



Healthy Supermarket Initiative

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Executive Summary

The Healthy Supermarket Initiative aims to assess accessibility and affordability of a typical weekly “market basket” as defined by the USDA’s Thrifty Food Plan. A six-week field study of 34 supermarkets throughout Philadelphia yielded data that indicates various trends, including the average total price of the market basket and average availability of healthy items, organized by store size and planning district. The data highlight certain patterns that merit further research in order to gather a more concrete and robust portrait of food insecurity in Philadelphia

Background

Over the past two months, undergraduate and graduate school interns engaged in the Healthy Supermarket Pricing Project with the Department of Public Health. This project is a component of Get Healthy Philly, a citywide initiative to encourage “healthy, active, and smoke-free” lifestyles. Get Healthy Philly seeks to promote healthy behavior by targeting the education, retail, and healthcare sectors as well as worksites in Philadelphia. Various projects under the Get Healthy Philly umbrella include media initiatives, legislation and regulation, and built environment assessment. Within the retail sector, Get Healthy Philly aims to both decrease health risks – promoting smoke-free markets, posting tobacco warnings, etc – and increase healthy food options at outlets throughout the city. Specifically, our project assessed the accessibility and affordability of healthy foods in supermarkets. The Healthy Supermarket

Pricing Project is critical because it addresses a fundamental portion of the “Health Impact Pyramid” as established by Thomas Frieden in the American Journal of Public Health.¹By understanding what foods are available at what price points on Philadelphia neighborhoods, we hoped to begin to understand the context in which decisions about food are made.

Context: Drexel’s Center for Hunger-Free Communities

Food Insecurity, defined by Drexel University as the “limited or uncertain access to enough nutritious food for all household members to lead an active and healthy life,” affects many Philadelphia residents.² With the highest poverty rate and second highest obesity rate among the ten largest American cities, Philadelphia has a food insecurity and food access problem. Based on research from the United States Department of Agriculture’s Thrifty Food Plan and from Drexel University’s Center for Hunger-Free Communities, the Healthy Supermarket Pricing Project addresses food insecurity and access in Philadelphia. The Thrifty Food Plan (TFP), published in 2006, serves as a national standard for achieving a nutritious diet at minimal costs, thus influencing the maximum food stamp allotments.³ Realizing the influence of regional discrepancies on food prices, Drexel University’s Department of Public Health created the Center for Hunger-Free Communities to specifically research Philadelphia neighborhoods. The Center for Hunger-Free Communities released “The Real Cost of a Healthy Diet: 2011” to address the shortcomings and to add regional depth to the TFP by asking, is a healthy diet within reach for low-income families at neighborhood food stores in Philadelphia? The Drexel study explored the cost and availability of a healthy diet in various sized food stores in low-income neighborhoods, and then compared these to the TFP market basket and the

¹Thomas Frieden, “A Framework for Public Health Action: The Health Impact Pyramid,” *The American Journal of Public Health* 100 (2010): 591.

²Amanda B. Breen, Rachel Cahill, Stephanie Ettinger de Cuba, John Cook, Mariana Chilton, “The Real Cost of a Healthy Diet: 2011,” Drexel University Center for Hunger-Free Communities: 2.

³Andrea Carlson, Mark Lino, WenYen Juan, Kenneth Hanson, P. Peter Basiotis, “*Thrifty Food Plan, 2006*,” (CNPP-19), U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

maximum SNAP allotment for a family of four⁴. The Philadelphia Department of Public Health then used this information, as well as the 2010 Dietary Guidelines for Americans, to identify “priority health items” which were then recorded and analyzed based on geographic and socioeconomic data.

Methodology

Since the goal of the project was to gauge the accessibility of nutritious food for a family on SNAP, our method for pricing was to find the lowest possible price of each item. Theoretically, a family on SNAP would not use optimal healthiness or quality as their guiding shopping principle, instead dictating choice by affordability. Food items were categorized in accordance with the USDA's TFP, which is described as "a fundamental part of the U.S. food guidance system and the basis for maximum food stamp allotments."⁵ Such categories included fresh fruits and vegetables, pasta, and dairy among others.

