to be generally well-lit and well-trafficked, although most stores require those on foot to cross a large suburban strip mall parking lot to get from main roads to the store entrance. This is a safety hazard and may be a psychological barrier to access. The exterior condition of stores ranged from fair to new, while interiors varied more considerably. Interiors ranged from the new, clean, welcoming interior of a recently-opened supermarket on Silver Hill Road to one with broken, leaking freezer cases and disorganized aisles. The interiors of the remaining stores in the study area, however, were found to be mainly fair, good, and utilitarian in appear-
Finally, all grocery stores except for one in the study area were found to accept both WIC and SNAP nutrition benefits.

Despite the individual strengths of the six grocery stores in and near Suitland, five of them are clustered near one intersection on the fringe of the study area, a situation which significantly limits the extent to which the half-mile access buffers around these stores extend into the heart of Suitland. Additionally, although these five stores are in close proximity to one another, their parking lots are not well-connected and therefore require those wishing to visit more than one store to exit onto major arterial roadways and re-enter at different access points. While these grocery stores were found to have the best variety and quality of available food items, occasional lapses in product availability might require shoppers to visit neighboring stores. The lack of connectivity between the stores in the cluster is likely to make such multiple visits especially burdensome.

Despite these limitations, however, residents who are in close proximity to the grocery stores in Suitland or who own a personal vehicle likely have little trouble accessing healthy foods in this community.

*International Markets*
In addition to the six grocery stores in Suitland, there are three international markets, each of which is noticeably smaller than the grocery stores in the study area and unaffiliated with any national or regional chain. Only one of the markets, La Poderosa, met the criteria for being considered a full-service food outlet, although all three were found to provide some variety of fresh produce and meats.

Generally speaking, the three international markets in the area occupied older retail spaces that did not appear to have received any major recent investment in upkeep. Two of the three outlets did have well-maintained exterior and interior spaces, however, both the exterior and interior condition of one outlet was found to be poor. All three outlets also sold foods specific to one or a few cultures, catering especially to Latino and West African food preferences. While these specializations likely bring culturally appropriate food choices to those in the community who desire them, they may also discourage residents of other ethnic or cultural backgrounds from visiting these outlets.

**General Merchandise and Convenience Stores**

General merchandise stores and convenience stores provide some additional food store options for residents of Suitland. The nine general merchandise stores that were surveyed were found to carry several food products that fall into the dairy, protein, and whole-grain categories of the physical survey, however, no general merchandise stores were found to carry fresh produce. Some of the general merchandise stores surveyed belonged to national drugstore chains like CVS and Rite-Aid, while others belonged to national discount retailers like Family Dollar and Big Lots. The chain drugstores generally had interiors and exteriors that were better-maintained than the discount chains, and most of the general merchandise outlets surveyed had long hours of operation, open anywhere from 10 to 24 hours a day, seven days a week. At best, these food outlets can only serve to complement full-service food outlets in the area.

The eight convenience stores that were surveyed in Suitland showed much greater variability in food selection, exterior and interior store condition, and hours of operation. Most of the convenience stores offered only a few types each of dairy, protein, and whole-grain products, although the three 7-11 outlets surveyed also stocked anywhere from three to six varieties of fresh fruit. Two of the 7-11 outlets even offered a few varieties of cut raw vegetables. As for store conditions, some convenience stores were well-maintained and clean, while others were found to be dingy and poorly lit. Many of the stores placed their cash registers behind protective glass, which hardly makes the stores feel safe and welcoming. Some stores were open 24 hours a day, while others had no posted hours and were closed some weekend days. Overall, convenience stores in Suitland play a very minor role, even as complementary outlets, in the local food environment when compared with the other available options.

**Shopper Survey**

The results of the shopper survey in Suitland were extremely limited by the fact that surveys were not administered to respondents by the research team. Although 20 surveys were provided for distribution at the Windsor Crossing Apartments, only six surveys were returned. And all of the returned surveys had questions that were either
misinterpreted by the respondents or unanswered altogether. This made it impossible to draw any meaningful conclusions about food access from the shopper survey portion of the research in Suitland. This shortcoming highlighted the importance of trained researchers administering the survey to respondents, and not respondents self-administering the survey. Unfortunately, time constraints prevented the research team from collecting or administering additional shopper surveys.

### TABLE 6.

<table>
<thead>
<tr>
<th>SUITLAND</th>
<th>Food Desert Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land Area (acres)</td>
<td>2,712 — 3,229</td>
</tr>
<tr>
<td>% of Total Land Area</td>
<td>74.7% — 89.0%</td>
</tr>
<tr>
<td>Population</td>
<td>22,732 — 30,197</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>67.8% — 90.1%</td>
</tr>
<tr>
<td>Households</td>
<td>10,416 — 12,800</td>
</tr>
<tr>
<td>% of Total Households</td>
<td>72.4% — 89.0%</td>
</tr>
<tr>
<td>Vulnerable Populations Impacted</td>
<td></td>
</tr>
<tr>
<td>Auto-less Households (Outside Buffer)</td>
<td>1,767 — 2,047</td>
</tr>
<tr>
<td>% of Total Households</td>
<td>13.5% — 15.5%</td>
</tr>
<tr>
<td>Persons Below the Poverty Level (Outside Buffer)</td>
<td>2,776 — 3,189</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>8.3% — 9.5%</td>
</tr>
<tr>
<td>Seniors Age 65 and Older (Total)</td>
<td>1,670</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>5.0%</td>
</tr>
</tbody>
</table>
Summary of Community Survey Results

A significant amount of data was collected as part of the community survey approach of the research methodology for this study. Many of the results of the physical surveys, shopper surveys, and key informant interviews for specific study areas were discussed as part of the case study narratives above. However, a summary of the aggregate findings of the community survey tools across all three areas provides a useful look at food access issues more broadly. The results of the physical surveys and shoppers surveys especially are worth describing in detail. A summary discussion of the results of these survey tools follows.

Physical Surveys

Physical surveys of food outlets in or near the study areas were designed to provide the most insight into local food environment conditions in Bladensburg, Capitol Heights, and Suitland. The physical surveys served two important purposes in this study: (1) to observe and look for characteristics of local outlets and the food they sold that might affect an individual’s real or perceived access to healthy food, and (2) to discover which outlets sold what types of foods, for the purpose of identifying “full-service” food outlets for use in the mapping portion of the research.

In total, 145 food outlets in or within a half-mile of the three study areas were identified using GIS data from Prince George’s County and the District of Columbia, as well as by on-the-ground surveys in each study area. The stores that were surveyed were classified as belonging to one of five categories, based on their primary retail use or function: grocery stores and supermarkets, markets and international markets, convenience stores, general merchandise stores, and liquor stores.

Of the 145 food outlets located in or within a half-mile of the three study areas, 81 were surveyed using the physical survey instrument, and 13 were found to be full-service food outlets.

Site Accessibility, Safety, and General Appearance

The physical surveys were designed to look for characteristics of local outlets that might affect an individual’s real or perceived access to healthy food. Many observations made of the physical environment in and around food outlets do not lend themselves to tabulation or quantitative analysis. The following discussion outlines those observations, which provide insight into the types of access barriers most prevalent at different types of stores.

- **Grocery stores in the study areas were generally accessible and fostered a perception of safety.**

  Grocery stores in the study areas tended to be accessible. One grocery store was open 11 hours a day during weekdays; the other 10 stores were open between 12 and 18 hours each weekday. All eleven stores maintained open hours on both Saturday and Sunday. As for access to public transit, all 11 grocery stores had proximate access to bus stops or a Metro-rail station. The most significant recurring access problem for shoppers who walk or use transit was the need to cross a standard strip mall parking lot to get from sidewalks to the store’s front door. Also, a number of the grocery stores were located with frontage on streets with significant amounts of traffic.

  Lights were standard in the parking lots for all the gro-
cery stores in the study areas, but two grocery stores had areas of their parking lots with insufficient lighting. The relatively high traffic levels of both pedestrians and automobiles and standard lights help shape a positive perception of safety for shopping at grocery stores in the study areas. Grocery stores in the study areas also accommodated government nutritional assistance plans. Only one grocery store was not on the list of Prince George’s County retailers that accept WIC, but the remaining 10 were, and all 11 grocery stores surveyed accepted USDA SNAP assistance.

- **The interior and exterior appearance of grocery stores in the study areas was mixed.**

  The 11 grocery stores in the three study areas were part of regional, national, or international food retail outlet chains. The need to conform to corporate standards promotes an effort to maintain the exteriors and interiors. The exterior appearance of grocery stores in the study areas was generally “fair” or “good,” according to the survey results.

  Interiors were generally “acceptable” or better, but there was a greater range of quality. At one end of the spectrum was a grocery store that was recently constructed. Its interior was found to be clean, modern, and spacious. The interior quality of this grocery store was matched by a wide variety of good quality produce. This store also offered amenities such as clean bathrooms, which make shopping more amenable. The grocery store even had a community room open to the public.

  Most grocery stores that were studied were found to have interiors that were characterized as “good” or “fair.” There were two grocery stores that show obvious signs of deterioration and limited investment in store maintenance in their interiors. One had a distinct odor and shelves that were aging. Another had leaking freezer cases. Generally, though, grocery stores in the study areas were in “adequate” or “good” condition.

- **Markets and international markets were characterized by great variability in the quality of the physical environment.**

  Although the exteriors of many of the markets were in “fair” or better condition and appeared to have adequate access, surveyors found some problematic areas. All 16 markets surveyed had proximate access to transit, but two lacked curb cuts and another two had steps leading to the front door, making handicapped access difficult, if not impossible. Only five of the 16 markets accepted government nutritional assistance in the form of WIC or SNAP.

  Exterior and interior quality was decidedly mixed, with some stores having a good exterior and interior and others being described as “dirty,” “neglected,” or “disorganized.” For some of the markets, exterior challenges related to handicapped access were matched by cramped, crowded aisles that would make shopping difficult. The hours of operation were generally good for markets that posted hours, with most stores open for 11 to 13 hours each weekday. Nearly half of the stores, though, did not post times they were open.

- **General merchandise outlets are accessible and generally in fair to good condition.**

  Of the 15 outlets characterized as general merchandise
outlets, 11 were noted as having an exterior and interior appearance of “fair” or better. The exceptions were from two national discount retail chains. General merchandise outlets had a good range of hours. One general merchandise outlet was open for 10 hours each workday; the rest were open 11 hours or more, and one general merchandise outlet was open 24 hours a day. Additionally, all of the general merchandise outlets were open during both weekend days. Eleven of the 15 had proximate access to transit. Access challenges are similar to other outlets, with the need to cross parking lots posing the most common and significant challenge.

- **Convenience stores exhibited the greatest range of variability in terms of access and physical environment.**

  While all of the convenience stores surveyed had proximate access to transit, some of them faced notable access issues. Eight of the 26 convenience stores surveyed had on-site access challenges including deteriorating or small sidewalks, lack of sidewalks, lack of ADA compliant ramps, and obstructed sidewalks. Interior movement posed a challenge as well, with many of the stores having small, cramped aisles to maximize their limited floor space. The range of hours of operation varied greatly but was generally good, with some convenience stores open 10 to 12 hours during weekdays, and seven convenience stores open 24 hours a day. Two of the convenience stores were closed on Sunday. Fourteen of the 26 stores did not have hours posted. Only eight of the 26 convenience stores accepted one or more forms of government nutritional assistance (WIC and/or SNAP).

**Food Availability and Quality of Produce**

The physical survey was also designed to determine which types of stores sold what food items and the quality of fresh produce at different types of stores.

- **Grocery stores in the study areas offered a good variety of produce, dairy, protein, and whole-grain products.**

  As a group, grocery stores most consistently met the criteria for being a full-service food outlet. All 11 food outlets surveyed as grocery stores met the criteria to be a full-service outlet. These 11 grocery stores demonstrated a strong mix of the fruits and vegetables on the survey checklist. All 11 stores had seven or more of the 10 varieties of vegetables on the checklist, and nine of the 11 stores had eight or more of the specified varieties. Additionally, eight of the 11 stores carried food items in all 18 categories of meat, dairy, whole-grain, and 100% fruit juice products on the physical survey checklist.

  Produce quality was at least adequate, with nine of the 11 stores having an average produce quality score of “3” (“fair”) or greater. Of all the produce and all the stores surveyed, there were only five instances of produce rated as “poor,” or that “most of the produce in the category appears old, rotten, bruised, mealy, or overripe.” There were 22 instances of produce being rated “mostly poor,” or that “more than half of the produce in the category is old, rotten, bruised, mealy, or overripe.” The remaining 200 observations rated produce quality as “fair,” “mostly good,” or “good.”

- **Markets and international markets were characterized by great variability in store quality, food variety, and produce quality.**

  This category had the greatest variability in store quality, food availability, and produce quality. Two of the 16 food outlets categorized as markets or international markets matched the criteria for being considered a full-service food outlet, with a third that just missed the minimum requirements. Food variety was not nearly as good as grocery stores, with the number of fruit and vegetable varieties on the checklist ranging from as
many as five or six down to some stores that lacked any of the fruits or vegetables on the physical survey.

- **General merchandise outlets were not found to be a source for fresh produce, but did generally offer dairy, protein, and whole-grain food items.**
  
  A total of 15 general merchandise stores were surveyed. None of the general merchandise outlets offered any form of fresh produce. All did, however, offer at least one form of whole-grain product, and nearly half offered whole grain options in both the whole-grain breads and whole-grain cereals categories. Twelve of the 15 offered multiple milk and dairy products, most commonly including whole and 2% milk. These two stores also sold eggs, which fulfilled the protein category.

- **Convenience stores are similar to general merchandise stores in that they often provide dairy, protein, and whole-grain products.**
  
  Eighteen of the 26 convenience stores provided products that fit seven or more of the sub-categories of dairy, protein, and whole-grain products. Seventeen had at least one whole-grain product, and seven of the convenience stores were found to carry at least one product in the whole-grain bread and whole-grain cereal categories. Convenience stores were not a reliable source for fresh produce and provide little variety. Fifteen of the convenience stores provided no fresh produce. The national convenience store chain 7-11 did stand out in the convenience store category; the five 7-11 stores in the study areas carried three or more fruits from the physical survey checklist, the only convenience stores in the study areas to carry more than two varieties of fruits from the checklist.

- **Liquor stores provided little, if any, value as food outlets.**
  
  A total of 13 liquor stores were surveyed in or within each study area. In these stores, the most common food product on the list of healthy foods was 100% fruit juice, which was found in 10 of the 13 liquor stores. Slightly fewer than half of liquor stores also provided either a protein, typically nuts, or a non-whole-grain bread product. One liquor store provided meats and whole-grain food items, but no liquor store provided any kind of produce.

### Full-Service Food Outlets in the Study Areas

Food outlets in or near the study areas that were found to sell an ample variety of fresh, healthy foods were described in this study as full-service food outlets. Full-service food outlets met the “5-5-1-1-1-1” standard, meaning they sell at least five types each of 10 specific fruits and 10 specific vegetables, at least one type each of dairy, protein, whole-grain, and 100% fruit juice food items. Only those persons living within a half-mile of a full-service food outlet are thought to have adequate access to healthy food; any area more than a half-mile from a full-service outlet is identified in this study as a food desert.

### Shopper Surveys

The shopper survey portion of the research was developed to understand shoppers’ perceptions of the local food environment in each study area. Specifically, the survey instrument evaluated shoppers’ perceptions of the quality, selection, and prices of food at the outlets they visited most often, as well as their perception of their own ease of access to healthy foods.

Neither the way in which the survey was designed nor the way it was administered was meant to provide scientific or statistically valid results. Instead, the survey questions were designed to begin to understand shoppers’ perceptions and the strengths and weaknesses of such a survey instrument.
• Less than half (40%) of respondents shop at the grocery store closest to where they live. Among the 60% of respondents who chose another grocery store, the factors that led them to choose an alternate store are lower prices, better selection, and higher quality produce.

Nearly 40% of respondents indicated that they shop at the grocery store closest to where they live. The 60% of respondents who traveled farther to shop at a different store were asked to rate the importance of five factors in making that decision. The most important and most frequently cited factors that lead respondents to shop further away were: “Lower Prices” (54%), “Better Selection” (66%), and “Higher quality produce” (57%). “Easier to get to” (29%) and “Availability of foods unique to my culture” (31%) were cited as most important for a limited number of respondents.

Most respondents access food outlets by car, and the vast majority of respondents travel less than 20 minutes to get to their primary retail food outlet.

Approximately two-thirds of respondents from the three study areas indicated that they drove to their primary retail food outlet. The next most popular mode was walking, at 14%, followed by other (which included three multi-modal responses), at 16%, and public transportation, at 7%. No respondent reported biking to their primary retail food outlet. Roughly 80% of respondents reported that it took less than 20 minutes for them to travel to their primary retail food outlet. For 56% of respondents in the study areas, neither distance nor method is a problem with grocery shopping. Ten percent reported that distance makes their grocery shopping difficult. Twenty percent indicated that their transportation mode made it difficult, and 14% cited both distance and method as a difficulty.

