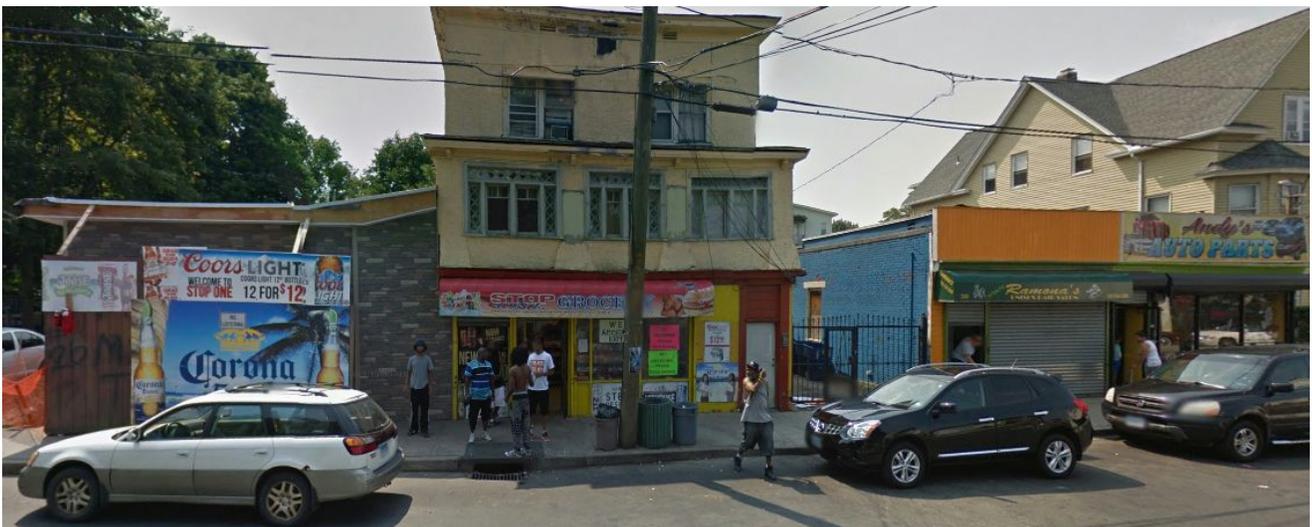


FOOD DESERTS IN THE BRASS CITY

A STUDY OF ACCESS TO HEALTHY
FOOD OPTIONS IN WATERBURY'S NORTH END



January 2016

UConn | WATERBURY
URBAN & COMMUNITY STUDIES

This report was completed in January 2016 as a collaboration between students in the course GEOG 4200 - Geographical Analysis of Urban Social Issues at UConn-Waterbury. Supervisory and editorial assistance was provided by Phil Birge-Liberman, Ph.D., Assistant Professor in Residence, Urban & Community Studies program. Students include: Shpetime Dalipi, Michael DiGirolamo, Tina Fields, John McDonald, Linnette Mendoza, Shawn Murray, Thomas Perez, Donato Pesce, Heather Price, and Mariama Rashadeen.

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Introduction

Not all Americans enjoy equal opportunity when it comes to meeting their dietary needs. In areas of concentrated poverty, residents often live in a “food desert” where they have limited access to affordable, healthy food options. A diet high in processed foods and low in fresh fruits and vegetables may result in many negative health outcomes, including obesity and obesity-related medical conditions such as diabetes, heart disease, cancer, arthritis, stroke, and hypertension.¹ A disproportionate increase in obesity rates has been reported for children living in poverty.² This is a situation with a number of social, physical, psychological and economic implications. As an overwhelming number of low-income residents are minorities, a state of racial, as well as socioeconomic, inequity exists. The term “food desert” has become a commonly used idiom in recent years, and describes a phenomenon that is experienced by a large number of disadvantaged Americans.

Food deserts, as defined by the US Department of Agriculture, are low-income urban neighborhoods (and rural towns) without ready access to fresh, healthy, and affordable food. Instead of full-service supermarkets, these communities are served by small grocery stores, fast food restaurants and convenience stores that offer residents few healthy, affordable food options. Studies indicate that this lack of access contributes to a poor diet, which can lead to higher levels of obesity and other diet-related diseases, such as diabetes and heart disease.³ Residents shopping in disadvantaged neighborhoods have higher BMIs than those not shopping there and, therefore, the socioeconomic status of a neighborhood can serve as a proxy for the quality of retail food options.⁴

Smaller retail food establishments, like corner stores, sell limited quantities of fresh produce and other healthy food options. Product availability in small grocery stores is substantially lower than in full-service supermarkets, and that selection is even more limited in corner stores. In addition to availability, cost is another variable affecting access to healthy food options. Supermarkets, operate at an economy of scale that allows them to offer lower prices than corner stores. The greatest barriers to obtaining healthy food in poorer areas, therefore, are the availability and affordability of healthy food options.⁵

