

Is Healthy Eating Possible in DeKalb County?

An Assessment of Food Availability, Access and Cost in Two Neighborhoods



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S. Elizabeth Ford, M.D., M.B.A.
District Health Director

I am pleased to present the report “Is Healthy Eating Possible in DeKalb County? An Assessment of Food Availability, Access, and Cost in Two Neighborhoods.” The assessment was conducted in two DeKalb County neighborhoods to determine whether healthy foods are available and affordable, and to consider other key factors affecting food access and choice. In order to continue to fight serious health issues like obesity and diabetes we need to understand the environmental barriers that impact making healthy food choices.

Studies show that Americans are not eating enough fruits and vegetables. In DeKalb County only 28 percent of adults eat fruits and vegetables the recommended five or more times per day. The Steps to a Healthier DeKalb program focuses on preventing diabetes, obesity and hospitalization due to asthma by improving nutrition, increasing physical activity and reducing tobacco use. Eating at least five servings of fruits and vegetables daily is a great way to improve nutrition and reduce one’s risk for obesity and chronic diseases, such as heart disease, diabetes and some cancers.

I would like to thank Steps to a Healthier DeKalb and the Atlanta Local Food Initiative for taking on this important task of assessing our local food sources. The report will be used to inform the communities and key leaders on issues related to food

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availability and affordability and related health outcomes. By involving the communities and key decision-makers, Steps to a Healthier DeKalb will develop an action plan that approaches challenges from both environmental and policy perspectives.

The report illustrates the tough realities of locating healthy foods, particularly fresh fruits and vegetables, in some local communities. As noted on page 16 of the report “food items most often missing in local stores are fresh fruits (apples, bananas, grapes, oranges, melons) and vegetables (lettuce, potatoes, onions, green peppers, celery)...” We can all become more aware of our food sources and choices by observing our neighborhood store’s food products, talking to the store managers about stocking better choices and offering a ride to a neighbor to a full-service grocery store.

I hope you will see this report as the Board of Health does as the first of many steps toward making healthy foods more available and accessible in DeKalb County. The full report can be found on the Board of Health’s web site, visit www.dekalbhealth.net.



S. Elizabeth Ford, M.D., M.B.A.
District Health Director

Is Healthy Eating Possible in DeKalb County? An Assessment of Food Availability, Access, and Cost in Two Neighborhoods

Executive Summary

An assessment of two DeKalb County, Georgia, neighborhoods reveals some significant challenges for healthy eating. Numerous stores in each neighborhood sell food, but only the seven chain supermarkets provide a full range of choices for a nutritionally sound diet. These stores are clustered geographically, so that residents of some sectors are served mainly by gas stations, drugstores, and other types of stores with limited food items—food that is sometimes more expensive than in supermarkets.

In light of the national obesity epidemic and alarming rates of diabetes and heart disease, the U. S. Department of Agriculture and the DeKalb County Board of Health have recommended five servings a day of fruits and vegetables to improve health and reduce risk. We used standard tools developed by the “Community Food Security Assessment Toolkit” to assess how available, accessible, and affordable is a healthy, low-cost diet in DeKalb County.

Are food stores well distributed? The results of a store census show that supermarkets and small grocery stores are available in both neighborhoods in widely scattered locations, but large sectors of each neighborhood must rely on a limited variety of foods from discount stores, drugstores, and gas stations. The more affluent of the two neighborhoods has fewer stores, perhaps because housing developments are newer or because many of these residents have cars and do not need to buy food within walking distance.

Can residents reach these supermarkets? A majority of the residential sections are well covered by bus routes, but there are sections in the southeast of each neighborhood that are sparsely served. Some residents may have to rely on stores within walking distance.

Is a full range of healthy food available and affordable? Reliance on small, local stores is a problem when seeking a healthy diet at affordable cost. We used the USDA “Thrifty Food Plan” to inventory 28 stores. Between 54% and 56% of required items were not available on average. Fresh fruits and vegetables were missing completely from 63% to 86% of all stores inventoried. Costs of food overall were also somewhat higher than the national average and showed considerable variability by kind of store and available items.

In summary, heavy reliance on local gas stations and convenience stores for food does not support choices for a healthy diet. Access to a car is necessary for many in these two DeKalb County neighborhoods to be able to eat “five a day” servings of fruits and vegetables.

Recommended next steps include attention to alternative means to provide healthy food choices, such as local farmers markets, community gardens, home food production, improved store stocks of fruits and vegetables, and transportation alternatives.

Is a Healthy Diet Possible in DeKalb County? An Assessment of Food Availability, Access, and Cost in Two Neighborhoods

Introduction

Public health leaders throughout the United States have expressed concern about growing numbers of overweight Americans, and recommendations for healthier diets are common. But how feasible is it for families to shift their eating habits? Does the environment around them support healthy choices? This assessment of food availability, access, and cost in two neighborhoods of DeKalb County, Georgia, is a first step towards answering these questions.

As the United States faces an epidemic of obesity, the costs are high. Obesity among adults increased to 30% of the population between 1988 and 2002, doubled among children under 11, and tripled for teenagers (U.S. Department of Health and Human Services 2004). Obesity is linked to higher rates of diabetes, high blood pressure, heart disease, stroke, and arthritis, and these chronic diseases are raising healthcare costs across the nation (Wang and Brownell 2005).

Many local communities are taking action to support health through nutrition, exercise programs, and public education. In Georgia, DeKalb County has initiated Steps to a Healthier DeKalb, a five-year health promotion program to prevent diabetes, obesity, and hospitalization due to asthma. Such a prevention program not only has the opportunity to improve quality of life, it can save considerable money. For example, prevention of diabetes is estimated to save an average of \$10,000 in medical costs per person each year (Nichols, Atilas, and Chapman 2005).

Efforts to address the obesity epidemic often begin with individual dietary choices and include family efforts to eat well. But it is also essential to understand whether neighborhood resources make it possible to eat healthfully (Inagami et al. 2006). When the U.S. Department of Agriculture recommends a minimum of five servings a day of fruits and vegetables, can all residents of DeKalb County make such nutritionally sound choices? Are foods for a healthy diet available, especially to those in less affluent parts of the county? This report assesses whether the food environment in DeKalb County supports the kind of healthy diet that will reduce the rates of obesity and diabetes.

To answer these questions, the DeKalb County Board of Health and Steps to a Healthier DeKalb partnered with the Atlanta Local Food Initiative in 2006-2007 to carry out an assessment of food availability, accessibility, and affordability in two neighborhoods within the county. The work was carried out by Emory University graduate students Faidra Papavasiliou (Anthropology) and Christa Essig (Public Health), under the guidance of Professor Peggy Barlett and with the help of Georgia Organics Executive Director Alice Rolls.

The Atlanta Local Food Initiative (ALFI) is a network that joins individuals, corporations, nonprofits, universities, and governmental agencies to work together toward a locally-based food system. ALFI supports an Atlanta regional food system that fosters strong local economies, enhances human health, promotes environmental renewal, and links rural and urban communities.