The vast majority of respondents had a positive or neutral assessment of the quality and variety of their primary grocery store and its produce.

On a 1 to 5 scale with one “1” being the best and “5” being worst, respondents gave average, good, or the best marks for their stores in terms of store environment (93%), variety (87%), and quality of produce (86%). Less than half of respondents rated their store highest in terms of store environment (44%), variety (39%), and quality of produce (45%). Most respondents were content with the value and quality of the store where they shop in comparison to other grocery stores. Only 14% of respondents felt that they paid more, and 16% of respondents felt that the quality of the produce was worse than other stores.

Most respondents reported buying fresh produce from sources other than grocery stores or other full-service food outlets.

Twenty-six respondents (44%) reported that they shop at a farmers market. Seventeen respondents (29%) reported getting at least some of their fresh produce from community gardens, food banks, their own garden, or a family member’s own garden.

<table>
<thead>
<tr>
<th>TABLE 8. Travel modes of respondents.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driving</td>
</tr>
<tr>
<td>Walking</td>
</tr>
<tr>
<td>Bicycle</td>
</tr>
<tr>
<td>Public transit</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TABLE 9. Respondents reporting feeling burdened by distance or mode to the store.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance</td>
</tr>
<tr>
<td>Mode of Travel</td>
</tr>
<tr>
<td>Both</td>
</tr>
<tr>
<td>Neither</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>
Respondents cited a number of areas for improvement of their food shopping experience. Respondents cited many different ways their shopping experience could be improved. The most common response (12) called for better selection. Price concerns were the second most cited improvement (with seven responses), followed by a grouping including better stores, improved transaction efficiency, better transportation options, and a range of markets (each with six responses). Ten respondents indicated that there was nothing that could be done to improve their grocery shopping experience.

**TABLE 10.** Shoppers’ ratings of store quality, product selection, and produce quality.

<table>
<thead>
<tr>
<th></th>
<th>1 (best)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (worst)</th>
<th>Avg. Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Store Quality</td>
<td>26</td>
<td>16</td>
<td>13</td>
<td>3</td>
<td>1</td>
<td>1.93</td>
</tr>
<tr>
<td>% of Responses</td>
<td>44%</td>
<td>27%</td>
<td>22%</td>
<td>5%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>Product Selection</td>
<td>23</td>
<td>10</td>
<td>18</td>
<td>5</td>
<td>3</td>
<td>2.24</td>
</tr>
<tr>
<td>% of Responses</td>
<td>39%</td>
<td>17%</td>
<td>31%</td>
<td>8%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Quality of Produce</td>
<td>26</td>
<td>9</td>
<td>15</td>
<td>5</td>
<td>3</td>
<td>2.14</td>
</tr>
<tr>
<td>% of Responses</td>
<td>45%</td>
<td>16%</td>
<td>26%</td>
<td>9%</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 11.** Shoppers’ perceptions of relative value and quality.

<table>
<thead>
<tr>
<th></th>
<th>Better</th>
<th>About the Same</th>
<th>Worse</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prices</td>
<td>28</td>
<td>16</td>
<td>7</td>
<td>51</td>
</tr>
<tr>
<td>% of Total Responses</td>
<td>55%</td>
<td>31%</td>
<td>14%</td>
<td>100%</td>
</tr>
<tr>
<td>Quality of Produce</td>
<td>17</td>
<td>25</td>
<td>8</td>
<td>50</td>
</tr>
<tr>
<td>% of Total Responses</td>
<td>34%</td>
<td>50%</td>
<td>16%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**Summary of Map Analysis Results**

The map analysis used GIS mapping software to identify what portions in each of the three study areas were located more than an acceptable walking distance away from food outlets selling healthy food. The results of the physical survey were used to determine which stores were full-service food outlets.

This study used two types of access buffers mapped around full-service food outlets in order to measure pedestrian access to these food stores. The first was an aerial access buffer that depicts a half-mile, “as the crow flies” radius around those stores. This measure provides a high-end estimate of the size of the area within a half-mile walking distance of full-service food outlets.

The second is a network access buffer that more realistically depicts pedestrian access to food stores by following the local street network around each full-service outlet. This measure provided a low-end estimate of the size of the area within a half-mile walking distance of stores selling healthy food.

Together, these two measures provide a realistic range of the size of food deserts in the three study areas. The maps below show both buffer types plotted around full-service food outlets in or within a half-mile of the three study areas. Portions of the study areas that fall outside of the aerial access buffers were considered to be food deserts, while those inside the network access buffers were considered not to be food deserts. Those areas in between the two buffers may or may not be food deserts depending on the possibility of other, non-road pedestrian access routes such as trails, shortcuts, or informal paths.
As a way to gauge the relative size and impact of identified food deserts on vulnerable populations within each study area, demographic information from areas inside food deserts reveal what types of people are likely to be most affected from living in areas with low access to healthy food. These data aggregated across all three study areas is a basis from which to understand what portions of the county’s more vulnerable populations can be expected to live in a food desert.

Of the total population across all three study areas, 27,000 individuals, or 59.6% of the total population, lived outside of a half-mile aerial access buffer of a full-service food outlet. When applying the network access buffer, 38,550 individuals, or 85.1% of the total population lived outside a half-mile of a full-service food outlet.

**MAPS 9-11.**
One objective of this study was to measure the impact of food deserts on vulnerable populations within each study area, or those groups of people who, in general, can be expected to be at greater risk of experiencing physical access limitations to healthy food outlets.

This study focuses on three key vulnerable populations that are most likely to have limited mobility and therefore are more prone to having limited access to healthy food: individuals who live in households that do not own a car, individuals with incomes below the federal poverty line, and seniors age 65 and older.

Those who live in auto-less households and individuals with income below the federal poverty line must walk, rely on public transit, or get rides from family, friends, or taxi cabs in order to get to the store. For many seniors age 65 and older, walking to the nearest food store—no matter how close it might be—can be difficult, dangerous, or even impossible.

Map analysis was used to estimate the number of individuals and households in each of the three study areas that are at greater risk of suffering from limited access to healthy food. The results of this portion of the research are presented in Section 5: Analysis.

### TABLE 12. Size and population of food deserts in each study area.

<table>
<thead>
<tr>
<th></th>
<th>Bladensburg</th>
<th>Capitol Heights</th>
<th>Suitland</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Land Area (acres)</strong></td>
<td>652</td>
<td>527</td>
<td>3,629</td>
<td>4,808</td>
</tr>
<tr>
<td><strong>Total Population</strong></td>
<td>7,661</td>
<td>4,138</td>
<td>33,515</td>
<td>45,314</td>
</tr>
<tr>
<td><strong>Total Households</strong></td>
<td>3,155</td>
<td>1,419</td>
<td>13,131</td>
<td>17,705</td>
</tr>
</tbody>
</table>

**Outside Half-Mile Buffers**

<table>
<thead>
<tr>
<th></th>
<th>Bladensburg</th>
<th>Capitol Heights</th>
<th>Suitland</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Land Area (acres)</strong></td>
<td>122 – 297</td>
<td>511 – 527</td>
<td>2,712 – 3,229</td>
<td>3,345 – 4,053</td>
</tr>
<tr>
<td><strong>% of Total Land Area</strong></td>
<td>18.7% – 45.6%</td>
<td>97.0% – 100%</td>
<td>74.7% – 89.0%</td>
<td>70.0% – 84.3%</td>
</tr>
<tr>
<td><strong>% of Total Population</strong></td>
<td>5.0% – 55.0%</td>
<td>93.9% – 100%</td>
<td>67.8% – 90.1%</td>
<td>59.6% – 85.1%</td>
</tr>
<tr>
<td><strong>Households</strong></td>
<td>483 – 2,177</td>
<td>1,520 – 1,603</td>
<td>10,416 – 12,800</td>
<td>12,419 – 16,580</td>
</tr>
<tr>
<td><strong>% of Total Households</strong></td>
<td>14.0% – 63.2%</td>
<td>94.8% – 100%</td>
<td>72.4% – 89.0%</td>
<td>63.9% – 85.4%</td>
</tr>
</tbody>
</table>
SECTION 5 | Analysis

In this section...
- Analysis of Community Survey Results
- Analysis of Mapping Results
- Implications for the County
- Methodology Assessment

Exploring food access issues and identifying food deserts in the Developed Tier of Prince George’s County required an extensive research methodology composed of two primary approaches. One approach used community survey tools to explore a broad range of factors influencing food access for residents in three specific study areas in the Developed Tier. The second approach used mapping software to identify what portions of each of the three study areas were located more than an acceptable walking distance away from food outlets selling healthy food. The results of the two approaches revealed that some residents in all three study areas either do, or are likely to, have limited access to fresh, healthy food, and that portions of all three study areas are food deserts.

The physical surveys, shopper surveys, and key informant interviews that were conducted provided valuable insight into such factors as: variations in the quality and selection of food items across stores; shoppers’ perceptions of quality, selection and prices of foods across stores; the presence or perception of physical barriers to access, such as unsafe parking lots and missing sidewalk connections; and the frequency and coverage of local public transit routes. The community survey approach did not shed much light on the unique dietary needs or customs of individuals with different cultural backgrounds. Nevertheless, the results of the three survey tools began to illustrate the condition of the food environment in each of the three communities, and provided the data needed to identify those portions of each study area that should be considered a food desert.

The results of the map analysis showed that, in all three communities, some portion of the land area was found to be more than a half-mile from a grocery store or other food outlet that sells an ample variety of fresh, healthy food. For residents in these areas without easy access to a private automobile—especially those in households that do not own cars, and individuals aged 65 and older—making regular trips to the grocery store to buy healthy food items for in-home preparation and consumption is likely to be more difficult and burdensome, if possible at all.

Together, the community survey and map analysis components of the research paint a picture of the local food environment in the three study communities. The sub-sections that follow discuss in greater detail the findings of the community surveys and map analysis, and what those results say more broadly about food access in Prince George’s County.
Analysis of Community Survey Results

The three-part community survey approach was designed to allow the researchers to begin to explore the range of factors that impact food access in the three communities. The physical survey allowed the researchers to take stock of characteristics of local food outlets and the food they sold that might affect an individual’s access to healthy food. The physical survey of food outlets in or near the study areas also provided the data needed to identify full-service outlets.

The shopper surveys provided insight into some of the challenges shoppers face and showed that some people did feel as though they had limited physical access to fresh, healthy food. Finally, the interviews and conversations with local community leaders (referred to elsewhere as key informants) provided a “lay of the land,” and aided in understanding the history and context of the study areas, challenges the leaders saw in their communities, and what opportunities might exist to address local food access obstacles.

The results of the shoppers and physical survey approaches provide valuable information on shoppers’ perceptions of food quality, food selection, and their own access to healthy food, as well as researchers’ observations of access barriers at or near food outlets. The surveys were not administered to a random sample of local shoppers; therefore, the results cannot be used to draw statistically-valid conclusions about shoppers’ perceptions of the local food environment and their shopping behavior. Even so, some themes that appear in the data provide insights into local food access issues and add anecdotal depth to this study.

Physical and Psychological Barriers to Access

- Physical access to many outlets is limited by more than distance. Numerous instances of missing sidewalk connections, large parking lots, on-site security concerns, and below average exterior appearance were found near several stores in the study areas.

- More than one-third of survey respondents (34%) reported accessing grocery stores by modes other than driving by car. Of those, 60% felt burdened by the distance to the grocery store they visit most often, the transportation mode they use to get there, or both.

- Survey respondents who do not drive to the grocery store they visit most often are significantly less satisfied with store quality, product selection, and produce quality than respondents who do drive.

- Approximately 59% of respondents report shopping at a grocery store other than the one nearest to their home. More of these individuals think that they pay less and get higher quality produce at their store as compared to other stores than do those who shop at the store nearest to their home.

- Physical access to many outlets is limited by more than distance. Numerous instances of missing sidewalk connections, large parking lots, on-site security concerns, and below average exterior appearance were found to be present at or near several stores in the study areas.

  The physical surveys of food outlets in and near the three study areas confirmed an assumption shared by the researchers that many factors beyond distance are present and can limit access to food in the three study areas. The physical survey instrument was designed to capture information about site and store characteristics that might make physical access more difficult or less inviting, especially for shoppers arriving on foot or by public transit.
Among those characteristics that might impede access are such things as limited hours of operation, missing sidewalk connections, large parking lots, a lack of exterior lighting, uninviting exterior and interior appearance of stores, a limited number of cash registers, and cash registers located behind protective glass barriers. Acceptance of government food assistance programs like WIC and SNAP was also considered, as outlets that accept vouchers from such programs are more accessible to low-income individuals.

The surveys reported numerous instances of missing sidewalk connections and large parking lots, especially at grocery stores and general merchandise stores. Exterior and interior conditions were also found to be lacking in some situations, particularly at older chain grocery stores, general merchandise stores, and some markets and international markets. Convenience stores also had cramped, uninviting interiors, and many outlets in this category had cash registers behind protective glass.

Many low-income families rely on government assistance to buy their groceries. The two primary programs, WIC and SNAP, require food outlets that accept benefits from those programs to supply adequate signage that announces the available use of those benefits. By cross-referencing government and county lists of stores that accepted those benefits with stores that supplied signage of the use of those benefits, researchers could determine whether low-income families had access to stores where they could use those benefits.

All of the full-service food outlets accepted SNAP benefits; however, only three of these full-service food outlets had signage. Eleven of the 13 full-service food outlets accepted WIC benefits and nine had signage. This means that even if stores accept benefits from programs that support low-income individuals, they may not have adequate signage to inform low-income patrons they may use those benefits. In this sense, access to food for low-income individuals may still remain a challenge, despite the availability of assistance for low-income individuals to acquire healthy food.
More than one-third of survey respondents (34%) reported accessing grocery stores by modes other than driving by car. Of those, 60% felt burdened by the distance to the grocery store they visit most often, the transportation mode they use to get there, or both. Access limitations cannot always be observed objectively by researchers, though; often, shoppers’ perceptions of their own access and the quality of the stores they visit most often can say more about whether residents have access to healthy food. The portions of the population without easy access to a personal vehicle to travel to a food outlet were a primary concern for this research. Of the total number of respondents to the shopper survey, more than a third (34%) reported accessing the grocery store they visit most often by modes other than driving by car. Approximately 14% report walking, 10% report taking public transit, and 10% report using some other unlisted mode or combination of modes. Not all non-drivers access grocery stores by modes other than driving out of necessity, however; only 65% of non-drivers report not owning a car, indicating that some people actually choose to walk, take public transit, or use some other mode.

Of the respondents who do not drive to the grocery store, 60% report feeling burdened by the distance they travel to the grocery store, the transportation mode they use to get there, or both. Among the 66% of respondents who report driving to the grocery store, 38% report feeling burdened by distance, mode, or both. That so many drivers and non-drivers report feeling burdened by their trip to the grocery store indicates that many people feel they have some degree of limited access, which may result in those individuals being less likely to visit the grocery store as often as necessary to maintain a healthy diet. That so many more non-drivers than drivers report feeling burdened indicates that those without access to cars are more likely to experience such access limitations.

Survey respondents who do not drive to the grocery store they visit most often are moderately less satisfied with store quality, product selection, and produce quality than respondents who do drive. Another theme that emerged from the shopper survey data was that respondents who do not drive to the grocery store they visit most often are significantly less satisfied with store quality, product selection, and produce quality than respondents who drive. Survey respondents who do not drive to the store rate these three categories worse (on a scale of 1 to 5, with 1 being the best rating) than respondents who reported driving by car to the store. The largest discrepancy between non-drivers and drivers was in quality of produce, where non-drivers rated produce quality 0.6 points worse than people who drove to find their groceries. Among survey respondents who do not drive to the store, average ratings for these three categories were 0.18 to 0.6 points worse than drivers.

TABLE 13. Average ratings between non-drivers and drivers for store quality, product selection, and produce quality.

<table>
<thead>
<tr>
<th></th>
<th>Store Quality</th>
<th>Product Selection</th>
<th>Produce Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Drivers</td>
<td>1.90</td>
<td>2.10</td>
<td>2.55</td>
</tr>
<tr>
<td>Drivers</td>
<td>1.72</td>
<td>1.85</td>
<td>1.95</td>
</tr>
</tbody>
</table>

Non-drivers rated overall store quality an average of 1.90, compared to 1.72 among drivers. Non-drivers rated product selection an average of 2.10, compared to 1.85 among drivers. And non-drivers rated produce quality an average of 2.55, compared to 1.95 among drivers. These findings show that those who drive to the grocery store are, on average, more satisfied with overall store quality, product selection, and quality of fresh produce. One possible conclusion that can be drawn from this information is that drivers have greater choice and are therefore able to seek out better food options farther from home.
Approximately 59% of respondents report shopping at a grocery store other than the one nearest to their home. More of these individuals think that they pay less and get higher quality produce at their store compared to other stores than do those who shop at the store nearest to their home.