The social justice implications of food deserts are reflected in the significant racial disparities that exist in terms of access to healthy food options. Supermarkets are four times more likely to be located in predominantly white neighborhoods than in predominantly black neighborhoods.⁶ One study of Detroit residents, determined that black residents lived, on average, one mile further from a supermarket than similarly impoverished white

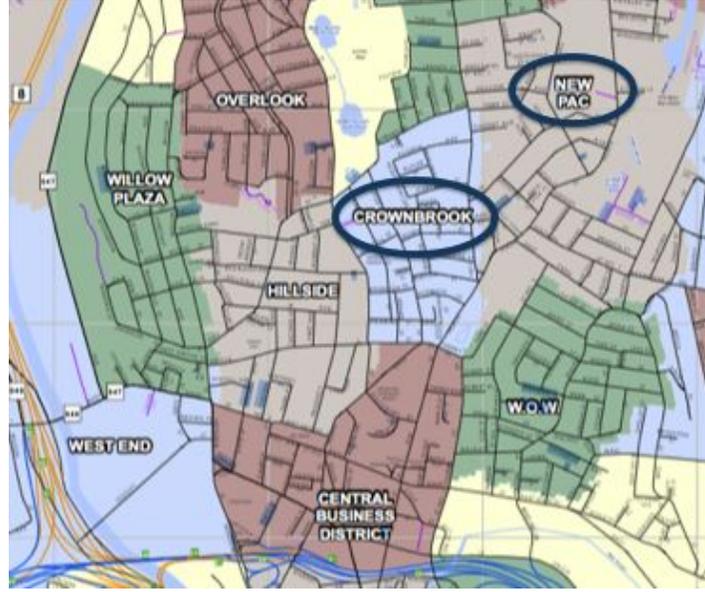


Figure 1. Map of Crownbrook and Newpac in relation to the CBD.
Source: City of Waterbury GIS.

residents.⁷ The negative health outcomes of a poor diet are also disproportionately distributed. Obesity and obesity-related medical conditions have a greater prevalence among people of color than white residents.⁸ Therefore, addressing the issue of food deserts is a public health issue *and* a social justice issue.

The Crownbrook and Newpac neighborhoods of Waterbury, Connecticut are the focus of this community food assessment. These neighborhoods lie just north of the downtown area, and are characterized by an abundance of corner stores (Figure 1). An important part of this assessment is gathering information about the existing conditions in the food system and forming a plan of action. This assessment aims to answer the questions, “What are the characteristics of the retail food environment of Crownbrook and Newpac?”, “What are the food-related perceptions, habits, and attitudes of neighborhood residents?” and “What and where are the greatest deficiencies found, and how might they be remedied?” Therefore, the information in this assessment can be used to help form policies, aid in decision-making, develop broader awareness and partnerships needed to facilitate community change, and improve resident access to healthy, affordable food options.

Community Profile

Waterbury is located in northern New Haven County, Connecticut. The Crownbrook and Newpac neighborhoods are located north of the historic district in downtown Waterbury. These North End neighborhoods once

Demographic Characteristics	Crownbrook & Newpac	Demographic Characteristics	Crownbrook & Newpac
Total Population	7,815	% White alone	21.9
% Male	45.9	% 2+ races/ethnicities	17.6
% Female	54.1	Median household income	\$17,974
% Black	36.5	% Below poverty level	38.2
% Hispanic (of any race)	41.3	% Under 18 in poverty	60.0

Table 1. Demographic Characteristics of the Crownbrook and Newpac neighborhoods in Waterbury’s North End. Source: U.S. Census Bureau, 2013 American Community Survey 5-year estimate.

contained the factories and mills associated with the city’s brass and clock manufacturing. Once the center of Italian immigration in the city as migrants came to work in the mills, since the 1970s, as the mills closed and white flight took place, the community has become home to increasing African American and Hispanic populations. These North End neighborhoods are two of the poorest in the city. The unemployment rate is 18.2 percent and nearly forty percent of residents live in poverty (including 60 percent of children). Forty-one percent of residents spend more than half of their household income on rent, leaving little left for other necessities like food, medicine, heating, and electricity; the median gross rent as percent of income is 45.4 percent.⁹ The median household income is slightly less than \$18,000 (Table 1). For comparison, the Connecticut Department of Labor estimated that the unemployment rate for the city of Waterbury and state of Connecticut is 7.9 percent and 4.8 percent, respectively; the 2009-2013 estimates from the U.S. Census Bureau indicate that the median household income for the city of Waterbury and the state of Connecticut is \$40,639 and \$69,461, respectively.