In agreement with the DeKalb County Board of Health supervisor of the project, Brandi Jessemy Whitney, each part of our work was based on standard methods used throughout the country from the Community Food Security Assessment Toolkit developed by the U.S. Department of Agriculture (Cohen 2002).¹ Our profile was designed to explore some first steps to understanding whether adequate food resources are available, accessible, and affordable in two separate communities of southern DeKalb County, inside the Steps to a Healthier DeKalb intervention area.

The communities of McNair and Stephenson were selected for their contrasting demographic characteristics. The Stephenson neighborhood, located in the eastern part of DeKalb County around Stone Mountain Park, has one of the highest median household income levels in the county and one of the lowest percentages of free or reduced price school lunch program participants. In contrast, the McNair community, located in the southwest part of the county, has one of the lowest median household income levels and highest percentage of free and reduced price lunch program participants. Both communities are predominantly African American, as is the rest of southern DeKalb County. A profile based on these two different neighborhoods is a good starting point to understand the diverse food environments within DeKalb County.

Table 1. Comparison of the Two Communities: 2000 Census

	Population	African American	White	Hispanic
McNair	65,716	93%	5%	1%
Stephenson	43,980	75%	18%	5%

Source: Status of Health in DeKalb Committee 2005

PART 1: ACCESS TO FOOD

Where can DeKalb residents go to obtain the healthy food needed for a good diet?

In general, households have five main sources for food:

1. Stores, including grocery stores, convenience stores, and gas stations.
2. Farmers markets and roadside stands.
3. Production in home gardens, community gardens, or farms.
4. Institutional providers: schools, food banks, and senior citizen centers.
5. Restaurants and take-out stores.

Our profile focused on only the first source—commercial grocery establishments—since it is the primary source of food for most households. We will make a few comments about the other four categories, but they were not the focus of the assessment.

Census of Stores: Availability of Food Markets in Two Communities

Our first step was to make a census of the kinds of places available to buy food in the two communities and map their locations. We did not attempt to expand the map beyond the borders of the two neighborhoods, nor did we discuss with community members how far they normally travel for food or where they shop. We wanted simply to know what kinds of commercial sources for food are located in each community's boundaries and how they are distributed across the area. The census was carried out by driving and walking in the two communities, using Internet searches, and by talking with local individuals during February and March of 2007.

Table 2. Number of Stores in Each Community

	McNair	Stephenson
Supermarket	5	2
Small Grocery	4	3
Drugstore/ Convenience	3	5
Gas-Grocery	31	16
Ethnic Specialty	2	1
Other-Discount	7	4
Total	52	31

How did we define these six types of stores?

Supermarket =	Large food and grocery stores, part of local, regional, or national chains.
Small Grocery =	Independent, “neighborhood” stores specializing in food and grocery items.
Drugstore/ Convenience =	Stores such as pharmacies that also carry food items as a convenience to shoppers.
Gas-Grocery =	Gas stations that also carry food items.
Ethnic Specialty =	Stores specializing in items from particular world regions or food traditions.
Other-Discount =	Discount and “dollar stores” that also carry food items.

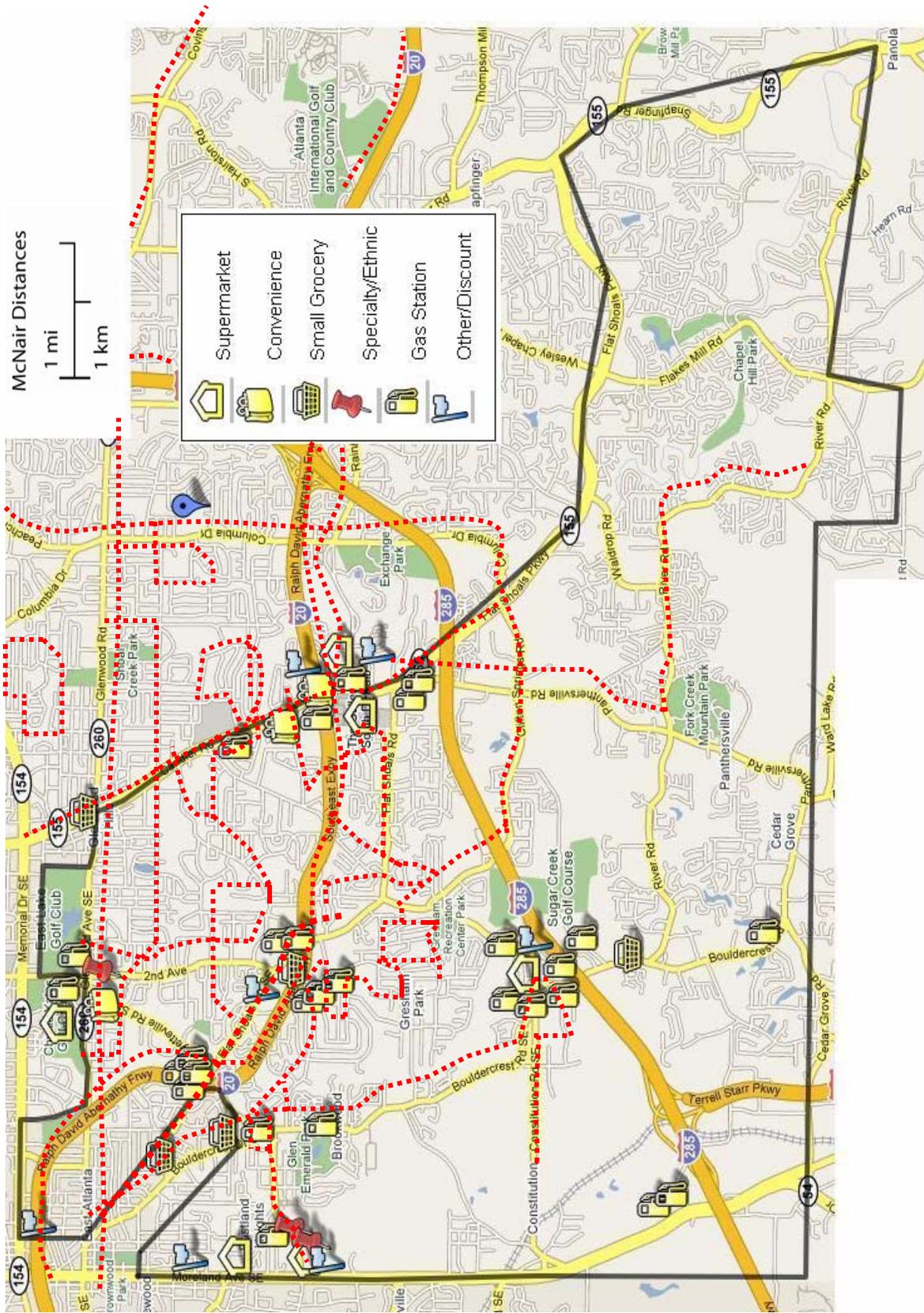
The results of our census show that supermarkets and small grocery stores are available in both neighborhoods in widely scattered locations (see Maps 1 and 2). However, not all areas are well served. In both communities the stores are concentrated in the western sections where there are higher densities of population and more major roads. Stephenson, with a smaller land area and 30% smaller population, not surprisingly, has fewer stores. The southern and eastern portions of that community are less densely developed, and transportation through the neighborhood is interrupted by Stone Mountain Park. McNair is crossed by I-20 and I-285, which probably contributes to some of its higher number of gas stations.

