

## RETHINKING FOOD DESERTS: AN INITIAL REPORT OF FINDINGS

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July 2013

### Research summary

- Food deserts have been a popular way of studying food access in low-income neighborhoods. However, by using only measures like distance to the nearest store, this research overlooks *other social and physical factors* that shape how people get food.
- My research moves from an analysis of store *proximity* to one focusing on the *practices of neighborhood residents*.
- I collected and analyzed data on the *Supplemental Nutrition Assistance Program* (SNAP, formerly known as food stamps) for the Twin Cities and *case studies* of residents in north and south Minneapolis.
- Many residents of low-income Twin Cities neighborhoods *regularly shop outside their neighborhoods* because of the perceived better quality and lower prices of suburban stores.
- Within their neighborhoods, residents often use *discount and ethnic grocers*.
- *Transit systems and social networks* played a significant role in shaping how and where individuals got food.
- The results of this research show that work to improve food access must be connected to broader efforts for *equitable and transit oriented development*.

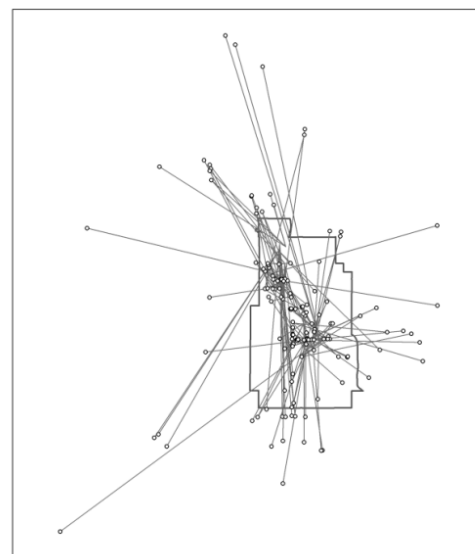


Figure 1: Diagram of food shopping trips by study participants (residence to store). Minneapolis boundary is outlined.

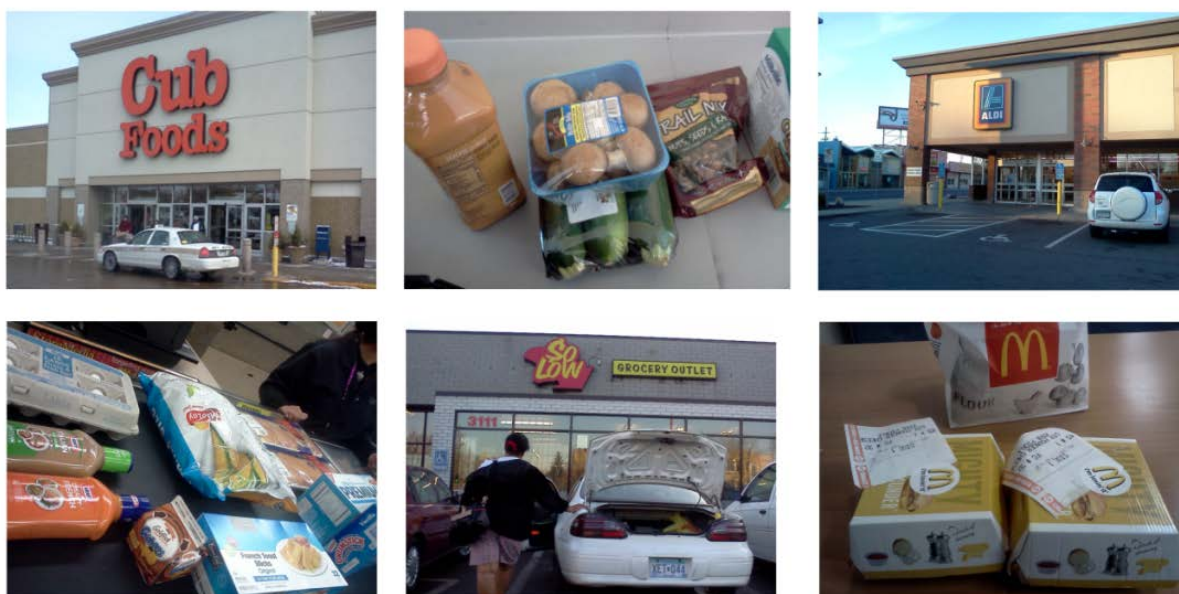


Figure 2: Study participants used smart phones to take photographs of food sources they used and the food they got there.

## **Context: From proximity to practice**

Food deserts can be broadly defined as low-income neighborhoods where culturally relevant, healthy foods are unavailable, overly expensive, or of poor quality. Over the last decade, researchers have intensively studied the link between food deserts and health outcomes, since corner stores or fast food restaurants in these areas lack healthy food options. Food deserts are usually identified by measuring the distances to/density of food retailers in low-income neighborhoods. The U.S. Department of Agriculture (USDA), for example, combines rates of poverty with the distance to the nearest supermarket to determine which census tracts can be characterized as low income and low access.<sup>1</sup> This research has garnered significant media attention and political action, including the Healthy Food Financing Initiative, a \$400 million dollar proposal by the Obama Administration to improve food access in vulnerable areas largely by creating new stores.

Recent research has questioned the validity of food deserts as a concept, finding little link between neighborhood store types and rates of obesity (Kolata, 2012; Lee, 2012). Neighborhood residents often shop for food beyond their residential neighborhood (Ledoux & Vojnovic, 2012). My research extends this work by moving from measures of store *proximity* to an alternative focus on the food procurement *practices* of neighborhood residents. This provides better insight on the ways people actually go about getting their food. My approach thus moves away from a “if you build it, they will come” model of improving food access to identifying the social, economic, and physical factors that shape how and where people get food.