Of all the respondents to the shopper survey, approximately 59% report shopping at a grocery store other than the one nearest to their home. Those who did were asked to rate the importance of five reasons for making that decision; “Lower prices,” “Better selection,” and “Higher quality produce” were cited as among the most important reasons by 54%, 63%, and 57% of that group, respectively. Survey responses from those who shop at more distant stores, however, show very little difference in the average rating of store quality, product selection and quality of produce, compared to those who shop closest to home.

When asked whether they feel the prices they pay for food are more, about the same, or less than at other stores, however, 60% of those who shop at stores other than the one nearest their home feel they pay lower prices compared to 30% of those who shop at the store nearest to their home. As for quality, 34% of those who shop at more distant stores feel they get better quality produce than at other stores, compared to 22% of those who shop closest to home. These findings indicate that those with the freedom to choose to shop at a more distant store feel they pay lower prices and get higher quality produce, even though their actual evaluation of store quality, product selection, and produce quality vary little with those respondents who shop at the nearest store.

### Availability and Quality of Healthy Foods

<table>
<thead>
<tr>
<th>Grocery stores and supermarkets in the study areas offer the best variety of healthy food items, including produce, meats, whole-grain, dairy, and 100% fruit juice products. Some markets and international markets also provide an ample variety of healthy food items.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce quality varies widely from store to store, even among grocery and supermarket chains. Several stores were found to have produce that lacked in quality of appearance and ripeness.</td>
</tr>
<tr>
<td>General merchandise stores and convenience stores do not sell an ample variety of healthy foods, but many offer some dairy, grain, and meat products. Liquor stores, however, provide little to no value as food outlets.</td>
</tr>
<tr>
<td>Some stores that meet the minimum criteria still have a very limited selection of items in the given categories.</td>
</tr>
</tbody>
</table>

**Grocery stores and supermarkets in the study areas offer the best variety of healthy food items, including produce, meats, whole-grain, dairy, and 100% fruit juice products. Some markets and international markets also provide an ample variety of healthy food items.**

Physical surveys of 81 food outlets in and near the three study areas revealed 13 food outlets that sold an ample variety of fresh, healthy food items, defined as at least five types each of 10 specific fruits and 10 specific vegetables, and at least one type each of dairy, protein, whole-grain, and 100% fruit juice food items. Of the 13 food outlets identified as being full-service, 11 were large, chain grocery stores or supermarkets, and two were international markets.

By far, grocery stores and supermarkets in the study areas were found to offer the best variety of healthy food items in-
cluded as part of the 5-5-1-1-1-1 definition of “ample variety.” All 11 grocery stores had seven or more of the 10 varieties of vegetables on the physical survey checklist, and nine of the 11 stores had eight or more of the 10 varieties of fruits on the checklist. Additionally, nine of the 11 grocery stores stocked food in all 18 sub-categories of meat, dairy, whole-grain, and 100% fruit juice items on the physical survey checklist.

Of the 16 markets and international markets surveyed in or near all three study areas, only two were found to meet the criteria for being considered full-service food outlets. About one-third of surveyed markets and international markets were found to fall just shy of meeting all six criteria in the 5-5-1-1-1-1 standard. Markets and international markets especially lacked the fruits and vegetables that were part of the NEMS-S-based physical survey checklist.

Surveyors noted, however, that many of these outlets stocked numerous varieties of produce that were not on the checklist but that are central components of many cultural and ethnic food diets (e.g., mangos, plantains, and avocados). In this way, markets and international markets do play an important role in making ethnic foods available in the study areas, whether or not they meet the variety standard established in this study. One significant limitation of the physical survey, therefore, was its focus on traditional U.S. cuisine and food culture, a shortcoming described in greater detail in the “Methodology Assessment” section.

- **Produce quality varies widely from store to store, even among grocery and supermarket chains. Several stores were found to have produce that lacked in quality of appearance and ripeness.**

  The quality of produce in the stores that met the criteria for being considered full-service outlets varied widely. On the whole, grocery stores received an average produce quality rating of 3.65 on a scale of 1 to 5, with 5 representing “good,” or that most of the produce appears fresh, ripe, not bruised, or overripe. Approximately 63% of surveyed produce items were rated as being “good” or “mostly good,” while approximately 12% of surveyed produce items at grocery stores was rated “mostly poor” or “poor.” Four of the 13 full-service food outlets stores had an average produce rating of 4 or higher, while the remaining nine outlets had an average rating less than 4. Nine of the 13 full-service food outlets grocery stores were found to have at least one produce quality that was rated either a 1 (“poor”) or 2 (“mostly poor”). Among international markets meeting the 5-5-1-1-1-1 criteria, produce quality received an average rating of 3.98 from the surveyors.

- **General merchandise stores and convenience stores do not sell an ample variety of healthy foods, but many offer some dairy, grain, and meat products. Liquor stores, however, provide little to no value as food outlets.**

  No general merchandise, convenience or liquor stores in or near any of the three study areas were found to carry an ample variety of fresh, healthy foods. Many general merchandise stores and convenience stores offered some dairy, whole-grain and protein products, and some even offer a few varieties of fresh produce. Liquor stores, on the other hand, were found to offer very little in the way of healthy food. Without the variety of fresh produce required to be identified as a full-

<table>
<thead>
<tr>
<th>Total Outlets Surveyed</th>
<th>Total Full-Service Outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grocery Stores</td>
<td>11</td>
</tr>
<tr>
<td>Markets and Int’l Markets</td>
<td>16</td>
</tr>
<tr>
<td>General Merchandise</td>
<td>15</td>
</tr>
<tr>
<td>Convenience Stores</td>
<td>26</td>
</tr>
<tr>
<td>Liquor Stores</td>
<td>13</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>81</strong></td>
</tr>
<tr>
<td><strong>13</strong></td>
<td></td>
</tr>
</tbody>
</table>
service outlet, such stores simply cannot meet all of the basic dietary needs of local residents. On the other hand, those stores that do provide some food items from the non-produce categories can play an important role in filling some gaps in the local food environment.

- **Some stores that meet the minimum criteria still have a very limited selection of items in the given categories.**

  Finally, even though many stores met one or more of the minimum criteria of the 5-5-1-1-1-1 standard for providing an ample variety of healthy foods, the selection of items in the given categories varied widely. While some stores offered dozens of food items that met the protein requirement of the ample variety definition, some only carried eggs or peanuts, but were still classified as meeting the minimum protein requirements. Because stores were only required to offer one item in one category in order to meet the requirement, there still remains much unexplored and undocumented variation in the selection of healthy food items at these stores.

**Analysis of Mapping Results**

The map analysis tells an unsettling story about the availability of fresh, healthy food in the three study areas. In Capitol Heights and Suitland, large swaths of land area fall outside of the half-mile aerial and network access buffers around each of the food outlets determined to sell an ample variety of healthy foods. In Bladensburg, a smaller but still significant portion of land falls outside the access buffers, especially the network buffer. These areas are home to a large proportion of the local population, as well as to a significant number of people and households considered to be especially vulnerable to physical access limitations to healthy food. The following statements represent the most significant conclusions drawn from the mapping analysis portion of the research, which used data available from the 2000 U.S. Census:

<table>
<thead>
<tr>
<th>Map Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant portions of all three study areas are more than a half-mile from a food outlet that sells an ample variety of fresh, healthy food items. In Capitol Heights, almost no households are within a half-mile of a full-service food outlet.</td>
</tr>
<tr>
<td>Auto-less households located more than a half-mile from a full-service food outlet represent between 13.4% and 15.9% of all households in the study areas.</td>
</tr>
<tr>
<td>At least 13.4% of households in the three study areas—the percentage of auto-less households outside of a half-mile aerial buffer of full-service food outlets—are very likely to lack access to fresh, healthy food.</td>
</tr>
<tr>
<td>Individuals with incomes below the federal poverty level who live more than a half-mile from a full-service food outlet represent between 7.9% and 9.3% of the total local population of the study areas.</td>
</tr>
<tr>
<td>Seniors age 65 and older, who are at increased risk of physical access limitations regardless of distance from a full-service food outlet, make up approximately 5.9% of the total population of the three study areas.</td>
</tr>
</tbody>
</table>

- **Significant portions of all three study areas are more than a half-mile from a food outlet that sells an ample variety of fresh, healthy food items. In Capitol Heights, almost no households are within a half-mile of a full-service food outlet.**
The percentage of land area identified as food deserts using aerial access buffers ranges from 19% in Bladensburg to 75% in Suitland to 97% in Capitol Heights. Using network access buffers along the local street system, as much as 46% of the land area in Bladensburg, 89% of the land area in Suitland, and 100% of the land area in Capitol Heights are more than a half-mile from full-service food outlets.

In some instances, portions of these large swaths of land area have non-residential land uses and are therefore of less concern when identifying areas where residents have limited access to healthy food. In Suitland, for example, more than 730 acres of land are occupied by three large cemeteries and the Suitland Federal Center, home to the U.S. Census Bureau and a division of the NOAA.

Despite the large non-residential areas in Suitland, significant numbers of the local population in each of the study areas live in areas that fall outside of a half-mile aerial or half-mile network access buffer around full-service food outlets.

- **Auto-less households located more than a half-mile from a full-service food outlet represent between 13.4% and 15.9% of all households in the study areas.**
- **Individuals with incomes below the federal poverty level who live more than a half-mile from a full-service food outlet represent between 7.9% and 9.3% of the total local population of the study areas.**
- **Seniors age 65 and older, who are at increased risk of physical access limitations regardless of distance from a full-service food outlet, make up approximately 5.9% of the total population of the three study areas.**

Not everyone who lives in an area that has been identified as a food desert lacks access to healthy food, however. Most people who live in food deserts, even in these three study areas, own or have easy access to a car and therefore do not experience physical access limitations due to distance from the nearest full-service food outlet.

Individuals who live in auto-less households, those with incomes below the federal poverty level, and seniors age 65 and older experience mobility challenges that leave them especially vulnerable to physical access limitations to healthy food. Those who live in auto-less households and those with incomes below the federal poverty level must walk or bike, rely on public transit, or get rides from family, friends or taxi cabs in order to get to food stores.

For many seniors age 65 and older, walking to the nearest grocery store—no matter how close it might be—can be difficult, dangerous, or even impossible. For this segment of the population, distance measures of access become irrelevant and special attention should be paid to the food access needs of all seniors, regardless of

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**TABLE 15. Size and population of food deserts in each study area.**

<table>
<thead>
<tr>
<th></th>
<th>Bladensburg</th>
<th>Capitol Heights</th>
<th>Suitland</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Land Area (acres)</td>
<td>652</td>
<td>527</td>
<td>3,629</td>
</tr>
<tr>
<td>Total Population</td>
<td>7,661</td>
<td>4,138</td>
<td>33,515</td>
</tr>
<tr>
<td>Total Households</td>
<td>3,155</td>
<td>1,419</td>
<td>13,131</td>
</tr>
<tr>
<td><strong>Outside Half-Mile Buffers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land Area (acres)</td>
<td>122 – 297</td>
<td>511 – 527</td>
<td>2,712 – 3,229</td>
</tr>
<tr>
<td>% of Total Land Area</td>
<td>18.7% – 45.6%</td>
<td>97.0% – 100%</td>
<td>74.7% – 89.0%</td>
</tr>
<tr>
<td>% of Total Population</td>
<td>5.0% – 55.0%</td>
<td>93.9% – 100%</td>
<td>67.8% – 90.1%</td>
</tr>
<tr>
<td>Households</td>
<td>483 – 2,177</td>
<td>1,520 – 1,603</td>
<td>10,416 – 12,800</td>
</tr>
<tr>
<td>% of Total Households</td>
<td>14.0% – 63.2%</td>
<td>94.8% – 100%</td>
<td>72.4% – 89.0%</td>
</tr>
</tbody>
</table>
whether they live inside or outside the designated access buffers.

The above table summarizes the number of individuals or households in each of these vulnerable groups who live in the food deserts that have been identified in each study area, and the percentage of the total local population they represent.

- **At least 13.4% of households in the three study areas (the percentage of auto-less households outside of a half-mile aerial buffer of full-service food outlets) are very likely to lack access to fresh, healthy food.**

  The map analysis shows that while a significant number of people live more than a half-mile from full-service food outlets selling an adequate variety of healthy food items, a much smaller share of the total population is likely to experience physical access limitations due to their lack of proximity to the nearest full-service food outlet. Most people who live in food deserts, even in these three study areas, own or have easy access to a car and do not have limited access to food because of distance.

Even so, the map analysis shows that at least 13.4% of households in the three study areas (based on the aerial access buffer) are auto-less and live more than a half-mile from the nearest full-service food outlet. This indicates that a sizeable share of the local population in the three study areas is very likely to lack access to fresh, healthy food. Depending on how many low-income individuals and seniors own cars but still suffer from reduced mobility, the number of households that lack access to healthy food could be considerably higher.

### Implications for the County

The results of the community surveys and map analysis conducted for this report demonstrate that food access limitations are present, though not pervasive, in the three study areas. A majority of households in Bladensburg, Capitol Heights, and Suitland (81%) own a private vehicle, which grants them much greater access to healthy food options in or near their communities. For those without vehicles, however, healthy food options are often not within a comfortable walking distance. And for those with incomes below the federal poverty level and for seniors age 65 and older, accessing food outlets that sell healthy food is also likely to be a struggle.
Although the numbers of impacted individuals identified here do not represent a huge proportion of the local population, it is precisely these individuals who have the fewest choices with regard to healthy food, and those whom planners have the greatest professional and ethical obligation to serve. The results of this study show that at least a portion of the population in each area is without adequate access to healthy food and that there are, in fact, food deserts in these areas. The results also demonstrate that food deserts are likely to exist elsewhere in Prince George’s County, and that the County should perform a more in-depth study in order to identify these areas and begin to develop policies aimed at addressing the food-related challenges faced by the people who live in them.

Methodology Assessment

This study provides one of the first formal explorations of food deserts in Prince George’s County. Many of the research methods and survey tools used in this study were developed by the researchers and used for the first time ever in the chosen study areas. Although much time and energy was spent developing the best possible methodology for studying food access issues in the area, the short time span within which the entire research project was conducted did not allow the techniques or instruments to be field tested prior to use. The methodology proved useful in many ways, but fell short of providing a more complete picture of food access in others.

The strengths and limitations of the research methodology used for this study are described below. Specific recommendations to the County for future studies of food deserts are outlined in Section 6: Recommendations.

A Review of the Research Methodology

The methodology used for this study consisted of two primary approaches: a community survey approach, and a map analysis approach. The community survey approach was designed to serve two important purposes: (1) to begin to explore the broad range of factors that influence food access for residents in three specified study areas in the Developed Tier, and (2) to determine which stores in or near each of the three study areas stocked enough healthy food choices to be considered full-service food outlets for the map analysis portion of the methodology.
The community survey approach consisted of physical, on-site surveys of local food outlets, shopper surveys of local residents, and semi-structured interviews with key community leaders from each of the study areas. These three survey tools were designed to help the researchers:

- Assess the quality of fresh produce in area stores;
- Make observations about the interior and exterior appearance, site safety, access to public transit and on-site access barriers at stores in or near the study area;
- Learn more about local shopping behavior, attitudes and preferences; and
- Identify other real or perceived barriers to access in the communities that were studied and possible solutions to those challenges.

The second phase of the research methodology—the map analysis approach—was used to identify what portions of each of three specified study areas in the Developed Tier were located more than an acceptable walking distance away from food outlets that sell healthy food. To identify where food deserts were located, half-mile aerial access buffers were plotted around food outlets in or near each of our three study areas that were found to be full-service food outlets providing an ample variety of fresh, healthy food. These buffers represented the areas within which residents could reasonably be expected to walk to buy groceries. Any area located outside that buffer was considered a food desert.

The following sub-sections outline the strengths and limitations of the specific tools and methods employed in carrying out each approach. Specific recommendations for addressing the limitations identified here are provided in Section 6: Recommendations.

**Community Survey Approach: Strengths and Limitations**

**Strengths:**

The community survey approach and the three specific survey tools that were developed to carry it out were designed to allow the researchers to begin to explore food access issues “on the ground” in the three study areas. The physical store surveys, shopper surveys, and key informant interviews were all meant to help paint a more complete picture of the local food environments in each of the three communities being studied.

- **Spending time in the community helped initiate and build valuable relationships that provided essential access to the community and its residents, and that supplied key insight into food access challenges unique to each area.**

  Carrying out the three survey methods required spending a lot of time in the communities that were studied. Doing so helped acquaint the researchers with the study areas, but also aided in finding, initiating, and building relationships with local leaders that helped the researchers gain further access to the communities and their residents. In Capitol Heights, especially, this access was an important part of being able to administer shopper surveys to community residents and to learn more about the unique needs of the town’s residents. The same was true in Suitland, where contact was made with two key community figures who provided valuable and detailed insight into the needs and opportunities present in that area.