Splitting into five groups of two, each pair of interns was originally tasked with visiting two supermarkets each Friday. When the list of 112 items proved too daunting a task to complete twice in the allotted time, we scaled back to one supermarket per group each week. The reduced workload allowed us to maintain thorough accuracy in our price gauging. In total, we visited 34 stores out of the total 132 in Philadelphia. Supermarkets were selected by our supervisors to cover various neighborhoods of the city. Each week found us in supermarkets that were largely clustered together, but varied in their accessibility via public transit. This presented a situation that is a reality for many families: how does one travel to and from a major food source?

While locating the lowest priced item became easier through experience, certain TFP guidelines proved difficult to abide by. The TFP offered target sizes for each item, but at times these sizes did not reflect what was available. For instance, the target of one pound cheese

⁴ Based on 2 adults (19 – 50 years old) and 2 children (one 6 – 8 years old and another 9 – 11 years old)

⁵ Andrea Carlson, Mark Lino, WenYen Juan, Kenneth Hanson, P. Peter Basiotis, “*Thrifty Food Plan, 2006*,” (CNPP-19), U.S. Department of Agriculture, Center for Nutrition Policy and Promotion.

wedges was rarely available, so we often had to settle for eight ounce wedges. Many low-fat items were also consistently unavailable. Tobacco availability was also gauged, as well as signage that advertised and warned about tobacco risks. Rather than price, however, tobacco information was recorded on a Yes/No basis.

After collecting all of the prices, each team recorded their gathered pricing information in an Excel file. In an effort to offer more subjective but illuminating observations, each store was described in a blog post to which everyone in the group had access. Before beginning data collection each week, the subsequent Fridays were used as meetings for us to share our experiences of the previous week's stores. Here we expressed what surprised us as well as what frustrated us about the widely variable quality of supermarkets across the city. With all of the information collected, we were able to calculate the total price of each store's Market Basket, or the total expenditures for a family of four. We then examined the varying Market Basket totals alongside neighborhood demographic data as well as predetermined categories that grouped supermarkets according to their yearly profits.

Results

The table below outlines the total basket cost for the 34 stores visited during the summer. These basket prices are the weekly cost of food the TFP indicates a family should eat in order to be considered "healthy eaters." Also listed are the total items missing at each store, out of a possible 112, and the key healthy items missing, out of a total 55.

Table 1. Annual Sales Size, Planning District, Total Basket Price, and Missing Items Total for All Stores

Store ID#	Store Category (based on annual sales)	Planning District	Total Basket Price	Total Items Missing	Healthy Items Missing
1	2	South	\$123.09	22	13
2	2	University/Southwest	\$152.75	29	16
3	2	Central	\$261.44	45	16
4	2	South	\$152.36	56	28
5	2	South	\$147.61	71	31
6	2	West	\$138.36	19	12
7	2	South	\$124.90	24	16
8	2	University/Southwest	\$156.69	7	4
9	2	North	\$197.47	11	7
10	3	Upper North	\$148.26	17	12
11	3	Lower North	\$184.77	9	5
12	3	Lower North	\$165.10	10	7
13	3	West	\$169.99	43	26
14	3	North	\$168.65	43	22
15	3	Upper North	\$162.97	52	28
16	3	South	\$155.07	33	17
17	3	River Wards	\$141.10	29	14
18	3	Central	\$178.62	19	9
19	4	South	\$204.86	9	5
20	4	South	\$159.94	5	5
21	4	West	\$207.10	7	5
22	4	River Wards	\$172.67	8	4
23	4	North	\$219.11	5	2
24	4	South	\$204.86	5	3
25	4	South	\$183.73	6	4
26	4	South	\$162.12	10	4
27	4	Central	\$186.94	5	2
28	4	Central	\$199.23	32	14
29	5	River Wards	\$230.43	15	7
30	5	River Wards	\$188.67	9	4
31	5	Central	\$190.09	13	5
32	5	South	\$254.37	19	8
33	5	South	\$194.61	14	9
34	5	South	\$162.55	10	5