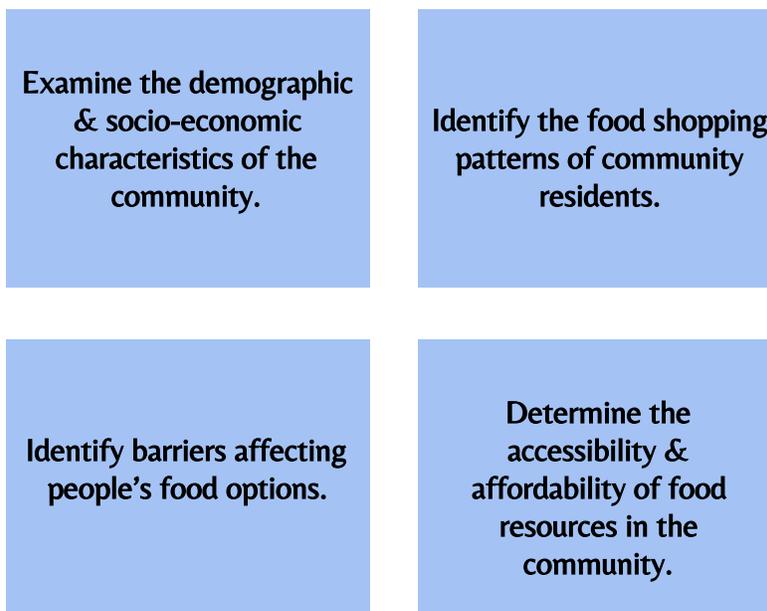
North End Community Food Assessment

This assessment was carried out by Urban & Community Studies students enrolled in GEOG 4200-Geographical Analysis of Urban Social Issues. This course was designed as a service learning course at the University of Connecticut-Waterbury. According to the Carnegie Foundation: *“Service Learning is a teaching and learning strategy that integrates meaningful community service with instruction and reflection to enrich the learning experience, teach civic responsibility, and strengthen communities”*. This is the definition that UConn has adopted to guide its community engagement via service learning. Service Learning can take many forms, and, in this course, students assessed access to healthy food options in the Crownbrook and Newpac neighborhoods in Waterbury’s North End.

This assessment was modelled on the USDA’s *Community Food Security Assessment Toolkit*. This guide “provides a toolkit of standardized measurement tools for assessing various aspects of community food security.”¹⁰ Following this model helps to characterize the retail food options in the community, inform the setting of goals to improve the food options for residents, and inform decision-making about policies and actions to improve community food security.

COMMUNITY FOOD ASSESSMENT GOALS

This assessment has the following four goals:



DATA COLLECTION

The strategies chosen to collect data about access to food, shopping patterns, affordability of food, and barriers impacting food choices include:

- Compiling a community profile based on existing demographic data.
- Conducting community food surveys and interviews with residents to identify food shopping patterns as well as barriers to healthy food options.
- Conducting a market basket analysis to compare cost and availability of staple foods in the community.

RESULTS & ANALYSIS

Access to healthy food is essential to a community's healthy diet and overall well-being. Food selections are influenced by individual decisions and learned behaviors, but social, economic, and environmental factors can also impact how people make food selections in their daily lives. Factors such as income, living situations, employment and working conditions, physical environment, access to transportation, and social support can affect access to healthy foods. This section identifies a number of key findings in the community food assessment in Waterbury's North End.

Of those surveyed:

- 61.4% indicated that it was difficult to buy fruits and vegetables in their neighborhood.
- 63.6% felt that a corner store was the only place to buy food in their neighborhood.
- 61.4% believed that their neighborhood did not have the best food stores in the city.
- 68.2% preferred not to shop in their neighborhood.
- 61.4% believed it was easy to purchase tobacco/alcohol products.
- 43.2% indicated that the corner stores in their neighborhood sold old, outdated, or rotten products.
- 86.4% felt that the prices in the local corner stores were too high.
- 50% believed that their family ate balanced meals.

Price comparisons:

- Healthy food options are more expensive in the community's corner stores than in the nearest full-service supermarket. In some cases prices were as little as 21% higher, and as much as 566% higher.

One part of the community food assessment was an 8-item survey that would help determine the food-related attitudes, habits, and perceptions of the residents of the North End. The survey also sought to identify barriers that limited access to healthy food options. The surveys were administered via door-to-door canvassing during the early afternoon hours. Additional surveys were administered via convenience sampling methods which used the networks provided by community organizations and social service agencies. A total of 44 surveys were administered. This is a small sample size given the total populations of Crownbrook and Newpac (7,815), but sufficient to present a general idea of how residents feel about the retail food options in their community.