- **Site visits to local food outlets was critical in verifying and collect information that was central to the final analysis.**

  Site visits to local food outlets were also a critical element of the community survey approach. Conducting physical surveys of food outlets was critical in verifying the presence and exact location of food outlets in or near the study areas, and
was essential in identifying which outlets carried an ample variety of healthy foods.

- **Physical surveys relied partly on previously-tested instruments, which saved time and provided a basis for increased confidence in the accuracy of survey results.**

  The physical survey instrument was developed primarily from scratch, but was based on the Nutrition Environment Measures Survey in Stores (NEMS-S), a previously tested store survey instrument (Glanz et al., 2006). Basing the physical survey instrument partly on NEMS-S saved a significant amount of time in trying to develop a specific checklist of “healthy” fruits and vegetables. Since the NEMS-S instrument has been heavily tested by previous researchers, there can be more confidence assumed in the accuracy of the results.

- **Physical surveys, shopper surveys, and key informant questionnaires were mostly designed from scratch to answer specific questions about food access.**

  In the interest of limited time and resources, however, the focus of the research had to be narrowed to those issues most central to assessing food access in the study areas. NEMS-S and other survey instruments found in the literature were simply too extensive for the purposes of this study, so all of the survey instruments that were used were designed primarily from scratch to answer very specific questions about food access. This was practical useful because it limited the survey results only to those data that were most useful in answering the specific questions in this study.

- **The 5-5-1-1-1-1 standard used for identifying full-service food outlets turned out to reflect a natural break in the data collected about food availability, a finding which provided a basis for increased confidence in the reliability of the survey results.**

  The definition used for identifying full-service food outlets in the study areas—referred to as the 5-5-1-1-1-1 standard—was adapted from the NEMS-S tool but was also found to reflect a natural break in the food availability data that were collected using the physical survey. This finding provided a basis for increased confidence in the survey results—and especially in making the distinction between full-service and limited-service food outlets—because the standard appeared to be less arbitrary. Only a few outlets were found to hover near the minimum threshold; most were either well above or well below the 5-5-1-1-1-1 requirements.

**Inherent Limitations Due to Time and Available Resources**

The community survey instruments were designed to capture a broad range of data about food outlets in and near the study areas, and about shoppers’ perceptions of local food stores. However, due to time and resource restrictions, only those items considered to be most important to assessing food access in the communities surveyed were included on the survey instruments.

- **Physical surveys were not designed to address, account for or ask about food prices or relative affordability, the proportion of shelf space devoted to healthy food versus junk food, or the number of nearby fast-food and take-out restaurants.**

  While the physical surveys were used to gather information about on-site access characteristics like store hours, the presence of adequate sidewalk connections, proximity of local transit stops, parking lot safety, and exterior and interior store appearance, the survey instrument did not include considerations of food prices or relative affordability across stores, the proportion of shelf space devoted to healthy food versus junk food, or the number of nearby take-out restaurants.

  Food prices and relative affordability of food across stores can be an important consideration in measuring the degree of access that individuals have to healthy food. Even though an individual may live within a half-mile of a food outlet that sells an ample variety of fresh, healthy food, he or she may not be able to afford to buy that food if it is significantly more expen-
sive than at other nearby stores. Food prices and relative affordability were not included on the physical survey instrument because of the time required to collect and analyze the data, and because most full-service food outlets in the study areas are large, national chain groceries, whose prices are most likely similar across the local market. Future studies may want to test this assumption, however.

The physical survey also did not take into account the proportion of shelf space in food outlets devoted to healthy food versus junk food, nor did it account for the number of nearby fast-food and take-out restaurants. Measures like these could begin to shed light on consumer behavior and whether higher proportions of unhealthy food options in or near food outlets lead individuals to make more unhealthy decisions. This has been referred to in the literature as a “food swamp” effect, whereby too many unhealthy food options make healthy food choices more difficult or less likely (Rose et al., 2009). Accounting for this effect could add another layer of depth to future studies of food access.

- **Shopper survey questions were not designed to provide detailed information about shoppers’ perceptions of food prices and spending habits, cultural needs or sensitivity concerns, and food consumption habits, especially how often respondents prepared food at home versus eating prepared food outside the home.**

  Shopper surveys were used to gather information about shoppers’ perceptions of the quality of local stores and the foods they carried, and perceptions about their own access to such outlets. In the interest of developing a survey instrument that did not require an excessive amount of time to administer, only those questions most relevant to the researchers’ queries about food access were included.

  More detailed questions about shoppers’ perceptions of food prices and spending habits could shed light on whether some shoppers feel burdened by high prices because they cannot access more distant food outlets that provide more afford-

able food choices. Answers to questions about shoppers’ perceptions of dietary needs unique to their culture or a possible sense of social exclusion at outlets can also influence measures of access. Those individuals who are either unable to find cultural foods they are accustomed to preparing, or who do not feel welcome at certain food outlets, may experience additional access limitations that prevent them from consuming a healthy diet.

  Finally, information about shoppers’ food consumption habits could show whether shoppers’ perceptions of store quality and their own access are correlated with more or less healthy food consumption patterns. Determining whether perceptions of poor quality or feelings of being burdened by trips to the grocery store are correlated with less frequent in-home cooking could shed further light on which access concerns have the greatest effect on residents’ healthy eating choices.

- **Shopper surveys, physical surveys and key informant interviews were not carried out in a way as to provide scientific, statistically-valid results; as such, all three survey methods were prone to significant selection bias.**

  The three components of the community survey approach were developed to provide a deeper understanding of the range of additional factors beyond just distance that affect access to food. The community survey tools were designed to yield results that begin to paint a picture of the local food environments in each of the three study areas by engaging local residents and community leaders, as well as by observing the physical environment in and near local food stores.

  However, the tools were not tested or administered in the field in a way as to provide scientific, statistically-valid results. The shopper surveys especially, though they provide quantitative data, are not the result of a random sample, but rather a convenience survey of local residents. As such, the conclusions that can be drawn from the results of the shopper survey data as well as the other survey methods should be taken with such a caveat. Additional time to refine the survey instruments and
to administer them to a random sample of respondents could have yielded more conclusive data.

**Unexpected Limitations Discovered in the Field or During Analysis**

Many of the limitations of the community survey approach were inherent in the design of the survey tools. However, the following shortcomings and challenges were either discovered in the field while the tools were administered, or while the results of the surveys were analyzed.

- **Physical survey results regarding store characteristics, food availability and produce quality were especially prone to inconsistency due to the inherent subjectivity of the researchers.**

  The physical survey instrument was designed with a certain degree of flexibility and simplicity to allow researchers to make their observations in a quick and efficient manner. However, this left more to subjective interpretation by survey teams than was originally desired—especially with regard to food quality and exterior site characteristics—and likely resulted in more inconsistencies in the survey results than was expected. This made it difficult to draw any clear or especially reliable conclusions from the data.

- **Physical surveys did not provide enough data to account for the availability of fruits and vegetables unique to cultures other than that of the U.S. in identifying full-service outlets.**

  The fresh produce checklists on the physical survey were limited to those 10 fruits and 10 vegetables identified as part of NEMS-S. However, the total number of fruit varieties and vegetable varieties was also recorded in an effort to note those stores which might still offer a wide variety of fresh produce varieties, even if they did not carry the more traditional fruits and vegetables identified by NEMS-S. Unfortunately, the categories for classifying the total number of varieties were too broad and did not allow useful distinctions to be drawn between stores. This data, although intended to be used in the final analysis, did not provide enough detail to draw any further conclusions about produce availability.

- **Physical surveys did not include a measure of how many varieties of food items in the dairy, protein, and whole-grain categories were available in stores.**

  Product selection was casually observed to vary widely from store to store, although that variation was not captured by the physical survey instrument. Some stores that met the minimum criteria for non-produce categories on the physical survey—that is, stocking just one qualifying item in the category—actually stocked dozens of items in the category, while others only offered one or two. Increased product selection, even in one category, provides more food choices for shoppers and probably leads to a healthier, more diverse diet. The physical survey used in this study did not account for these variations.

- **Shopper surveys targeted all groups of shoppers, making it difficult to learn about the needs and perceptions of those belonging to groups especially vulnerable to physical access limitations.**

  Given time limitations, the researchers set a goal of administering 20 surveys in each of the three study areas, and the surveys were not targeted to any specific group. Although the way in which the surveys were distributed provided some insight into the number of people affected by access limitations, it did not provide a large enough sample size of those individuals to allow the researchers to learn much about the needs and perceptions of those who suffer most from limited access to healthy food.

- **Shopper survey responses in Suitland were incomplete because surveys were self-administered and many questions were either misinterpreted or unanswered by respondents.**

  In Suitland, shopper surveys were not administered by the research team; instead, they were self-administered by
respondents. This distribution method was chosen as a way of adapting to a perception that local residents would not be comfortable giving answers directly to the research team. Unfortunately, several of the questions on the survey were either misinterpreted or unanswered. Therefore, most of the surveys from Suitland were not included in the final aggregate analysis of the shopper survey results for the three study areas.

**Map Analysis Approach: Strengths and Limitations**

**Strengths**

- **Maps provided an objective, easy-to-understand, and visually appealing illustration of where food deserts exist.**
- **Maps allowed for quick visual comparison of the spatial extent of food deserts from community to community.**
- **Estimates could be made of the number of vulnerable individuals and households at greater risk of having limited food access due to distance.**

The map analysis approach was originally designed to provide an objective, easy-to-understand, and visually appealing illustration of where there were food deserts in each of the three chosen study areas. The map analysis approach was also designed to allow demographic and socioeconomic data to be overlaid on maps of the study areas for the purpose of assessing the severity of the food desert. Estimates could then be made of the total number of people who lived in areas identified as food deserts as well as numbers of persons belonging to vulnerable groups especially at risk of having limited access to full-service food outlets.

The maps that were generated and the analysis they enabled fully met the design objectives of the map analysis approach, providing an easy-to-understand representation of what areas should be considered food deserts and to begin to understand how many people were at risk of not being able to access fresh, healthy food in these areas. Creating similar maps for each of the three study areas allowed for quick comparison of the relative spatial extent of food deserts in each community and the number of people at greatest risk of having limited access. Such comparisons can aid in developing and prioritizing food planning strategies in these areas.

- **Both an aerial buffer around full-service food outlets and a network access buffer drawn along the local street system provided more realistic estimates of pedestrian access.**

  The map analysis approach that was employed also allowed for two types of access buffers to be drawn around full-service food outlets: an aerial, “as the crow flies” access buffer, and a network access buffer drawn along the local street system. Aerial buffers assume that pedestrians follow direct paths to food outlets, while network buffers assume that they follow sidewalks along the local street system. But in areas with limited street connectivity or significant natural or man-made access barriers, the aerial buffer can overestimate the number of households within a half-mile walking distance of adequate food outlets.

  Network buffers, meanwhile, assume that all streets have sidewalks and do not account for alternative travel paths—like those through open spaces and across parking lots—that do not follow the street system. This limitation means that network buffers can underestimate the number of individuals or households within a half-mile walking-distance of adequate food outlets. Mapping both the aerial buffers and the network buffers provided a high-end and low-end estimate of the size of the food deserts in the three study areas.

**Limitations**
Food outlet databases from both Prince George’s County and the District of Columbia were found to have some minor inaccuracies, including missing or incorrectly categorized outlets.

Unfortunately, the map analysis approach and the results it provided are limited in a number of important ways. Some of the shortcomings of the map analysis approach resulted from technical limitations having to do with limited availability of data. For instance, the food outlet data collected from both Prince George’s County and the District of Columbia were found to have minor inaccuracies that required additional on-the-ground verification by the research team. Some food outlets in the database did not actually exist, some food outlets that did exist were not in the database, and some food outlets that were in the database were not correctly categorized.

Demographic and socioeconomic data used for analysis were 10 years old.

Population data were only disaggregated to the census block level; socioeconomic data were disaggregated only to the census block group level.

Socioeconomic data was based on survey sample data, not a full count.

Another technical limitation of the map analysis approach was that the estimates of the number of people and households impacted by the food deserts that were identified were based on data from the 2000 U.S. Census, data that are now 10 years old. Furthermore, estimates of the number of households in areas the maps defined as food deserts were based on data disaggregated only to the census block level, while estimates of the number of households in certain vulnerable socioeconomic groups were based on data disaggregated only to the census block group level. Such socioeconomic data—which included car ownership, poverty status, and age—were also based on a sample survey and not the full census count. Therefore, the final assessment of the severity of the food deserts and estimates of the number of vulnerable individuals at greatest risk were both subject to error due to the age of the data that were used, its spatial resolution, and the fact that some of the data was sample data and not full count data.

Maps relied on a single definition of “access” that only took into account physical proximity to food outlets and the variety of food items they carried.

Other limitations of the mapping approach had more to do with shortcomings inherent in the approach itself or in the way it was employed. The main limitation of the maps that were created is that they relied on a single definition of “access” that, in the case of this study, only took into account physical proximity to food outlets and the variety of foods those outlets carried. The maps do not illustrate variations in such things as quality, selection and prices of food items, the presence of real or perceived safety concerns and other psychological access barriers at or near food outlets, the frequency and coverage of local public transit routes, the condition of the sidewalk networks, or seasonal variations in weather.

All of these factors can affect one’s ability to access a food outlet that sells an adequate variety of healthy food items. However, maps can only represent so much data at once, and can therefore only tell so much of the story of food access in the communities that were studied. Limitations of time and resources also prevented the study from incorporating such factors into the maps, even though much of the data was collected that would be needed for such analysis using the tools developed for the community survey approach of the methodology. Although the maps that were created are visually appealing and easy-to-understand, the process of incorporating the data that was collected proved to be somewhat challenging and rather time-consuming, a difficulty that ultimately limited how much could be said with the maps that were generated.
SECTION 6 | Recommendations

In this section...
- Methodology Recommendations
- Best Practices
- County-Specific Recommendations
- Next Steps

Addressing food deserts and food access issues require commitments from policy makers and communities. This study provides an initial exploration into the presence and impact of food deserts in Prince George’s County, but further research is necessary to gain a full understanding of the issue. To build upon this research, recommendations for improving upon the methodology employed in this study are provided.

Best practices from around the country are provided to demonstrate innovative ways communities are tackling their food access issues. Recommendations for the County are provided based on best practices and this study’s initial research into food deserts. While time did not allow for conducting feasibility studies of these recommendations, the research team felt that these suggestions would be appropriate initiatives for the County to consider.

Finally, a set of next steps builds upon the methodology recommendations, best practices, and county-specific recommendations to provide suggestions for addressing food deserts.

Methodology Recommendations

The initial exploration of food deserts in Prince George’s County provided not only a picture of the issue in the Developed Tier, but also a test of several methodologies. The following recommendations recognize ways in which the mapping, physical survey, and shopper survey techniques can be improved. Further recommendations were generated from some of the strengths of the physical survey.

As County planners prepare for the future, it will be important to look at the methodology that will strengthen the research and plans for the food environment throughout the county. Following the specific recommendations for improving the methodology employed in this survey are recommendations for how planners can help shape the food environment.