The average cost of the market basket for all of the supermarkets was \$177.96 per week for a family of four. The lowest cost was \$123.09 at Store 1, which was \$138.35 less than the

highest priced basket, which was \$261.44 at Store 3. These values can be compared with the national average, calculated in May 2012 to be \$144.50.⁶

For missing items, the numbers ranged from small quantities of items missing to a substantial amount of unavailable foods, such as at Store 5, where 71 of 112 items on the TFP were missing. These numbers become more alarming when one considers the number of priority healthy items that were missing. Store 27 was only missing 2 priority healthy items, but many more stores were missing more than 10 priority healthy foods, out of a total of 55 items. That means that many stores were missing more than 20% of their “healthiest” foods as identified by our project supervisors. On average, stores lacked 21 items total and 11 healthy items.

Below highlights the average, minimum, and maximum prices for each food sub-category, which include fresh fruits, fresh vegetables, meats, chicken, grains, and dairy products, among others.

Table 2. Average, Minimum, and Maximum Prices for Sub-Categories

Sub-Category	Average	Minimum	Maximum
Fresh Fruit	\$27.09	\$12.30	\$50.94
Fresh Veggies	\$19.34	\$10.72	\$39.90
Canned Fruit	\$4.07	\$2.18	\$6.45
Canned Veggies	\$6.20	\$3.76	\$12.33
Frozen Fruits & Veggies	\$25.18	\$10.14	\$43.64
Breads, Cereals, and Others	\$10.19	\$6.20	\$19.52
Whole Grain Cereals	\$1.90	\$1.00	\$4.08
Pasta, Rice, and Other Grain	\$9.58	\$6.21	\$33.10
Popcorn	\$0.73	\$0.31	\$1.13
Dairy	\$25.42	\$20.95	\$34.42
Beans	\$2.99	\$1.96	\$4.34
Beef & Pork	\$11.09	\$3.27	\$19.20
Chicken	\$8.85	\$4.38	\$24.39
Fish & Fish Products	\$14.34	\$4.73	\$30.60
Luncheon Meat	\$0.64	\$0.15	\$2.05
Eggs	\$1.02	\$0.57	\$1.73
Peanut Butter	\$3.57	\$2.07	\$6.30
Table Fats, Oils, Dressing	\$2.86	\$1.92	\$4.71
Sugars, Sweets, Candies	\$0.45	\$0.24	\$1.65
Soups	\$2.46	\$1.02	\$9.64

⁶ <http://www.cnpp.usda.gov/Publications/FoodPlans/2012/CostofFoodMay2012.pdf>

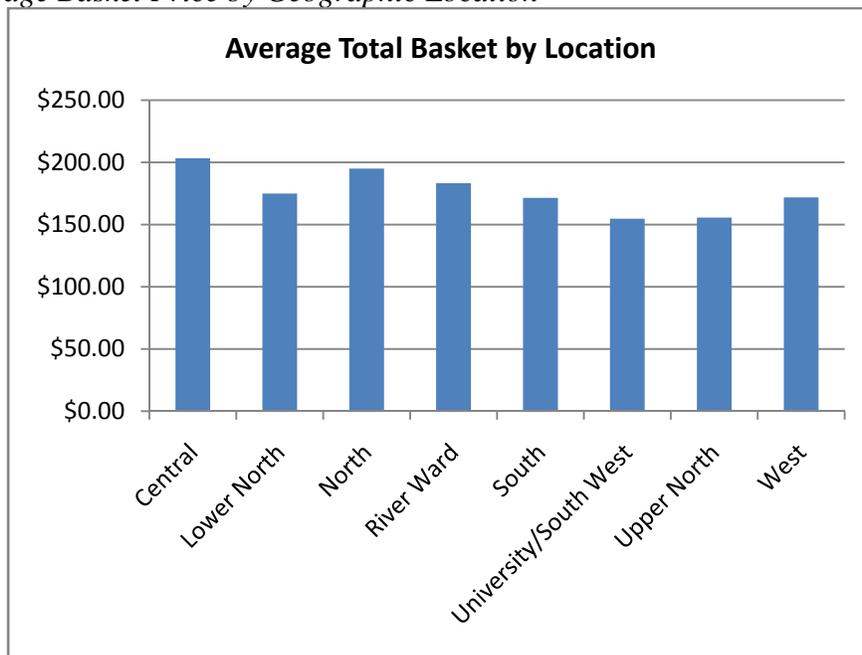
There are significant differences between stores even within the same sub-categories. For example, fresh fruit could cost \$12.30 up to \$50.94. Healthy options for fresh vegetables ranged from \$10.72 to \$39.90, another notable disparity. Frozen fruits and vegetables averaged about \$25.18, with a range of \$33.50. One of the largest differences in a sub-category of food was in fish products, which ranged in price from \$4.73 to \$30.60.