Key Findings on Food Availability

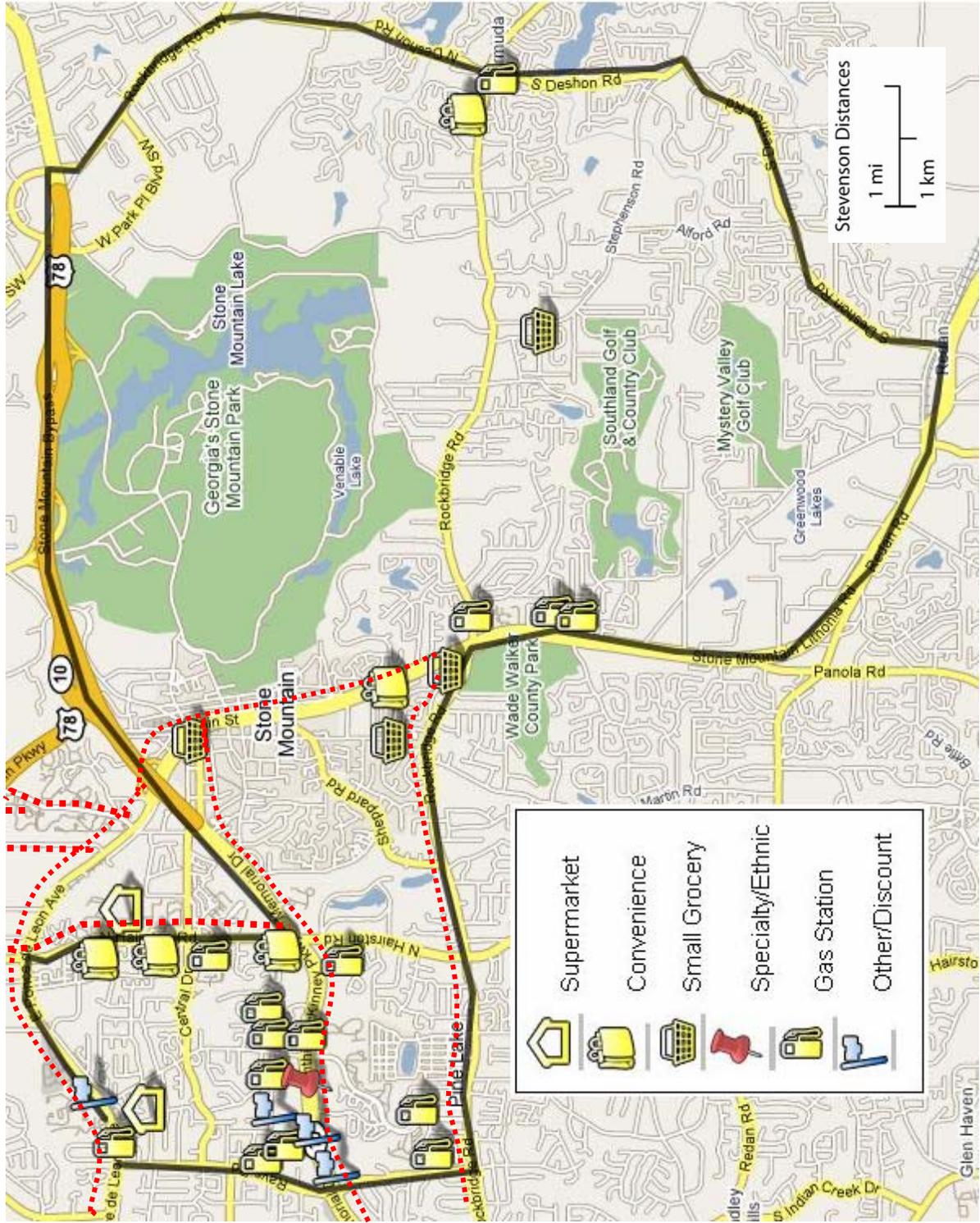
- The two communities are sharply unequal in income and poverty levels, and Stephenson, the more affluent community, has fewer stores. Given its lower population, however, it is not much different in overall density of key food stores—the chain supermarkets and small groceries.
- The majority of residents in both neighborhoods have a supermarket within five miles, but in the less-served eastern sections, distances may reach six to eight miles.
- In the McNair community, there are many gas stations that also provide food; over half the food store sources in that neighborhood are gas stations. This pattern is probably related to the two interstates that cross it as well as a larger number of lower-income households that rely on walking and public transportation to buy food.
- In the Stephenson community, three-fourths of the food establishments are clustered in the northwest third of the area and there are no supermarkets in the eastern section. There may be other groceries over the county line, out of the assessment area.

We now turn to the next step in determining whether food is accessible: transportation.

Map 1: The DeKalb County Food Profile: McNair Food Sources and MARTA Bus Routes (in red).



Map 2. The DeKalb County Food Profile: Stephenson Food Sources and MARTA Bus Routes (in red)



Mapping Public Transportation Routes: Access to Stores to Buy Food

Our mapping of the two neighborhoods shows that stores of various kinds typically cluster together. It is common that a single intersection has four to seven stores that sell food. For individuals who do not live close to these clusters and do not have access to a car, food store access may present a challenge. We therefore looked at MARTA bus lines in these areas, as shown in Maps 1 and 2.

A majority of the residential sections of the two neighborhoods are relatively well covered by bus routes. Though schedules may not be as frequent as many would like, it seems that many residents with no access to private cars are able to buy groceries using the bus.

Still, access by bus is significantly lower in the southern part of each neighborhood, marking the edges of MARTA transport. One owner of a gas station in Stephenson confirmed that his stock was determined by the needs of nearby residents who cannot easily reach the larger supermarkets. He carries a well-stocked food section in order to serve mainly pedestrian traffic, and the variety and quantity were sufficient to make us classify the place as a small grocery, rather than a gas station.

Although bus routes are present, senior citizens and those with physical limitations may face significant challenges to obtain food. There is the expense of fares, the need to carry heavy bags, and the wait times at both ends.

Other Sources of Food

Though it was beyond the scope of work on this project, we do note that there are three other ways that DeKalb residents can supplement food from these stores.

Farmers Markets. Through our travels in these two neighborhoods, we heard reference to the DeKalb Farmers Market (a warehouse-sized “world market” specializing in fresh, processed, and prepared foods from all over the United States and the world) and to the Decatur Farmers Market (a small, seasonal, organic produce market of local farmers). Neither of these two markets is located in the neighborhoods under consideration, and we were not able to assess how many people are able to make the journey to one of these two sources of fresh food of high quality. Further research is desirable to identify locations outside the two communities where residents regularly shop. It is also important to consider the impact that a good farmers market might have on the consumption of fresh fruits and vegetables, particularly if such a market were in easy walking distance for residents.