Demographically, the distribution of survey respondents did not drastically differ from the overall composition of the community. There were significantly more female than male respondents. All adult-age ranges were

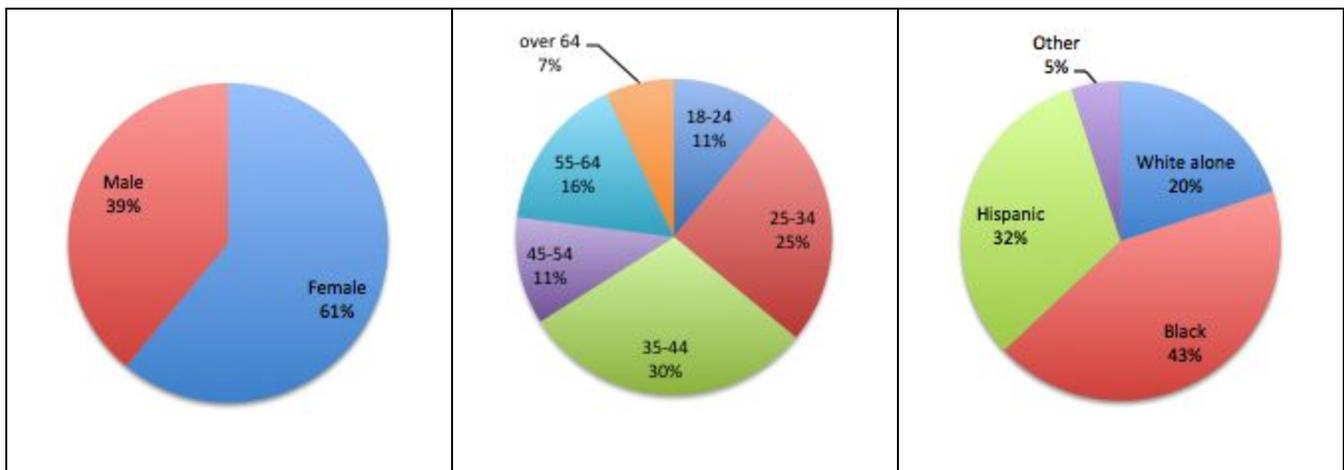


Figure 2. Number of respondents to the survey by gender, age, and race/ethnicity.

represented in the survey sample, but the majority of respondents were between the ages of 25 and 44. This is in line with the U.S. Census Bureau's ACS 2013 5-year estimates which indicate that the majority of Crownbrook and New PAC residents are between the ages of 25 and 44. The sample was racially diverse, even if the distribution did not conform to the total population. While Hispanic residents make up the largest racial/ethnic group in the total population, they were the second largest group of respondents (31.8%). The largest group of respondents were Black residents (43.2%), with White residents (20.5) rounding out the sample (Figure 2). The survey findings indicate an average household size of 3.08, slightly more than the ACS average for both neighborhoods (2.96).

The survey included 8 items and employed a 5-point Likert scale: 5=Strongly Agree, 4=Agree, 3=Undecided, 2=Disagree, 1=Strongly Disagree. In addition acquiring basic demographic information, like gender, age range, household size, etc., the eight items were meant to provide insight into the food-related attitudes, values, and perceptions of the community (Figures 3 & 4).

The results of these surveys indicate that the residents in the North End lack access to affordable healthy food options. The retail food environment of this working class community is dominated by expensive corner stores which do not offer many fruits or vegetables, often sell tobacco and alcohol products, and sometimes sell old, outdated or rotten products. The majority of residents in the community are people of color and/or women. Nearly 40 percent of the residents (including 60 percent of all children) live in poverty, and lacking transportation, rely heavily on corner stores to make food purchases, which eats up what little income they have left after rent. This lack of access to fresh, affordable healthy foods is a social justice issues that needs to be