The following chart and two graphs disaggregate the data by planning district:

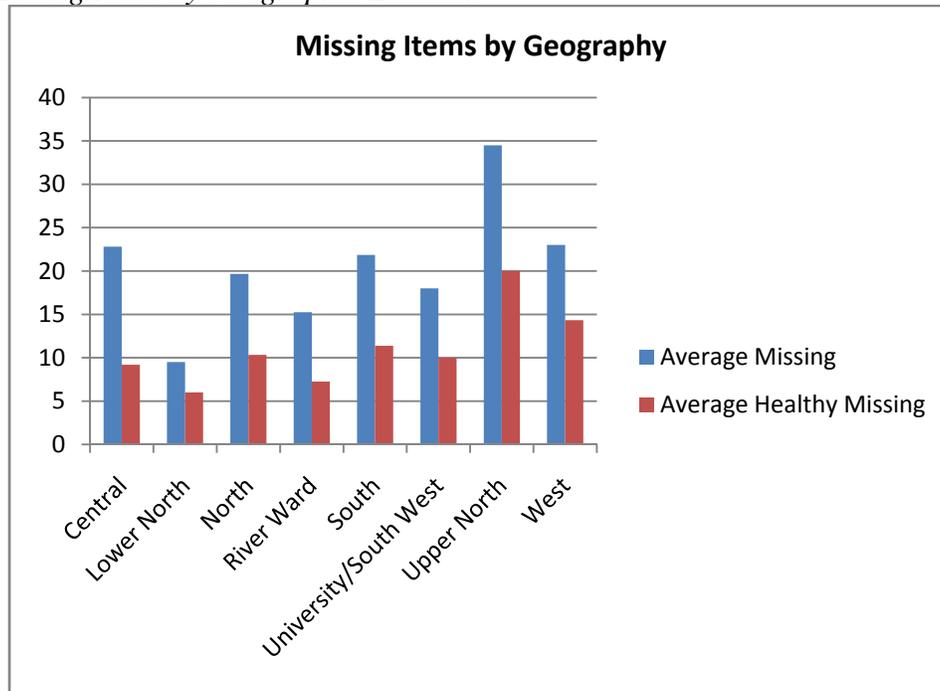
Table 3. Average Basket Cost and Missing Items Averages by Geographic Location

Planning District	Average Total Basket	Average Items Missing	Average Healthy Items Missing
Central	\$203.26	22.8	9.20
Lower North	\$174.94	9.50	6.00
North	\$195.08	19.67	10.33
River Ward	\$183.22	15.25	7.25
South	\$171.54	21.85	11.38
University/South West	\$154.72	18.00	10.00
Upper North	\$155.62	34.50	20.00
West	\$171.82	23.00	14.30

Graph 1. Average Basket Price by Geographic Location



Graph 2. Missing Items by Geographic Location



Center City had the most expensive basket at \$203.26, on average. University City/South West Philadelphia was the least expensive, with an average basket costing \$154.72. Lower North has the fewest total and healthy items missing, on average, with only 9.5 and 6 missing, respectively. Upper North, the second cheapest basket cost, had the most missing items and missing healthy items, 34.5 and 20, respectively.