### Physical Survey

<table>
<thead>
<tr>
<th>Strength:</th>
<th>Further Recommendation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relied heavily on tested instruments.</td>
<td>Rely fully on tested instruments, such as NEMS-S; adjust tested instruments as needed to fit research goals.</td>
</tr>
<tr>
<td>The 5-5-1-1-1-1 standard for full-service outlets provided a good breaking point in the data observed from the physical surveys.</td>
<td>Use 5-5-1-1-1-1 in the future; providing for cultural sensitivity will enhance the findings using that criteria.</td>
</tr>
</tbody>
</table>
## Physical Survey

<table>
<thead>
<tr>
<th>Limitation:</th>
<th>Recommendation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questions were too broad and lacked a specific protocol or checklist for evaluating site characteristics and food items.</td>
<td>Refer to NEMS-S (or other survey with thorough instructions) protocol for guidance.</td>
</tr>
<tr>
<td>Survey did not consider food prices and proportion of outlet’s space devoted to junk food compared to healthy foods.</td>
<td>With agreement of store owner or manager, these items can be included in a survey (see NEMS-S or the Rose, et al. 2009 study for guidance).</td>
</tr>
<tr>
<td>The survey of fruits and vegetables was not culturally-sensitive, and may not have properly accounted for different produce important to different cultural groups.</td>
<td>Conduct further research or consult with health and nutrition experts to develop a list of common fruits and vegetables that should be present (in international markets, for example) to meet the dietary needs of various cultural groups. Use variations of a list of fruits and vegetables to account for differences in store type.</td>
</tr>
<tr>
<td>Only one item was sufficient to meet the criteria for each food category; no distinction could be made between stores carrying many varieties of healthy food or simply one variety.</td>
<td>Estimate the number of varieties available in each category.</td>
</tr>
<tr>
<td>Some selection bias in administration of physical surveys.</td>
<td>Survey all types of outlets consistently, or develop a clear rationale for avoiding some outlets.</td>
</tr>
</tbody>
</table>

## Shopper Survey

<table>
<thead>
<tr>
<th>Limitation:</th>
<th>Recommendation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Too few shopper surveys administered.</td>
<td>Conduct more surveys to gain a greater breadth of information, even if they are not statistically significant.</td>
</tr>
<tr>
<td>Surveys were not administered in a standard way between study areas.</td>
<td>Ensure that surveys are administered by trained staff or volunteers; administer surveys in a similar fashion across study areas.</td>
</tr>
<tr>
<td>Surveys did not address or account for cultural issues (such as dietary needs/wants), food prices/affordability, or food consumption habits.</td>
<td>Given time, these would be important topics to address in a shopper survey.</td>
</tr>
<tr>
<td>Surveys were not targeted to groups most at risk of food access issues.</td>
<td>Focus surveying on neighborhoods with higher proportions of low-income residents, auto-less households, and residents over the age of 65.</td>
</tr>
<tr>
<td>Surveys were not conducted scientifically, and were not statistically significant.</td>
<td>If time and resources allow, develop a scientific methodology for conducting surveys, including appropriate population sampling.</td>
</tr>
</tbody>
</table>
Recommendations for Planners

This initial look into food access issues in Prince George’s County shows that many different factors influence the food environment, including transportation, community organizations, education, and more. Planners can offer their skills and experience with communities to help address problems with food access.

In The Food System, Pothukuchi and Kaufman (2000) mention the following ways in which planners can be involved:

- Gathering data on food production, processing, retail distribution and wholesale sales and evaluating the economic impact of food systems;
- Analyzing the impact of the food system on land use patterns;
- Assessing planning efforts in light of their effects on the local food system and access for low-income residents;
- Setting land use and zoning policies to support food systems;
- Engaging the community to discuss food security; and
- Educating new planners about food systems and the role of planning.

Planners can have a tremendous impact through crafting policies that support the local food system. Richard D. Felsing, as cited in Campbell’s Building a Common Table (2004), found that including community gardens in zoning regulations provides a law binding reference point, and enhances the viability of gardens. Economic incentives, such as tax abatements, waivers and sales tax exemptions, financing, and funding initiatives have been used in New York City, Chicago, Oakland, and across Pennsylvania to attract community gardens, farmers markets, and new small grocery stores (Shigley, 2009).

Map Analysis

<table>
<thead>
<tr>
<th>Limitation:</th>
<th>Recommendation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic and socioeconomic data used for analysis were 10 years old.</td>
<td>Update maps with new data available in 2011. Use American Community Survey data where available.</td>
</tr>
<tr>
<td>The databases of food outlets from both Prince George’s County and the District of Columbia were found to be incomplete and/or outdated.</td>
<td>Make efforts to keep database up to date. Collect more information on food outlets prior to future studies. Ground truth through surveying prior to mapping access buffers.</td>
</tr>
<tr>
<td>Maps rely on single definition of access that takes into account only physical proximity and the types of food items sold at outlets. Other factors such as quality, price, terrain, etc., are not capture in the maps presented in this study.</td>
<td>The potential exists to incorporate these elements into maps through techniques such as the use of different color dots marking stores according to their quality or changing the buffers based on terrain.</td>
</tr>
<tr>
<td>Network buffer assumes that all streets have sidewalks and that only those sidewalks that follow streets provide access.</td>
<td>Create a sidewalks layer, acknowledging cut-throughs and paths that are not along the street network.</td>
</tr>
</tbody>
</table>
Best Practices

The following towns, cities, and counties have addressed the concepts of food access and food quality through planning initiatives, policy change, and special projects. It is important to note that assessment of best practices and recommendations for potential programs and policy change is a never ending analysis, as an abundance of programs and policies exist that are successful throughout the country and the world. While some are particular to urban areas, others focus on a region’s agricultural sector, and even attempt to bridge the gap between the two particular land uses within one region.

Education through City Services and Resources

- **Healthy Bodegas in New York City, New York and the Healthy Corner Store Program in Washington, DC**

   Prince George’s County has many small convenience stores and small markets. The county is served by both bus and commuter rail lines, with many residents commuting through public transportation and by foot. Additionally, the County plans to increase development around transit stations. Increasing the quality and types of healthy food at the small stores that are easily accessible to pedestrians is a way of improving access to healthy food.

   In New York City, many residents use public transportation or pedestrian thoroughfares during their daily commutes. Many of these residents shop at corner or convenience stores on a regular basis, providing ample opportunities for retail establishments to educate individuals about healthy eating habits and lifestyles. Through New York City’s Health Department, the “Healthy Bodega Initiative” has helped several corner stores and bodegas improve the quality of foods available, or obtain permits to sell healthier food, through a two-phase consumer education campaign (Institute of Medicine of the National Academies, National Research Council, 2009). Specifically:

   Depending on the stores characteristics, the department helped bodega owners increase quantity, improve quality, provide prepackaged items, and market healthy foods better, or obtain the appropriate permits to sell processed produce and produce in front of the store or on the stoop. (Institute of Medicine of the National Academies, National Research Council, 2009, p. 59)

   Initially, success was limited given the somewhat struggling infrastructure of several bodegas. Additionally, the funds for increased and improved offerings often made extended progress difficult. Educational materials have also been necessary to cultivate a larger consumer base. Since these areas were initially addressed and then combined with health department standards and requirements, the initiative has been successful. The effort also works to encourage bodegas to sell less tobacco and other unhealthy items (Institute of Medicine of the National Academies, National Research Council, 2009, p. 59-60).

   In 2007 Washington, DC began a pilot program, “DC Healthy Corner Store Program,” that is administered by DC Hunger Solutions and funded by the District of Columbia Department of Health, Community Health Administration (DC Hunger Solutions, 2010). In cooperation with the city’s Department of Health, the program creates marketing materials for selling healthy foods as well as a guide for store owners. The program also aims to provide consumer education to both adults and youth on where to find and how to snack on healthy foods at local corner stores (DC Hunger Solutions, 2010). Additionally, the Healthy Corner Stores Network offers nationwide support to a coalition of stakeholders in the movement to bring nutritious food choices to smaller stores in underserved communities, and it is led by the Community Food Security Coalition, The Food Trust, Public Health Law & Pol-
icy, and Urbane Development (Healthy Corner Stores Network, 2010).

- **Youth Friendly Displays and Materials**
  Childhood obesity is on the rise, but proactive measures such as child-friendly packaging and displays can increase the appeal of healthy meals and snacks. Vendors and stores are working together to create exciting packaging and displays for healthy food to combat the eye-catching displays of unhealthy snacks.

  Additionally, signage and advertisements are refocusing respective approaches to tackle issues of healthy food and living. Some efforts focus specifically on youth and families. The goal of this effort is to increase long-term sales and extended understanding for healthy habits (Institute of Medicine of the National Academies, National Research Council, 2009, p. 60).

- **Yearlong Indoor Farmers Markets**
  Given the proximity of the Developed and Rural Tiers within Prince George’s County, a stronger relationship between the two communities would be quite valuable. Several towns within the county already hold farmers’ markets from late spring through the early fall. The existing markets attract patrons from throughout the metro-area and provide local residents with fresh and locally grown food.

  Many communities tackle the issue of accessible fresh, local food through the implementation of a yearlong indoor farmers market. Indoor markets create the opportunity for extended economic development for local agriculture, and provide fresh, local food to communities on a consistent, year-round basis. Examples of yearlong markets exist in Baltimore, Philadelphia, and Seattle (Raja et al., 2008a).

**Policy**

- **Food Policy Council in Madison, Wisconsin**
  Prince George’s County has urban, suburban, and rural areas within its borders; linking these areas together through policy initiatives and programs to provide support for the agricultural industry (Appendix A: Agriculture in Prince George’s County) and to increase access to fresh produce for all residents addresses multiple concerns.

  Dane County, Wisconsin, also has both rural and urban areas within its boundaries. The City of Madison, located within Dane County, addressed concerns about access to local, fresh food and the need to extend the use of its agricultural resources through the creation of a Food Policy Council (FPC). The FPC emphasizes that the Madison Comprehensive Management Plan works toward two goals in achieving the region’s concerns:

  - Maintain the region’s status as one of the nation’s most productive and economically viable food production areas
  - Maintain existing agricultural operations in the city and encourage new, smaller farming operations such as Community Supported Agriculture (CSA) farms. (Raja et al., 2008a, p. 49-50)

  Four objectives were outlined to support these goals:

  - Encourage the preservation of farming operations within the city where it is economically feasible and compatible with surrounding land uses;
  - Identify areas in the City’s periphery suitable for long-term preservation for diverse agricultural enterprises and community separation;
  - Promote the sale of foods grown in Dane County;
  - Protect existing community gardens in the city and establish additional areas for new community gardens. (Raja et al., 2008a, p. 49-50).

  In order to achieve the goals and objectives outlined by the FPC, community-wide understanding of the political system is not only valued knowledge among citizens, but also
helps citizens take a more proactive role and interest in the community’s planning issues, specifically food accessibility, preservation, and development of agricultural opportunities (Raja et al., 2008a, p. 50-51).

- **Food, Environmental, and Economic Development of the District of Columbia (FEED DC) Act**

  With adjacent proximity to the District of Columbia, many communities in Prince George’s County have similar food access issues, health and obesity concerns, and an interest in stimulating economic development. Additionally, some residents of District neighborhoods shop for food in Prince George’s County while some residents of the county shop in Washington, DC, and improvements in the food environment of one may have spillover effects into the other.

  The recently introduced Food, Environmental, and Economic Development of the District of Columbia (FEED DC) Act is modeled on Pennsylvania and New York City initiatives and attempts to stimulate economic development through attracting new grocery stores to low-income areas and improving existing food outlets. The goals of the FEED DC Act are increased jobs, decreased loss of revenue to bordering states, and increased access to healthy food. Supporters are also hopeful that the Act will address health concerns among District residents (Cheh et al., 2010).

**Population and Land Use**

- **County Planning in Marin County, California**

  Prince George’s County faces challenges with population growth based on its adjacency to Washington, DC. Meeting the needs of all residents of the county requires managing growth to target development and preserve agricultural land.

  Marin County, California, experiences population relocation issues due to its proximity to San Francisco, which “leaves the county vulnerable to encroaching residential development” (Raja et al., 2008a). To address the population encroachment concern, Marin County stresses three efforts in making countywide improvements:

  - Preservation of agricultural lands and resources
  - Improved agricultural viability
  - Address community food security. (Raja et al., 2008a, p. 36-39)

  Most notably, the third goal is new ground for County planners. These goals together work to support viable agricultural practices and promote healthier residents. Marin County has experienced a few hiccups along the implementation process, but learned quickly the process used among planners for community and stakeholder involvement is crucial towards success. In fact, Marin County’s Planning Director emphasizes the importance of the education and outreach and the involvement of all stakeholders in the success of any plan or community-wide initiative (Raja et al., 2008a, p. 36-41).

**Economic Development and Job Creation**

- **Growing Green in Buffalo, New York**

  Encouraging economic development is a primary goal of Prince George’s County. Grants and designations such as the Community Development Block Grant or Enterprise Zone in Capitol Heights provide added support to communities to invest in economic development.

  Communities such as Buffalo, New York, have combined concerns about youth, food, and economic development in creative ways. In Buffalo, a non-profit organization, Growing Green, works with youth to focus on food systems issues in the inner-city neighborhoods. Raja et al. note that “Growing Green is a multifaceted program that empowers youth to improve food environments and transform their neighborhoods” (2008a, p. 76).

  In this case study, Growing Green works to solve the issues of food insecurity and affordability for residents of the
inner-city Buffalo area, and it approaches its mission with four objectives:

- Community gardening on vacant lots;
- Youth business entrepreneurship;
- Youth leadership; and
- Promoting healthy eating behavior among youth. (Raja et al., 2008a, p. 77-80)

Through these objectives, the youth involved in Growing Green create a connection between the agriculture and local farming industry with a low-income community in downtown Buffalo. The program provides youth with an opportunity to give back to the community and experience a working non-profit business venture. The involved youth work and learn about business, social action, community planning, healthy eating habits, local food, and basic social services. The goals of the objectives associated with the Growing Green initiative are:

- Enhancing local food production through land use planning;
- Promoting food-based economic development;
- Increasing transportation access to food;
- Promoting youth-based economic development through food projects. (Raja et al., 2008a, p. 81)

The efforts of Growing Green and other grassroots organizations create a fundamental connection through the immediate work done by the organization and its employees and volunteers. The long-term consequence of such involvement goes beyond the initial engagement; those involved in the effort maintain an extended interest in the cause.

Planners now understand the importance of education and outreach in this experience. Prior to this, residents of the entire Buffalo area were at a disadvantage concerning nutritional and agricultural knowledge and food accessibility. The implementation of community gardens and the improved understanding through partnerships and community work now aid the efforts of planners and community members. The Growing Green initiative has enabled the community to:

- Facilitate land acquisition and permanent land tenure for community gardens;
- Information generation;
- Facilitate site suitability analysis for community gardens; and
- Nurture and support community partnerships on food. (Raja et al., 2008a, p. 81-82)

**Process and Implementation**

- **Food System Planning in Philadelphia, Pennsylvania**

  Given its Rural and Developed Tiers, as well as its proximity to Washington, DC and neighboring counties, Prince George’s County has an opportunity to work on a regional plan addressing food systems. Across the U.S., regional studies and plans have subsequently provided the foundation for food
policies and programs.

The Delaware Valley Regional Planning Commission (DVRPC) compiled a study in 2008 and 2009 detailing the status of food accessibility and quality in the Greater Philadelphia Region. The study “addresses a number of challenges and opportunities facing the food system, including: increased consumer interest in local food, land constraints and development pressures, the prevalence of both malnutrition and obesity, food distribution, and economic development” (Delaware Valley Regional Planning Commission, 2010). The completed assessment details the extended Delaware Valley Region in consideration of a 100-mile radius. Farms, food deserts, current initiatives, and policies are outlined. A current assessment continues to issue recommendations for the area.

The process employed in any planning initiative is vital to the short- and long-term success of the policy or initiative. As indicated on the DVRPC’s web page, the process used and still in use by DVRPC strongly supports typical planning strategies and ideals—community support through public meetings, collaboration, and continued research and information sharing:

[The] current planning phase builds on the knowledgebase of the food system study and creates a vision for a more food system for Greater Philadelphia. The Plan will identify shared values, goals, indicators, recommendations and priorities for Greater Philadelphia’s food system. . . . In addition to creating a plan adopted and implemented by the Stakeholder Committee and their member organizations, DVRPC’s food system planning efforts seek to coordinate, collaborate, and complement the efforts of many diverse state agencies, organizations and businesses working to support and expand the local food economy, food access, and sustainable agriculture, by convening regular meetings and providing meaningful activities and interaction. (Delaware Valley Regional Planning Commission, 2010)

DVRCP has created a strong model for this effort and caters to a large urban, suburban, and rural area. Similarly to Prince George’s County and its surroundings, the Philadelphia region is diverse in people, land, and general community interests and needs. The Food Study commissioned by DVRCP could become a model for comparable regions, in either demographic or land use similarities (Delaware Valley Regional Planning Commission, 2010).

**County-Specific Recommendations**

The marriage of concepts from best practices around the country with recommendations from community initiatives could begin to address food deserts and food access issues in Prince George’s County.

It is valuable to recognize the multi-faceted approach towards implementing suggestions and recommendations. Some initiatives to address food access issues may require top-down policy change, while others may rely on grassroots efforts.

Public-private partnerships could be the most promising option for the Bladensburg, Capitol Heights, and Suitland communities. Many of the initiatives discussed here could develop through public-private partnerships through the local municipality, the County, or the state. By joining efforts with both for- and non-profit organizations, and incentivizing private sector investment, Prince George’s County could begin to implement programs similar to the Best Practices outlined in this report. Additionally, individuals interested in community service or community outreach, advocacy, and organizing should be included in these efforts in an attempt to bring together every entity of the community.

Bladensburg, Capitol Heights, and Suitland present very spe-
cific community issues indicative of the type of community and people within each. The issues within each community, however, are not unique to one study area, as they also share similar needs and interests. In response, Prince George’s County can address these areas in a holistic approach.