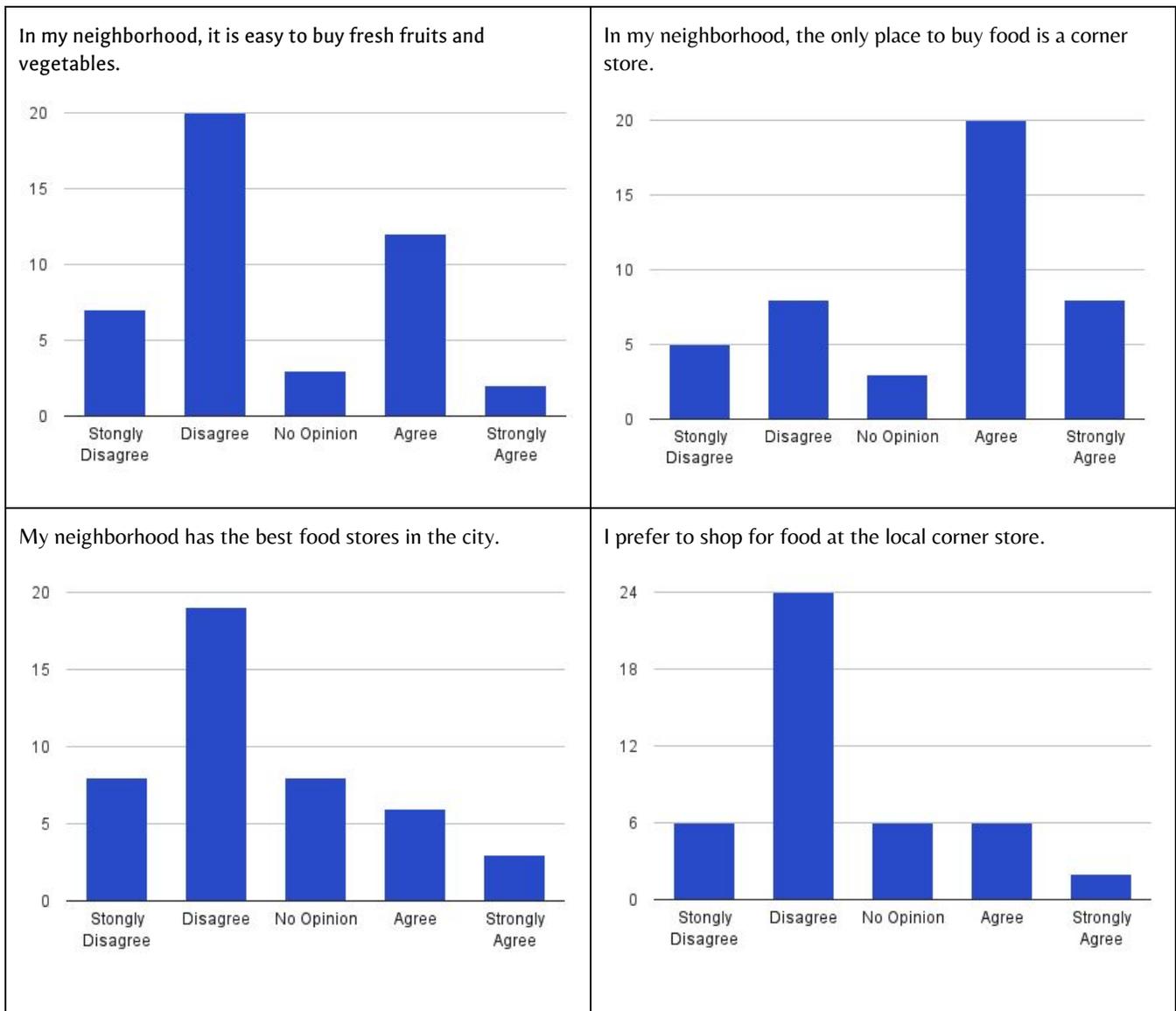


Figure 3. Community perceptions related to healthy food option.

addressed. Food availability and affordability are the two primary factors affected access to healthy food options, but there are several secondary factors, including: transportation, culture and values, and marketing and advertising.

Food Availability

Diets rich in fruits and vegetables (and other healthy food options like whole grains) offer numerous health benefits. The results of this food assessment indicate that residents make many of their food purchases in corner