Discussion

Before proceeding with the discussion, however, it must be reiterated that this study surveyed only 34 of the total 132 supermarkets in Philadelphia, and the number of stores visited was not consistent between districts. Therefore, some of the following claims must be further substantiated with additional research. The diagnoses, trends, and patterns articulated herein must always be placed in the context of the limited data pool. Nonetheless, in comparing supermarkets across eight planning districts in Philadelphia, there appeared to be patterns along geographic and socioeconomic lines. An examination of available demographic data for the Upper North planning district and the West planning district of Philadelphia reveals that these two areas have the highest populations of people of color (defined here as the following: Black,

Hispanic, and Asian citizens). The Upper North district is 79.8% Black, 8.7% Hispanic, and 6.0% Asian, while the West planning district's population is comprised of 92.8% Black residents, 2.3% Hispanic residents, and 1.0% Asian residents. Thus, the data not only displays a disproportionate amount of marginalized groups congregated in these two districts, but also that the majority is Black. Consequently, it must be acknowledged that this data points toward the history of racially inequitable urban practices in Philadelphia and, more broadly, in the United States, from red-lining districts in the 1950s to contemporary educational disparities.

Regardless of the controversial historical context, however, it is simply undeniable that these neighborhoods display higher concentrations of minority groups, in comparison to districts like Center City or the River Wards, with a White population of 70.1% and 71%, respectively. We noticed this while conducting our surveys in the Upper North and West neighborhoods, as documented in our project blog. In the case of the Upper North and West districts, these racial statistics can be compared with the fact that the supermarkets interns visited in these areas were missing the highest percentage of items on the TFP. In the Upper North district, the supermarkets that were surveyed lacked, on average, 34.5% of the items on our list (the highest of all the districts surveyed), and the West planning district supermarkets were missing 23% of the items (the second-highest percentage). This trend was consistent with the percentage of key healthy items missing from the supermarkets: an average of 20% of healthy items on our list were absent from stores in the Upper North (the highest statistic), while an average 14.33% of healthy foods could not be found in stores in the West district (the second-highest). The West planning district also has the second-highest percentage of people living at or below 200% of the federal poverty line (64.7%), which indicates that traveling to access healthy foods might be a financial hardship. Thus, these statistics may point to obstacles to food access in these neighborhoods that deserve to be further investigated, especially in the context of the startling and inequitable racial composition of these areas. Interns were only able to survey 2/9 supermarkets in the Upper North

district and 3/10 in the West district, however, so these trends may not be reliable; again, there is room for additional research to support or deny these claims.

Another notably problematic statistic was found when looking at the North Philadelphia planning district. According to demographic data, this area has the highest percentage (68.7%) of people living at or below 200% of the poverty line, as compared to all districts surveyed. The average total price of the market basket in this neighborhood, however, was the second-most expensive (\$195.08), coming in behind only the Central district (\$203.26). Such a disparity between the expensive market basket and financially insecure population paints a dire portrait of inaccessible food and economic hardship.

Furthermore, we noticed that the select supermarkets in Center City statistically had the highest amount of missing items; however, these grocery stores lacked fewer healthy items. These stores were also the most expensive with the total average market basket being \$203.26. With the lowest poverty rate in the city, a comparatively small 18.3%, Center City residents have higher expendable incomes, thus potentially explaining the high market basket price. Such Philadelphians are also probably more mobile due to their financial status, and thus would be capable and/or willing to travel to other neighborhoods to locate missing items. We can also infer that the high amount of missing items is due to deviations from the median categorization of food. For example, these stores offered many organic, soy, and vegan options that would not have been included in the TFP model.

In week five of our study, two groups went to two Asian supermarkets in the South Philadelphia area. The format of the TFP largely did not adhere to the cultural differences presented in these stores; thus, there were many missing items. These stores proved to be cultural outliers in defining what are and are not healthy, suggesting that while a median categorization of food may be efficient, and it does not always cover the food diversity of a city. These stores

had some of the most extensive produce sections in the city, as well as an emphasis on fresh fish and meat.

