Part 1

Assessment of the study area

What do consumers say?

Access to healthy food survey

A consumer survey was conducted in July 2013 to identify the needs of Prince George's County residents in accessing healthy food choices. The survey included questions about residents' food shopping habits, eating habits, and nutrition knowledge. In this chapter, the results on food shopping habits are analyzed. Results on eating habits and nutritional knowledge may be found in Appendix 1.

English and Spanish versions of the survey were made available to residents as a hard copy[2] and on-line. Residents were recruited at various community events within the study area to take the survey. Links to the survey were also posted on various Internet sites.

A total of 565 survey responses were received. Although efforts were made to recruit Spanish-speaking people, only 19 Spanish survey responses were received. While the majority of the people who participated in the survey were between 35 and 64 years old, there were respondents from all age groups, including below 18. The participant group was not as well balanced by gender; more than three quarters were female.


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[2]   Survey questionnaires are displayed in Appendix 2 on page A-9.

Survey results on food shopping habits

Residents shop frequently for food. More than three quarters of the residents shop for food one to three times a week. Only 15 percent shop less frequently than once a week. This shows that residents make a high number of daily trips to the food retail outlets.

Chart 2: Frequency of food shopping
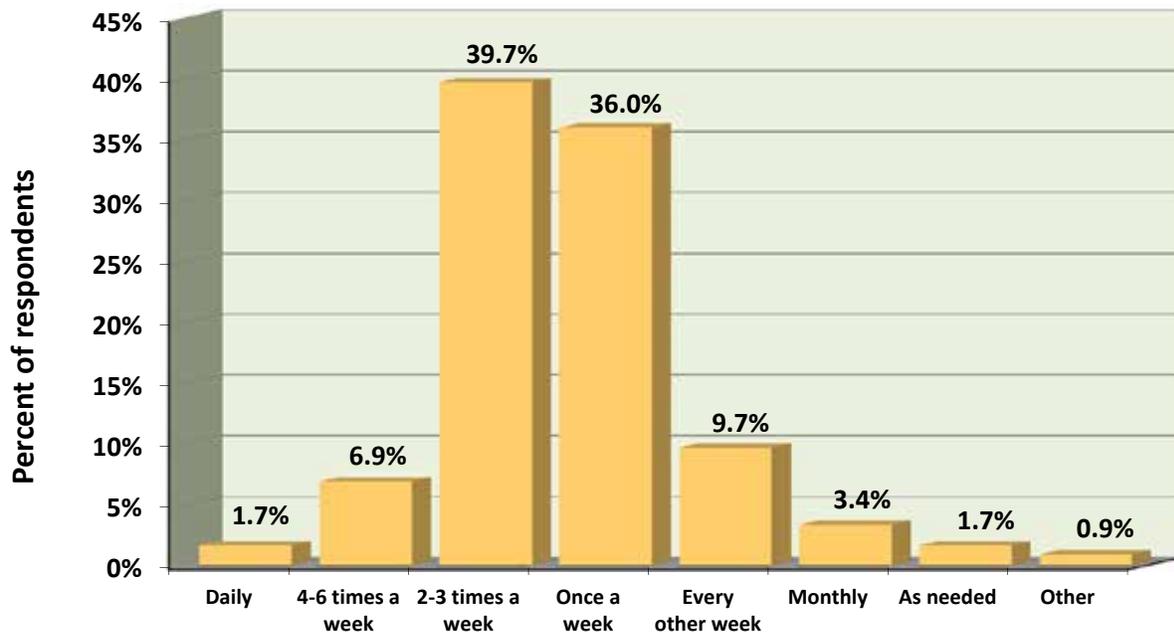
However, not all food shopping takes place close to where people live. Although more than half of the respondents shop in their own neighborhood, 40 percent of those also shop elsewhere. Only 34 percent of the respondents shop exclusively in their neighborhoods. A more surprising result is that almost a third of the respondents never shop in the neighborhood where they live. This shows that for many residents a significant amount of food shopping takes place farther away from home. One reason why some consumers choose not to shop close to home may be due to lack of stores or food items sought by the residents.

> **56%** shop in **own** neighborhood, but
> **40%** of those also shop **elsewhere**
>
> **34%** shop <u>only</u> in **own** neighborhood
>
> **29%** shop <u>only</u> in **another** neighborhood

The highest rate of food shopping in the residing neighborhood is seen in the South Area and the lowest in the Central Area. (See Map 1 on page 4 for the boundaries of subareas.) Shopping exclusively in one's own neighborhood does not necessarily mean that people are satisfied with the food outlet options there. It is possible that consumers may not have the transportation to travel to stores elsewhere.

Study area residents patronize a variety of food outlets. While major supermarkets are the most frequented food outlets, residents also purchase food at small grocery stores, ethnic markets, membership clubs, and big box stores such as Target or Walmart, farmers' markets, and farms. Convenience stores are the least patronized traditional food outlet type.

A good indicator of healthy food access is patronizing farmers' markets or getting food directly from local farms, either as a Community Supported Agriculture (CSA) member or from farm stands. Some residents indicated that they also grow their own food. An increasing number of community gardens and free gardening courses enable residents to grow their own food at least half of the year.

Several participants mentioned getting at least part of their food from food pantries. This implies that these residents cannot afford buying food at the existing food retail outlets in the study area. This is an indicator of food insecurity, as discussed in the "How is food insecurity a problem" section on page 99.

The comparison of geographic areas within the study area shows that there are very few differences in the food shopping habits of the residents of different areas. Given that the majority of farmers' markets are located in the North Area, it is not surprising to have more farmers' market shoppers here. While small grocery stores are patronized more in the North Area, big box stores are more popular in the South Area. An interesting finding is the similar proportion of the ethnic market patrons in all areas. There is a higher percentage of food pantry patrons in the Central Area than the other two areas.

Most residents drive less than 10 minutes to shop for food. An overwhelming majority of the respondents drive to the place where they most frequently get their food. Fifty of the survey takers indicated that they walk to the place where they most frequently shop. The majority of survey participants travel 10 minutes or less to the place they most frequently shop for food. Only 12 percent of the respondents indicated that they travel more than 20 minutes to do food shopping.

Chart 3: Mode of transportation to food retail outlets

- Walk — 10.2%
- Drive — 81.1%
- Bus — 2.0%
- Metro — 0.8%
- Bicycle — 2.4%
- Taxi — 0.4%
- Get a ride — 2.9%
- Other — 0.2%

Percent of respondents
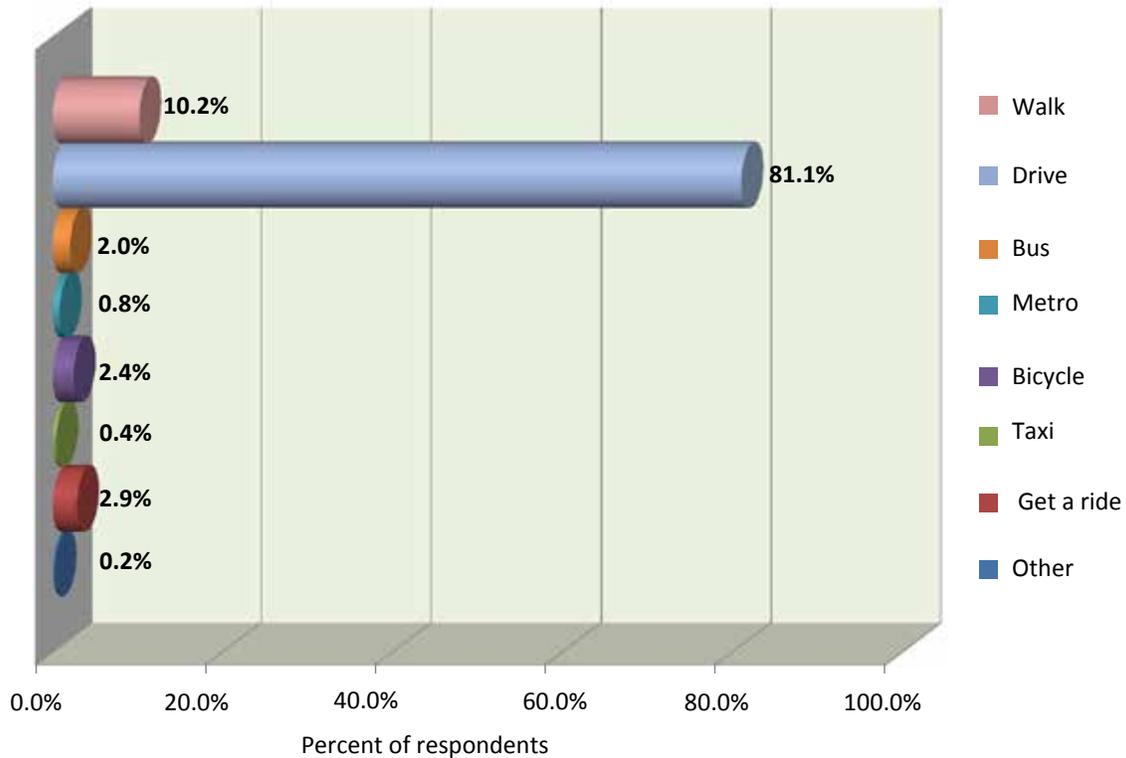
Chart 4: Travel time to food retail outlets

- Less than 5 minutes — 19%
- 5-10 minutes — 35%
- 11-20 minutes — 34%
- 21-30 minutes — 8%
- More than 30 minutes — 4%
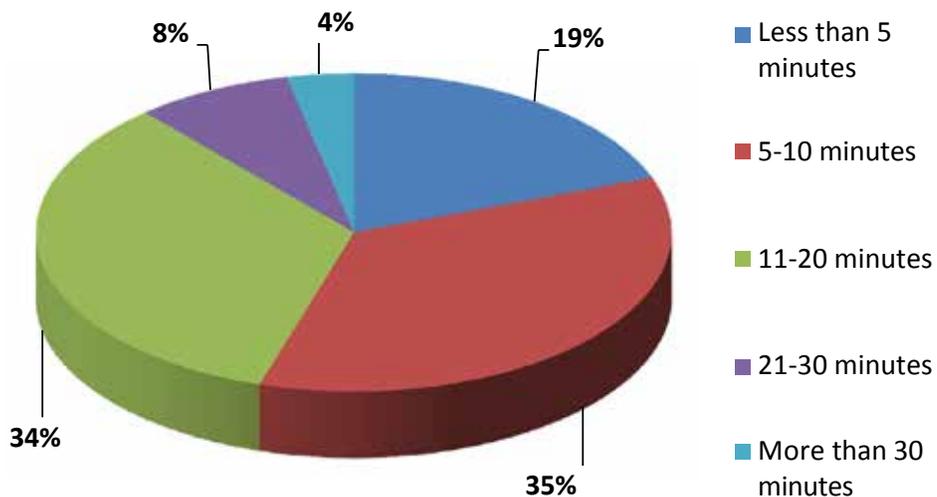
Food access challenges are more related to what local stores carry than the physical access to food outlets. One of the most important findings of the survey is the challenges the residents are experiencing to get the food they want. According to the survey results, the most important challenge is not being able to find the food items they want in nearby stores. The next challenge is the poor quality of food. While the affordability of food was a challenge to 18 percent of the survey participants, 16 percent mentioned that grocery stores are too far from their home. Pedestrian safety was pointed out by eight percent of the respondents. A small number of people indicated transportation related challenges. A general conclusion from these responses may be drawn as food access challenges are more related to what nearby stores carry than the physical accessibility of the food outlets. Perhaps availability of a large variety of affordable, good-quality food in the existing stores would substantially reduce the challenges.

Chart 5: Food access challenges

Percent of respondents

- Grocery stores are too far
- Cannot find items at nearby stores
- Do not have access to a car
- No public transportation to stores
- No walkways/pedestrian safety
- Too expensive/cannot afford
- Quality of food is not good
- Lack of culturally appropriate foods
- Not enough time
- Other
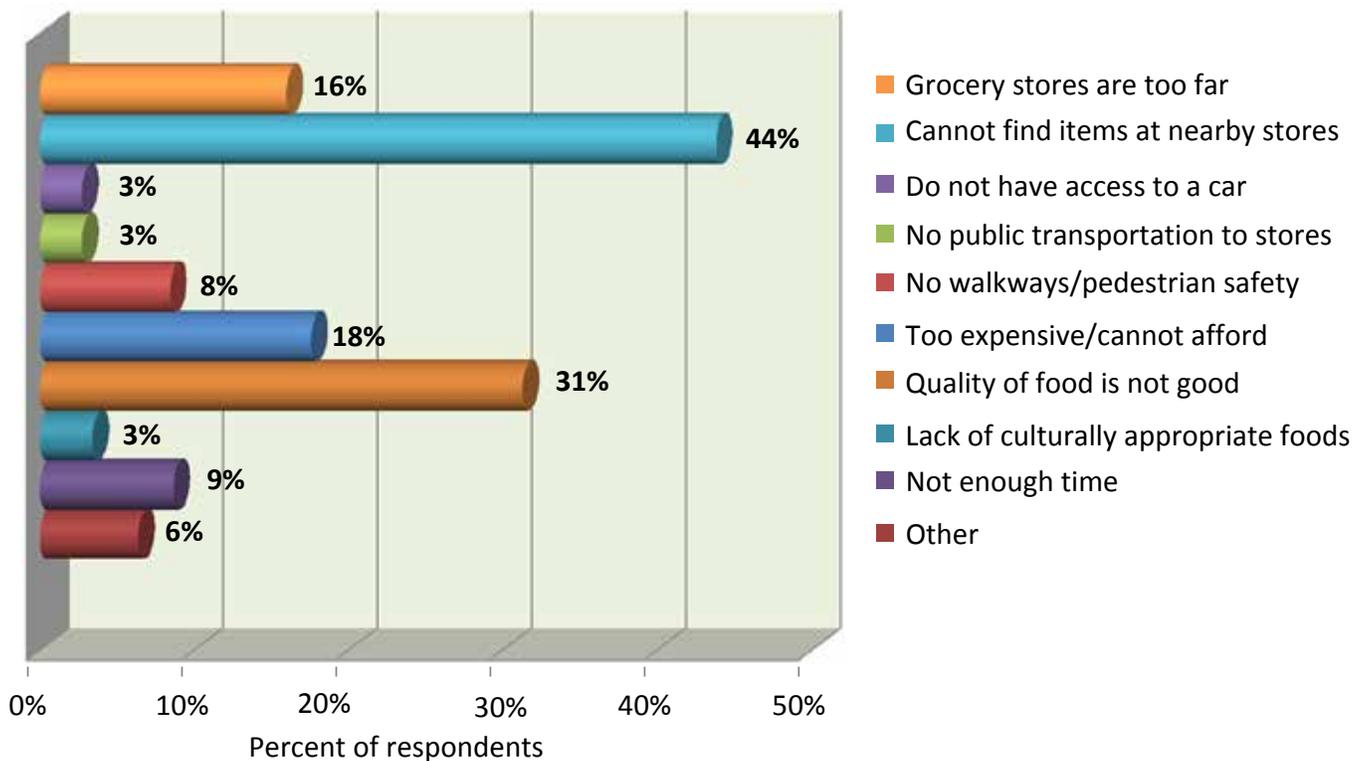
The majority of respondents are somewhat satisfied with their shopping options.
When the level of satisfaction with current shopping options was asked, 56 percent of the respondents answered "somewhat satisfied." Although lots of challenges with food shopping experience were expressed, 32 percent of the respondents said they were "very satisfied" with current shopping options. Only 12 percent of the respondents chose "not satisfied."

Residents want good quality clean food stores that have good customer service and are close to home. They want a variety of affordable and good quality fresh, healthy food, including locally grown produce. An open-ended question was asked about what needs to be done to improve their food shopping. The following are the most common responses:

- Good quality grocery stores within walking distance.
- More options for food retail—Trader Joe's, Harris Teeter, Wholefoods, and specialty stores.
- Better quality food.
- Affordable healthy food.
- Lower prices.
- Fresh produce and food.
- Healthier food options.
- More organic foods.
- More variety/better selection.
- Cleaner stores.
- More local foods.
- Better customer service.
- Provide transportation/shuttle service to grocery stores.