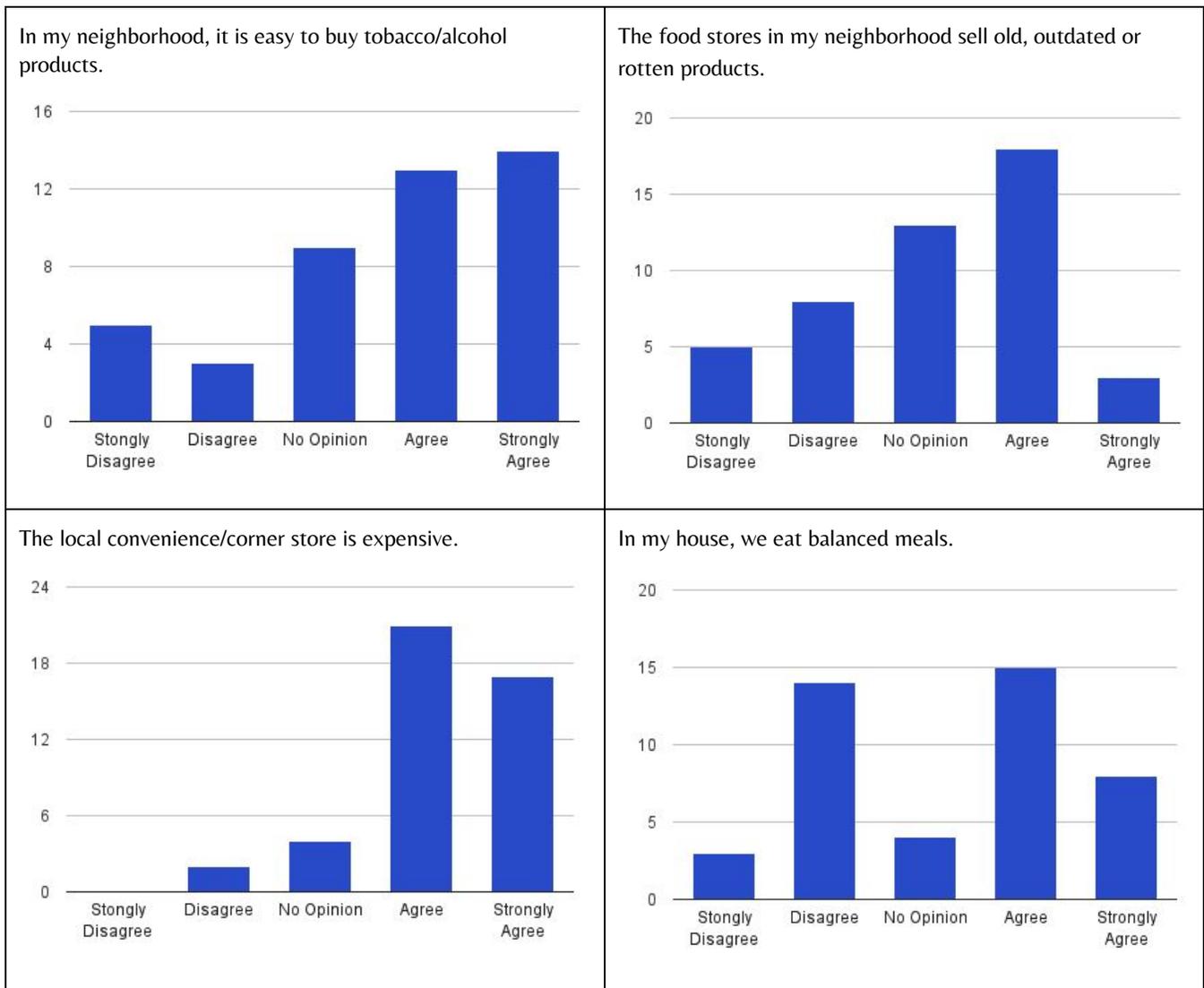


Figure 4. Community perceptions related to healthy food options.

stores, which stock relatively low amounts of fruits and vegetables. More than 70% of survey respondents preferred to not shop in their local corner stores, but did shop in these stores due mainly to convenience and the distance to larger full-service markets. These corner stores stock significantly less healthy food than full-service markets. The market basket analysis of community food options compared the availability of staple food items in the nearest full-service supermarket (Super Stop & Shop on Chase Ave.) and in nine corner stores in the neighborhood. The analysis revealed that of the nine stores:

- Six did not sell 6 oz. cups of yogurt (without granola, candy, etc.).
- Five did not sell 8-16 oz. packages of sliced American cheese.

- None sold plain tofu.
- Four did not sell 5 oz. cans of chunk light tuna in water.
- Seven did not sell fresh oranges.
- Eight did not sell fresh apples.
- None sold frozen strawberries with no added sweeteners.
- None sold frozen peas.
- Four did not sell canned peaches packed in water or fruit juice.
- None sold baby carrots.
- None sold fresh green peppers.
- Seven did not sell fresh onions.
- Only one sold a loaf of 100% whole wheat bread.
- Six did not sell whole wheat tortillas.

Increasing the food selections in corner stores will increase the community's access to healthy food options. But since the prices of fresh and healthy food options are higher in these stores, affordability becomes as important as availability.

Food Affordability

Food affordability constrains an individual's ability to purchase healthy foods. The residents of Crownbrook and Newpac have a median household income of nearly \$18,000. Forty-one percent of residents in these neighborhoods spend more than half of their household income on rent, leaving little left for food. Lacking access to full-service supermarkets, lower income residents rely heavily on corner stores for their food purchases (Table 2). Corner stores lack the economy of scale of the larger, full-service supermarkets and therefore residents spend what little income they have left after paying rent on higher retail food prices. More than 85 percent of those surveyed believe that the prices in their corner stores are too high. This supports the academic literature where the findings indicate that that prices are higher in almost all aspects in stores located in working class neighborhoods.¹⁰ These findings suggest that access to healthy food is not limited to geographic factors, but also to non-spatial variables such as food availability and affordability.

Transportation

Transportation plays a key role in the community's access to fresh, healthy and affordable foods. Those with access to automobiles have the ability to make trips to large, full-service supermarkets (i.e., Super Stop & Shop,