Home Production and Community Gardens. A number of residents produce food in their backyard gardens, but it is beyond the scope of this assessment to find out how many do so and how big a contribution this fresh food makes to diets. No formal community gardens were found during our census, but two local farms are located in the McNair

community. Gaia Gardens runs an organic food buying coop and sells at several local farmers markets. Wonderland Gardens is a landscaped park that also has a food garden section. We saw many fewer farm stands or informal produce vendors in the two neighborhoods, compared to traffic corridors of nearby Fulton County.

Institutional Sources of Food, Restaurants, and Take-Out Stores. Though very important for some families, these food sources were not a focus of this profile. We did note a large number of chain fast food restaurants in both neighborhoods. Further research on all these food sources would expand our understanding of the total food environment of McNair and Stephenson.

Key Findings on Food Accessibility

- A good range of types of food stores is available in the two neighborhoods, though unevenly distributed. We found the more affluent and less dense neighborhood, Stephenson, actually had fewer stores and poorer distribution of supermarkets, perhaps because many of these residents have access to cars and do not need food stores within walking distance.
- Bus lines thread through much territory in both neighborhoods, but there are pockets with very poor bus coverage. Such a pattern can present serious problems to disabled or senior residents and suggests that the environment does not evenly support a healthy diet in these two neighborhoods. Even with bus lines available, significant walks with heavy food sacks may be required to obtain food for many residents of McNair and Stephenson.

PART 2: TYPES OF FOOD AVAILABLE

Can DeKalb residents in these two neighborhoods afford to buy a full range of foods needed for a healthy diet? Are the foods available in local stores appropriate for a healthy diet?

To answer these questions, we used an assessment method developed by the U.S. Department of Agriculture based on the Thrifty Food Plan. The Thrifty Food Plan was developed in collaboration with Pennsylvania State University and serves as a national standard for a nutritious diet at a minimal cost. It is the basis for the allotment of Food Stamps and also is used by the federal government to provide information and recommendations for eating on a limited budget. It is drawn from a sample of menus to meet the average nutritional needs for a week of a family of four, including two adults under 50 and two school-age children (Cohen 2002:50). See Appendix 1 for sample menus.² The Thrifty Food Plan assumes that the foods needed for three meals a day and snacks are all purchased at stores and that all meals are prepared at home (Andrews et al. 2001). We used the standard inventory of 87 needed grocery items, based on a single week's menus and recipes. See Appendix 2 for the list.

Because inventorying each store's stock was time-consuming—over an hour for two persons for supermarkets—we chose a stratified sample of food stores in McNair and Stephenson (see Table 3). From the census of 83 stores of all kinds, we wanted to inventory at least a dozen in each community, in rough proportion to the frequency of store types in the census. The inventory followed the standard guidelines of the Community Food Security Assessment Toolkit, so our results are comparable to other studies around the country. We recorded the type of store, availability, package sizing, and price of Thrifty Food Plan weekly menu food items.

Store owners and managers reacted in highly variable ways to our request for permission to carry out the inventory, and we were unable to complete the work in 20% to 30% of the places that we tried. This introduces some bias into our sample, although we were generally able to substitute other markets of the same type when access to the initial store was denied. We were not given permission to inventory any of the small grocery stores, however, in the Stephenson community. Our visits were preceded by a formal letter from the Atlanta Local Food Initiative, explaining the assessment and its purpose. Almost none of the store managers indicated having seen the letter when we arrived for the inventory. Some chain retailers required corporate authorization to allow the inventory, which also limited our options. A few store owners or managers were quite suspicious of this project and in one case we were asked to leave because the owner had not realized we also needed to record prices. Conversely, at least one manager of a large supermarket was very interested in the results of this assessment, seeing it as something that may help steer his store's purchasing decisions to serve the area better.

Table 3. Number of Stores Surveyed in Each Community

	McNair	Stephenson
Supermarkets	3	2
Small Grocery	1	0
Drugstore/ Convenience	2	4
Gas/Grocery	4	4
Ethnic Specialty	2	1
Other-Discount	3	2
<hr/>		
Total	15	13

Store Inventory Results

Though food stores of various kinds are well distributed in the target neighborhoods, the availability of appropriate food items is not very good. Overall, many items from the Thrifty Food Plan are missing in both neighborhoods, as summarized in Table 4:

Table 4. Average Percentage Missing Food Items per Store

McNair	54%
Stephenson	56%

Food items most often missing are fresh fruits (apples, bananas, grapes, oranges, melons), vegetables (lettuce, tomatoes, potatoes, onions, green peppers, celery), and some meats (especially ground pork).

These results contrast sharply with a study carried out in Washington, D.C., where the items in the Thrifty Food Plan inventory were much more available, on average. In a 2001 study of 34 food retailers, a quarter carried all the items, and the top three-quarters of stores yielded an average of only 15% missing items (Andrews et al. 2001). That study, however, combined results from the whole city, whereas this study was confined to two sections of southern DeKalb County. Also, dietary preferences may play a role, as discussed below.

Tables 5 and 6 present more detailed information by type of store.

Table 5. McNair: Percentage of Missing Food Items by Food and Store Categories

	Super-market	Small Gro-cery	Drug-store/ Conven.	Gas-Gro-cery	Ethnic Spec-ialty	Other/ Dis-count
Fruit, Fresh	0	100	100	70	100	80
Vegetables, Fresh	0	14	100	100	100	29
Fruit, Canned	0	100	75	38	100	33
Vegetables, Canned	0	67	17	42	50	22
Fruits and Vegetables, Frozen	0	100	100	100	100	67
Bread, Cereals, and Other Grain Products	5	57	79	89	100	48
Bread, Cereals, and Other Grain Products, Dry	0	43	50	46	86	24
Dairy Products, Fresh	0	80	50	80	100	33
Dairy Products, Canned	0	0	0	25	100	0
Meat and Meat Alternatives, Fresh	14	86	93	89	71	80
Meat and Meat Alternatives, Frozen/ Canned	13	80	60	70	80	67
Fats and Oils	0	50	25	50	88	17
Sugars and Sweets	0	56	56	81	100	48
Other Food Items	2	74	39	70	87	53

Table 5 shows that in the McNair neighborhood many categories of stores do not provide access to the needed ingredients for a healthy diet. Our assessment reveals that the full Thrifty Food Plan requires access to a supermarket. Fresh fruits and vegetables are largely absent from most categories of stores, except the supermarkets, and even the listed frozen products are rarely available in the neighborhood. The supermarkets provide many needed items, but a hefty number of desired meat items are missing. In one small grocery we were told it would have some fruits and vegetables during the summer season, but it had none at the time we visited. Gas stations were very variable in food items offered and were not a reliable source for most of the items on the list.

Table 6 shows the availability patterns for the Stephenson community.