Consumer focus group discussions

To get a more intimate knowledge of the experiences of the residents with accessing healthy food and hearing their voices, multiple focus group discussions were conducted during summer and fall 2013. One focus group discussion was held in each of the North, Central, and South Areas. Additionally, Spanish language focus groups were held in Riverdale and Langley Park, areas with significant Latino populations.

Recruitment of participants

Recruitment for the focus groups was done in various ways. All community and civic associations, as well as municipalities, were notified that their help was sought to recruit residents. Flyers were posted at supermarkets, community centers, and restaurants. Participants were also actively recruited at various community events, farmers' markets, and community centers. Many area residents showed interest and signed up to be a focus group member. Focus groups were limited to 20 residents. Although in some cases fewer people showed up, there were enough residents to hold a meaningful discussion at every meeting.

Conducting focus group discussions

As an ice-breaking activity, at the beginning of each meeting, participants marked on a map their home locations and the place where they primarily get their food. A noteworthy outcome from this exercise was that several food outlets in other jurisdictions were marked.

Participants were asked to identify issues in accessing healthy food in five categories:

1. Physical—Availability and accessibility of food retail outlets/transportation.
2. Economic—Affordability of food.
3. Cultural—Life styles and availability of culturally appropriate food.
4. Quality—Fresh, healthy, and organic food availability; store environment; customer service.
5. Other.

As representatives of their communities, the participants considered issues of their respective communities as well as their personal experiences. After identifying these problems, each participant voted for the three most important issues. When the top three were identified, the participants divided into groups. Each group discussed one issue and came up with three solutions to resolve the given issue. Groups then presented their solutions, and everybody voted to determine the top three solutions for immediate implementation.

Identified issues

The issues identified in each focus group discussion were quite similar. Consumers in all areas have more common issues than area-specific issues. The top three issues that were identified at each focus group discussion are as follows:

North Area
1. Healthy food is expensive
2. Nearby stores do not have quality food
3. Transportation is a problem
   a. Distance
   b. Walkability
   c. Need to go to multiple stores for food shopping

Central Area
1. Quality of food
2. Family structure/fast food
3. Quality of store

South Area
1. Quality of food is bad
2. People do not know how to prepare fresh food
3. Lack of locally grown food

Riverdale—Spanish Speaking
1. Food hygiene is bad
2. Buying healthy food in one store is costly
3. Transportation is a problem
4. There is no access to farmers' markets year round

Langley Park—Spanish Speaking

1. Expiration dates of products and quality should be controlled
2. Cleaner stores are needed
3. There is not enough variety of ethnic foods

Solutions offered

Focus group participants offered various solutions to the issues they identified. The solutions offered to major issues across all focus groups for each category are listed below.

Physical

Issue: Transportation is a problem.

Solutions:

- Offer shuttle services to take people to farmers' markets and supermarkets.
- Establish public/private partnerships for mobile markets that sell healthy food.
- Improve transportation infrastructure—more bus routes where markets are, more frequent bus service.
- Educate people about existing transportation services such as Call-A-Bus.
- Promote involvement of churches in providing transportation.
- Spread the word about existing phone services for food shopping, such as Top Banana and Peapod.
- Increase number of accessible quality stores in the neighborhoods.

Economic

Issue: Healthy food is expensive.

Solutions:

- Provide subsidies for healthy food.
  - Federal subsidies should go to healthy foods instead of corn and soy.
  - County should tax soda and use that money to promote farmers' markets.
  - Give tax breaks and other incentives to specialty and independent stores that sell healthy food to ensure they can compete while providing high quality food.
- Establish food co-ops and food shares.
- Encourage value shopping (shopping for bargains featured in papers, using coupons, and cooperative partnering to shop at wholesale clubs thus discounting membership fees).
- Consolidate farmers' markets to a large central location (mention of an indoor year-round farmers' market).

Cultural

Issue: Families choose fast food because of family structure/lifestyle.

Solutions:

- Provide nutrition education to children at the school and to adults at the grocery stores.
- County should provide more cooking and nutrition classes.

- County should allow regulated food trucks that sell prepared healthy food for more accessibility to alternatives to fast food.
- Health care agencies and insurance companies should educate people on how what they eat affects their health.
- Department of Family Services should utilize funds to solve the issues related to unhealthy eating.

Quality

Issue: Nearby stores do not have quality food, good hygiene, and customer service.

Solutions:

- Issue County ordinances/regulations to ensure equity in all stores that sell food—provide consistency of quality, and levy fines on stores that provide bad produce in poor neighborhoods.
- Provide access to public land for farmers' markets and food co-ops.
- Involve community to report poor quality food—provide educational outreach to teach people how and where to report.
- Stop shopping at the stores where quality is poor and protest.
- Use social media to publicly shame stores and urge them to offer better quality food.
- Establish community advisory groups to challenge and let stores know what the community desires (good quality food, cleanliness, better labeling, etc.).
- Report to the Health Department, County Council, and speak or write a letter to the manager and/or sign a petition to request clean stores, better quality food selection, and store personnel training for better customer service.
- Require more community outreach from stores to ask what people want.

Other

Issue: There is a lack of CSA to support local farmers and urban farming in general.

Solutions:

- Partner with local urban and rural farmers to get fresh, locally grown, and organic produce into the stores.
- Establish a neighborhood-based micro food system—work together as a food hub to solve our food problems.
- Establish more community gardens in each local area.

Photo by Deborah Wren

Food retail outlets and healthy food availability

Food retail outlets are places where food is directly sold to the consumer. There are two kinds of food retail outlets:

Food retail stores: Grocery stores and other markets where primarily unprepared food is sold.

Prepared food service outlets: Places where food is cooked and made ready for consumption, such as restaurants, cafeterias, and carry-out places.

Inventory of food retail outlets

An inventory of all food outlets in the study area was conducted in summer 2012. The data were obtained from a variety of sources, including Maryland Food System Map[3], Prince George's County Health Department, Prince George's County Shopping Center Directory, and several on-line directories. The data were geocoded and verified through on-line map and image services using aerial images. A field check was done in the study area by visiting all outlets. After the field verification, identification of all food retail outlets in the study area was completed and mapped.[4] The inventory of food retail stores was updated in summer 2013.

Map 2 on page 24 shows all the food retail outlets in the study area. In total, there are 1,587 outlets that sell food directly to consumers. While there are 636 food retail stores, the number of prepared food service outlets is 951, which is 50 percent more than the food retail stores.

The large number of prepared food outlets is an indicator of resident's eating habits. Residents consume significant amounts of ready-to-eat food. The map also clearly shows the spatial distribution of food outlets. Most of the food retail stores are clustered along major roads, but the prepared food outlets are scattered. Thus, for many residents, access to prepared food is much easier than access to raw food that can be purchased at a grocery store. The easy availability of prepared food may partially explain the alarming rates of obesity in the County[5] since the majority of prepared food is not healthy.

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[3] Created by the Center for a Livable Future at Johns Hopkins University Bloomberg School of Public Health. mdfoodsystemmap.org

[4] A detailed methodology on data collection and inventory creation is in Appendix 3 on page A-11.

[5] See "Food-health connection" on page 69.

Map 2: Food retail outlets in the study area

Food retail outlets
- ● Food retail store
- ▲ Prepared food service outlet

Geographic areas
- North
- Central
- South

- One-mile buffer of study area

Metro rail lines
- Blue line
- Green line
- Orange line
- Ⓜ Metro station

Montgomery County

Prince George's County

District of Columbia
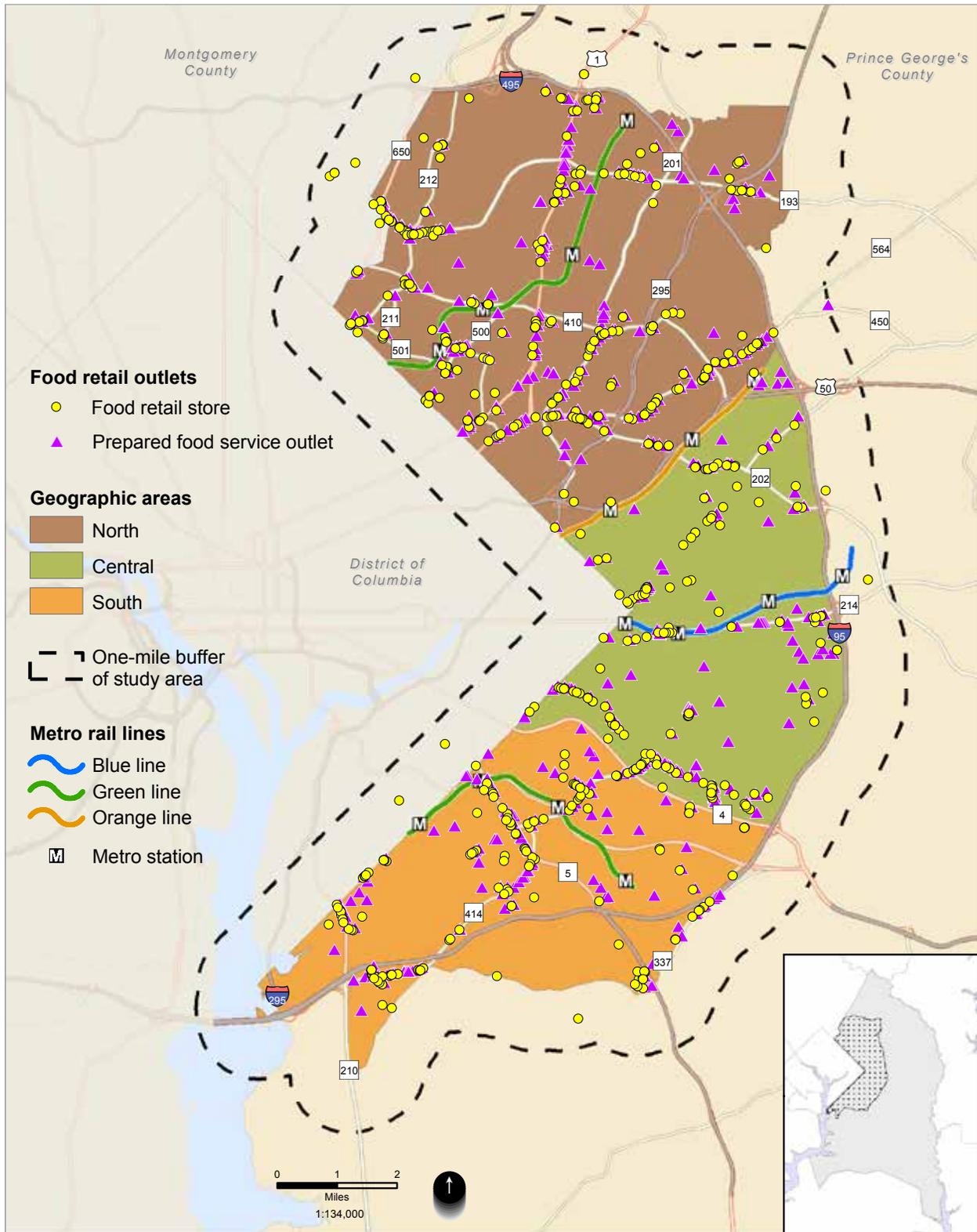
As shown in Chart 6, the most prevalent type of food retail outlet in the study area is carry-out places. While carry-out places comprise almost a quarter of all food retail outlets, full-service restaurants have the second highest number, followed by gas station stores and fast-food restaurants. Supermarkets, small groceries, and international markets are close to the bottom of the list. These three retail food stores, when combined, comprise only 12 percent of all food outlets. Even when convenience stores and discount stores are added, the number of food retail stores cannot reach the number of carry-out places.

Chart 6: Food outlets in the study area by type

Full-service restaurants — 196
Small restaurants — 125
Fast-food restaurants — 135
Carry-out places — 368
Cafes, ice-cream parlors, etc. — 76
Bakeries — 51
Drug stores — 50
Discount stores — 64
Convenience stores — 93
International markets — 66
Supermarkets — 55
Small groceries — 65
Liquor stores — 96
Gas station stores — 147

Number of food outlets
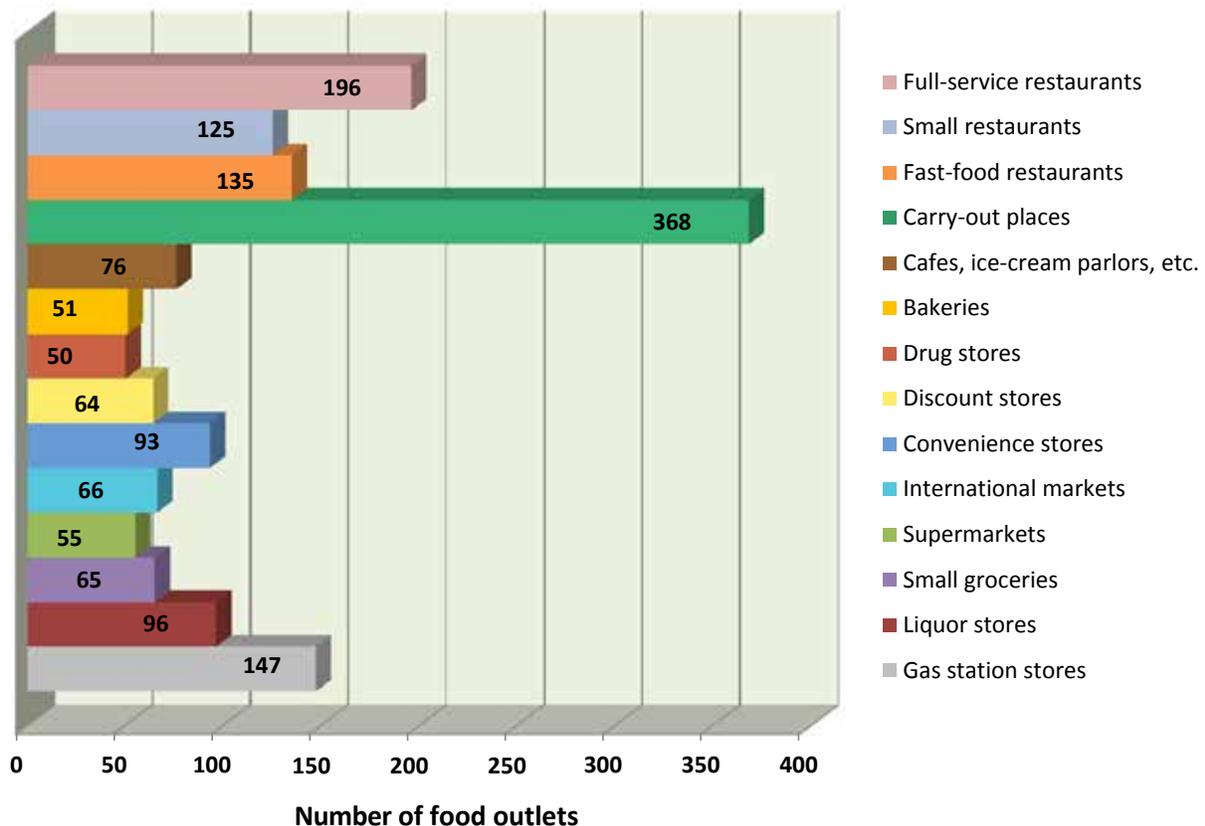
Sixty percent of all food retail outlets in the study area are prepared food service outlets. Even when bakeries and cafés are excluded, restaurants and carry-out places comprise the majority of food outlets. Unfortunately, healthy food alternatives are hard to find at most of these outlets.

These figures seem to indicate that there is an abundance of unhealthy food available at hundreds of places all over the study area. Only a fraction of all the food retail outlets are true grocery stores where fresh fruits and vegetables can be found.

A closer look at the prepared food service outlets, excluding bakeries and cafés, in Chart 7 show that close to half of the places in this category are carry-out places. Among the study area restaurants, contrary to the common perception, there are more full-service, sit-down restaurants than chain fast-food restaurants. Most of the places in the small restaurants category are full- or self-service ethnic restaurants.