Soda

The team was also asked by Mayor Michael Nutter and the Get Healthy Philly staff to research other aspects of supermarkets, including soda and tobacco sales. Examining soda availability and prices in grocery stores showed problematic trends. The accessibility of soda is undeniable: 94% of the surveyed stores stocked soda, the same percentage that stocked oranges. Mirroring trends with other unhealthy foods, stores aggressively marketed soda products. In almost every store, soda was available in more than one location. Larger bottles typically were found in the “junk food” aisle, alongside chips, dips, and pretzels. Here, most stores offered standard two-liter bottles both brand name and generic; however, some stores only sold generic-brand soda in three-liter bottles. The three-liter bottles provide 50% more soda than the standard two-liter bottle and were usually cheaper than the two-liter, name-brand bottle.

Grocery stores also sold twenty-ounce, name-brand bottles at the end of each checkout aisle in small refrigerators. Additionally, some stores displayed sodas that were on sale at the beginning and end of aisles in displays known as “endcaps.” In fact, about 25% of the surveyed stores promoted soda products on sale, making the normally-expensive brand names more affordable and attainable purchases. Finally, soda is inexpensive in comparison to other, healthier foods. The refrigerated, brand-name bottles cost on average \$1.49 for 20 ounces, while the cheaper option - the two- or three-liter generic brand bottles in the “junk food” aisle or the on-sale brand-name bottles - cost on average \$1.29 for 75 ounces.

Tobacco

It is important to mention that the data collection on tobacco was conducted and recorded very differently in comparison to that of food collection. Firstly, no prices were recorded on any tobacco product, only the availability of that product in each grocery store. Since PA has a minimum price law and tax on cigarettes, but not on food, we were less concerned with

recording prices on cigarettes. Another important aspect observed with tobacco products was where they were located within the store and whether or not advertising was involved in order to increase sales. Out of 34 grocery stores that we went to, 50% of them sold cigarettes while all other tobacco products were seen only scarcely. And out of the 50% of stores selling tobacco, 100% of them kept tobacco products either behind the customer service counter or in a locked cabinet where accessibility was limited. Tobacco data was then assessed according to geography and store category. Unfortunately, a comparison of tobacco data by planning district is not reflective of all stores within that district because, as with the market basket survey, the number of stores we visited was not consistent from district to district. For example, interns visited only two out of nine supermarkets in the Upper North part of Philadelphia, both of which sold cigarettes. So, when data was compiled by district, the spreadsheet displayed that 100% of stores within the Upper North part of Philadelphia sold tobacco. Interns then visited 12 out of 15 stores in the South district, eight of which sold tobacco, which led to a calculated 66.7% of stores that sold tobacco within that region. A juxtaposition of these data points does not represent an accurate description of each region, and therefore the city, in terms of tobacco availability in supermarkets.

To take another extreme example, interns visited only three out of ten supermarkets within the West planning district, none of which sold any tobacco products. In looking at the Excel sheet then, it displays that 0% of stores within the West Philadelphia region sell tobacco, again not an accurate description of tobacco accessibility within this region.

In conclusion, though we did not have the time or resources to gather a complete data set, such information about tobacco availability is vital in determining the overall health of individuals in different neighborhoods.

Future Research

We have identified areas where improvements can be made in the methodology for collecting data and, more broadly, the necessity of increasing Philadelphians' purchasing powers. Firstly, disparities were observed between the ounces listed on a 2006 TFP Data Collection Sheet (TFPDCS) as opposed to the actual availability in supermarkets. In order to rid the sheet of these discrepancies, we recommend updating the TFPDCS to reflect current product selection in the year 2012. Secondly, it is crucial to note that a family of four would not purchase all the products listed within one specific food category. For example, it is unlikely that a family on SNAP would purchase both white and wheat bread or both whole-fat and low-fat cheddar cheese. This made the total market basket cost higher than it would typically be on a given week. Finally, we believe that certain unhealthy snacks, such as potato chips and cookies, should be added to reflect real choices that a family of a four makes when grocery shopping using the SNAP program. Such additional comparison points would provide information that shows the cost of choosing healthy options as opposed to unhealthy options within the constrictions of a SNAP budget.