Table 6. Stephenson: Percentage of Missing Food Items by Food and Store Categories

	Super-market	Small Gro-cery	Drug-store/ Conven.	Gas-Gro-cery	Ethnic Spec-ialty	Other/ Dis-count
Fruit, Fresh	0	--	100	100	80	100
Vegetables, Fresh	0	--	100	100	86	100
Fruit, Canned	0	--	13	75	100	0
Vegetables, Canned	0	--	17	33	100	17
Fruits and Vegetables, Frozen	0	--	100	100	100	100
Bread, Cereals, and Other Grain Products	14	--	82	71	71	64
Bread, Cereals, and Other Grain Products, Dry	0	--	75	54	71	29
Dairy Products, Fresh	10	--	75	85	100	60
Dairy Products, Canned	0	--	0	50	0	0
Meat and Meat Alternatives, Fresh	7	--	93	96	100	71
Meat and Meat Alternatives, Frozen/ Canned	10	--	65	75	20	60
Fats and Oils	0	--	56	56	75	25
Sugars and Sweets	0	--	46	74	67	44
Other Food Items	5	--	45	61	42	61

The Stephenson inventories show a similar pattern. Supermarkets have most of the items needed, and the other categories of stores are missing many key ingredients. The gas stations and discount stores often have canned fruits and vegetables but carry few frozen goods. They also have low availability of fresh dairy items and breads, and rarely carry any kind of meats. We found that chain discount and drugstores carried the same inventory in both communities.

Though we would not expect the ethnic specialty stores to be strong in all categories of the Thrifty Food Plan, our visits suggested they are missing most of the items most of the time. It is possible that a different menu selection would still yield a healthy diet, but that was beyond the scope of our work. Ethnic specialty stores are rare in both areas, but they do carry a variety of fruits and vegetables, mostly canned and frozen, but occasionally fresh. It was our impression that these stores do not constitute main food sources for the general population, because much of what they stock does not feature prominently in mainstream American diets.

Quality of food is also an issue. When we asked for cooperation with store managers, we indicated that our visit was not designed to assess food quality, cleanliness, or health-related conditions of the stores. However, we can say that during our inventories we noted a wide variety of store conditions, from clean to filthy. Food items were sometimes well displayed and appealing, other times messy, dusty, or in abused

packaging. Notably, fresh fruits and vegetables in other than supermarkets were often unappealing, wilted, or past their prime.

Can DeKalb residents in these two communities meet their “five a day” dietary recommendations for fresh fruits and vegetables in nearby stores?

The availability of fresh fruits and vegetables overall for the two communities is shown in Table 7.

Table 7. Percentage of Stores in Sample Missing Fresh Fruits and Vegetables

	McNair	Stephenson
Fresh Fruits	84%	63%
Fresh Vegetables	86%	69%

In both neighborhoods the low availability of fresh fruits and vegetables was the most striking finding of the profile. Often, canned green beans and corn were the only vegetables available. Overall, fresh produce was found to be missing significantly more in the McNair stores than in the Stephenson stores.

Key Findings on Types of Food Available

- In both communities, though food stores are widespread, they mostly lack items needed for a healthy diet, as assessed using the USDA Thrifty Food Plan.
- Supermarkets do better than other types of stores in providing a full range of healthy foods. Families who rely on nearby discount stores, gas stations, or other food establishments that are not supermarkets must find it difficult to follow recommendations for healthy eating, unless they can get a ride to a grocery store with a more comprehensive inventory. Convenience, gas, ethnic, and discount stores have a relatively poor selection of food items across the board.
- Particularly in the area of fresh fruits and vegetables, some DeKalb residents in these two communities cannot expect to meet their “five a day” recommendations in nearby stores.

PART 3: COST OF FOOD

What about cost? Can a careful shopper on a limited budget eat a nutritious diet in DeKalb County?

The inventory method from the Thrifty Food Plan allows us to calculate costs for a family of four (two adults and two school-age children) in the two neighborhoods. All food items across all stores were compared in price per unit of product, most commonly by weight (ounce) and volume (gallon). Eggs were counted by the dozen, and certain packaged bread items by the pack.³ Sale prices were used for products on sale, but other discounts or coupons were not included in the price consultations.

Table 8 presents the average weekly food costs, based on all 28 stores inventoried.

Table 8. Average Weekly Food Costs for Thrifty Food Plan, All Stores Combined

McNair	\$135.43
Stephenson	\$140.10

Weekly food costs in McNair are about \$135.00 on average and in Stephenson, \$140.00. Price differences are not significant between the two neighborhoods due to our small sample size and the big variations in items available. Furthermore, units of sale also affect price differences. For example, a gas station might carry apples, but they are sold by the piece as snacks and priced accordingly. Therefore, the 20-ounce bag of apples costs an average of \$.89 in a McNair supermarket, but the same number of ounces would cost \$1.85 on average in a discount store and \$1.89 in a gas station.

The price information from our inventory shows that families in DeKalb County pay somewhat more for the Thrifty Food Plan package of foods than the national average.⁴ For the month of May 2007, during which most of the store surveys were conducted, the official USDA national average weekly cost for the plan was \$125.30 for a family of four with two school-age children (Center for Nutrition Policy and Promotion 2007). The comparison with the Washington, D.C., study (Andrews et al. 2001) shows that in Atlanta food costs are slightly higher. The average food cost in Washington, D.C., in 2001 was \$98.51 (and in the zip codes with the highest poverty levels, the average cost was \$98.26). Correcting for inflation between 2001 and 2007 shows that \$98.51 is equal to \$115.60 in 2007 dollars.

Table 9. Comparison of 2007 Food Costs: U.S., Washington, D.C., and DeKalb Profile

	Thrifty Food Plan Average Cost for all Stores
U.S. Average	\$125.30
Washington, D.C.	\$115.60
McNair and Stephenson Combined	\$137.68

Is the cost of food higher in these two neighborhoods of DeKalb County because grocery chains are not the most common type of food store?

In order to answer this question, we first calculated the average price of a food category for the whole neighborhood, wherever the food type was sold. Then, we compared the average cost by each type of store. As we saw from Tables 5 and 6, many stores do not carry all categories of food. But where they are available, Table 10 shows whether they are sold for more or less than the average for that food category (shown as a plus or minus percentage difference). For example, fresh fruits in McNair are slightly cheaper than average (8% below the average) but discount stores that carry fruit are considerably cheaper (26% below the average). Gas stations that carry fruit on average charge a third more.