Chart 7: Prepared food service outlets in the study area
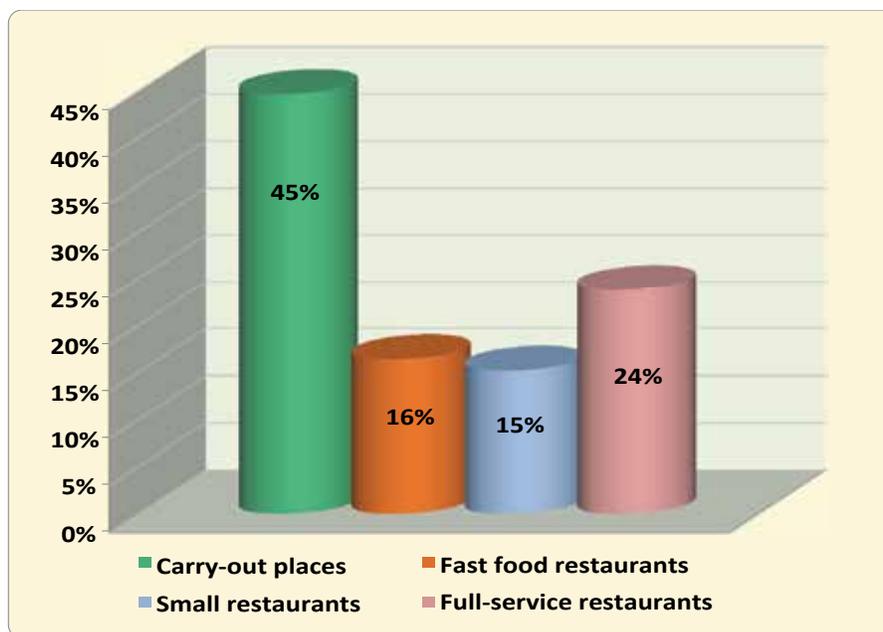
The popularity of carry-out food is an indicator of lessening home cooking activities. These places carry all kinds of food, including different ethnic options, and usually offer more food for the buck than home-prepared food. Having carry-out food as opposed to eating out (even at a fast-food restaurant) has many advantages—it saves time, it is cheaper than eating out, it can be picked up on the way home by a family member, and the whole family can eat together in the coziness of their home.

Replacing home-cooked foods (where ingredients are known and mostly natural) with ready-made outside meals that contain unknown ingredients, which most likely include chemicals, creates health risks. There is a correlation between the high number of carry-out places and fast-food restaurants and the alarming obesity rates and other diet-related chronic disease statistics in the County. Efforts to provide access to healthy food should not focus only on improving food retail stores but also on improving the prepared food service outlets.

Types of food retail stores

Food retail stores that generally sell food that is not ready for consumption are classified into two groups: supermarkets and small markets. Each group is further divided into subcategories as shown in Table 1.

Table 1: Types of food retail stores	
Supermarkets	**Small markets**
Full-service supermarket	Convenience stores
Big-box store	Discount stores
Other supermarket	Drug stores
	Gas station stores
	International markets
	Small grocery stores
	Liquor stores

In the study area, 55 supermarkets and 484 small markets, excluding liquor stores, are identified as food retail stores. Although listed in this table, liquor stores were not included in the analysis discussed in this chapter. Liquor stores are considered food retail stores, but most of them do not carry food items other than beverages. If they carry any food, it is usually nothing more than snacks.

Types of supermarkets

For this study, supermarket types are defined as follows:

Full-service supermarkets: Large supermarkets with multiple departments, including a pharmacy.

Big-box stores: Large-scale retail stores that sell reasonably priced food, all kinds of goods, and includes membership clubs.

Other supermarkets: All other food markets with three or more cash registers.[6]

The breakdown of 55 supermarkets in the study area by type is shown in Chart 8a. Chart 8b shows the same breakdown for all 70 supermarkets that serve the study area (i.e., supermarkets in the study area plus the ones within one-mile radius of the study area). Even though some of the supermarkets within one-mile radius are in different jurisdictions, they are included because they provide service to the study area residents.

Chart 8: Number of supermarkets by type

a. Study area

b. Study area + one-mile radius

- Full-service supermarket
- Big-box store
- Other supermarket
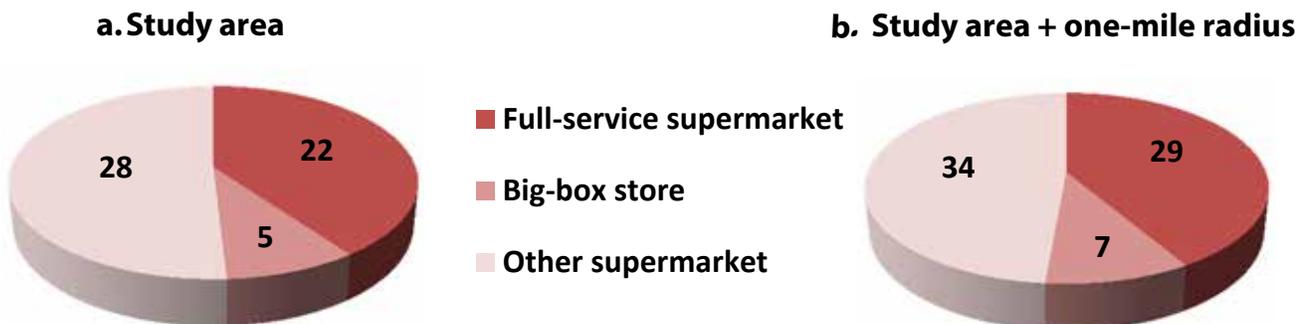
Location of supermarkets

Map 3 on page 30 shows the location of supermarkets in the study area as well as one-mile radius of the study area by supermarket type. It also shows the distribution of supermarkets by geographic area.

The map clearly shows the uneven spatial distribution of supermarkets. While there are clusters of supermarkets in certain areas, there are quite large areas with no supermarket at all. Generally, supermarkets are located along main arteries and cluster at major intersections. Only three Metro

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6   Based on the supermarket definition by the Johns Hopkins University Center for a Livable Future.

stations have supermarkets near them. At the area level, while the majority of supermarkets are located in the North Area, within this area they are mostly concentrated in the western portion. Most supermarkets in both the Central and South Areas are located at the periphery, leaving many neighborhoods without a supermarket.

The number and type of supermarkets located within the boundaries of each area as well as those providing service for each area (i.e., including those within one-mile radius outside the area) are shown in Table 2.

Table 2: Number of supermarkets by type and area								
Area	**Full-service supermarket**		**Big-box store**		**Other supermarket**		**Total**	
	Located in	Provide service	Located in	Provide service	Located in	Provide service	**Located in**	**Provide service**
North Area	12	14	3	4	18	23	**33**	**41**
Central Area	5	7	2	3	6	6	**13**	**16**
South Area	5	8	0	0	4	5	**9**	**13**
Total	**22**	**29**	**5**	**7**	**28**	**34**	**55**	**70**

Map 3: Supermarkets by type

Supermarket types

BB	Big-box
🛒	Full service
🛒	Other

Geographic areas

North

Central

South

One-mile buffer
of study area

Metro rail lines

〰️ Blue line

〰️ Green line

〰️ Orange line

Ⓜ Metro station
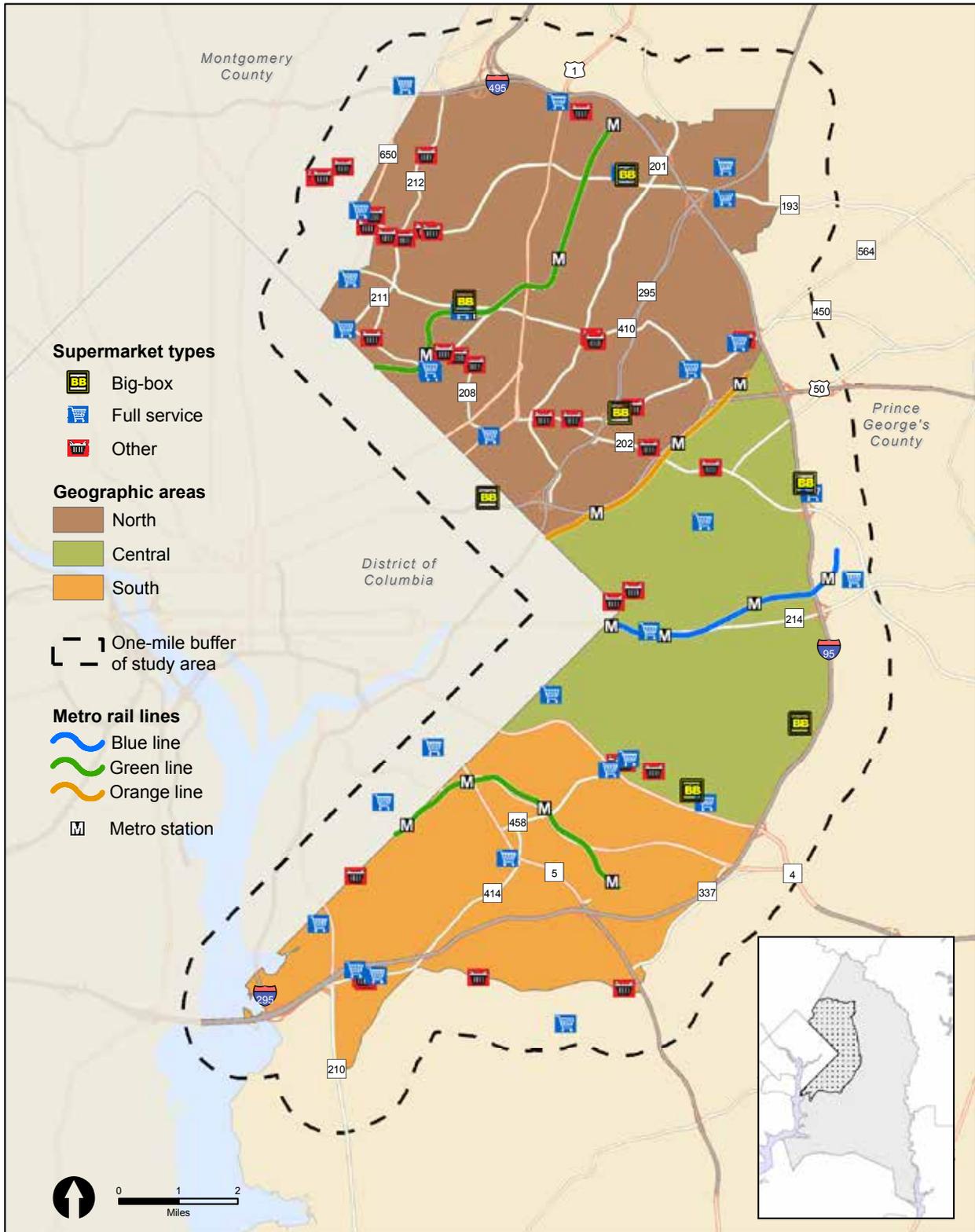
The North Area has 60 percent of all the supermarkets in the study area. This is not surprising, given that more than half of the population and close to half of the households in the study area are in the North Area. However, the number of supermarkets is not necessarily proportionate to the population or the number of households in each area. The Central and South Areas each has roughly a quarter of the study area's population and households, but their shares of supermarkets are 24 and 16 percent, respectively. When the supermarkets within the one-mile radius of the study area (which serve the study area population) are added, we see a slightly different picture. The number of supermarkets increases by 15, totaling 70 supermarkets. The North Area is served by an additional eight supermarkets, whereas the Central and South Areas get three and four additional markets, respectively. These additions increase the South Area's share to 19 percent, while slightly decreasing North and Central Areas' shares.

By type, seven full-service supermarkets, two big-box stores, and six other supermarkets are located outside the study area but serve its residents. In each geographic area, the share of full-service supermarkets is pretty proportionate to that area's population and households. This is not the case for big-box stores and other supermarkets. The South Area is not served by any big-box store, and the North Area has a much higher proportion of other supermarkets. This is most likely because of the existence of a significant number of ethnic supermarkets, which fall under the "other supermarket" category. The customers of ethnic supermarkets usually are not just the immediate area residents. Due to the specialty nature of the foods they carry, the ethnic supermarkets serve 63 percent of the County's Hispanic/Latino population as well as other ethnic populations who reside in the County.

Table 3 shows the number of supermarkets each area could support as well as the number of existing supermarkets to see whether the study area is served by enough supermarkets. A general industry rule of thumb is that 3,000 households are required to support a supermarket.[7]

Table 3: Sufficiency of supermarkets that serve the study area				
	North	**Central**	**South**	**Study Area**
Number of households	73,459	38,464	38,947	**150,870**
Existing supermarkets that serve the area	41	16	13	**70**
Number of supermarkets this area could support	24	13	13	**50**
Number of supermarkets in excess in this area	17	3	0	**20**

The study area is served by more supermarkets than the market, theoretically, should support. This is also true for the North and Central Areas, while the South Area is at par. The high number of excess supermarkets in the North Area could be due to the ethnic supermarkets that draw customers from the region. These numbers show that in terms of the number of supermarkets, the study area is sufficiently served.

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[7]   According to the International Association of Shopping Centers.

Types and location of small markets

There are 484 small markets that provide food in the study area. The location of these markets is shown on Map 4. The map also shows the breakdown of small markets by type.

It is clearly seen on the map that spatial distribution of the small markets reflects the transportation system. Stores are primarily located along the main arterial roads. Clustering becomes dense at the junction of these arterials. An interesting observation is that, although roads are a major factor in the selection of store location, Metro stations have no impact at all. There are no stores at or near more than half of the Metro stations. There are clusters of stores around only five stations. Absence of food retail outlets near the Metro stations is a lost opportunity for the County residents who are in need of better food retail alternatives at convenient locations, for entrepreneurs who are looking for starting and/or expanding businesses, and for the County that is seeking economic development opportunities.

Map 4: Small markets by type

Small market types
- Convenience store
- Discount store
- Drug store
- Gas station store
- International market
- Small grocery store

Geographic areas
- North
- Central
- South

Metro rail lines
- Blue line
- Green line
- Orange line
- Metro station
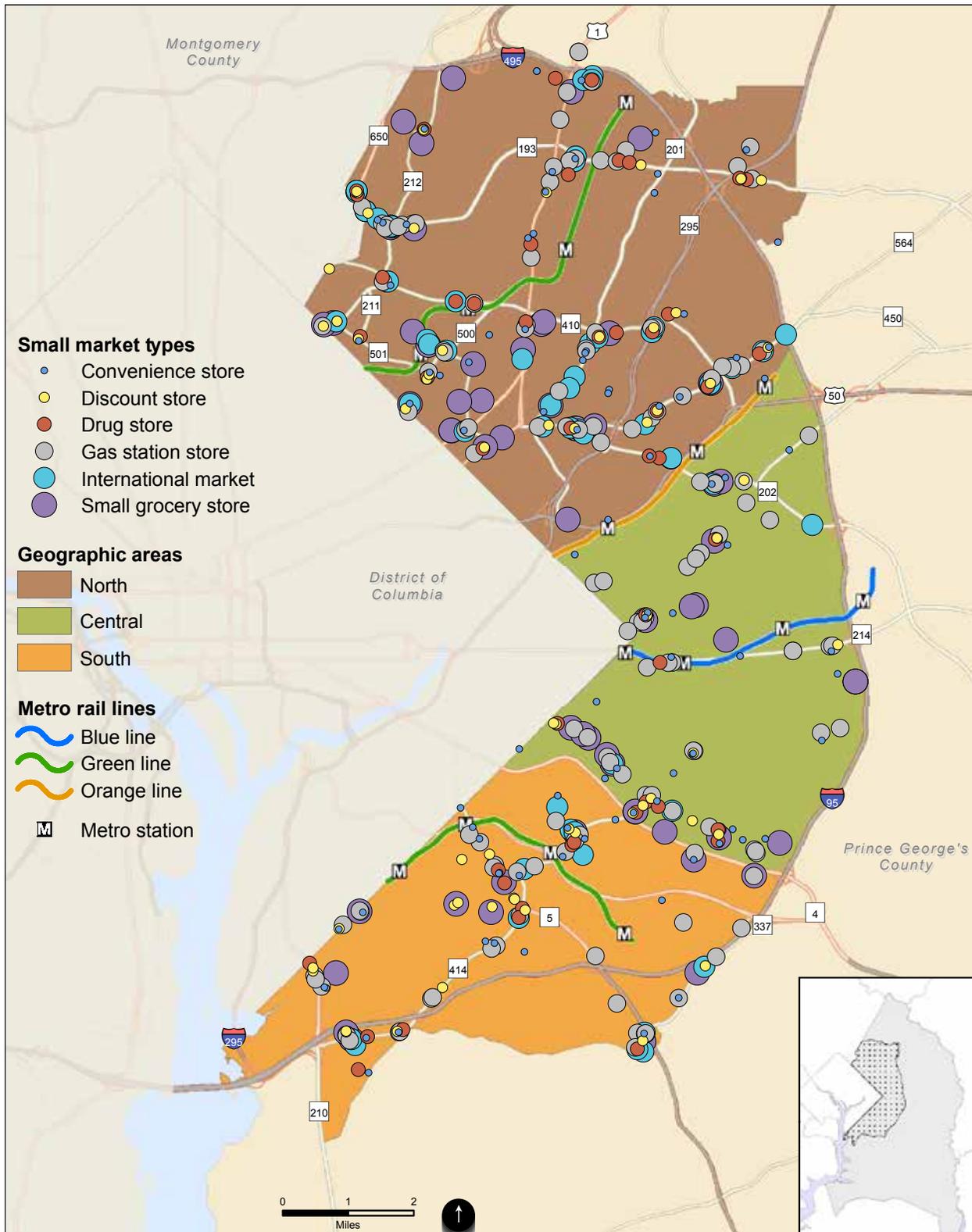
Table 4 gives the numeric breakdown of different types of small markets by area.