Product	Price at full-service market	Food affordability at corner stores ¹²
1 dozen eggs	\$2.99	<ul style="list-style-type: none"> ■ 5 stores sold eggs at the same price ■ 1 store sold eggs at a lower price (\$2.89) ■ highest price was \$3.97 (33% higher than full-service supermarket)
1 gallon of 2% milk	\$3.69	<ul style="list-style-type: none"> ■ mean price = \$4.48 (21% higher)
half gallon (64 oz.) 100% apple juice	\$2.50	<ul style="list-style-type: none"> ■ mean price = \$3.99 (60% higher)
half gallon (64 oz.) 100% orange juice	\$2.39	<ul style="list-style-type: none"> ■ mean price = \$4.19 (75% higher)
navel oranges	\$1.00/ea.	<ul style="list-style-type: none"> ■ sold in 2 stores, each at \$1.99 each (100% higher)
red delicious apples	\$1.49/lb.	<ul style="list-style-type: none"> ■ sold in only 1 store, at \$1.99 each ■ assuming 3 medium apples per pound, the store sold apples at \$5.97/pound (300% percent higher)
onions	\$1.49/lb.	<ul style="list-style-type: none"> ■ sold in 3 stores, & each priced onions at \$2.50 each ■ assuming 4 onions per pound, the store sold onions at \$10/pound (566% higher)
16 oz. bag dry black beans	\$0.69	<ul style="list-style-type: none"> ■ mean price = \$2.13 (207% higher)
14 oz. can black beans	\$0.79	<ul style="list-style-type: none"> ■ mean price = \$1.46 (85% higher)
14-16 oz. bag of brown rice	\$1.09	<ul style="list-style-type: none"> ■ mean price = \$2.08 (91% higher)
16 oz. whole wheat tortillas	\$1.99	<ul style="list-style-type: none"> ■ sold in 3 stores, & each was priced at \$2.99 (50% higher)
1 loaf whole wheat bread	\$1.99	<ul style="list-style-type: none"> ■ sold in only 1 store, at \$2.99 (50% higher)
1 loaf white bread	\$0.99	<ul style="list-style-type: none"> ■ mean price = \$2.13 (145% higher)
5 oz. canned chunk light tuna (in water)	\$1.29	<ul style="list-style-type: none"> ■ mean price = \$1.59 (23% higher)

Table 2. Selected food affordability at corner stores.

Walmart, Costco) located outside the neighborhood. All of the five residents who were interviewed about their shopping patterns and barriers to healthy food options expressed that they do shop at these full-service supermarkets once or twice per month because they felt that these stores sold better quality food. However, they all supplemented this with numerous trips to corner stores (usually 2-4 trips per week, but one resident stated that she makes up to 20 trips per week).

Those with lesser means and rely on public transport access to these supermarkets is restricted. One resident stated that he visits the corner store near his home a bit more frequently because he does not have a car making a trip to the Super Stop & Shop more difficult. He also expressed discontent with the inconvenient bus schedule--if he misses a bus he has to wait an hour for the next one. Improving transportation options can improve the community's access to healthy and affordable foods.

Culture & Values

Cultural and familial values impact knowledge of healthy eating behaviors and the purchasing of food. Some residents of the community do not purchase healthy foods because they require more work to prepare or they do not know what to make with them. Working families are strapped for time and it is often easier to prepare the pre-packaged, and heavily processed, foods they are familiar with. One resident admitted to buying fast food at least three times per week: *"It is more convenient, cheaper and easier to get food at the corner store and fast food restaurants than going all the way to the supermarket and having to go home and cook a meal...After cooking, it will take me even a longer amount of time to have to clean up the kitchen, help my kids with homework and prepare for another work day."* When asked whether they would prepare healthier meals if they had better access to fresh fruits and vegetables, one resident stated that buying fresh vegetables and fruits was just too expensive. Shelf life was also another concern: *"You spend so much money on the vegetables and if you don't prepare them fast then they get bad. I just can't afford that."*

Marketing & Advertising

Leaving aside the amount of tobacco and alcohol advertising in corner stores, these retail outlets market unhealthy foods that are highly processed and are high in sugar, sodium, and fats to children and adults. Agri-businesses rely heavily on subsidies and incentives to produce large quantities of corn and soy products, with which food processors produce vast quantities of cheap food products. Shelves of relatively inexpensive chips, cookies, and sugary drinks manipulate buyers by appealing to basest desires of sweet and salty foods. A more appropriate term for areas such as this, might be "food swamps" where relatively large amounts of convenient, cheap, energy-dense foods vastly outnumber healthy food options.¹³ Eating these processed foods may be more inexpensive in the short-term, but there are enormous long-term costs and consequences associated with a lack of healthy food options.

Policy Implications

Corner stores have the potential to act as important vehicles for residents seeking healthy foods. One study of corner stores in Hartford, revealed a positive correlation between the variety of fruits and vegetables and the probability that a customer purchases fruits and vegetables. Therefore, encouraging corner store owners to increase the selection of fresh produce may increase their consumption by low-income residents.¹⁴ A “Healthy Corner Stores” program, a partnership of local community organization, Waterbury’s Health Department, and store owners that aims to make fresh produce more available, affordable, and appealing to customers, can work to increase the inventory and visibility of fresh produce, the quality of fresh produce, store owners’ knowledge about handling and marketing fresh produce, and fresh produce sales in local corner stores.¹⁵ There are various initiatives that such a partnership could engage in to promote healthy eating and increase fresh produce sales and consumption, including:

- Highlighting fresh produce by moving it to the front of the store.
- Arranging fresh produce in “grab-&-go” kiosks or baskets near the cash register.
- Highlighting healthy food options with displays and taste-testing samples.
- Advertising fresh produce near the store entrance.
- Listing the prices on (or on the shelf in front of) the items.
- Providing in-store nutrition lessons.
- Providing cooking demonstrations to teach customers how to cook with new ingredients.
- Providing health screenings in corner stores.
- Providing 1-on-1 technical assistance to store owners regarding handling and marketing of fresh produce.