In each community, concerns about a lack of amenities seem to reflect the limited access to quality food. The following recommendations stem from recognized best practices and from the research conducted in this study, and they address the concerns mentioned in each community:

- Consumer education
- In-store promotions and presentations
- Infrastructure improvements
- Food policy coordinator
- Transportation
- Non-traditional food outlets
- Thinking outside of the “box”
- Connecting the Rural and Developed Tiers

**Consumer Education**

In communities such as New York City, which has the Healthy Bodegas Initiative, and other large urban areas, education has been at the forefront in addressing community-wide obesity and food access issues. Through educational programs at schools, community centers, houses of worship, workplaces, and community organizations, individuals have learned what types of food and activity yield the healthiest lifestyles. Additionally, the involvement in a community-wide education program provides an incentive to individuals to remain healthy and active.

In Bladensburg, Capitol Heights, and Suitland, residents would greatly benefit from a “Healthy Food and Lifestyle Campaign” that expands on and further implements the County’s current Livable Communities Initiative. A countywide curriculum could be developed through partnerships with the County’s Health Department, Public Schools, Park and Planning Commission, and the University of Maryland’s Extension Program for Agriculture. Materials, discussions, and events would provide the means for educating individuals. Programs for schools, community centers, houses of worship, workplaces, and community organizations would provide individuals with not only a location and/or outlet for education, but also a community of people with a common vision: holistic healthy living.

Existing partnerships such as the Port Towns Community Health Partnership between the Port Towns CDC, Kaiser Permanente, the Consumer Health Foundation, and other local organizations can be leveraged to help implement such an educational campaign. Additionally, the County can encourage communities and non-profit organizations to include language specific to addressing food access issues in private, federal, and state grants.

**In-Store Promotions and Presentations**

In many communities across the country, food outlets have begun to display signage and provide information regarding nutritional values and healthy food options. Many outlets and food produc-
ers have also changed their packaging and displays to invite and educate more customers.

Food outlets can be incentivized through economic development standards to amend their practices. The County could encourage food outlets of any size, market, and location to provide clearer pictures of what an item’s ingredients and benefits are; provide obvious and more enticing displays for produce and fresh food; and finally provide benefits to consumers for purchasing healthy foods. This could also be an intersection for public-private partnerships.

Infrastructure Improvements

As evidenced by the following, access to food can be improved by making general infrastructure improvements throughout the county. Access is often limited due to infrastructure blight and disrepair. In Bladensburg, Capitol Heights, and Suitland, infrastructure presented some barriers to food access.

In Suitland, most stores require those on foot to cross a large suburban strip mall parking lot to get from main roads to the store entrance; this is both a safety hazard and can be a psychological barrier to access. Just outside the Bladensburg study area, one full-service food outlet is located over the Anacostia River and another is located beyond the Baltimore-Washington Parkway where there is a lack of sidewalks, access to either store is a major obstacle for shoppers travelling on foot. Taking shopping carts, lugging groceries long distances, and jaywalking are some examples of ways residents are currently dealing with access issues while shopping for food. Finally, in Capitol Heights, most stores are within proximity to the bus system, yet accessibility from the bus stop to the front door was not always safe or accessible due to a significant lack of ADA compliant ramps and curb cuts.

Food Policy Coordinator

Just as in the Delaware Valley, Prince George’s County would greatly benefit from a Food Policy and Programming staff member. If an individual from M-NCPPC is solely focused on the issues of food access and security throughout the county, Prince George’s County may have the ability to better leverage its resources, providing far more for its residents. A person in this role could make further connections between the agricultural community and the urban/suburban communities, aid in countywide education about healthy eating and lifestyles, and advocate on behalf of the county to the state and federal governments to gain more assistance for those within Prince George’s County who focus on this important issue.

Transportation is a challenge in each of the communities studied. Although the communities studied have access to WMATA, County public transit, and other community-initiated transportation efforts, it would be valuable to explore the option of adding something akin to “food buses” that make it easier for residents to travel to and from the food outlets.

In Bladensburg, one of the international markets offers use of a “food bus;” patrons who purchase a minimum $50 worth of groceries are transported home. Other individual stores or communities could
provide this service, which would be especially beneficial to the elderly, families with young children, and disabled individuals, who may need safer and more convenient access to full-service food outlets. Incentives and requirements must be put in place to ensure a program of this nature is not abused. In fact, a yearly fee may be reasonable for this service to guarantee that vehicles are safe and efficiently driven. This type of service could even be implemented countywide, with specific routes geared toward the communities in question.

Additionally, access seems to be difficult from the pedestrian perspective. Some of the food outlets lack handicap accessibility, sufficient lighting, and maintained sidewalks. For individuals who walk to the store or utilize disability services, options are limited. Planners and policymakers must enforce ADA standards throughout the entire county, but specifically near these food outlets, since each of these communities are considered complete or borderline food deserts.

**Non-Traditional Food Outlets**

The addition of non-traditional food outlets may improve the general accessibility to and opinion toward food throughout the county and within these three communities. The inclusion and improvement—through program planning, policy implementation, and community planning—of more farmers markets, roadside stands, community gardens, and community shares, among other options, may provide residents with the opportunity to acquire healthier and fresher food. Many individuals in these three communities are limited to what the closest grocery store, liquor store, convenience store, or general merchandising store offers, or individuals are forced to travel a distance to purchase the food they want and need. Offering non-traditional outlets that depend heavily on local farmers, producers, business owners, and community members could yield more food options and potentially entrepreneurial and partnership opportunities as well.

Connections to agricultural land within the Rural Tier and the surrounding area should be explored and evaluated. Additional farmers markets, operated on varying days and at varying times, could enhance access to fresh produce in the Developed Tier. As discussed in the agricultural research (Appendix A: Agriculture in Prince George’s County), Cheltenham Market currently houses the Southern Maryland Regional Farmers Market, which functions as an auction house. Research should be done to explore the feasibility of using the Cheltenham Market as an indoor yearlong farmers market.

In Suitland, honoring the history of the community could also be a way to benefit the current residents and employees. From 1943 until as late as 1989, community garden plots existed on the grounds of the U.S. Census Bureau. Originally started as Victory Gardens, the plots could be rented by employees for a very low cost (U.S. Census Bureau, 2010). While the former community gardens have been plowed over for development, the Suitland Federal Center could install a new community garden that would be available to the entire Suitland community, as a means of fostering a better community-institution relationship and of honoring the history of the Center.

Community gardens should also be considered throughout the Developed Tier due to the high rate of renter-occupied units, particu-
larly in the three case study areas. Where many individuals do not own their respective properties, they may appreciate the opportunity to acquire fresh vegetables through a community garden plot.

Additionally, Prince George’s County should consider the opportunity to retain currently “leaked” grocery dollars and tax revenue by expanding purchasing options for those residents willing and able to shop outside of their communities (DC Hunger Solutions and Social Compact, 2010). When locally earned money is also spent locally on goods and services—in this case within the county or individual municipalities, rather than outside the community—a cycle of investment in the economy can occur through an increase in both employment opportunities and general capital. This concept also applies to efforts the County can make toward linking the local supply of food to the local demand.

**Thinking Outside of the “Box”**

Big-box stores, or traditional chain supermarkets and retailers, are common in cities, the suburbs, and rural areas. While big-box stores provide a “one stop shop” for many people, making it easier to shop for food and everyday household items in one location, they often crowd the market and make it harder for smaller shops to compete. Typically, these big box stores are only accessible by car or public transit, and are not frequently cited as part of walkable communities.

Prince George’s County could encourage, through tax incentives and economic development grants, the development of small, local grocers that focus on the very specific needs of a community and its people. In Bladensburg, for example, several small Latin markets already exist and appear to thrive. Given the population throughout the county, other small ethnic and specialty markets and grocers would benefit the county as well.

**Connecting the Rural and Developed Tiers**

As Prince George’s County has both a sizeable rural area and developed area, the County should explore ways in which the Tiers can be connected. A preliminary analysis of the Rural Tier, along with additional information from the assessment below, is provided in Appendix A: Agriculture in Prince George’s County.

The question of connecting the Rural Tier to the Developed Tier is less a question of “can” and more a question of “how.” Local strengths and challenges both present opportunities for the County to engage the farm community and to connect that community to the urban areas in the Developed Tier. While no single initiative will combat food access and security concerns alone, acting in a holistic manner, and adapting to specific needs will go a long way in beginning to bridge the current gaps. Better understanding the current landscape will help cultivate an awareness of where the County currently stands and what can and should be done going forward to better link the two Tiers.

**Local Challenges**

In order to link the Rural and Developed Tiers, a firm understanding of the challenges currently facing farmers in Prince George’s County is necessary. Based on conversations during a farm tour on
June 9, 2010 (Y. Clagett, G. Güleryüz, and J. Howley, personal communication), specific barriers to stability in the Rural Tier include:

- An economy of scale that inhibits profitable growth—approximately 1,000 acres are needed to make a profit on grain production, yet there are no 1,000 acre grain farms in the county.
- Challenging real estate transactions;
- The dependence of an already deficient grain market on Purdue Farms’ receiving facility; and
- Obstacles to aggregated and inter-county institutional sales, including procurement restrictions.

Local Strengths

Aside from the long history of agriculture in Prince George’s County, many of the current strengths of the Rural Tier stem from initiatives aimed squarely at securing the foundation of the farming community. Some of the county’s local assets include:

- Agricultural preservation programs allowing farmers to acquire equity from their land without selling to developers;
- Current preservation easement programs permitting on-site agricultural commercial enterprises, like farmers markets or wine shops; and
- The potential for low-rent farm land owned by the County and funded through Program Open Space. (Y. Clagett, G. Güleryüz, and J. Howley, personal communication, June 9, 2010)

Local Opportunities

A number of food policy recommendations adapted from the APA’s *Policy Guide on Community and Regional Food Planning* (2007) would further enhance the relationship between the two tiers while addressing food access issues, including:

- Ensuring recommendations from community- and regional-level food planning efforts are incorporated into comprehensive and economic development plans;
- Continuing to develop and utilize tools to support and protect agriculture; and
- Aiding the creation of policies that put incentives on public and private institutions to buy locally.

Next Steps

While implementing a holistic plan for addressing food access and security in Prince George’s County will take considerable time to both cultivate and implement, a number of proactive first steps should be taken in the next one to three years to lay the foundation for comprehensive food planning:

- Develop a more comprehensive study of community food systems in Prince George’s County;
- Incorporate food systems issues into comprehensive and economic development planning throughout the county;
- Employ methodology recommendations listed here, beginning with in-depth, community-specific research;
- Encourage farmers markets and community gardens through zoning and tax incentives, public-private partnerships, and developers’ community benefits agreements;
- Encourage grant applications from individual communities for health initiatives, and provide County support for communities to include food access as a part of future grants; and
- Develop county-wide institutional purchasing of products from Rural Tier (i.e. Prince George’s County Schools, County offices, municipal offices, and hospitals)

Generally, the County has the tools and resources needed to produce a valuable and resourceful Food Action Plan. The issues of food access and security are not foreign in nature and the County has the ability to address and solve them in the near future.
Conclusion

For many planners, food deserts and food access are concerns that have only recently surged to the forefront of the field. Food access issues are important in Prince George’s County because there are both many local health concerns related to nutrition and many vulnerable groups who are more impacted by shortcomings in local infrastructures and services. If these groups cannot access healthy foods, there is no doubt healthy lifestyles are sure to suffer as a result. This study explores ways to identify issues related to access to healthy foods and provides recommendations that can be used to solve the negative effects of food deserts.

Numerous academic studies have sought to measure access and to identify areas where individuals—particularly low-income and other disadvantaged populations—have limited access to fresh, healthy food. In general, such limitations are of special concern because balanced diets are vital to battling public health epidemics like diabetes, heart disease, and obesity. Food access studies have used a multitude of definitions and measures to assess the degree to which residents in particular areas have access to healthy food options. Some have focused on the affordability of healthy food; others have focused on physical proximity to grocery stores, while still others have focused on the quality of the items available for purchase. This study does not mean to suggest that previous studies have missed any particular aspect of measuring food access or identifying food deserts. Instead, its intent is to build upon existing academic work in the field with a focus on some of the challenges unique to the Developed Tier of Prince George’s County.

Improving and promoting residents’ quality of life is a top priority for community planners everywhere, but is of special concern in a county with high concentrations of low-income and minority peoples. The diversity of residents in the Developed Tier brings vitality and richness to this part of the county. Many of these neighborhoods, however, are seen as being at special risk for diet-related health challenges, and this study attempts to uncover some of the underlying reasons why healthier lifestyles are not more common. Discovering whether and to what degree residents lack access to healthy food will help county planners develop policies to improve the health and quality of life for county residents. This research provides the first steps for Prince George’s County to develop a plan for ensuring that all residents, and especially those most vulnerable to physical access limitations, can access healthy food options more easily.

What This Study Found

The results of this study revealed that access to healthy food is, in fact, limited for a significant number of residents in each of the three communities that were studied. In all three areas—Bladensburg, Capitol Heights, and Suitland—some portion of land was not within a half-mile of a “full-service” food outlet found to stock the variety of fresh, healthy food necessary for a balanced diet. These areas were identified as food deserts, or areas where full-service outlets were not accessible by walking.
A majority of the people living in each of the three study areas own personal vehicles; therefore, not everyone living in food deserts is without access to healthy food. Instead, it is those households that do not own vehicles, individuals with incomes below the federal poverty level, and seniors age 65 and older who are most at-risk of suffering from limited access to healthy food options. For example, as many as 16% of households across the three study areas were found to be auto-less and to be located more than a half-mile from a full-service food outlet. For obvious reasons, these households have difficulty accessing a store that sells healthy foods.

Physical surveys of local food outlets in each of the three study areas revealed that most stores identified as full-service food outlets were grocery stores or supermarkets, although in some instances an international market met the criteria for being considered a full-service food outlet. There were also many international markets and markets that came close to meeting the criteria but failed to carry the minimum number of fruit and vegetable varieties specified on the physical survey checklist. However, these stores commonly offered many alternative produce items preferred by various cultural groups.

Even if a store met the criteria to be a full-service food outlet, the quality of these foods was sometimes less than desirable. Physical surveys reported numerous instances of low-quality fruits and vegetables even at stores that met the minimum standards for being considered full-service outlets. Additionally, the expiration dates of dairy and meat products were found to be fewer than five days out in some stores, and, in some instances, expiration dates were just one day out or had already passed. Although residents may have access to an outlet that offers an ample variety of healthy food, the quality of that food may deter them from making healthy food choices.

Food availability and quality are not the only factors that affect food access; on-site access barriers and unsafe or unwelcoming store environments may also limit residents’ access to healthy food. The physical surveys of food outlets in the study areas found many instances of stores that lacked appropriate pedestrian amenities. Some stores did not have sufficient sidewalks or crosswalks for easy pedestrian access, some did not have handicapped parking or ramps, and some were surrounded by a large, intimidating, and potentially unsafe parking lot. The physical appearance of stores was also cited as a concern. Stores with deteriorating façades, cash registers behind protective glass barriers, or dirty interiors were also seen as having on-site access limitations. Lastly, some full-service food stores did not accept WIC or SNAP benefits and were, therefore, not accessible to many low-income people.

Surveys of area residents showed that many people feel that existing food stores fall short of meeting their needs. Several respondents reported shopping at food outlets other than the one nearest their home, and many of these residents reported that they felt they could get higher quality products for lower prices at stores farther away. Those who did shop at the food outlet nearest to their home reported, on average, feeling less satisfied with the quality of the store and the quality and selection of produce at that store. A majority of the people who reported walking to the grocery store also reported feeling
burdened by the distance to the store or the transportation mode they used to get there. Residents perceive that access to healthy food in their communities is somewhat limited, and many of those who have the ability to do so shop elsewhere for their groceries.

While many of the same challenges were discovered in each of the three study areas, it remains difficult to generalize about food deserts in the Developed Tier. Many different issues are at play and require additional in-depth study. In order to identify where food deserts are located and what factors impeded food access the most, maps can be useful, but a more thorough look through the eyes of the people who are most impacted is essential. Understanding the actual conditions on the ground and the perceptions of local residents within any given food environment is the only way to understand fully what challenges exist and what plans can be made to address them.

**How This Work Can Be Used in Prince George’s County**

The implications of this study can be used in a few ways. From this initial research, the county should have a better understanding of what food deserts look like and how researchers are identifying them, valuable new tools and insights for researching food access issues in the Developed Tier, and a list of regional and local solutions being used to combat the negative effects of food deserts.

In studying food issues, there are many important variables to define and test. In addition to the measures of access, quality, and variety tested in this study, further studies should include research aspects that focus on affordability, cultural and personal preferences, and shopping habits. Further studies would also do well to develop a more complete list of produce items that fulfill a healthy diet, and focus community surveys more specifically on vulnerable groups. Future studies, with additional time and resources, will have the benefit of using updated demographic information, more reliable mapping information focusing on access issues, and larger, more statistically valid samples. With the insights gleaned from this study, further studies should be able to unveil a more complete picture of food access issues in Prince George’s County.