Area	Convenience store	Discount store	Drug store	Gas station store	International market	Small grocery	Total
Table 4: Total number of small markets by type and area							
North Area	41	29	29	68	48	30	**245**
Central Area	26	16	10	41	4	22	**119**
South Area	26	19	11	38	14	12	**120**
Total	**93**	**64**	**50**	**147**	**66**	**64**	**484**

One interesting finding is the large number of gas station stores that make up 30 percent of all small markets. Lately, more and more gas stations have been adding stores or expanding the existing ones that carry a variety of food items.

Although the availability of food stores is an important indicator of food availability, the mere existence of retail food stores is not proof of access to healthy food. To assess the availability of healthy foods at various food retail stores in the study area, the Healthy Food Availability Index (HFAI) tool is utilized.

Healthy Food Availability Index

Inspired by the Nutrition Environment Measures Survey in Stores tool,[8] the Johns Hopkins University Center for a Livable Future (CLF) developed the Healthy Food Availability Index (HFAI). HFAI scores are a quantitative depiction of the availability of healthy and whole foods in retail stores that provide food. A numerical value, this score attempts to both evaluate individual stores as well as provide a means through which healthy food availability can be compared between stores. The HFAI was originally developed for assessing supermarkets. Later a modified version was created for small markets.

The supermarket HFAI measures selected foods that can be found in a typical market basket. It assesses the presence and, to a lesser extent, quality of 12 food groups: milk; 100% fruit juice; fresh fruit; fresh vegetables; meats; chicken; seafood; frozen fruits, vegetables, and healthy meals; rice, beans, and pasta; canned fruits and vegetables; 100% whole wheat and other bread; and low-sugar cereal (7 grams of sugar or less).

The supermarket HFAI also includes an assessment of the store environment by measuring multiple store characteristics. However, only lighting and odor are accounted for in the final score. Price information for many foods is also part of the HFAI survey, but prices are not included in the score due to various price fluctuations and inconsistencies in units of measurement. Both store characteristic and pricing information may be useful for future studies.

CLF modified the supermarket HFAI for small markets and created a simplified survey. The small market HFAI does not include the assessment of the store environment and food prices.

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[8] The Nutrition Environment Measures Survey in Stores (NEMS-S) tool was developed by researchers at the Rollins School of Public Health at Emory University to measure the nutritional environment of food retail stores and is designed to assess healthy food availability in grocery and convenience stores. The tool assesses options, price and quality of items that are comparable across store type and presents "healthier" and "regular" options for a total of 10 food categories, a "market basket" of common food items. The tool can be applicable to a variety of community nutrition assessments, and studies have shown the measure to be both reliable and valid, after proper training of surveyors.

HFAI *survey for supermarkets that serve the study area*

The HFAI survey for supermarkets is based on the survey instrument CLF created for Baltimore City. The survey was customized for Prince George's County by making a few changes and adding four additional questions. The survey instrument is displayed in Appendix 4.

In the CLF HFAI study, the definition of a supermarket is based on the number of cash registers. A food market is classified as a supermarket if it has three or more cash registers. In order to be consistent with CLF, the same classification was used in this study. The survey was conducted at all 70 stores that serve the study area residents and fit in this supermarket definition. Table 5 shows the surveyed supermarkets in the study area and within one-mile of the study area by location.

Table 5: Stores surveyed for supermarket HFAI	
Location	**Number of stores**
Study area	55
Within one-mile radius of the study area	15
Prince George's County	5
District of Columbia	3
Montgomery County	7
Study area + one-mile radius	70

The supermarket HFAI survey was conducted in spring and summer 2013. Students from the Bowie State University Botany class and two interns from the University of Maryland at College Park conducted the survey. Surveyors were trained by the CLF staff. Each supermarket was surveyed by three surveyors separately. After checking for quality control and rectifying any discrepancies, they submitted the final validated composite survey data.

Following the CLF's supermarket HFAI scoring system, survey results were converted into scores, and an HFAI score was calculated for each supermarket. The highest possible supermarket HFAI score is 28.5 points. All scores were normalized to the 100 scale for reporting purposes.

Disclaimer

It should be noted that there are some shortcomings of the HFAI survey:

- Due to the large number of surveyors and their individual observations and judgments, survey results may contain a degree of subjectivity.
- HFAI score does not take into consideration the square footage of the store. Smaller stores that do not have enough space for larger variety are put in a disadvantaged position and may score lower points even though they carry healthy products.
- Although international markets have lots of healthy food items (especially fresh produce) for cultural reasons, some do not carry commonly acceptable processed healthy food items, such as low-fat milk, and may lose points due to the lack of these products.

Key survey findings

🌿 Average HFAI score for supermarkets in the study area is 56 out of 100. The average does not change when supermarkets within one-mile radius are included.

🌿 Full-service supermarkets have a higher average HFAI score than others.

Chart 9: Average HFAI score by supermarket type

Ratings per HFAI score
Good = 67 and above
Fair = 34 to 66
Poor = 33 and below
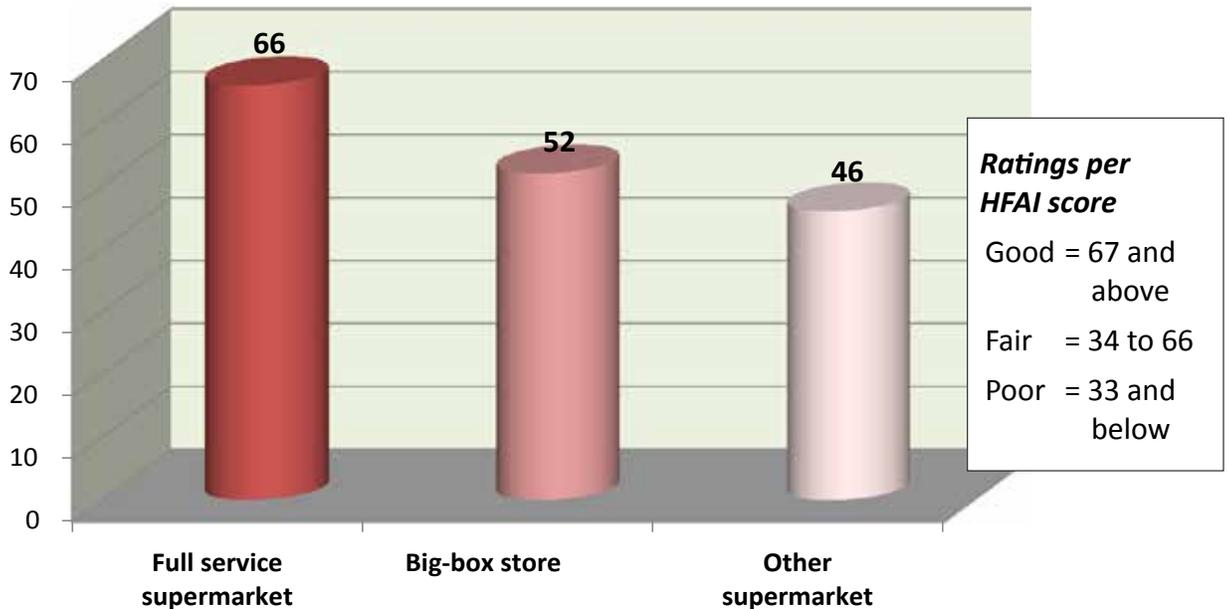
🌿 Supermarkets that serve the South Area have the highest average HFAI score. North Area has the lowest average score due to the large number of "other" category supermarkets in the North Area.

Chart 10: Average HFAI score for supermarkets by area
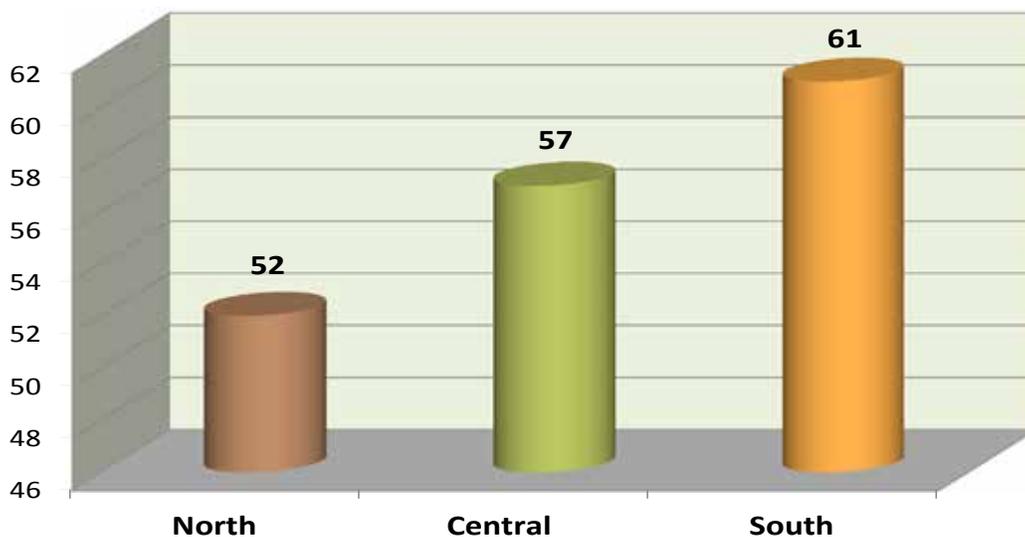
- The majority of supermarkets have "fair" rating, and only less than a quarter got "good" rating, which implies that a significant proportion of supermarkets does not carry a variety of healthy food options.

Chart 11: Percent of supermarkets by HFAI rating
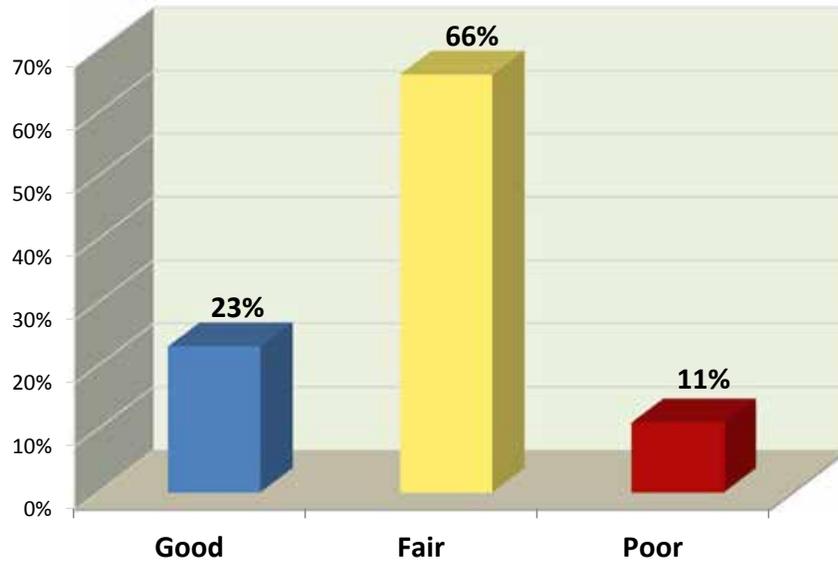
- Supermarkets with "good" ratings are found in all three areas; however, all but one of the "poor-rated" ones are in the North Area.

Table 6: Number of supermarkets by HFAI rating and area				
Area	**Good**	**Fair**	**Poor**	**Total**
North	7	27	7	**41**
Central	4	12	0	**16**
South	5	7	1	**13**
Total	**16**	**46**	**8**	**70**

- Map 5 shows the spatial distribution of supermarkets with "good," "fair," and "poor" HFAI ratings by area. Similar to the overall distribution of supermarkets, there is not an equitable distribution of healthy foods among or within each area.

- The study area is sufficiently but not adequately served by supermarkets. In other words, there are more than enough supermarkets that the market can support, but their quality and spatial distribution are not adequate to meet the needs of the residents.

- Table 7 on page 40 shows the score and ranking of individual stores.[9] While the good-rated stores are almost exclusively full-service supermarkets, 14 of the full-service ones are rated "fair" with two of them being at the lower end of this category.

- HFAI scores of individual stores reveal that there is discrepancy in terms of healthy food availability and/or quality among the stores by the same retailer.

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9   Low scores for some stores that carry quite healthy food may be due to the reasons stated in the disclaimer on page 36.

# Map 5: Supermarkets by Healthy Food Availability Index (HFAI) rating
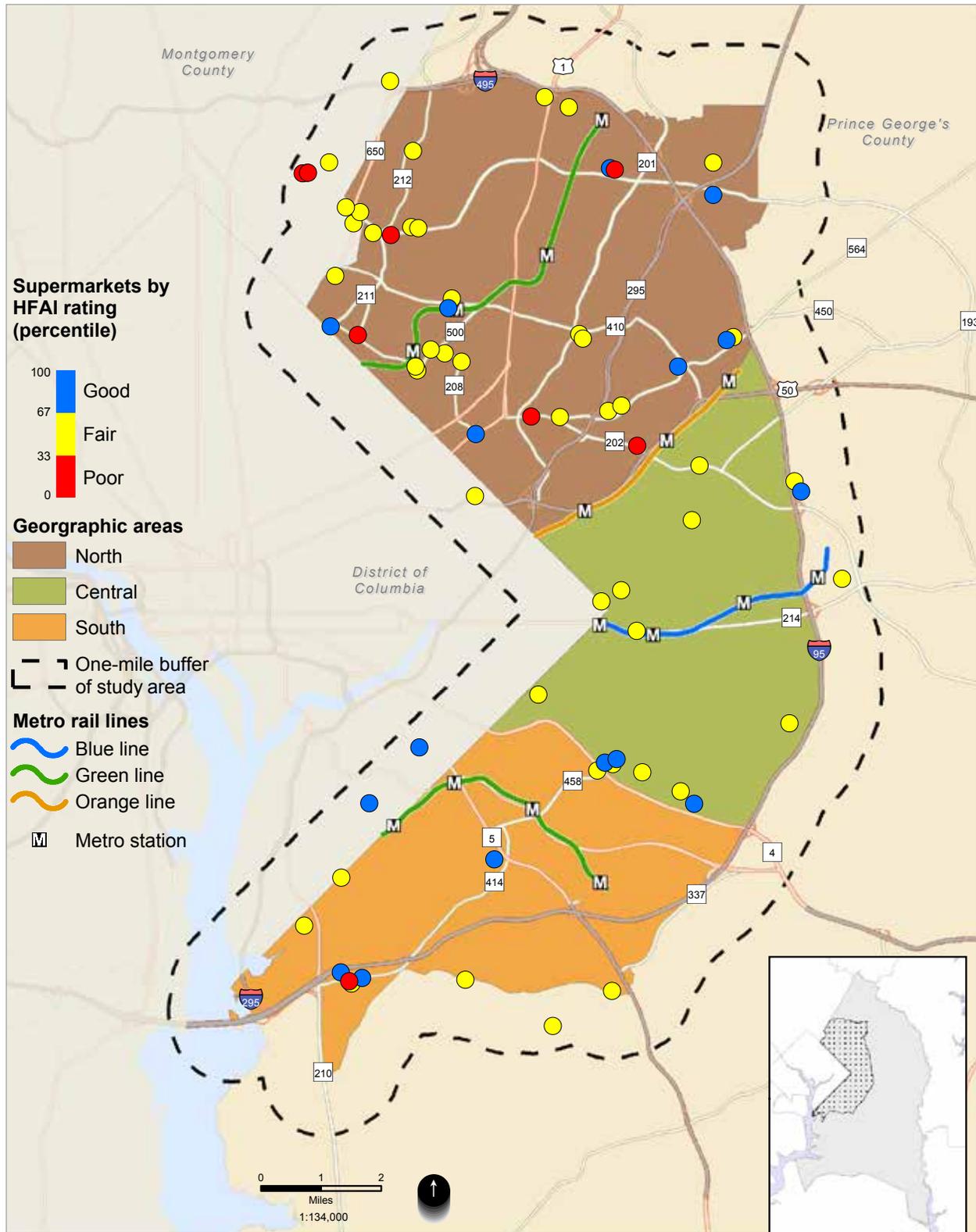
Table 7: Supermarket ratings per HFAI score by type and location