Table 10. McNair: Price Difference from Average by Food and Store Categories

	Super-market	Small Grocery	Drug-store/Conv.	Gas/Grocery	Ethnic Specialty	Other/Discount
Fruit, Fresh	-8%	+2%		+32%		-26%
Vegetables, Fresh	+11%	-20%				+9%
Fruit, Canned	-2%			+7%		-5%
Vegetables, Canned	-3%	-4%	+1%	+13%	-2%	-5%
Fruits and Vegetables, Frozen	+2%					-2%
Breads, Cereals, and Other Grain Products	+36%	+25%		-52%		-9%
Breads, Cereals, and Other Grain Products, Dry	-3%	-6%	-7%	+24%	-4%	-4%
Dairy Products, Fresh	+17%	-176%	-73%	+195%		+38%
Dairy Products, Canned	-2%	0%	+1%	+4%		-2%
Meat and Meat Alternatives, Fresh	-49%	+40%	+40%	+10%	-38%	-3%
Meat and Meat Alternatives, Frozen and Canned	-6%	+9%	+1%	+12%	-9%	-7%
Fats and Oils	-4%	+2%	+2%	+9%	-5%	-3%
Sugars and Sweets	-2%	-20%	-18%	+33%		+6%
Other Food Items	+4%	+12%	-2%	-14%	+12%	-11%

Some striking findings emerge from Table 10. Fresh dairy products, meats, and some bread/cereal products show large markups in some types of stores, such as gas stations. Sometimes, a product will be substantially cheaper, such as fresh dairy in small grocery or convenience stores. A word of caution about these price comparisons, however: part of the difference among types of stores comes from the fact that stores carry different items. For example, a gas station might sell milk, which gives it a value for the dairy category, but it will not have cheese, which is more expensive. Therefore, its average price for that category will be lower. Conversely, cheese will be in the supermarket, which makes the total dairy price difference higher for supermarkets. Because there is so much variability from store to store, it is very difficult to compare prices. Still, this information is useful to show that some residents without access to stores with fuller inventories will not get the same value for their food dollar.

Table 11. Stephenson: Price Difference from Average by Food and Store Categories

	Super-market	Small Gro-cery	Drug Store/ Conv.	Gas/ Grocery	Ethnic Spec-ialty	Other/ Dis-count
Fruit, Fresh	+42%				- 40%	
Vegetables, Fresh	+24%					
Fruit, Canned	-4%		+1%	+10%		-7%
Vegetables, Canned	-4%		+3%	+11%	-6%	-7%
Fruits and Vegetables, Frozen	0%					
Breads, Cereals, and Other Grain Products	+35%		+8%	+6%	+ 22%	-27%
Breads, Cereals, and Other Grain Products, Dry	-2%		+7%	+1%	-5%	-1%
Dairy Products, Fresh	-112%		+92%	+102%		-83%
Dairy Products, Canned	-5%		+4%	+6%	- 2%	-4%
Meat and Meat Alternatives, Fresh	-50%		+72%			-22%
Meat and Meat Alternatives, Frozen and Canned	-3%		+4%	+4%		-5%
Fats and Oils	-5%		+5%	+5%		-5%
Sugars and Sweets	-23%		-11%	+48%		-14%
Other Food Items	+9%		+16%	+11%		-36%

Table 11 for Stephenson also shows considerable variability in prices (and availability). Supermarkets are higher in costs of some categories, but again these variations mainly reflect a fuller selection of items. As in McNair, some drugstores/convenience stores in Stephenson show some very high prices for fresh dairy and meat.

Finally, to finish the comparison of prices in different types of stores, we chose a small group of items commonly available in different types of establishments. Tables 12 and 13 compare prices for the same items, from one type of store to another.

Table 12. McNair: Price Comparison for Basic Food Items by Store Category

	Super-market	Small Grocery	Drug-store/Conv.	Gas/Grocery	Ethnic Specialty	Other /Discount
Bananas (16 ounces)	\$0.46	\$0.34		\$1.51		\$0.46
Tomato Sauce (8 ounces)	\$0.33		\$0.47	\$0.82		\$0.43
White Bread (16 ounces)	\$1.04			\$1.79		\$1.76
Whole Milk (1 gallon)	\$3.39		\$2.49	\$3.99		\$3.44
Eggs (1 dozen)	\$1.65	\$1.29		\$1.29	\$1.39	\$1.99
Sugar, White, Granulated (16 ounces)	\$0.46		\$0.86	\$1.06		\$0.45

Table 13. Stephenson: Price Comparison for Basic Food Items by Store Category

	Super-market	Small Grocery	Drug-store/Conv.	Gas/Grocery	Ethnic Spec.	Other /Discount
Bananas (16 ounces)	\$0.48				\$0.48	
Tomato Sauce (8 ounces)	\$0.28		\$0.64	\$1.07	\$0.53	\$0.40
White Bread (16 ounces)	\$0.82		\$1.71	\$1.41	\$1.98	\$1.68
Whole Milk (1 gallon)	\$3.47		\$3.69	\$4.69		\$3.64
Eggs (1 dozen)	\$1.41		\$1.54	\$1.39		\$0.99
Sugar, White, Granulated (16 ounces)	\$0.58		\$0.96	\$0.96	\$0.80	\$0.48

Key Findings on Food Cost

- Depending on the type of store, the same item can cost double or more. Gas stations, drugstores, and convenience stores tend to charge considerably higher prices for some of the same products.
- Unlike study results in other cities where poorer neighborhoods pay more, the more affluent Stephenson neighborhood in DeKalb tends to pay more for food items.
- A diligent shopper can certainly find some “bargains,” but for an individual with limited transportation, food is often more expensive than for those who can easily use the supermarket.

We have some reservations in accepting these results about food costs. In order to conclude that McNair and Stephenson residents are paying more for their food than residents in other areas of the U.S., it would first be necessary to redo carefully the Thrifty Food Plan with nutritionally similar menu choices that reflect cultural and regional dietary preferences. Such foods are likely more available and possibly cheaper, and only with that information can we be sure that a low-income family is at a disadvantage in eating healthfully from stores in the McNair and Stephenson communities.

CONCLUSIONS AND DISCUSSION

Does the local environment of the McNair and Stephenson communities support choices for a healthy diet? Can the dietary guidelines for fruit and vegetable consumption to reduce obesity and diabetes levels be carried out by interested individuals and families?

This profile allows us to make an excellent start in answering these questions. We have looked at the availability of food by neighborhood, type of store, and category of food and explored whether the food markets are accessible and affordable. In doing so, we have found the answers to the questions to be both yes and no.

First we will present some general conclusions and then some reservations about the assessment, followed by some suggestions for next steps.

General Conclusions

1. The two communities benefit from 83 food-related stores of many types, widely dispersed across their territory. The majority, however, are gas stations with some food items, and the seven supermarkets are not evenly distributed, clustering in certain sectors of each neighborhood. The southern regions of each community are underserved.
2. Only the seven supermarkets in the two neighborhoods provide the full range of food items necessary for meeting the dietary guidelines for a healthy diet.
3. MARTA bus service is generally good in the two neighborhoods, providing many routes to access chain supermarkets and independent food stores. However, some sectors of each community lack a supportive environment to buy food within easy walking distance.
4. Portions of each neighborhood are underserved with bus routes, and residents in these areas experience challenges purchasing food if they do not have access to a car. In addition, given that there are individuals for whom walking several blocks with heavy groceries is not physically possible and others for whom the costs of riding MARTA are prohibitive, we conclude that access to adequate food is mixed for the two neighborhoods. Seniors and physically challenged individuals are particularly at risk.
5. The inventory of the available food items in 28 stores shows that many items are missing in both of these neighborhoods. To the extent that the Thrifty Food Plan captures a reasonable diet for McNair and Stephenson residents, those foods can be obtained only at one of the seven supermarkets in their areas. Also, the level of missing food items is much higher than a comparable study in Washington, D.C.
6. A balanced diet, especially one containing fresh fruits and vegetables, presents a significant challenge in the targeted areas, unless one can travel to a supermarket.