Pairing the specific characteristics of food deserts in the county with relevant programs and initiatives should be an effective method of tackling healthy food access issues. While challenges to access that were found as part of this research are not new, such issues are gaining new attention in planning offices and departments around the country. This report includes a number of best practices and policy recommendations gathered from research about other counties and cities throughout the United States in an effort to better inform Prince George’s County on what can be done locally. One example of a best practice is the Healthy Bodegas initiative in New York City, which helps supply produce to non-traditional food outlets and provide in-store educational displays (Institute of Medicine of the National Academies, National Research Council, 2009). A similar program could be effective in areas like Capitol Heights, which may be too small to support a full-service grocery store. Portions of the two other study areas might also benefit from such an initiative.

Locally, there are many examples of community groups or
organizations addressing health issues and food access limitations, especially for vulnerable groups. One food store in Bladensburg offers rides home to customers who buy at least $50 worth of groceries. Both the Port Towns and Suitland CDCs have started “Healthy Eating, Active Living” initiatives with financial support from healthcare leader Kaiser Permanente. Small community gardens are popping up all over the Developed Tier, with support from Engaged Community Offshoots, an urban agricultural facility in Edmonston. Additionally, some politicians have proposed prohibiting any new licenses for fast-food restaurants in Prince George’s County. Becoming more engaged in such efforts and providing them with county-level support could be the beginning of additional programming throughout the county.

Small public improvements and campaigns around changes related to food access may prove fruitful for the county. Though dense in population, many communities in the Developed Tier have traditional suburban-style, auto-oriented designs that lack much of the basic infrastructure needed to support pedestrian access to food stores and a host of other destinations. Recent Sector Plans have addressed this by calling for efforts to improve pedestrian amenities with the hope of creating more walkable communities. Continuing planning efforts such as this will likely aid in alleviating food access limitations in the Developed Tier, as long as access to healthy food is recognized as an initial goal.

Finally...

In addition to identifying issues with access to healthy food and methods to better pinpoint those challenges, this study also provides recommendations for future studies of food access in the Developed Tier. As with any study, however, the results and analysis of this research do not provide the last word on food access in the Developed Tier, nor do the recommendations suggest a “one-size-fits-all” solution in the communities that were studied. Instead, this report serves as a launching pad for future efforts to study and address food access in Prince George’s County. The best practices and policy recommendations are starting points for further exploration of potential solutions for improving the health and quality of life of county residents.

Both the research and recommendations provided here show that increasing access to healthy food in an effort to improve health conditions in the county is no small task. More questions than answers are likely a result of this report, suggesting the wheels are turning and momentum is building for a sea change in planning with regard to food. With proper direction and motivation, Prince George’s County can be a national leader in supporting healthy lifestyles among all residents.
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Appendix A: Agriculture in Prince George’s County

One of the goals of the county planners for this research was to explore using agricultural land and agribusiness in creative ways to provide jobs, add value to the land, and help support urban centers. On June 9, 2010, the research team toured the Rural Tier of Prince George’s County with Yates Clagett, President of the Prince George’s Farm Bureau and Administrator for the Prince George’s County Soil Conservation District; Gül Güleryüz, Planner Coordinator with M-NCPPC Prince George’s County Planning Department; and Janna Howley, Agriculture Marketing Specialist at the University of Maryland Extension Prince George’s County.

Time constraints focused the attention of this studio on food deserts in the Developed Tier, but preliminary research and findings about the Rural Tier are helpful in considering ways to connect the Developed and Rural Tiers. The following is a result of preliminary research into county reports, recent USDA Agriculture Censuses, and a compilation of discussions with Clagett, Güleryüz, and Howley.

Prince George’s County Agriculture

Farmers in Prince George’s County, Maryland face many of the same challenges as farmers nationwide. Farms are quickly being parceled out and subdivided as farmers turn to more profitable returns from development pressures rather than sustainable agricultural markets. Many factors contribute to the loss of agricultural land and reasons why farmers struggle to stay in step with larger economic forces, including:

- Retirement of aging farmers with no replacement;
- Increasing farm operational costs;
- Loss of agricultural support services;
- Lack of health, retirement, and disability benefits;
- Regard for land as commodity;
- Lack of price support programs for vegetable farmers;
- Large decrease in agricultural land following the Maryland Tobacco Buyout Program;
- Value of land for development purposes not in sync with value of production;
- Out of reach start-up costs for younger farmers and agricultural entrepreneurs;
- Reliance on distant distribution and processing centers; and
• Lack of farm network connections. (Maryland-National Capital Park and Planning Commission, 2005)

While much of the farming done in Prince George’s County has historically been in commodity crops such as corn, soybeans, and forage (hay, silage, feed), and in raising conventional livestock, such as beef cattle and chickens, there is a small but emerging group of non-traditional farmers, growing specialty crops to fill niche markets in the Washington, DC metropolitan area. This slow transition from traditional farms growing produce for wholesale markets and distant processing to more direct consumer sales at localized markets is one of the most cited opportunities for small farming businesses in the county. Prince George’s County farmers are working hard to develop new and closer markets where they may get better values for their produce and animal products. In the meantime, predominantly traditional agricultural methods continue to perpetuate severe problems for many of the county’s farmers.

*Risky Business*

To survive as a stable, productive farm in today’s industry, farmers need to maintain consistent production of high value crops. The easiest way for many farmers to do this is to participate in large scale, commodity crop production, where established markets with consistent demand vary by price, stabilized by federal intervention. This makes it convenient for farmers to sell their crops without having to find their own markets and drum up local business. However, this system only works if farms can produce enough of a crop to sell at wholesale markets. Many of Maryland’s farms are too small to generate enough production for wholesale, and farmers must find alternate ways to sell their produce while staying in business. Due to decreases in agricultural land and an immature network of local markets, the problem is perpetuated to a greater degree throughout Maryland’s farms.

In Maryland, and Prince George’s County specifically, many farm types are suffering under the current wholesale agribusiness arrangement. Historically, many of Maryland’s farms grew commodity crops such as tobacco. Following the 2000 Tobacco Buyout Program, many farmers were persuaded to switch from growing tobacco to higher value, more diversified crops. This change is currently being manifested in slow crop changes and lower profitability of farms during this transition. New markets have yet to fully develop for farmers switching from tobacco to alternative crops. At one time, tobacco production accounted for 65% of all farm income in the state; as of the 2007 Agriculture Census, one tobacco farm remained in Prince George’s County (Maryland-National Capital Park and Planning Commission, 2009b).

Though they do not produce food, horse farms constitute 26% of agricultural land in the county. The greatest challenge for the equine industry comes as a result of Maryland’s policies on gaming and betting. With the threat of slots and the lack of “purse” payouts from horse race winnings, equine investors are less likely to spend money on Maryland’s horseracing industry. If winnings are not competitive with surrounding states and if more state residents spend less at the tracks and more at slots, investors simply see no local incentive. Re-
taining this land for agricultural use will be important if farmers are interested in expanding production or putting fallow land back into production before real estate developers make local investments.

While the volatility of the value of commodity crops fluctuates as a result of international production yields, some larger farms can produce enough for wholesale trade. The majority of farmers in the Rural Tier of Prince George’s County are relatively small by national standards. The average size of farms in across the nation in 2007 was 418 acres, while the average in Prince George’s County was 99 acres (U.S. Department of Agriculture, 2009). This means many farmers in the county are struggling to keep up with production demands to sell competitively to larger markets.

Less land in production has also resulted in the loss of some agricultural services, such as processing and distribution centers, service centers, and equipment retailers. This requires farmers to spend more to find services that are farther away to meet their operating needs. Many newer niche crops, such as wineries, do not yet have services in the area. This could be a potential opportunity for specialty supply stores to open closer to producers, where emerging markets may develop as crops transition to more locally viable products.

Prince George’s County is the state leader in food manufacturing employment, but the county is still losing agricultural land at an alarming rate (Maryland-National Capital Park and Planning Commission, 2009d). While some services have been lost or do not yet exist, the county cites the location of food manufacturing businesses as a potential option for farmers to connect with existing local processing centers to add value to locally grown agricultural products.

Loss of agricultural land means less food, additional reliance on outside growers, and increased food-to-table miles. If agriculture in Prince George’s County continues trending in this manner, some predict that county farms and farmland will vanish altogether by 2050 (Maryland-National Capital Park and Planning Commission, 2005). This is significant not only for agricultural land, but also for local infrastructures already fighting to manage sprawl and the issues therein.

Challenges of the Lifestyle

In addition to development pressures for land, farmers are also faced with many other factors that make it difficult to stay in production and make a living. Farmers are growing older, their operating costs are increasing, many cannot pay for health insurance or retirement funds, and a number of crop prices are not protected in a global market.

Many farmers are exiting the industry due to their age. The average age of farmers has been increasing and fewer family members and heirs take on the responsibility and lifestyle of a farmer. In 2007 in Prince George’s County, the average age of farmers was 59.7 years, while 10 years earlier it was 55.3 years. Young men and women are more reluctant to start farming as they have watched farmer’s incomes steadily decline (Gale, 2002). Older farmers are looking to their land as a retirement fund as they become less physically able to handle farm tasks.

Because farmers are typically self-employed and manage op-
erations as small businesses, many farms do not have the capacity to set up accounts for health, disability, and retirement benefits. Increasing numbers of farmers rely on outside income or the benefits of another family member to cover them under these circumstances. Yates Clagett, a local beef grower in Prince George’s County, wittily put this in perspective, saying, “My wife works to support my farming habit” (Y. Clagett, personal communication, June 9, 2010).

Farmers also face large increases in overhead. The rising costs of fuel, fertilizer, seed, and insurance have put a substantial strain on farmers’ net incomes. Since 2007, fertilizer and seed prices have tripled and farm equipment prices have risen by 15% (Gustafson, 2008). Between 2001 and 2005, the USDA recorded a 12.6% increase in the cost of farm production expenses (U.S. Department of Agriculture, 2009). While commodity crop prices have historically remained strong due to federal price protection, non-commodity growers have difficulty retaining more of their income after paying for operating costs. Equipment and building maintenance and repairs are often put on hold. The ability to spend less on irrigation or fertilizer can also mean lower crop yields, further perpetuating the problem of increasing operating costs.

The return on farming and the increase in demand for land has had astounding effects on agriculture. Between 1992 and 2002, the average market value of agricultural products from Prince George’s County dropped 47.2% while the average value of farmland and buildings increased by 41.2% (U.S. Department of Agriculture, 2004; Maryland-National Capital Park and Planning Commission, 2005). This is largely a result of many tobacco farmers retiring after the Tobacco Buyout Program, and much of the market value of crops has been restored since then. However, the value of crops has not been able to keep up with inflation and rising operating costs without subsidies and farmer incentive programs, indicating an unstable market structure for farm products.

**Markets**

In an increasingly competitive agricultural sector, due to national and worldwide commodity markets, local markets are inundated with produce from outside the local area. Farmers do not sell enough produce locally to satisfy local food needs. Most of their crops, such as corn or soybeans, are sold in commodity markets; these crops require large amounts of energy, land, and processing before they are ready for market.

Between 2002 and 2007, Prince George’s County lost 77 farms and 8,547 acres of agricultural land. Of the 375 remaining farms in Prince George’s County in 2007, the average size of farms was 99 acres. These farms comprise 2% of all agriculture land in Maryland. The average value of land and buildings for each of these 375 farms was $933,487. The value of agricultural land has risen from $6,531 in 2002 to $9,640 in 2007, a 34% increase in value in five years (U.S. Department of Agriculture, 2009). This has lead to the demise of many small farms unable to keep up with a more competitive agricultural sector.

The most abundant crops in Prince George’s County are corn, soybeans, and forage. However, of these crops, farms growing corn
dropped from 63 in 2002 to 51 in 2007 for a total loss of 80 acres in land growing corn. Soybean farms fell from 66 in 2002 to 37 in 2007 for a total loss of 2,475 acres in land growing soybeans. Farms growing forage dropped from 147 in 2002 to 131 farms in 2007. There was no loss in acreage growing forage, however, suggesting that some farms were combined or that land at other farms transitioned to hay and silage (U.S. Department of Agriculture, 2009). Unfortunately, due to the nature of the soil, hay in Prince George’s County is of much lower quality hay sources throughout the region, requiring many farmers to buy their livestock feed from other areas or supplement part of what they harvest with higher quality forage from elsewhere (Y. Clagett, personal communication, June 9, 2010).

During that five-year period, barley, potatoes, sweet potatoes, and orchard products experienced increases in land for production. In 2002 the county had 2 barley farms; in 2007 the number increased to 5. Unfortunately, acreage data is incomplete for this crop. Farms growing potatoes increased from 8 in 2002 to 13 farms in 2007, and gained 5 acres in potato production. The number of farms growing sweet potatoes dropped between 2002 and 2007 while the land in sweet potato production increased from 21 to 30 acres in the same time period. Hog farms and egg laying chicken farms experienced increases in production and activity. There were 7 farms growing hogs for sale in 2007, an increase of 4 farms from 2002. One additional egg-producing farm was recorded between 2002 and 2007, for a total of 30 farms (U.S. Department of Agriculture, 2009).

While Prince George’s County has relatively small farms by national standards, it is becoming more apparent that farmers in the county are becoming wary of commodity crops and markets. More farms are growing higher yield crops of higher value, even without wholesale markets and federal price protection. While this could be an early sign of success in local production, it does not solve all the problems faced by the agricultural sector, nor lessen the likelihood of larger farms selling land and subdividing for a quick cash return from development projects.

**Connecting the Rural and Developed Tiers**

The question of connecting the Rural Tier to the Developed Tier is less a question of “can” and more a question of “how.” Local strengths and challenges both present opportunities for the county to engage the farm community and to connect it to the urban areas in the Developed Tier. While no single initiative will combat food access and security concerns alone, acting in a holistic manner, and adapting to specific needs will go a long way in beginning to bridge the current gaps. Better understanding the current landscape and planning efforts will help cultivate an awareness of where the county currently stands and what can and should be done going forward to further link the two tiers.

**Current Assessment: Subregions 5 and 6 Master Plans**

The Master Plans for Subregion 5 and Subregion 6, both in the Rural Tier, appropriately plan for the agricultural sector in their Economic Development sections. Agriculture within Subregion 5 consists of 7,600 acres with 140 agriculturally tax assessed par-
cels, which contributed significantly to the county’s $12.2 million in agricultural sales in 2002. Subregion 6 maintains much of the remainder of agricultural land throughout the county. In 2002, the 210 farms in this area generated $5.7 million in agriculturally related sales (Maryland-National Capital Park and Planning Commission, 2009b; Maryland-National Capital Park and Planning Commission, 2009c).

Subregions 5 and 6 have been affected by the Tobacco Buyout Program and are still in a period of transition as farmers find new crops and cultivation methods. In fact, many farmers are talking about how to grow new crops for surrounding urban and suburban consumption. They are fully involved in a structural shift from traditional, wholesale commodity crop growing toward smaller farms offering a broader variety of crops and niche products to sell at closer markets. While gathering public input for the Master Plans, both subregions recognized main concerns from farmers and those concerned with small agribusiness. Specifically, commenters made such requests as:

- A “suite of tools” to protect access to productive for expansion and growth;
- Support modernizing agricultural industry to incorporate new practices such as processing, retailing, agritourism and production methods;
- Legal protection against nuisance claims from surrounding non-agricultural land uses in order to element court time and legal fees;
- Local supply and service businesses since much of the agricultural support infrastructure has left with the implementation of the Tobacco Buyout Program; and
- Connections to capital for start up costs for young and entrepreneurial farmers. (Maryland-National Capital Park and Planning Commission, 2009b; Maryland-National Capital Park and Planning Commission, 2009c)

To address these concerns, the county established a number of goals, policies, and strategies to begin to build the new successful new future of the agricultural industry, including:

- Develop a transitional strategy from tobacco farms to farms producing locally marketable food products;
- Create a new farmer program to connect younger and entrepreneurial farmers to capital typically unavailable through commercial banks;
- Protect rights to farm and develop system to resolve disputes between agricultural and non-agricultural lands;
- Broaden the county Zoning Ordinance to incorporate more agricultural and agriculturally related uses to broaden the scope of allowed farming practices;
- Encourage farmers to specialize their production base to reach more specific and stable local markets;
- Create an agricultural marketing position in County government;
- Include agriculture in economic development programs, such as the Small Business Initiative Program; and
- Create new programs for farmers modeled after the “So. Maryland, So Good” campaign initiated by the Southern Maryland Agricultural Development Commission. (Maryland-National Capital Park and Planning Commission, 2009b; Maryland-National Capital Park and Planning Commission, 2009c)

One distinction between the two Master Plans is that Subregion 6 discusses the feasibility of connecting all three tiers while looking at the structure of the regional food system as a whole. It points out the large opportunity of connecting local food producers to individual businesses and public institutions in the county and surrounding areas. It is encouraging that the subregion is aware of the need to address food system challenges in the surrounding more urban areas while building on opportunities of nearby agricultural production (Maryland-National Capital Park and Planning Commission,
Local Challenges

In order to link the Rural and Developed Tiers, a firm understanding of the challenges currently facing farmers in Prince George’s County is necessary. Based on conversations during a farm tour on June 9, 2010 (Y. Clagett, G. Güleryüz, and J. Howley, personal communication), specific barriers to stability in the Rural Tier include the following issues.