Type	Area	Score	Rank	
Full	North	84	1	
Full	South	82	2	
Other	Central	79	3	
Full	South	77	4	
Full	South	77	4	
Full	North	77	4	
Full	North	77	4	
Full	Central	77	4	
Full	Central	77	4	GOOD
Full	South	74	5	
Full	North	74	5	
Full	North	74	5	
Full	South	72	6	
Full	North	72	6	
Full	Central	70	7	
Full	North	68	8	

Type	Area	Score	Rank	
Big-box	Central	65	9	
Full	Central	65	9	
Other	North	65	9	
Full	South	65	9	
Full	South	65	9	
Big-box	Central	63	10	
Full	Central	63	10	
Full	North	63	10	
Other	North	63	10	
Full	South	63	10	
Other	North	61	11	FAIR
Other	North	61	11	
Other	South	61	11	
Other	Central	60	12	
Big-box	North	60	12	
Big-box	North	60	12	
Full	Central	58	13	
Full	North	58	13	
Other	North	58	13	
Other	North	56	14	

Type	Area	Score	Rank	
Other	North	56	14	
Full	North	56	14	
Full	North	56	14	
Other	North	54	15	
Other	North	53	16	
Other	North	53	16	
Full	North	53	16	
Other	North	51	17	
Other	South	51	17	
Other	North	49	18	
Other	North	49	18	
Other	Central	47	19	
Full	North	46	20	**FAIR**
Other	North	46	20	
Big-box	North	46	20	
Other	South	46	20	
Big-box	Central	42	21	
Other	North	40	22	
Other	North	40	22	
Full	Central	39	23	
Full	North	39	23	
Other	Central	37	24	
Other	Central	37	24	
Other	Central	37	24	
Other	South	37	24	
Other	North	35	25	

Type	Area	Score	Rank	
Other	North	32	26	
Other	North	32	26	
Other	North	32	26	
Big-box	North	30	27	**POOR**
Other	North	25	28	
Other	North	25	28	
Other	South	25	28	
Other	North	16	29	

HFAI *survey for small markets in the study area*

As noted with the supermarkets, the HFAI survey for small markets is based on the CLF survey for Baltimore City. The HFAI small markets survey instrument is displayed in Appendix 5. The small market survey was conducted during summer 2013 by graduate interns.

Due to a large number of small markets in the study area, the HFAI survey was conducted using a stratified sampling approach. Small markets were categorized by type, and for each geographic area, a sample of stores from each type was selected. Wherever store owners did not give permission, another comparable store, if available, was surveyed.

A total of 104 small markets were surveyed out of 484 in the study area, a sampling of 21.5 percent. Table 8 displays the number of surveyed small markets by type and area, and Map 6 shows their locations by type.

Table 8: Number of surveyed small markets by type and area							
Area	**Convenience store**	**Discount store**	**Drug store**	**Gas station store**	**International market**	**Small grocery**	**Total**
North Area	9	8	8	8	12	6	**51**
Central Area	6	5	5	3	3	3	**25**
South Area	6	3	5	7	3	4	**28**
Total	**21**	**16**	**18**	**18**	**18**	**13**	**104**

The small market HFAI survey is a simplified version of the supermarket survey and does not include the assessment of the store environment and food prices. Therefore, it has a different scoring system. Using CLF's scoring system, small market HFAI scores were calculated. The highest possible small market HFAI score is 27 points. All scores were normalized to the 100 scale for reporting purposes.

Map 6: Surveyed small markets by type

Small market types
- Convenience store
- Discount store
- Drug store
- Gas station store
- International market
- Small grocery store

Geographic areas
- North
- Central
- South

Metro rail lines
- Blue line
- Green line
- Orange line
- Ⓜ Metro station

Montgomery County

District of Columbia

Prince George's County

0   1   2
Miles
1:125,000
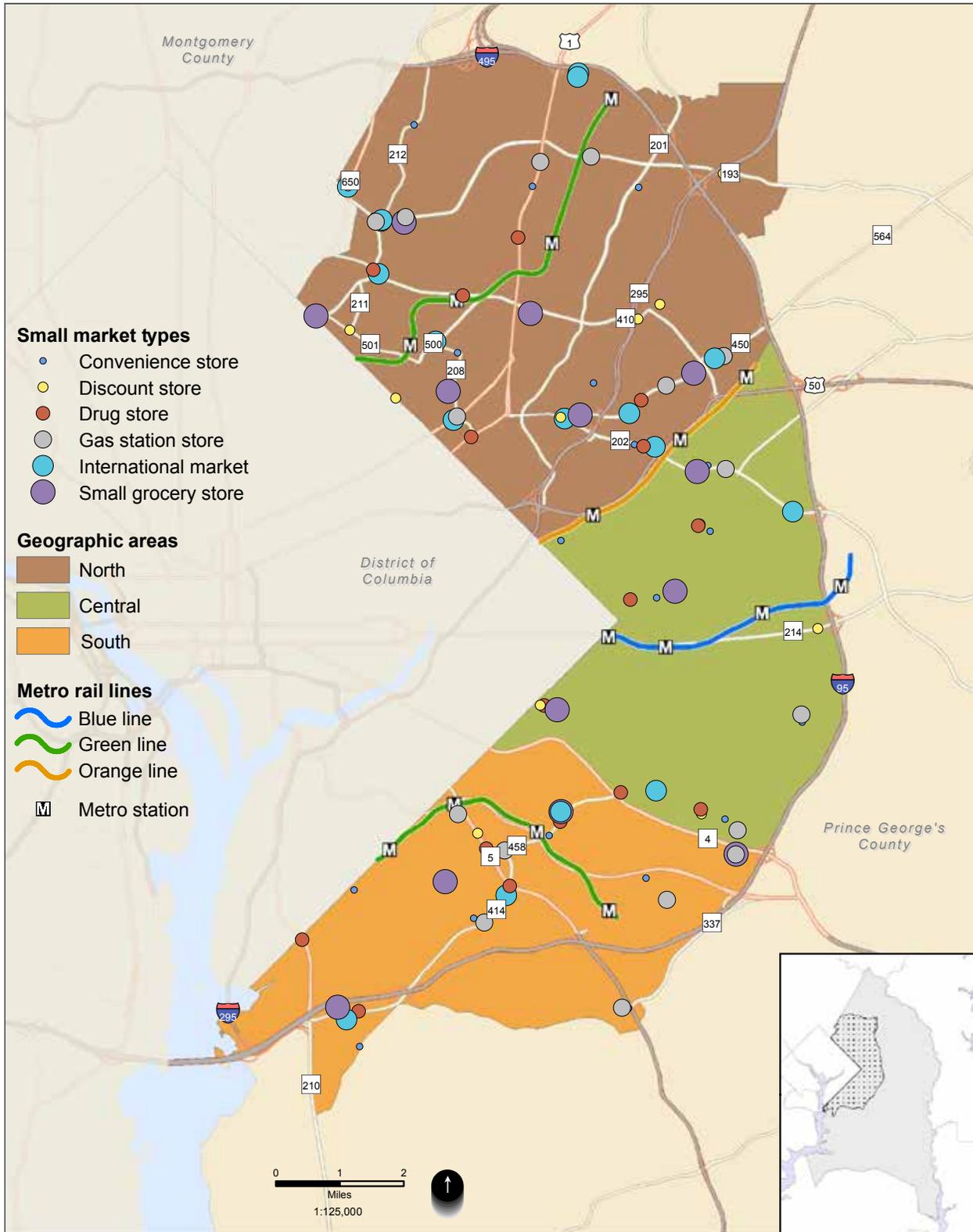
Key survey findings

🥦 The average HFAI score for small markets in the study area is 27 out of 100. This low score is an indicator of unavailability of healthy food alternatives in the study area small markets.

🥦 Among the six categories of small markets, international markets scored the highest, and gas station stores scored the lowest average HFAI scores. It is not surprising that the gas station store category has the lowest score. These stores carry very limited food items that are considered groceries. They primarily provide snacks and drinks for people who stop for gas. However since they are the most commonly available stores, many residents use these stores for basic food needs when they cannot travel farther to other food retail stores.

Chart 12: Average HFAI scores by small market type

Legend:
- ■ Convenience store — 28
- ■ Discount store — 22
- ■ Drug store — 30
- ■ Gas station store — 9
- ■ International store — 41
- ■ Small grocery store — 29
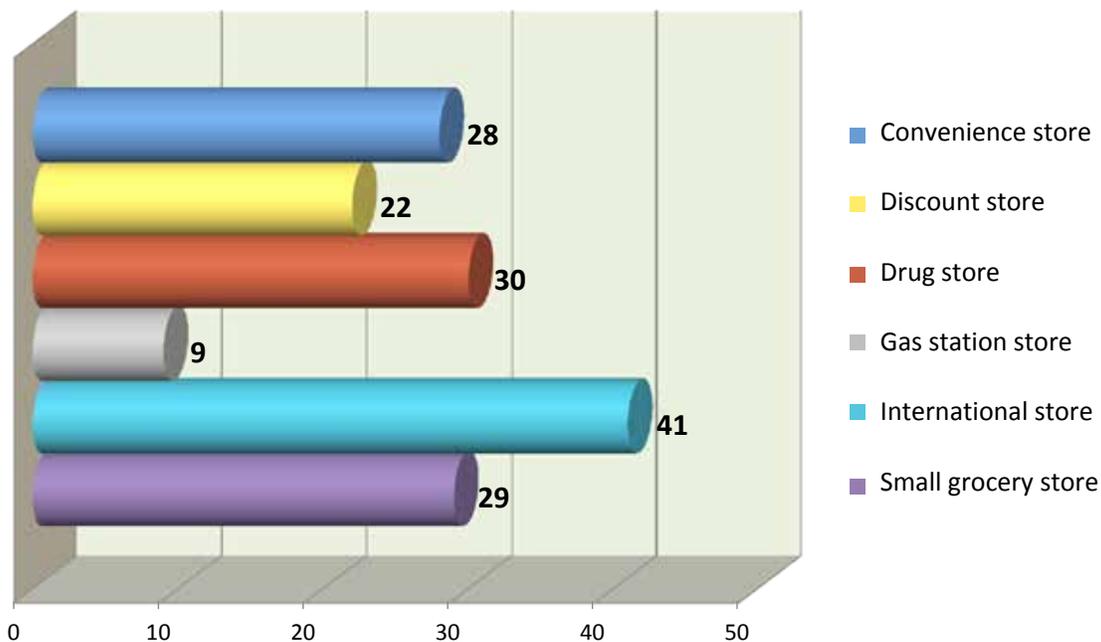
🥦 While small grocery and convenience store categories have quite similar scores, it is surprising to see the drug stores scoring higher than them. Similar to the big-box stores, drug stores recently started expanding their grocery aisles. Although they do not carry fresh fruits, vegetables, or meat items, they carry healthy frozen or packaged foods.

🥦 Despite the fact that some discount stores carry meat items, they lack healthier foods; thus, the HFAI score for this category is much lower. It is not expected for the discount stores to have healthy food, because healthy food is not cheap.

🥦 Half of the top-ranked 26 stores (25 percent of surveyed stores) are international markets. In fact, six of the top seven stores are international markets, including the overall highest scoring small market. The variety of fresh fruits and vegetables distinguish the international stores from all other small markets. Despite the abundance of fruits and vegetables, international stores could not get a high HFAI score. This is due to lack of low-fat, low-sodium, and low-sugar food varieties as well as lean meat, whole grains, and healthier frozen meals. The international markets carry the culturally preferred food by immigrants, which is usually heavy on natural foods. Thus, the availability of a large variety of fresh fruits and vegetables is understandable, particularly ethnic ones that

cannot be found in regular grocery stores. Similarly, lack of commonly acceptable "healthy" food alternatives in the USA, such as low-fat milk, is not unusual. Most likely their customers do not buy these alternatives. People who are used to eating food directly from the natural source are not attracted to the foods that are processed by altering the natural state of the food. Also, they may not be aware of the nutritional facts about these goods.

North Area small markets have the highest average HFAI score, followed by South and Central Areas. The average HFAI score for each type of store, and for all small markets in each subarea and surrounding area, is displayed in Table 9. The small market scores for the international markets in the South Area got the average highest score, and the gas stations in the Central Area got the average lowest score.

Area	Convenience store	Discount store	Drug store	Gas station store	International market	Small grocery	All small markets
Table 9: Average HFAI score by small market type and area							
North Area	35	21	35	12	44	31	31
Central Area	23	21	31	2	18	17	21
South Area	23	23	21	8	56	36	24
All areas	**28**	**22**	**30**	**9**	**41**	**20**	**27**

The majority of small markets got a "poor" rating in healthy food availability. Although small markets are not expected to score high due to their limited capacity, they can still carry some healthy food options. Having only two percent of stores with "good" rating is notable. Given the large number of small markets in the study area that are dispersed more widely than supermarkets, these findings imply that a significant number of study area residents are served mostly unhealthy food. Even people who have access to a vehicle tend to shop at stores closest to home. Thus the proximity of stores is an important factor for eating unhealthy food.

Chart 13: Percent of small markets by HFAI rating

Ratings per HFAI score

Good = 67 and above

Fair = 34 to 66

Poor = 33 and below

2% Good
31% Fair
67% Poor
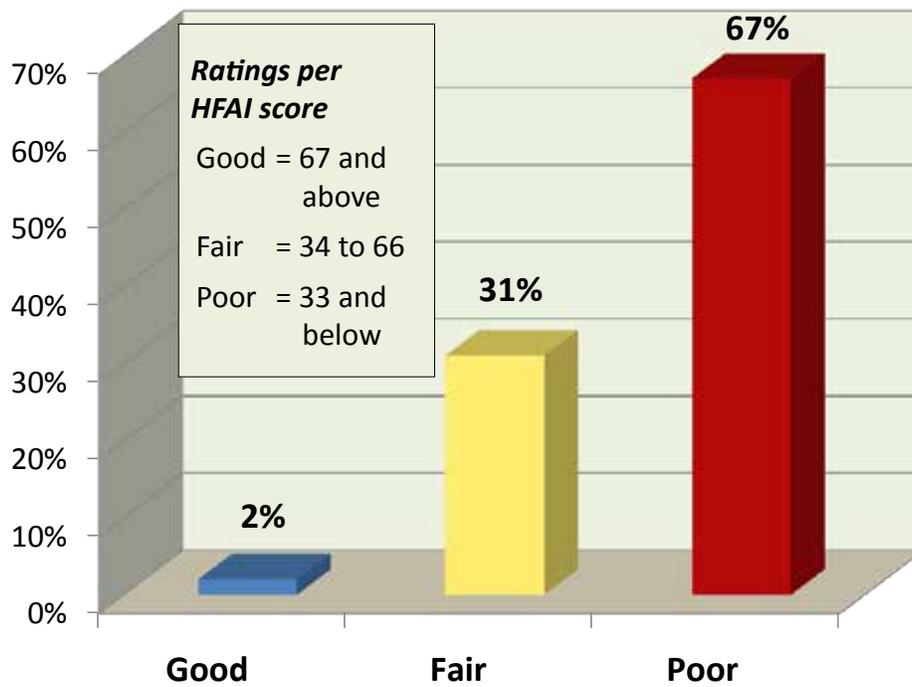
Alternative outlets for healthy food

Food retail outlets covered in this section are not the only places that carry healthy food. Several alternative outlets, such as farmers' markets, Community Supported Agriculture (CSA), community gardens, mobile markets, and food trucks, are significant suppliers of healthy food. One common characteristic of these alternative outlets is their locational flexibility. They can be found inside the residential areas where consumers can have easy access.