7. Costs for a weekly food budget using the USDA Thrifty Food Plan are slightly higher in the two communities of DeKalb County than for national averages and for the Washington, D.C., area, though this finding may stem from the limitations of our method. Costs are definitely higher if one cannot shop regularly at a supermarket.

8. Though McNair is larger and has considerably lower income levels and higher levels of families in poverty, we did not see significant differences between the overall numbers of stores and their geographical distribution when compared with the more affluent Stephenson neighborhood. There are, however, more supermarkets in McNair.

Limitations of the Assessment Findings

It was a good decision to study in depth two neighborhoods within south DeKalb County because it would be too time consuming and expensive to carry out an inventory in all of the south DeKalb communities. The decision to focus on two neighborhoods, however, did present a problem. At the borders of the communities or nearby, there might be better or cheaper food sources that we did not assess. Metro Atlanta is a thoroughly urbanized area and any community boundary is somewhat arbitrary.

Also, our study was carried out in the winter and spring, but some fresh food sources are mainly found in the summer. While it is important to be able to meet dietary recommendations throughout the year, we are aware that roadside stands and stocks of fresh produce in stores might be more common during the summer. We tried to account for all food retailers, but some seasonal produce vendors may have been missed.

The restricted nature of the 87-item inventory for the Thrifty Food Plan created some challenges for our assessment. Many common items such as peanut butter and fresh fish might substitute well for the items required on the list. Some inventory categories are quite open, such as tomatoes. Others are very specific, such as three types of pasta products, and that specificity creates the possibility of more “missing” items in a particular store. There is great value in having a standard instrument that is used across the country, but because the Thrifty Food Plan is a generic list, it may not contain the most regionally and culturally appropriate selection of food choices for our targeted areas.

The specificity of the food list also meant that ethnic specialty stores, which can offer exceptional nutrition at affordable prices, were underrepresented in our inventory. For example, we included one Halal (Muslim) butcher, who did not carry any of the pork items, and that omission contributed to a higher score of missing items in that neighborhood. Our store list also contained a fresh seafood store but the Thrifty Food Plan list contains only frozen and canned fish items, and so we could not include that store in our assessment.

The Thrifty Food Plan is the least expensive of the different plans created by USDA, but it has come under some criticism. When compared with other USDA food plans that cost more, such as the Low Cost Food Plan (the next most expensive plan, yet over double the cost of the Thrifty Food Plan), the Thrifty Food Plan has significantly more calorie density and contains twice the fat, both of which are not recommended for a diet to lower obesity. It also is critically low in several key nutrients such as folate, iron, vitamin D, and the B vitamins, and it falls short of the recommended daily intake of these nutrients (Vermont Campaign to End Child Hunger 2006).

The biggest problem we faced in our assessment of food cost was the wide array of product packaging and sizes in the stores we visited. The Community Food Security Assessment Toolkit lists standard-sized units and directs profilers to record food items of that size or the closest size to it. The purpose for this restriction is to allow for comparisons of stores, areas, and national data. Especially when surveying various store types, such as gas-groceries, drugstores, or other small retailers, packaging sizes are highly variable and the product sizes specified in the list are not necessarily the most affordable.⁵ A family, therefore, may be able to eat more cheaply than our profile suggests if they seek out “the best deal” and have the money to stock up on larger sizes.

Future Assessment and Action

According to Steps to a Healthier DeKalb, the majority of DeKalb County residents report that they do not eat the recommended “five a day” of fruits and vegetables, and our assessment indicates that the store environment around them does not make it easy to buy these kinds of food.

Slow progress in reversing the obesity epidemic may be due in part to the lack of available and affordable food sources. In order to determine if this is the case, we recommend expanding the findings of this profile by exploring:

Food and Shopping Preferences:

The interest DeKalb County community members have in accessing fresh fruits and vegetables, in particular, might be considerably higher than intake levels suggest. Or, it may be that diet preferences still do not conform to nutritional recommendations.

- Talk more with local residents to find out their shopping patterns and whether they experience frustration with meeting their preferences for weekly meals.
- Conduct focus groups and surveys of a random sample of the county population.

Fresh Produce and Home Production:

- Understand the role of farmers markets and fresh produce stands in attracting shoppers and expanding their diet towards healthier choices.

- Explore the role of home food production. In a pilot survey of 20 individuals at a faith-based health event in DeKalb County, almost half were gardeners or knew someone who gardened, and 55% said they wanted to learn more about gardening. This interest suggests an important avenue for improving nutrition—and decreasing food costs—by supporting community gardens and home food production.

Food Stores:

- We recommend that DeKalb County Steps leaders consider how small stores can play a role in promoting healthier diets in the county. Browns Mill Elementary School Principal Yvonne Sanders-Butler has reported that local convenience stores near her DeKalb County school were persuaded to stock healthier snack items in support of her work to reduce obesity levels among grammar school children (Sanders-Butler 2005).
- Large groceries and supermarkets can also play a role. Store managers have a significant level of control over what the store will carry but they may or may not be informed about issues surrounding recommended diets and local food supply. They may be willing to stock some different products and even buy from local farmers, to guarantee fresher produce. This report may be useful in discussions with store managers of all types of establishments.
- It also may be appropriate to consider a special “grocery bus” or other transportation alternatives that will give neighborhood residents who live far from supermarkets better access to these stores with a full array of healthy food choices.

We recommend that the Board of Health explore other food sources besides stores. Local restaurants, fast food outlets, and institutional meals all play a role in the obesity epidemic, and attention to the healthy food outside of the store context would be useful. We also recommend that this assessment be repeated in five years to see whether indicators of availability, accessibility, and affordability of foods for a healthy diet have improved. In light of our findings in this profile, we recommend re-evaluation of the focus on the two communities chosen, since the differences between them did not turn out to be as major as might be expected.

Endnotes

1. Food security is defined as “access by all people at all times to enough food for an active, healthy life” (Cohen 2002). It assumes that nutritionally adequate, safe, and socially acceptable foods are available and can be acquired in socially acceptable ways. Community food security expands the concept to the underlying social, economic, and institutional factors that affect access to sufficient quantity and quality of foods, in relation to household resources available for their acquisition in a specified area. The food security concept is valuable in nutrition education and health promotion efforts, as health agencies may not take into account whether the foods they recommend are available, accessible, and affordable for their constituents.
2. We considered adapting the Thrifty Food Plan to reflect a more Southern palette of menus, in consultation with experienced nutritionists at the DeKalb County Board of Health. However, we were unable to do so in the timeframe possible for the study and decided to use the standard U.S. menus instead. The USDA-calculated food needs combine twelve different age, gender, and demographic groups, and each “contains a selection of foods in quantities that reflect current dietary recommendations, actual consumption patterns, food composition data and food prices” (Cohen 2002:50).
3. The inventory calls for specific amounts of foods that may or may not be found in exact quantities specified. We calculated prices both for the food amounts called for in the Thrifty Food Plan, and the desired package/unit sizes of the Community Food Security Assessment Toolkit survey. For example, the Thrifty Food Plan menu requires 10 ounce of beans for the particular meal, but the inventory specifies a package size of a 15 ounce can. Our dual counting system allows for assessing both the cost of the prepared menu and the likely cost of shopping for the menu items.
4. The USDA updates its calculations of a national average price for the cost of the Thrifty Food Plan on a monthly basis, suggesting prices for a family of four, with the parents between the ages of 19 and 50 years, and two children either between 2 to 5 years or 6 to 11 years.
5. The USDA guidelines for the inventory require that when only a portion of the package is needed for a recipe, the total cost is reduced accordingly, on the assumption that the remainder of the package will be used at a later time. We calculated the total average cost of the Thrifty Food Plan inventory using the full cost of each item in the package size consumers must actually purchase from each store and found that raises the total weekly cost to \$198.00 for McNair and \$201.11 for Stephenson.