- Due to the local climate, it is difficult to procure and make good quality hay; while the soil was ideal for tobacco farming, it is too acidic for hay. A consequence of this is that much of the materials needed to support horse farms, and even owning horses for pleasure, must be imported from outside Prince George’s County.

- Maryland as a whole is grain deficient because nearly all of the grain produced is funneled into the poultry industry. One grain receiving facility is located in Southern Maryland, and it is owned by the Perdue poultry company. If Perdue leaves the region, Southern Maryland would still produce grain, but the premiums farmers are receiving currently would no longer exist, and this would drastically harm the economy of the local agriculture industry.

- Approximately 1,000 acres are needed to make a profit on grain production, yet there are no 1,000 acre grain farms in the County. Farmers cobble together plots and run the roads to make a profit, but the economy of scale inhibits profitable growth. Further, new, young farmers are finding it difficult to procure land on which to farm.

- Although farmers want—and indeed have great incentive—to be stewards of the environment, it is very expensive for them to adhere to state and federal compliance regulations. The costs to do so drive down revenues sharply.

- A farmer’s retirement lies in the ability to sell property, and this is becoming increasingly challenging. If a farmer does wish to sell, based on current zoning guidelines, the same size parcel in the Rural Tier would sell for half as much as in the Developed Tier. Additionally, despite being in the Rural Tier, many of the farms in the county abut suburban development, causing further complications with real estate transactions.

- No mechanism exists today in the county for aggregating vegetables to sell them to local institutions. Farmers do not have the time or resources to manually haul their crops across the region, and schools may not be able to afford farmers’ prices. Cheltenham Market currently houses the Southern Maryland Regional Farmers market and functions as an auction house, but prices are undercut in order to provide wholesale transactions.

- Increasing regulations, certifications, and procurement guidelines inhibit institutional transactions like direct farm-to-school and farm-to-hospital sales.

Local Strengths

Aside from the long history of agriculture in Prince George’s County, many of the current strengths of the Rural Tier stem from initiatives aimed squarely at securing the foundation of the farming community. Some of the county’s local assets include the following programs.

- Agricultural preservation programs allow farmers to acquire equity from their land without selling to developers.

- On-site agricultural commercial enterprises, like a farmers market or wine shop, are allowed under the current preservation easement provisions.

- Grass-fed beef operations are accessible to farmers with smaller operations and an abundant market exists for this type of animal production.

- A raw milk and cheese pilot in underway in Maryland that may potentially transition into a state-wide raw dairy program. Today, Maryland sees a leakage of this income as residents who want raw dairy products simply purchase these products in Pennsylvania.

- Prince George’s County owns 1,300 acres of farmland in the county, funded through Program Open Space. Through this initia-
tive, this land can be offered at low rents to farmers.

- Conservation subdivision designs are now required in the Rural Tier, although none have been implemented thus far.

**Local Opportunities & Utilizing Local Resources**

After assessing both the challenges and strengths present in the County’s Rural Tier, the task of identifying those opportunities for the county that would work specifically to connect its farmers with its urban neighborhoods is clearer. A number of food policy recommendations adapted from the APA’s *Policy Guide on Community and Regional Food Planning* (2007) would further enhance the relationship between the two tiers while addressing food access issues, including:

- Ensuring that recommendations from both community- and regional-level food planning efforts are incorporated into comprehensive plans, strategic plans, and economic development plans;
- Expanding public awareness by framing the value of the food sector in economic terms;
- Conducting assessments of agricultural land and analyze factors that support or constrain agriculture;
- Developing tools to support and protect agriculture, including agriculture land preservation zoning, purchase of development rights, transfer of development rights, partnership with land trusts;
- Developing land use and transportation plans to provide access to food outlets, such as recognizing areas where local food can be produced and removing all zoning barriers;
- Supporting local food production and consumption and helping to develop policies that put incentives on public and private institutions to buy locally;
- Developing assistance for small-scale and women- and minority-owned farms;
- Assisting with developing market advertising and diversifying products;
- Supporting community kitchens, food business incubator facilities, and urban agriculture projects;
- Encouraging mixed-use neighborhood design to include small- and mid-size grocery stores;
- Creating safe pedestrian, bike, and transit connections to food outlets;
- Supporting the development of community gardens, edible landscaping, and related infrastructure on publicly owned land;
- Assessing and mapping availability of fast food restaurants and comparing the results to grocery store availability;
- Assessing the impact of food on local and regional waste systems;
- Investigating the use of appropriate brownfield sites, specifically in low income areas, for food production and distribution;
- Developing assessments of land on institutional properties for agriculture; and
- Supporting planning that promotes cultural, agricultural, and dietary diversity.

**Future Research**

This preliminary research should be continued to evaluate the feasibility of connecting the Rural and Developed Tier of Prince George’s County, perhaps through expanded farmers markets or institutional sales. With careful, well-research coordination, providing connections between agricultural land and urban markets can help alleviate some of the pressures faced by both groups, including the devaluing of local farms and agricultural land and access to fresh produce in urban areas.
Appendix B: Key Informant Survey Instrument

Key Informant Survey

Background
- Name of community, informant.
- How long have you lived in and/or worked with this community?
- What organization or organizations in the community are you connected/affiliated with?
- What attracted you to work with this community?
  - Were there specific issues that drew you in?
- Please draw a map or diagram of your community.
  - Please explain the physical boundaries of your community.
  - Please indicate and list on the map the places and types of places in your community where people can get their food.

Public Health & Accessibility
- When you think of "healthy food" what comes to mind?
- How do people generally get to these establishments? (i.e. walk, drive, bus, bicycle, etc.)
  - How many minutes do you think each method takes?
- Do you consider this food to be generally healthy?
- Do people in the community tend to buy food they prepare themselves, or do they purchase prepared food?
- Why do you think people in this community tend to shop for food where they do?
- What are some reasons people in this community buy certain foods?
  - Are there particular foods, unique eating habits, or food cultures and traits in the community you can think of?
  - How far do people need to go to satisfy these?
  - Have people in your community expressed that they would like more/easier access to certain types of food?
- How easy or difficult do you feel getting around to different places in the community for food is?
Vision/Goals

- Is there activity in the community—by individuals or organizations—to bring in other kinds of food?
- Are there any nutritional education programs you are aware of in the community? Are people in the community aware of them and do they have access?
- What challenges do people in your community face in acquiring food (i.e. travel, safety, money, quality, etc.)?
  - ... in acquiring healthy food?
  - What are some thoughts/ideas to get past these challenges?

Next Steps

- Are there any additional organizations, churches, community leaders, or individuals we should speak with? Are they involved with food and nutrition issues?
- Where (i.e. store, church, rec. center, etc.) could we find a representative cross-section of community residents with whom to speak about their food choices and access?
- Do you know of any specific community residents that would be willing to speak with us for this project? Where would be a good place to speak to people in the community?
- Are any events coming up in the community this summer (i.e. festivals, fairs, block parties, parades)?
- Where are the nearest churches, recreation centers and pools, cooling centers, libraries located?
- What are your thoughts on whom or what else we may want to focus our attention on?
Appendix C: Physical Survey Instrument

Physical Survey of the Food Environment

Surveyor Name:
Location (Physical Address):
Study Area:
Outlet Name:
Outlet type: (circle one)
International Market
Supermarket
Liquor Store
Operating Hours:
Monday to Friday
Saturday
Sunday

Exterior

Accessibility
1. What are the surrounding land uses and pedestrian networks?
Please describe/provide examples.

2. Are there any accessibility challenges to the grocery store?
i.e. condition of sidewalk, size of sidewalk, large parking lot, stairs to the front door

Transit Availability
1. Are there any bus stops/transit stations near the outlet?

a. Approximately how far are they located from the outlet?

Safety Factors
1. What is the condition of the exterior of the store? Is it well-maintained?

2. If you can tell, is there ample exterior lighting?

Interior
1. What is the condition of the interior of the store? Is it well-maintained?
Is the environment friendly and inviting (for example, is there adequate lighting?)
Are the aisles passable? Is the store generally clean?

2. How many cash registers are present?
   a. Are they located behind a glass barrier?

   Government Assistance Programs
   1. Does the food outlet accept WIC?
      a. Is there a logo, sign, or notice posted?
   2. Does the food outlet accept SNAP benefits?
      a. Is there a logo, sign, or notice posted?

Food Availability and Quality

Vegetables
Which of the following are available:

<table>
<thead>
<tr>
<th>Available?</th>
<th>Quality:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrots</td>
<td></td>
</tr>
<tr>
<td>Tomatoes</td>
<td></td>
</tr>
<tr>
<td>Sweet Peppers</td>
<td></td>
</tr>
<tr>
<td>Broccoli</td>
<td></td>
</tr>
<tr>
<td>Lettuce</td>
<td></td>
</tr>
<tr>
<td>Corn</td>
<td></td>
</tr>
<tr>
<td>Celery</td>
<td></td>
</tr>
<tr>
<td>Cucumbers</td>
<td></td>
</tr>
<tr>
<td>Cabbage</td>
<td></td>
</tr>
<tr>
<td>Cauliflower</td>
<td></td>
</tr>
</tbody>
</table>

1- Poor - most of the produce in the category appears old, rotten, bruised, mealy, overripe
2- Mostly Poor - half of the produce in cat. looks old, rotten, bruised, mealy, overripe
3- Fair - some produce is good, fresh, ripe; some produce is old, rotten, bruised, etc.
4- Mostly Good - half of the produce appears fresh, ripe, not bruised or overripe
5- Good - most of the produce in the category appears fresh, ripe, not bruised or overripe

Total variety of vegetables: (please circle one)
None
11-25 26-50
>50
### Fruits
Which of the following are available:

<table>
<thead>
<tr>
<th>Fruit</th>
<th>Available</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bananas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apples</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oranges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grapes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cantaloupe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peaches</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strawberries</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honeydew Melon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watermelon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pears</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Quality scale:
1 - Poor
2 - Mostly Poor
3 - Fair
4 - Mostly Good
5 - Good

Total variety of fruits: (please circle one)
- None
- 1 - 10
- 11 - 25
- 26 - 50
- >50

### Grains
Which of the following are available: (look at the first few ingredients to verify):

- Whole grain breads, rice, pasta and pastries
- Whole grain cereals (including hot cereal mixes)
- Popcorn and other whole grain snacks
- Non-whole grain breads, cereals, pasta, pies, pastries, snacks, and flours

### Milk Products
Which of the following are available:
- Whole milk
- Whole milk yogurt and/or cream
- 1%, 2% or skim milk
- Low fat yogurt and/or cream
- Cheese
- Milk drinks and milk desserts

Are expiration dates generally more than 5 days out?
- Yes
- No

### Proteins
Which of the following are available:
- Beef, pork, veal, lamb and/or game
- Chicken, turkey and/or game birds
- Fish and fish products
- Bacon, sausages and luncheon meats
<table>
<thead>
<tr>
<th>Nuts, nut butters and seeds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetarian proteins (soy-based &quot;meats,&quot; etc.)</td>
</tr>
<tr>
<td>Canned beans</td>
</tr>
<tr>
<td>Eggs and egg mixtures</td>
</tr>
</tbody>
</table>

For meat products, are expiration dates generally more than 5 days out?

Yes  
No

**Other foods**

Which of the following are available:

- 100% fruit juice
Appendix D: Shopper Survey Instrument

Issues in Food Access - Shopper Survey

Survey Questions

1. What is the name and approximate location of the grocery store you visit most often?

2. Is the grocery store you visit most often the nearest grocery store to where you live?
   - YES
   - NO

3. If not, what are the reasons why you choose to shop at a grocery store that is farther away? (Please rank the following options 1-5 with 1 being most important to you and 5 being least important)
   a. Lower Prices
   b. Better Selection
   c. Higher quality produce
   d. Easier to get to
   e. Availability of foods unique to my culture

4. How many times per week do you shop for groceries at this location?
   - < once per week
   - once per week
   - two to three times weekly
   - >three times per week

5. How do you usually get to the grocery store you visit most often?
   a. By driving a car owned by you or someone in your home
   b. By walking
   c. By bicycle
   d. By public transportation (ex. bus, shuttle, or Metro rail)
   e. Other (ex. by taxi/cab or a ride from a friend)

6. How much time, in minutes, does it usually take you to get to the grocery store you visit most often? _____ minutes

Food Shopper Survey 2
7. Do you think your trip to and from the grocery store you visit most often is difficult due to distance or your method of transportation?
   a. Yes, because of the distance.
   b. Yes, because of my method of transportation.
   c. Yes, due to both.
   d. No, neither make my trip difficult

8. How would you rate the overall quality or environment at the grocery store you visit most often?
   Clean, safe, welcoming — 1 2 3 4 5 — Dirty, unsafe, uninviting

9. How would you rate the selection or variety of food available at the grocery store you visit most often?
   Plentiful, wide variety — 1 2 3 4 5 — Very limited or specific

10. On a scale of 1-5, how would you rate the quality of the fruits and vegetables at the grocery store you visit most often?
    Crisp, fresh, flavorful — 1 2 3 4 5 — Rotten, mealy, moldy

11. For the store you visit most often, in comparison to other grocery stores
    a. do you feel that you pay MORE, THE SAME, or LESS (circle one) for your groceries?
    b. Do you feel that the quality of the fruits and vegetables that you buy is BETTER, AS GOOD, or WORSE (circle one)?

12. Do you visit food stores other than your grocery store during the week to get all the food items you need? YES NO
    a. If so, how many other stores? 1-2 3-5 more than 5

13. Do you ever shop at a local farmer’s market/roadside market/produce stand? YES NO

14. If you do shop at a local farmer’s market/roadside market/produce stand:
   a. How often do you shop there?
      OFTEN SOMETIMES RARELY
   b. Where is it located? ________________________________

Food Shopper Survey 3
c. Are the hours of the market convenient for you? YES NO

15. Do you get fresh fruits and vegetables from any of the following: (Circle all that apply)
   a. a Community Garden
   b. a Food Bank
   c. your own garden
   d. Other (please explain) ________________________

16. What, if anything, would make your grocery shopping experience better?
   __________________________________________________________
   __________________________________________________________

DEMOGRAPHIC INFORMATION
1. What is your gender?
   o Male
   o Female
2. In what decade were you born? ________
3. What is the total number of people living in your household? ____________
4. Please indicate the number of dependents you have in your home. __________
5. What are the nearest cross streets to your home? _______________________
6. Do you own or have easy access to a car? Yes No

7. What is your total household income? (Optional)
   o Less than $10,000
   o $10,000 to $19,999
   o $20,000 to $39,999
   o $40,000 to $59,999
   o $60,000 to $79,999
   o $80,000 or more

Q. Please specify your ethnicity.
   o Not of Hispanic, Latino, or Spanish origin
   o Yes, Mexican, Mexican Am, Chicano
   o Yes, Puerto Rican
   o Yes, Cuban
   o Yes, another Hispanic, Latino, or Spanish origin. Please indicate: ________

Q. Please specify your race.
   (check all that apply)
   o White
   o Black or African American
   o American Indian or Alaska Native
   o Asian
   o Native Hawaiian or Other Pacific Islander
   o Some other race

**Thank you for completing this survey. We appreciate your time and feedback!**

Food Shopper Survey! 4
Appendix E: Maps Used to Choose Study Areas

1. Population Density for the Northern Portion of Prince George’s County Developed Tier
2. Percentage of Persons Below the Poverty Level for the Northern Portion of Prince George’s County Developed Tier
3. Percentage of Autoless Households for the Northern Portion of Prince George’s County Developed Tier
4. Food Outlets for the Northern Portion of Prince George’s County Developed Tier
Appendix F: Maps of Surveyed Food Outlets and Food Deserts
Legend

Food Outlets
Type of Food Outlet
- Liquor Store
- General Merchandise
- Convenience Store
- International Market
- Market
- Supermarket

Physical Survey Status
- Surveyed
- Not Surveyed

Types of Food Outlets near the Town of Bladensburg
Areas with Adequate Access to Full-Service Food Outlets near the Town of Bladensburg
Areas with Adequate Access to Full-Service Food Outlets near the Town of Capitol Heights

Legend

- Food Outlets
- Variety Measure (5-5-1-1-1-1)
- Full-Service Outlet
- Limited-Service Outlet
- Non-Surveyed Outlet

- Half-Mile Network Access Buffer
- Half-Mile Aerial Access Buffer

Town of Capitol Heights
Areas with Adequate Access to Full-Service Food Outlets near the Community of Suitland