Farmers' markets are very popular in Prince George's County. Although they are seasonal, most of them operate more than half of the year. There are 19 farmers' markets in the County, 11 of which are located in the study area (see Map 7 on next page).

Community Supported Agriculture operations are increasing in number, and more residents are becoming shareholders each year. While most CSAs operate in summer, some of them, such as ECO City Farms in Edmonston and Bladensburg, operate year round. There is at least one CSA (Heron There Farm's Cool Season CSA) in the County that operates only in the spring and fall.

Community gardens are on the rise. In addition to three major community gardens operated by M-NCPPC Department of Parks and Recreation, many communities are building their own gardens. The University of Maryland Extension Master Gardeners are providing technical support to residents to build community gardens and grow food.

Mobile markets are farmers' markets on wheels. So far, Arcadia Mobile Market is the only one that serves in one location in the County. Their ability to go everywhere makes mobile markets an ideal alternative for areas that are far from any other food retail outlet.

Food trucks are becoming the trendy places to get healthy and ethnic foods around the nation. Many jurisdictions are promoting food trucks, and many events are featuring food trucks to attract customers. Food trucks can be a good healthy alternative to unhealthy fast food.

Map 7: Farmers' markets in study area

Legend:
- \# Farmers' market
- Study area

Farmers' Markets in Prince George's County

Map Number	Name
1	Bowie Farmers' Market
2	Branch Avenue in Bloom Farmers' Market
3	Cheverly Community Market
4	College Park Farmers Market
5	Downtown College Park Farmers Market
6	The Farmers Market at Maryland
7	Glenn Dale Farmers Market
8	Greenbelt Farmers Market
9	Hollywood Farmers Market
10	Hyattsville Farmers Market
11	Laurel Farmers Market and Bazaar
12	MedStar Southern MD Hospital Center Farmers Market
13	Our Local Bounty: St. Thomas Church Farmers' Market
14	Port Towns Farmers Market
15	Riverdale Park Farmers Market
16	Roots & Stems Community Farmers' Market
17	Roots & Stems Farmers' Market at WSCC
18	Up on the Hill Flea & Farmer's Market
19	USDA (Beltsville) Farmers Market

Areas with limited access to healthy food

In Prince George's County, like most of the country, not all residents have easy access to healthy food. Although the majority of the residents in the study area have access to food, not all of them can access healthy food. This chapter will discuss the identification of specific areas where access to healthy food is an issue.

Terminology and methodology to determine limited access areas

The spatial distribution of the food retail outlets is as crucial as the type of food they carry. Some areas are called "food deserts" due to lack of healthy food retail outlets. Some areas are called "food swamps" due to the abundance of unhealthy food retail outlets. Often times food deserts and food swamps overlap. The concept of a food desert has emerged as a way of communicating the geographical disparities in food access, particularly as they relate to income.[9]

The term "food desert" has been commonly but inconsistently used by scholars and policy makers. There is neither a universal definition nor a measure for a food desert. Variations in definition, methodology, and data sources used in different studies produce different results for the same area.

Access to healthy food is a challenge in several areas of the County, but mapping these areas is even more challenging. A review of two nationwide studies is included in this report to see how they have identified the limited access areas or food deserts in Prince George's County and how reasonable their findings are.

Nationwide studies on areas with limited access to healthy food

There are two major nationwide studies that identify areas with limited access to healthy food:

- Food Access Research Atlas by the United States Department of Agriculture (USDA) Economic Research Service (ERS).
- Limited Supermarket Access (LSA) Areas by The Reinvestment Fund (TRF).

Both studies were done for the whole nation, and hence, detailed attention was not given to any particular jurisdiction or region. Therefore, both studies have significant limitations, even misleading conclusions.

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[9]   Nathan Hilbert, Jennifer Evans-Cowley, Jason Reece, Christy Rogers, Wendy Ake, and Casey Hoy. "Mapping the Cost of a Balanced Diet, as a Function of Travel Time and Food Price." Journal of Agriculture, Food Systems, and Community Development. December 6, 2014.

USDA Food Access Research Atlas

In 2006, USDA ERS developed the Food Desert Locator, an Internet-based mapping tool that pinpoints the location of food deserts around the country.[10] In 2010, ERS changed its methodology and terminology and transformed the Food Desert Locator into the Food Access Research Atlas.[11] ERS also replaced the term "food desert" with "Low-Income and Low-Access" areas.

Census tracts that are both Low-Income areas and Low-Access areas are considered food deserts or "LI & LA" areas.

Original food desert definition in the USDA Food Desert Locator:

Low-income areas where a significant number or share of residents is far from a supermarket, where "far" is more than 1 mile in urban areas and more than 10 miles in rural areas.

LI & LA areas are identified in the 2010 Food Access Research Atlas by using food access indicators for different distance demarcations from the nearest supermarket and median family income (MFI) for census tracts.[12] LA areas are defined:

- For urban areas: ½- and 1-mile demarcations to the nearest supermarket.
- For rural areas: 10- and 20-mile demarcations to the nearest supermarket.

LI areas are:

Census tracts with a median family income (MFI) less than or equal to 80 percent of the metropolitan area's MFI.

Using these measurements, USDA ERS identified several areas in the study area as food deserts and/ or LI and LA areas. The following series of maps explain how these areas were identified using the measures of the USDA Food Access Research Atlas.

Map 8 shows LA areas in the study area and its vicinity, which includes multiple jurisdictions in the Washington, D.C. metropolitan area. Almost every jurisdiction in the region has LA areas. Only the densely populated urban areas have adequate access. This shows that availability of supermarkets (or healthy food as measured by the USDA) in Prince George's County is no different than any other jurisdiction in the region.

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[10] Agricultural Marketing Service (AMS), U.S. Department of Agriculture (USDA). USDA Food Desert Locator Tool. http://apps.ams.usda.gov/fooddeserts/faqlocatortool2-pgr.pdf

[11] Economic Research Service (ERS), U.S. Department of Agriculture (USDA). Food Access Research Atlas. http://www.ers.usda.gov/data-products/food-access-research-atlas.aspx

[12] ERS, USDA. Food Access Research Atlas Documentation. http://www.ers.usda.gov/data-products/food-access-research-atlas/documentation.aspx

Map 8: Low Access (LA) areas at 1 and 10 miles

Source: ERS, USDA Food Access Research Atlas

Map 9 shows the LI areas. The largest concentration of the LI areas is in the eastern half of the region inside the Capital Beltway. The majority of the study area is identified as LI. This outcome is not surprising given that median family income (MFI) of each census tract is compared to the metropolitan area's MFI.

Map 9: Low income (LI) areas
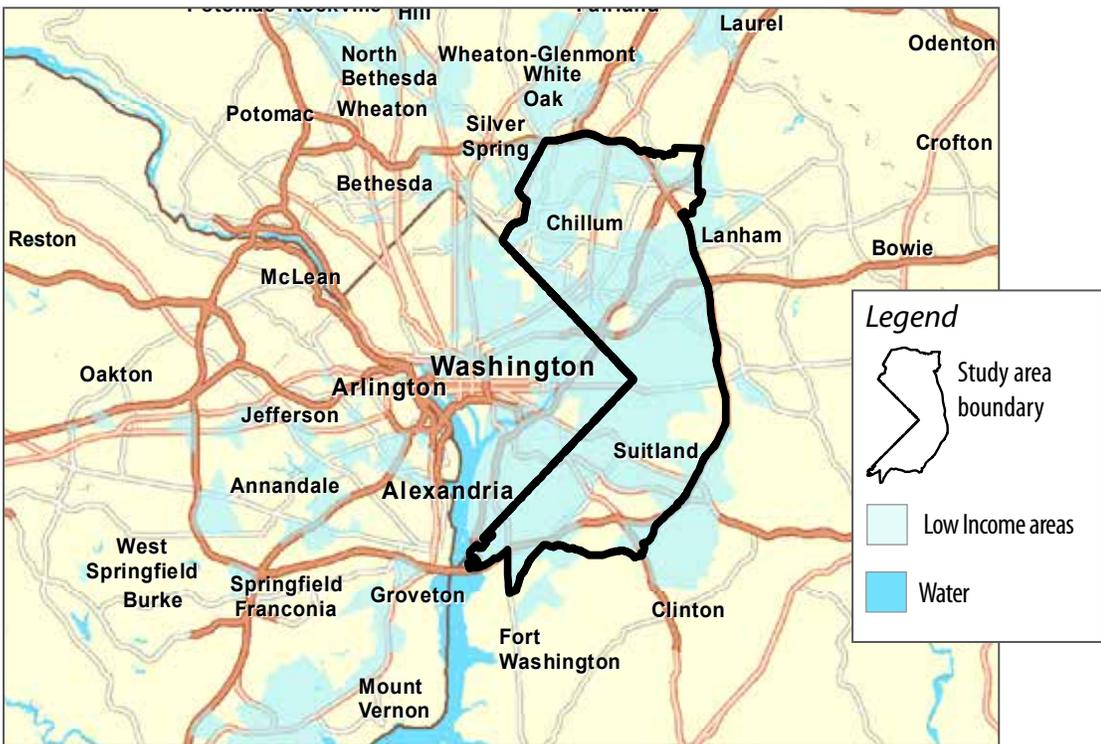
Source: ERS, USDA Food Access Research Atlas

Map 10 shows the LI & LA areas by overlapping Maps 8 and 9. LI & LA areas (shown in green) are census tracts where LA areas at one and ten miles (shown in pink) and LI areas (shown in blue) overlap. These areas are identified as "food deserts."

Map 10: Low income and low access areas (food deserts) at 1 to 10 miles
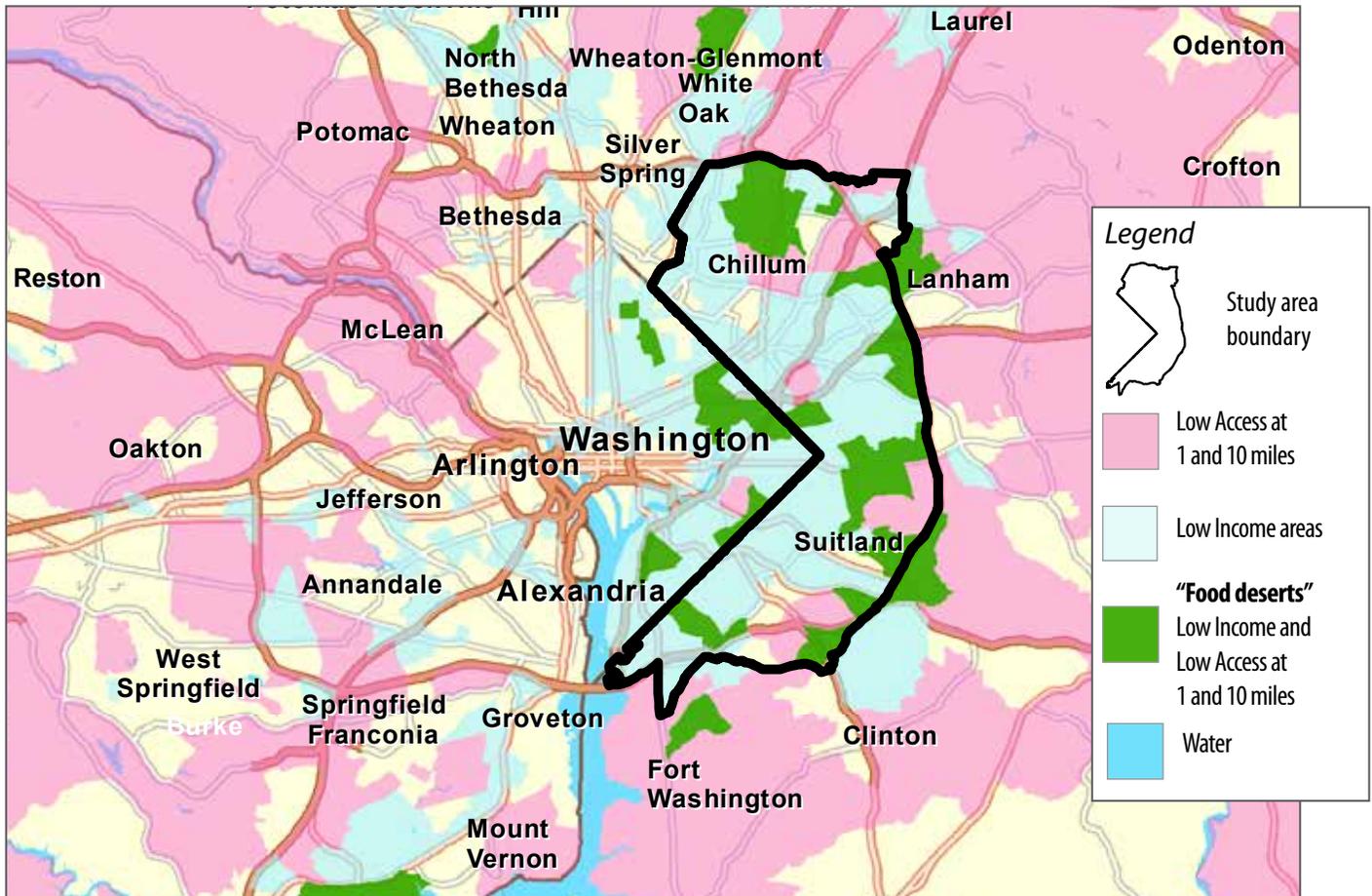
Source: ERS, USDA Food Access Research Atlas

This analysis clearly shows that the determining factor for food desert identification is not only the availability of a supermarket but also the presence of lower income families.

The study area has more areas identified as food deserts not because of the availability of fewer supermarkets compared to other low-access areas in the region but due to the presence of areas with an MFI less than or equal to 80 percent of the metropolitan area's MFI. When compared to one of the nation's wealthiest regions, many census tracts in the County are considered LI areas. Some of these LI areas where there are no supermarkets within close proximity were identified as food deserts. If Prince George's County were in a different metropolitan area with less wealthy jurisdictions, or if MFI of the census tracts were compared to the nation's MFI as opposed to the metropolitan area's, these areas, although LA, would not be identified as food deserts.

It is important to acknowledge that many residents in the study area do not have access to healthy food for a variety of reasons explained elsewhere in this report. It is also important to note here that various studies, regardless of differing methodologies used, have found major disparities in accessing healthy food between low-income and higher-income communities around the world. Studies also have found that residents of minority communities in the United States tend to have poor access to

healthy food.[13] The study area, with its majority minority population and lower-income households, is susceptible to disparities.

The Reinvestment Fund Limited Supermarket Access Areas

In 2011, The Reinvestment Fund (TRF)[14] conducted research to identify areas with inadequate access to supermarkets within the continental United States and to estimate the unmet demand and retail grocery leakage.[15] In this study, TRF defined Limited Supermarket Access (LSA) areas as places where residents travel longer distances to reach supermarkets when compared to the average distance traveled by residents of high income areas with similar population density and car-ownership characteristics.

The key assumption of TRF's methodology is that block groups with a median household income (MHI) greater than 120 percent of their respective metropolitan area MHI are adequately served by supermarkets and thus travel an appropriate distance to access food. This assumption established the benchmark to which all block groups were compared to identify LSA areas.[16]

In Prince George's County, TRF identified several LSA areas. In terms of area, a big chunk of LSA areas is outside the study area, with the largest area being in Bowie, followed by Greater Upper Marlboro. Clinton and Glenarden LSA areas are also outside the study area. Map 11 shows the LSA areas in the study area. They are located in College Park, Bladensburg, Cheverly, Fairmount Heights, Greater Landover, Suitland/Silver Hill, Hillcrest Heights, and Oxon Hill/Glassmanor.

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13   The Reinvestment Fund, Searching for Markets: The Geography of Inequitable Access to Healthy & Affordable Food in the United States, 2011.