In identifying ways in which to use this data in order to make changes to the greater Philadelphia region, we immediately thought of how SNAP and WIC could be affected. We believe that an important result of this study would be to reassess – and ultimately increase – the amount of money designated to families who receive these benefits. We understand that such an increase implicates enormous and complex government efforts, but prospectively, if these benefits were increased, families would be free to buy healthier food options that are often more expensive than their unhealthy counterparts. They would be free to lead healthier lives.



Healthy Supermarket Initiative

Wednesday, August 8, 2012

Background

- Thrifty Food Plan
- Get Healthy Philly Initiative
- Healthy Supermarket Pricing Project

Supermarkets Visited by Neighborhood

	Central	Lower North	North	River Wards	South	University/South West	Upper North	West
# of Supermarkets	12	11	15	7	15	6	9	10
# Visited	5	2	3	4	12	2	2	3
% of Supermarkets Visited	41.6%	18.2%	20%	57.1%	80%	33.3%	22.2%	30%

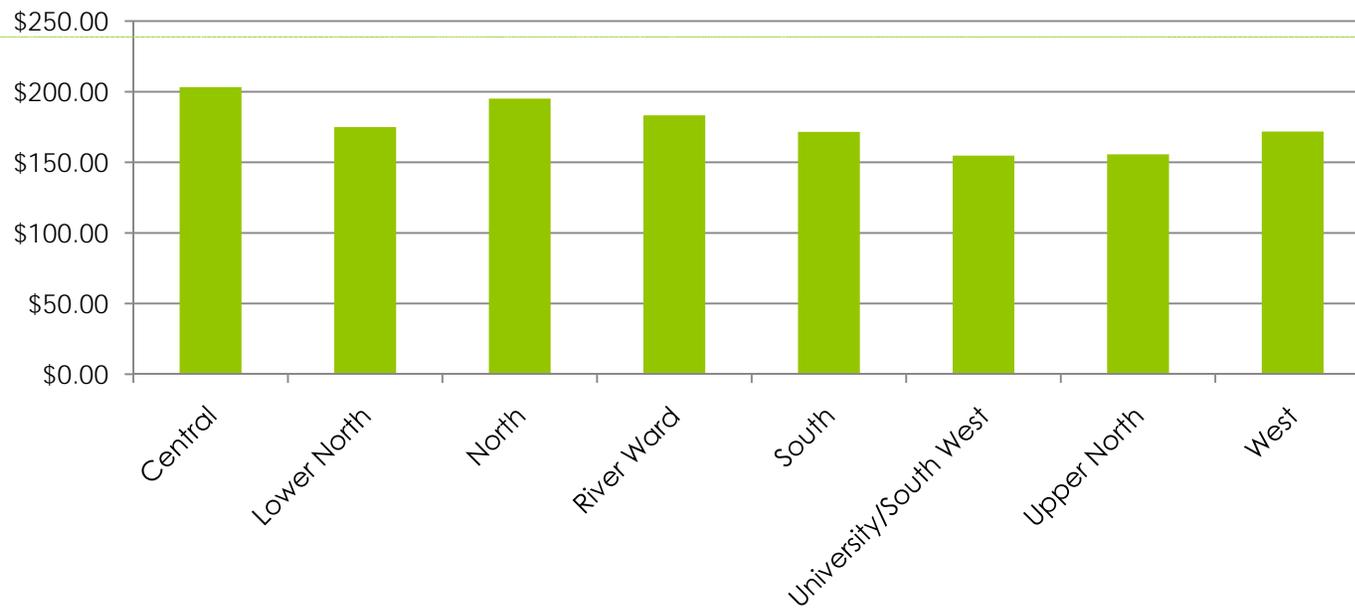
- Over 6 Fridays, interns paired up and visited a total of 34 supermarkets
- Collected information on lowest priced items in 21 sub-categories