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Appendix 1: Weekly Menus from the Thrifty Food Plan

The 87-item inventory is drawn from a multi-week series of menus (USDA 2000); here is one week's sample.

	Breakfast	Lunch	Dinner
Monday	Orange Juice Ready-to-eat cereal Toasted English muffin 1% lowfat milk	Turkey patties Hamburger bun Orange juice Coleslaw 1% lowfat milk	Beef-noodle casserole Lima beans Banana orange salad 1% lowfat milk
Tuesday	Orange Juice Banana Bagel Margarine 1% lowfat milk	Crispy chicken Potato salad Orange gelatin salad Peaches Rice pudding	Turkey stir fry Steamed rice White bread Peach-apple crisp 1% lowfat milk
Wednesday	Orange Juice Cooked rice cereal Bagel Margarine	Turkey chili Macaroni Peach-apple crisp 1% lowfat milk Orange juice	Baked cod with cheese Scalloped potatoes Spinach Margarine Chocolate pudding
Thursday	Orange Juice Scrambled Eggs Hash brown potatoes 1% lowfat milk	Turkey ham sandwiches w/ salad dressing Baked beans Banana slices Oatmeal cookies Orange juice 1% lowfat milk	Beef pot roast Noodles Peas and carrots Orange slices Biscuits Margarine Rice pudding 1% lowfat milk
Friday	Orange Juice Ready-to-eat cereal Toasted English muffin Margarine 1% lowfat milk	Potato soup Snack crackers Tuna pasta salad Orange slices Oatmeal cookies 1% lowfat milk	Beef pot roast Noodles Green beans Leaf lettuce w/ dressing Rice pudding 1% lowfat milk
Saturday	Orange Juice Baked French toast w/ cinnamon sugar topping 1% lowfat milk	Potato soup Snack crackers Apple, orange slices Rice pudding 1% lowfat milk	Saucy beef pasta White bread Canned pears Orange juice 1% lowfat milk
Sunday	Orange juice Baked potato cakes White toast 1% lowfat milk	Baked fish sandwiches Crispy potatoes Macaroni salad Melon Orange juice 1% lowfat milk	Turkey-cabbage casserole Orange slices White bread Chickpea dip 1% lowfat milk

Appendix 2: Thrifty Food Plan Inventory of Grocery Items

Fruit-Fresh

Apples
Bananas
Grapes
Melon
Oranges

Vegetables-Fresh

Carrots
Celery
Green Pepper
Lettuce, leaf
Onions, yellow
Tomatoes
Potatoes

Fruit-Canned

Oranges, Mandarin
Peaches, any variety

Vegetables-Canned

Mushrooms, pieces
Spaghetti sauce
Tomato sauce

Fruits and Vegetables-Frozen

Orange juice, concentrate
Broccoli, chopped
Green beans
Green peas
French fries

Breads, Cereals, and Other

Grain Products

Bread, white
Bread, whole wheat
Hamburger buns
Rolls, dinner
French or Italian bread
Bagels
Bread crumbs, plain

Breads, Cereals, and Other

Grain Products-Dry

Ready-to-eat cereal, corn flakes
Ready-to-eat cereal, toasted oats
Flour, white, all-purpose
Macaroni, elbow-style
Noodles, yolk-free
Popcorn, microwave, any variety
Rice
Spaghetti, any variety

Dairy Products-Fresh

Milk, 1%, low fat
Milk, whole
Cheese, cheddar
Cheese, cottage
Cheese, mozzarella

Dairy Products-Canned

Evaporated milk

Meat and Meat Alternatives-Fresh

Beef, ground, lean
Chicken, fryer, cut-up
Chicken, thighs
Turkey ground
Pork, ground
Turkey ham
Eggs, grade A, large

Meat and Meat Alternatives-Frozen and Canned

Fish, flounder or cod, frozen
Tuna fish, chunk-style, water packed
Beans, garbanzo (chick peas)
Beans, kidney, canned
Beans, baked, vegetarian

Fats and Oils

Margarine, stick
Shortening, vegetable
Salad dressing, mayonnaise-type
Vegetable oil, any type

Sugars and Sweets

Sugar, brown
Sugar, powdered
Sugar, white, granulated
Jelly, grape
Molasses, any type
Pancake syrup
Chocolate chips, semi-sweet
Fruit drink
Fudgesicles

Other Food Items

Baking powder
Baking soda
Chile powder
Cinnamon
Cumin
Onion powder
Garlic powder
Italian herb seasoning
Oregano
Paprika
Black pepper
Salt
Vanilla
Chicken bouillon
Catsup
Soy sauce
Lemon juice
Gelatin
Chocolate drink mix

Appendix 3. Social Ecological Levels of Recommended Food Systems Actions

Using the "Food Systems Actions at Multiple Levels Using the Social Ecological Model" chart from the DeKalb County Board of Health (2007), this table summarizes recommended actions, beginning with individual level change and culminating with societal change. All recommended actions aim to improve food availability, access and cost--and ultimately, nutritional health status.

Social Ecological Level	Recommended Actions
Individual	<ul style="list-style-type: none"> • Survey residents about their shopping preferences, shopping patterns, and home production. • Offer skill-building opportunities for residents on healthy food shopping, “grocery tours,” and easy gardening projects.
Interpersonal	<ul style="list-style-type: none"> • Survey residents about their shopping patterns and home production for their households. • Offer skill-building opportunities on family or cooperative community gardening.
Organizational	<ul style="list-style-type: none"> • Engage managers of larger groceries and supermarkets in issues surrounding local food supply. • Ask local organizations and businesses to donate use of transportation vehicles for grocery bus concept (e.g., faith groups with vans).
Community	<ul style="list-style-type: none"> • Advocate for local policies that support community gardens, produce stands, and other community supported agriculture. • Work with community partners to sponsor healthy food events at the grocers (e.g., sample menus with food demonstrations).
Society	<ul style="list-style-type: none"> • Advocate for state and federal policies that support local food production and access to healthy food sources. • Promote key messages through social marketing strategies (television, print, radio, and other media).

Appendix 4: Further Reading

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