14   The Reinvestment Fund is a Community Development Financial Institution (CDFI) that specialized in financing neighborhood revitalization in the mid-Atlantic region. TRF supports its financing with research and policy analysis. TRF conducts research on healthy food access and finances major projects to bring healthy food to communities. The Reinvestment Fund, Searching for Markets. http://www.trfund.com

15   The Reinvestment Fund, Searching for Markets.

16   2011 Limited Supermarket Access Analysis: Summary of TRF's Methodology. http://www.trfund.com/wp-content/uploads/2013/07/LSAMethodology2011.pdf

Map 11: TRF Limited Supermarket Access (LSA) areas
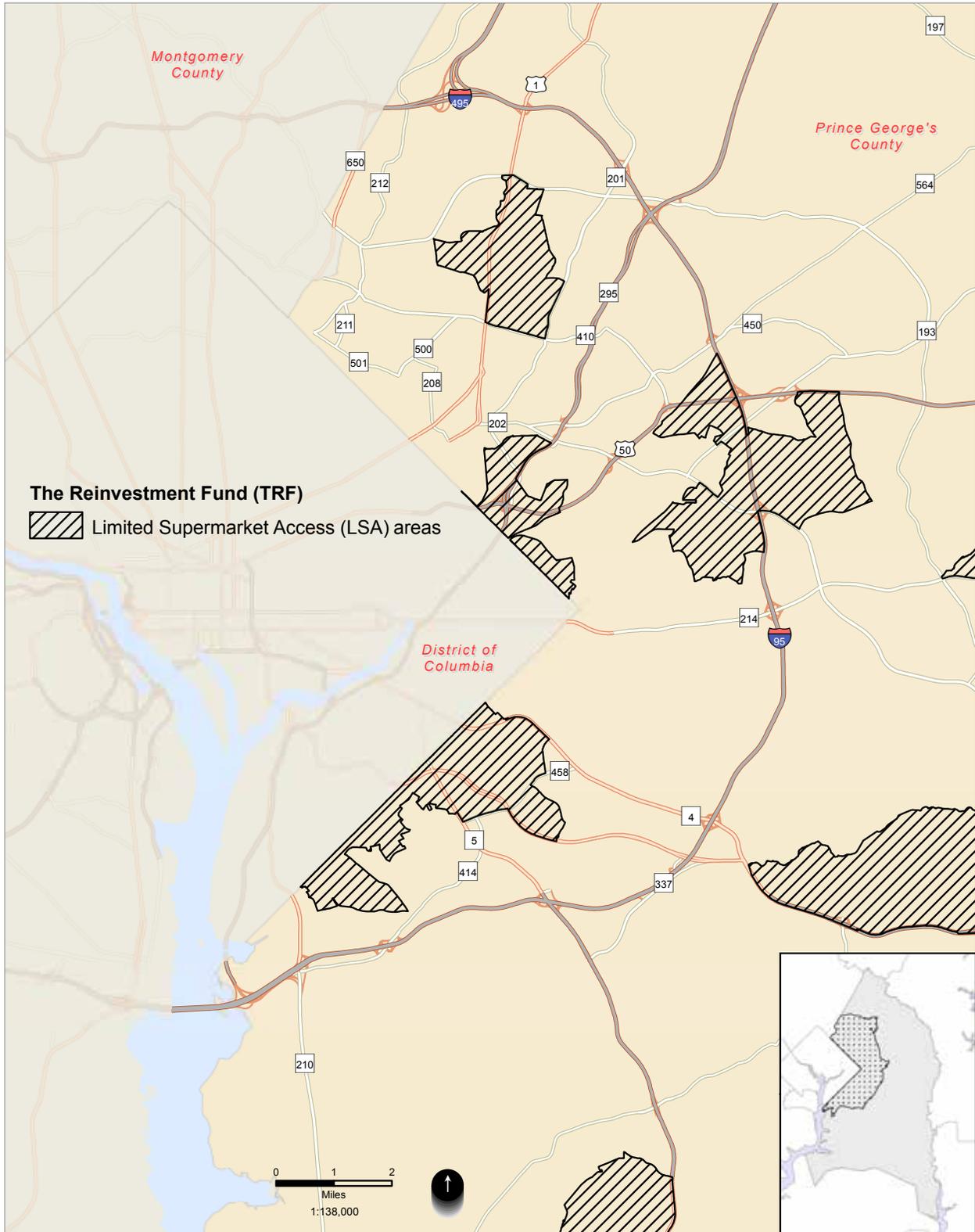
Source: The Reinvestment Fund, Limited Supermarket Access Analysis Mapping Tool.

Comparison of USDA and TRF maps

Map 12 displays the overlapping areas of USDA LI and LA areas and TRF LSA areas. The areas identified by the two studies as areas with inadequate access to healthy food clearly do not match. The discrepancy between the two studies demonstrates that using different methodologies, assumptions, and/or datasets may produce different results.

Both studies used supermarkets as the source of healthy food and identified low access areas based on the location of supermarkets. It is interesting to see several supermarkets inside or within one-mile of the identified areas with limited access to healthy food. This is an indicator of use of inaccurate secondary data without verification in both studies. Another observation is the inclusion of some nonresidential areas, such as the Suitland Federal Center and the cemetery next to it, in the low healthy food access areas in both studies. The consequence of including such land masses in the calculation is false identification of areas with limited access to healthy food.

Map 12: Comparison of USDA and TRF limited access areas and existing supermarkets

USDA Economic Research Service (ERS)

Low Income and Low Access areas

- at 1 and 10 miles (original food desert measure)
- + at 0.5 and 10 miles

The Reinvestment Fund (TRF)

- Limited Supermarket Access (LSA) areas

- Supermarkets
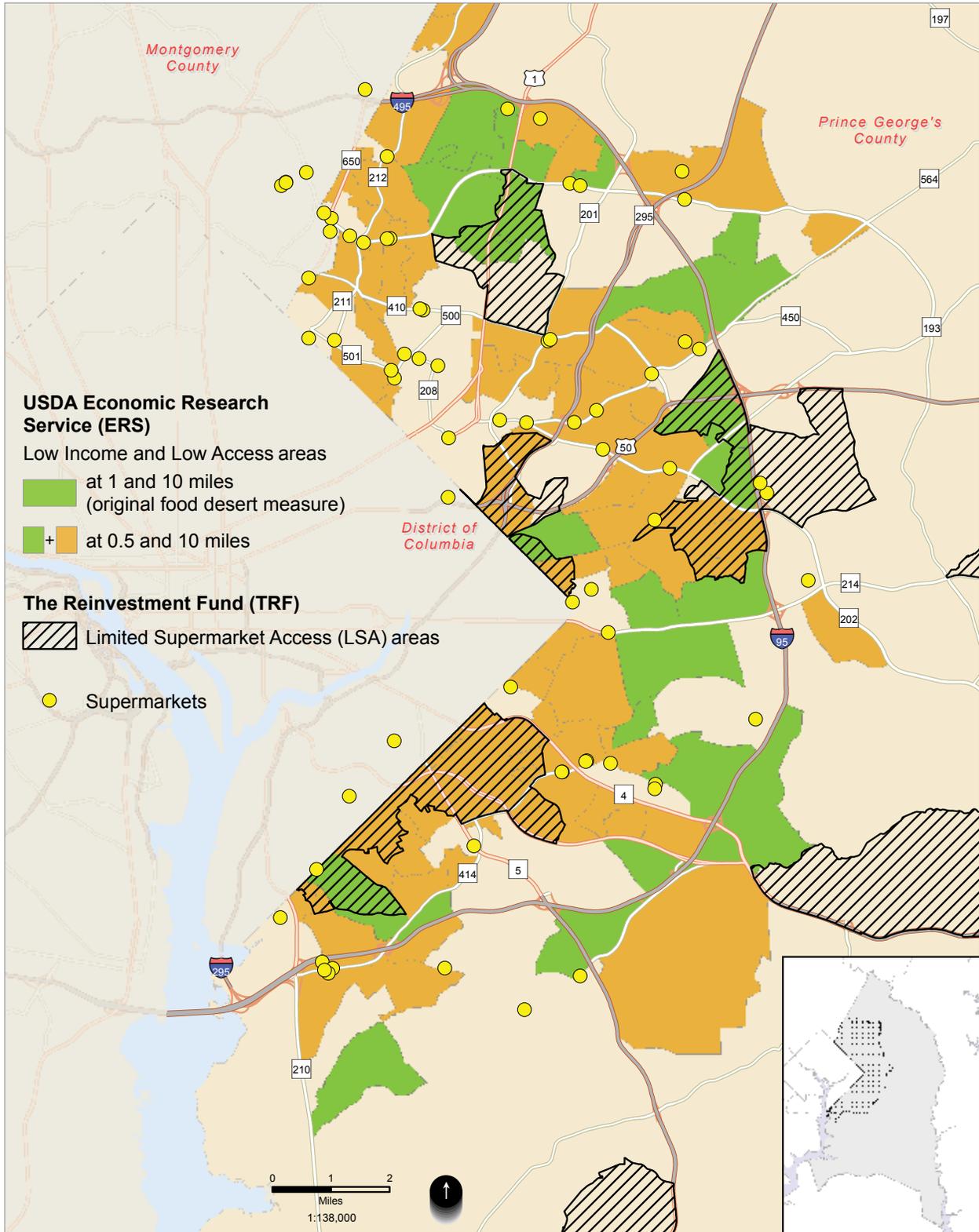
Limitations of nationwide healthy food access analyses

Conducting nationwide studies is a huge undertaking, and some shortcomings are expected. Despite their limitations, they may be useful tools to compare jurisdictions and regions in the United States. But at the local level they may be misleading. Their limitations should be taken into consideration when using the results of these studies.

Labeling communities as food deserts based on nationwide study outcomes may have adverse effects. Policy decisions at the local level should not be made based on these studies without further research. Knowledge of the local area, availability of additional local data, and ability to collect primary data and/or verify existing data are valuable assets the local government may use to refine the outcome of national studies.

Some of the limitations of the USDA ERS study on LA & LI areas and TFR's LSA areas study due to the methodology, assumptions, and data they used and their implications are listed in Appendix 6.

False labeling communities as "food deserts"

The following two scenarios demonstrate how food deserts may be falsely identified based on the methodology, assumptions, and data used:

A low-income community without a supermarket but with multiple farmers' markets, a food co-op that sells affordable healthy food, an organic food market, urban farms with affordable CSAs, several small ethnic mom and pop stores that sell culturally appropriate healthy food, and several community gardens where people produce their own food IS labeled as a food desert according to its commonly used definition.

BUT

A similar community with the same size and demographics IS NOT considered a food desert because there is a poorly maintained supermarket on the other side of the train tracks where customer service is bad and where a limited variety of poor quality, high-fat, high-sugar, and high-sodium processed food is sold for very high prices.

Place matters for food equity

The ineffectiveness and unfairness of nationwide studies in identifying areas where disparities in food access are the highest in Prince George's County does not mean that the County is immune from place-based food inequity. Even within the study area, there are variations in availability, quality, and cost of healthy food among subareas. The Healthy Food Availability Index (HFAI) results presented in the "Food retail outlets and healthy food availability" section demonstrated the disparities in availability of healthy food. There are also other ways to measure disparities in accessing healthy food in the County. The cost of acquiring a balanced diet is examined here to analyze spatial variation in affordability of healthy food.

Cost of a market basket as a measure of food equity

A recent study suggests that for any given location, an estimate of the cost of a balanced diet is a more useful measure than any food desert measure in understanding access issues and needs.[17] It also suggests that policy alternatives that are intended to influence access should be evaluated based on how much they influence costs, and for whom, depending on where people live.

Both the consumer survey and the focus group discussions with Prince George's County residents revealed a similar concern. Residents believe that there are major discrepancies between different areas of the County. Their perception is that usually in low-income neighborhoods the quality is lower and the price is higher than the higher income neighborhoods.

Using price data gathered during the HFAI survey, an analysis was conducted to calculate and compare the cost of a typical market basket at the study area supermarkets. This analysis helps measure food equity by showing the differences in the cost of healthy food in different parts of the study area.

Chart 14 on page 60 displays an average cost of a market basket at the supermarkets located in each geographic area. It is the highest in the South Area and lowest in the North Area. Although in absolute dollars, the difference between the highest and lowest market baskets is only $1.52, when the affordability of the market basket for an average household in each area is calculated, discrepancies become more obvious.

Chart 15 on page 60 shows the average household income by area. The North Area, where the market basket is the cheapest, has the highest income. The lowest income is in the Central Area, where the cost of a market basket is mid-range.

The affordability of a market basket to an average household in each area was calculated using the average household income and the cost of a market basket. For every nine market baskets that an average household in both Central and South Areas purchases, an average household in the North Area can buy 10 market baskets.

What is a market basket?

A typical market basket for a balanced diet that contains foods from different categories.

For this exercise, a market basket consists of one pound of tomatoes, one pound of bananas, one pound of boneless chicken breast, one pound of tilapia, one gallon of whole milk, and one loaf of whole wheat bread.

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[17] Nathan Hilbert, Jennifer Evans-Cowley, Jason Reece, Christy Rogers, Wendy Ake, Casey Hoy. "Mapping the Cost of a Balanced Diet, as a Function of Travel Time and Food Price." Journal of Agriculture, Food Systems, and Community Development. December 6, 2014.

Chart 14: Average cost of a market basket by geographic area.
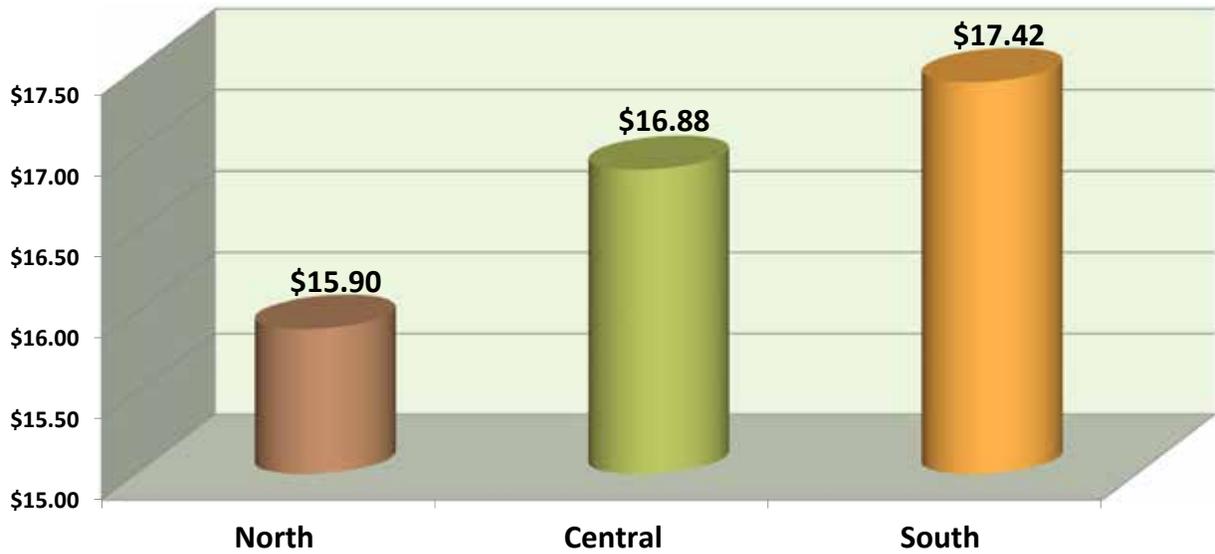

Chart 15: Average household income by geographic area
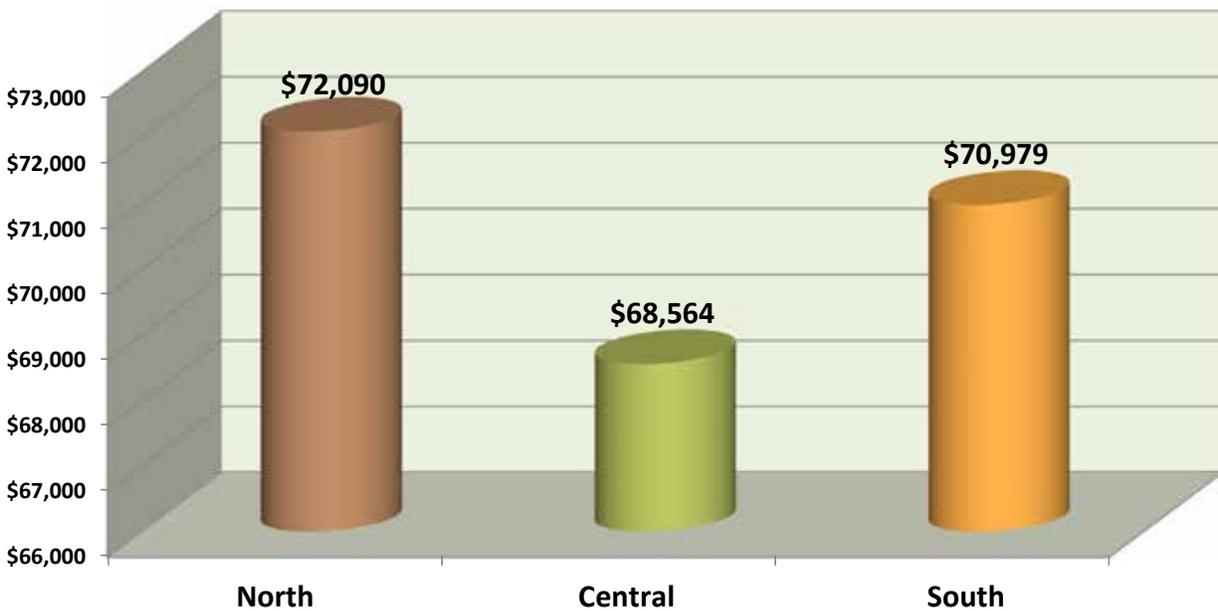
Examining subareas (see Map13 for subarea boundaries) within three geographic areas revealed even more disparities. The price range for a market basket is between $13.89 and $20.84. Table 10 on page 62 shows the average household income and average cost of a market basket by subarea.