Store owners may express some reluctance to convert shelf space from unhealthy food options to fresh produce and other healthier option. Owners of converted stores identify several barriers that must be addressed, including consumer demand and a lack of space and refrigeration. Despite these barriers, numerous studies of converted stores indicate an overall increase in sales (and associated profits) of fresh produce and healthy food options.¹⁶

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11. Chung and Myers 1999; Liese *et al.* 2007.
12. The students gathered price data for 29 foods. Only the prices for 14 of the foods are reported here due to errors in collecting price data for some foods. The prices of foods that come in various sizes, Rice Crispies for example were not calculated on a per unit basis. So while a box of Rice Crispies sold for \$4.39 at Stop & Shop and ranged from \$2.00 to \$5.99 in the corner stores, it's not clear if these boxes were the same size. For example, the the box was 36 oz. at Stop & Shop and 24 oz. at corner stores, no comparison could be made.

13. See: Rose, *et al.*, 2009, “Deserts in New Orleans? Illustrations of urban food access and implications for policy” (retrieved from http://www.npc.umich.edu/news/events/food-access/rose_et_al.pdf, 21 Jan 2016); Michele Ver Ploeg, 2010, “Access to affordable, nutritious food is limited in food deserts” (retrieved from <http://www.ers.usda.gov/amber-waves/2010-march/access-to-affordable,-nutritious-food-is-limited-in-%E2%80%9Cfood-deserts%E2%80%9D.aspx#.VqERHFIX7XM>, 21 Jan 2016).
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Appendix A - Questionnaire



We are students in the Urban & Community Studies program at UConn Waterbury. As part of a class assignment we are examining the availability of fresh, healthy and affordable food in Waterbury’s north end. Below are a number of statements regarding food shopping options. Please read each one and indicate the extent to which you agree or disagree.

	1 Strongly Disagree	2 Disagree	3 No Opinion	4 Agree	5 Strongly Agree
1. In my neighborhood, it is easy to buy fresh fruits and vegetables.					
2. In my neighborhood, the only place to buy food is a convenience/corner store.					
3. My neighborhood has the best food stores in the city.					
4. I prefer to shop for food at the local convenience/corner store.					
5. In my neighborhood, it is easy to buy tobacco/alcohol products.					
6. The food stores in my neighborhood sell old, outdated or rotten products.					
7. The local convenience/corner store is expensive.					
8. In my house, we eat balanced meals.					

The following questions are for demographic purposes only. Please circle the appropriate response.

Gender: Male Female Trans

Age Range: 18-24 25-34 35-44 45-54 55-64 over 64

Race/Ethnicity: African American Hispanic/Latino White alone Other:_____

Number of people in your household: 1 2 3 4 5 6 7 or more

Number of children under 18 in your household: 1 2 3 4 5 6 or more

Do you make the food decisions for your household? Yes No Sometimes

Appendix B - Food Comparison List



Store Name: _____

Address: _____

FOOD	PRICE	SIZE	PRICE/UNIT	NOTES
Eggs - 1 doz. brown or white				
Milk - 1 gallon 2%				
Cheese - 1, 8-16 oz. block cheddar				
Cheese - 1, 8-16 oz. sliced American				
Yogurt - 1, 6 oz. cup (none w/granola, etc)				
Tofu - 14-16 oz. package plain				
Infant formula - 12.5 can of powdered formula				
Infant cereal - 8 oz. box of plain, dry cereal				
Cereal - 1 box 36 oz. or less (Rice Krispies, Corn Flakes, or Cheerios)				
Fruit juice - half gallon (64 oz.) 100% apple juice				
Fruit juice - half gallon (64 oz.) of 100% orange juice				
Fresh fruits - navel oranges				
Fresh fruits - red delicious apples				
Frozen fruits - strawberries (no added sweeteners)				

Canned fruits - peaches (packed in water or juice)				
Fresh vegetables - baby carrots				
Fresh vegetables - green peppers				
Fresh vegetables - onions				
Frozen vegetables - peas				
Canned vegetables - corn				
Bread/Grain - 1 loaf whole wheat bread				
Bread/Grain - 1 loaf white bread				
Bread/Grain - 16 oz. whole wheat tortillas				
Bread/Grain - 16 oz. tortillas				
Bread/Grain - 14-16 oz package brown rice				
Peanut butter - 18 oz. jar, smooth or chunky (unflavored)				
Beans - 16 oz. bag dry black beans				
Beans - 14 oz. can black beans				
Canned tuna - 5 oz can, chunk light in water/oil				