Blog Post



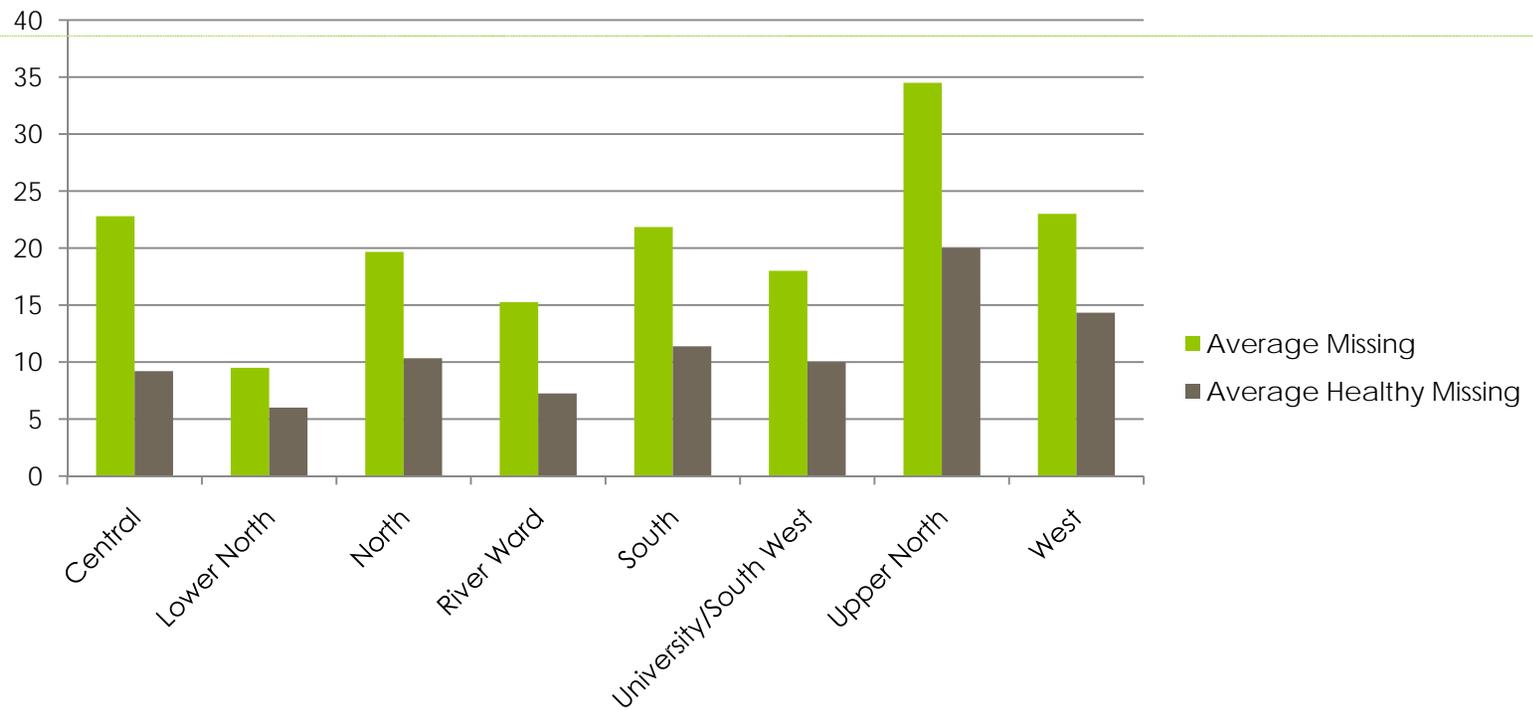
Results

Average Total Basket by Planning District



Results

Missing Items by Planning District



Discussion

- Soda Pricing
- Cultural Variation Across City
- Policy Suggestions



Questions?

Thanks for Listening!