Map 13: Study area subareas

Food system study subareas

North
- Langley Park
- College Park/Greenbelt
- Port Towns/Arts District
- Cheverly

Central
- Capitol Heights
- Landover
- District Heights

South
- Suitland
- Glassmanor/Hillcrest Heights
- Oxon Hill

- One-mile buffer of study area
- Geographic area boundary

Metro rail lines
- Blue line
- Green line
- Orange line
- Ⓜ Metro station
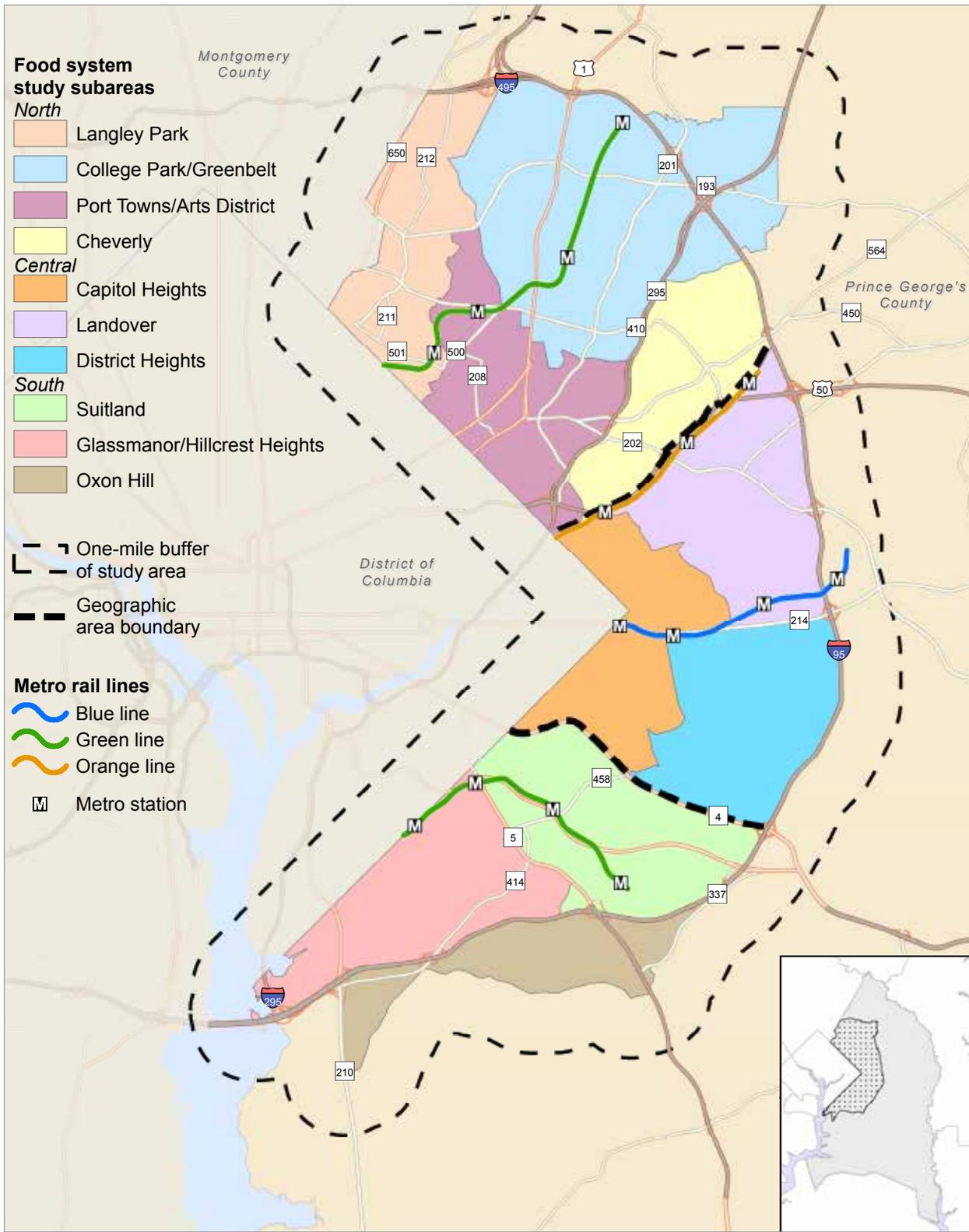
Table 10: Average household income and cost of a market basket by subarea		
Subarea	Average household income	Average cost of a market basket
College Park/Greenbelt	$78,192	$18.36
Cheverly	$77,370	$13.89
Oxon Hill	$76,555	$15.36
District Heights	$75,127	$18.25
Langley Park	$71,214	$15.41
Suitland	$69,775	$20.84
Glassmanor/Hillcrest Heights	$67,514	$18.89
Capitol Heights	$66,833	$15.16
Landover	$65,382	$17.73
Port Towns/Arts District	$64,352	$16.41

Besides the fluctuation of a market basket price among subareas, a more significant observation is lack of correlation between household income and cost of food, which augments inequity in accessing healthy food. Chart 16 depicts the disparities in affordability of a typical market basket of basic foods among subareas. With Cheverly as a base (where food is the most affordable) and assuming that each household uses the same percentage of their income on food, the chart shows the number of baskets an average household can purchase in each subarea. For every 10 baskets that an average household in Cheverly buys, households in each of the subareas can buy less than 9 baskets, and as low as 6 baskets in Suitland.

Chart 16: Number of market baskets an average household can afford by subarea
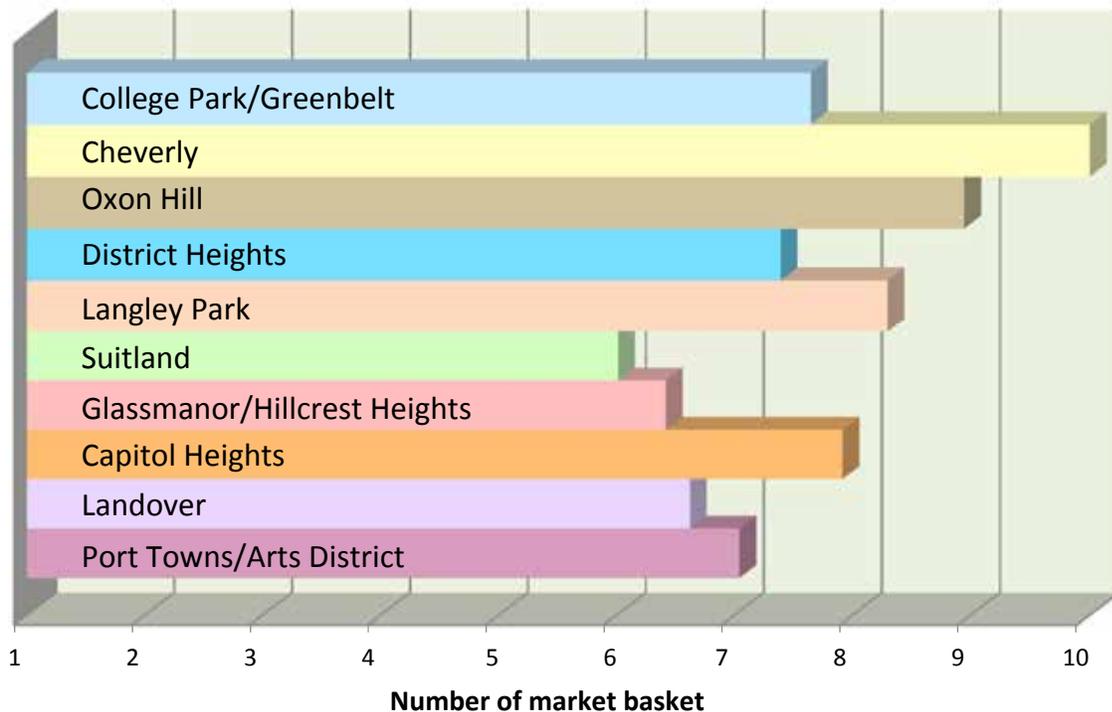
Same chain, same food, different price

One perception of the residents is that even the stores of the same chain supermarket have different quality and price for the same item in different neighborhoods.[18] They believe that usually in low-income neighborhoods the quality is lower and the price is higher compared to the higher income neighborhoods. A price comparison analysis for each chain supermarket was performed to see whether this perception is supported using the available data.

Prices of six items from the market basket (tomatoes, bananas, boneless chicken breast, tilapia, whole milk, and whole wheat bread) were compared at 10 supermarket chains with more than one store in the study area. The findings showed that there are indeed price differences for the same item in different stores of each of the same chain supermarket. However, there is no evidence of higher prices in lower-income areas. The following is the summary of the findings for price comparison at chain stores:

- For almost all items, all chains have different prices at different stores.
- There is no correlation between the price of any food item and the average household income in a given subarea.
- There is no correlation between the quality and price of food items.
- Price ranges among the stores of the same chain are usually small, but for some items some chains have big price differences.
- In some cases, the same chain may have the same price in multiple stores but a different price only in a couple of stores.
- Generally big-box chains have more consistent prices across their stores.

Supermarket X at College Park/Greenbelt, Cheverly, and Langley Park.*

Supermarket X at Oxon Hill.*

This small exercise of analyzing the cost of a market basket and individual healthy food items in different geographic areas provided an insight about the food inequity in the study area. The results show that food is not equally cheap for all; it depends on where one lives. A more in-depth study that would unveil various reasons behind the limitations in accessing healthy food in different parts of the county may enable policy makers to see a better picture of healthy food access in Prince George's County.

*Actual prices.

18   Consumer survey and focus group discussion results.

Are supermarkets a remedy to alleviate limited access areas?

The commonly proposed solution to food deserts is opening new supermarkets. There are many success stories around the nation about the life-changing impact of new supermarkets in neglected run-down communities. When a supermarket comes into a poverty stricken area with almost no food retail outlets, it not only brings food but also jobs and hope. It becomes the pride and focal point of the neighborhood and serves as a community gathering place. Usually a new supermarket carries considerable amount of fresh healthy food. Therefore, it serves the purpose of accessing healthy food and more. This remedy sounds pretty satisfactory, but is it a good solution everywhere? As one size does not really fit all, its effectiveness and feasibility should be evaluated case by case.

> *"The first supermarket supposedly appeared on the American landscape in 1946. That is not very long ago. Until then, where was all the food? Dear folks, the food was in homes, gardens, local fields, and forests. It was near kitchens, near tables, near bedsides. It was in the pantry, the cellar, the backyard."*
>
> *—Joel Salatin, Farmer and Author*

In the case of the study area, opening new supermarkets may not solve the problem of accessing healthy food. It is the spatial distribution of the supermarkets and quality and price of food products they carry that create inequity in accessing healthy food.

Facts about the study area

There are more than enough supermarkets. There are 70 supermarkets serving the 150,870 households in the study area. The rule of thumb is that 3,000 households are needed to support a supermarket. Even when the supermarkets within one mile of the study area are excluded, there are still an additional 5 supermarkets, more than the 50 supermarkets that the study area population can support (see Table 3 on page 31 for details). It may not be economically feasible for a for-profit food retailer to open a new store in this area except to out-compete existing outlets, which may cause other outlets to go out of business. Saturation of the market by multiple supermarkets cannot support a profitable operation unless there is enough density. The study area has a suburban layout, thus does not have the population density to support a supermarket every two miles. It is also not feasible for food retailers to enter areas where disposable income of the households cannot support a profitable business.

The majority of supermarkets lack quality. HFAI surveys revealed that the majority of the supermarkets that serve the study area do not carry quality healthy food. Some supermarkets' produce departments have minimum variety of fruits and vegetables that are not always fresh, and meats usually are not lean. Some have an unpleasant odor and do not have enough illumination. Comments received from area residents through a survey and focus group discussions supported these findings. Residents complained about wilted, even rotten, produce; brownish colored meats; and several items with expired dates. They also mentioned unattractive supermarket environment, lack of hygiene, and presence of bad odor. The poor customer service and unresponsiveness of the managers to most customer requests were common complaints. Our research shows that many people travel longer distances to shop elsewhere even if there is a supermarket next to their home. If a supermarket does not offer what the customer is looking for (i.e., high quality, culturally appropriate healthy food for an affordable price in a clean store with good customer service), the customer goes somewhere else. Only those who cannot travel farther have no choice but to shop at what is available nearby.

Healthiness of the food sold in supermarkets is questionable.
Generally food access studies associate supermarkets with healthy foods. But this is not always the case. The HFAI survey showed that most supermarkets that serve the study area carry a limited amount of nutritious food, which includes fresh fruits and vegetables, lean meats, and minimally processed or unprocessed whole foods with less sodium, sugar, and fat. Additionally, at many supermarkets where healthy food is available, shelves are also full of unhealthy food (i.e., highly processed food with high calorie, sodium, sugar, saturated fat, and cholesterol).

The spatial distribution of supermarkets contributes to the healthy food access problem. Although, as discussed above, some parts of the study area are falsely identified as limited access areas, there are indeed several large areas without a supermarket. Most County residents do not complain much about physical access, because they can drive where the healthy foods are. However, those who do not have access to a car or cannot drive have serious difficulties traveling to even relatively close supermarkets, let alone other healthy food outlets. Limited public transportation options aggravate this problem. There are various reasons for the unequal spatial distribution of supermarkets that cause inequitable food access. Business decisions based on marketing strategies are one reason for the site selection. At some major intersections and high visibility areas, such as in Oxon Hill, supermarkets tend to cluster, as opposed to spread around to serve different neighborhoods. Other criteria for location choices include demographic composition, household income, and perception of crime in different neighborhoods. But there is also another culprit that is not usually discussed; it is the unintended consequences of planning and zoning decisions. Separation of commercial and residential uses leaves large residential areas without supermarkets. Unless zoning permits healthy food retail outlets in residential neighborhoods, equitable access to healthy food will not be achieved in the County.

Next steps

Information presented in this section conveys that a sophisticated analysis is necessary to identify the areas with limited access to healthy food. Analyzing only a few factors with insufficient data cannot provide enough information to make necessary changes for an equitable healthy food access. There are multiple factors to limit one's access to healthy food; many of them are mentioned in this study. All these factors should be taken into consideration during healthy food access analyses. Another important point is to define what healthy food is in order to be able to differentiate between food access and healthy food access. Different cultures, opinions, and lifestyles may impact definitions and analyses, so there are lots of gray areas. Therefore, each community should determine the best-fitting criteria for the conditions of their community and pursue an analysis based on them. Although all the right analyses are done, physical access to healthy food is not enough to achieve community health. Affordability, cultural appropriateness, and quality of food are as important. But most important of all are the mindsets of the people and their willingness to eat healthy.