## **Data and methods**

This research had two main sections. First, I analyzed data from the Supplemental Nutrition Assistance Program (SNAP, formerly known as food stamps) for fiscal year 2010 in the seven county Twin Cities metropolitan area. This data was collected at the zip code level from both the USDA and the Minnesota Department of Human Services. To analyze how this program operates at a neighborhood scale, I used a technique called dasymetric mapping to create detailed estimates SNAP benefit distribution to clients and store redemptions. While it is currently impossible to track where clients living in a particular area use their benefits, it is possible to compare the benefit dollars distributed to area residents to those spent at area food stores. Figure 3 shows estimated benefits for Minneapolis and St. Paul, including eight areas with high concentrations of SNAP clients.

Second, I conducted a case study with low-income residents of south and north Minneapolis (38 total, 20 in S. Minneapolis and 18 in N. Minneapolis) from Nov. 2012 through April 2013. I interviewed study participants about their food shopping, and they kept track of the daily trips they made and the food they got during a five day study period. Participants were given GPS enabled smart phones that tracked their daily movement and that they used to take pictures during their food shopping. I used my interviews with these participants and data on their shopping trips to better understand the factors shaping their decisions about how and where to get food.

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<sup>1</sup> This tool is available at <http://www.ers.usda.gov/data-products/food-access-research-atlas/>

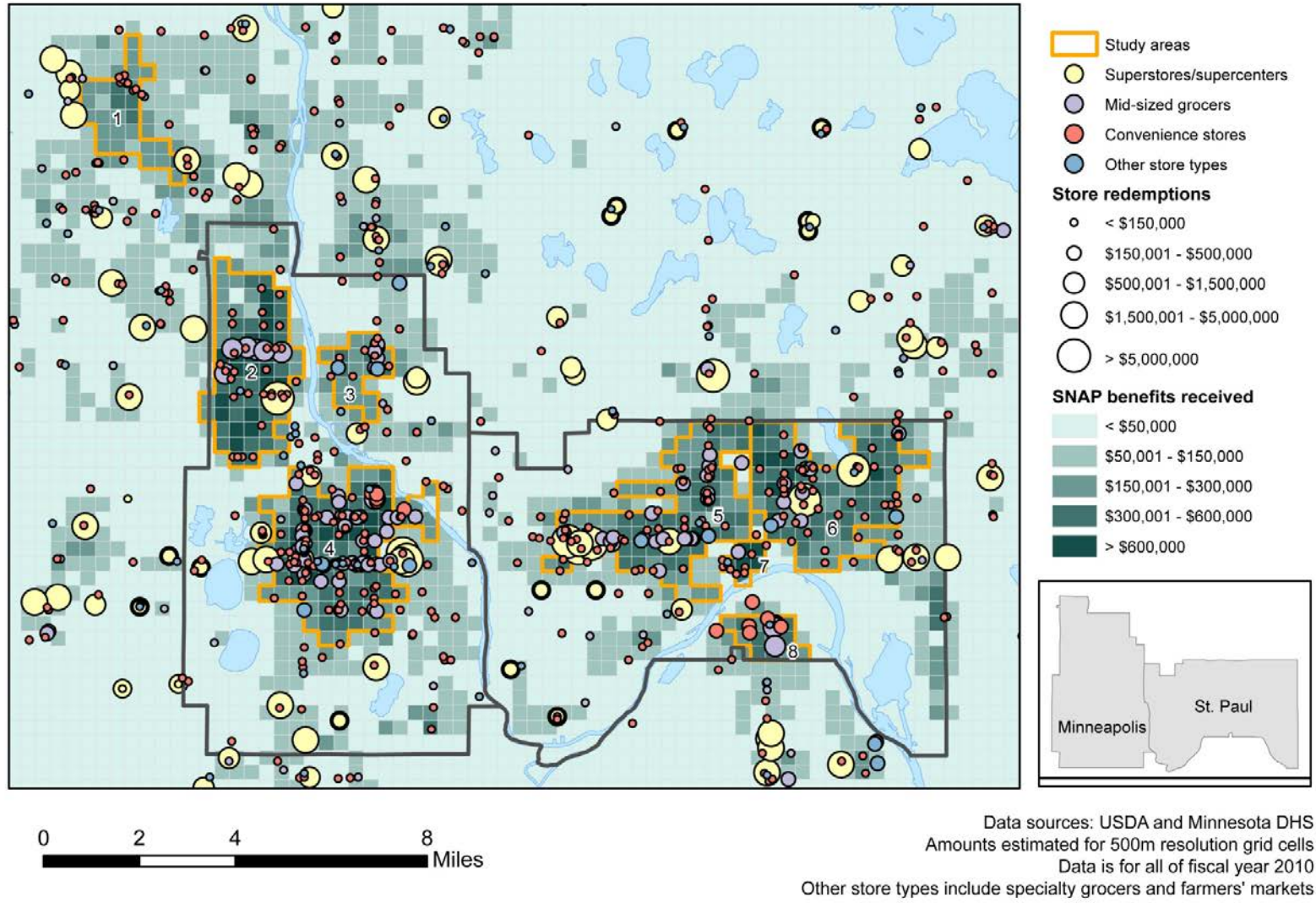


Figure 3: SNAP benefit distribution and redemption for Minneapolis and St. Paul. Green squares show benefits received. Circle size and color show value of benefits received and store type, respectively. Orange outlines show the eight study areas, which are numbered (see figure 4).

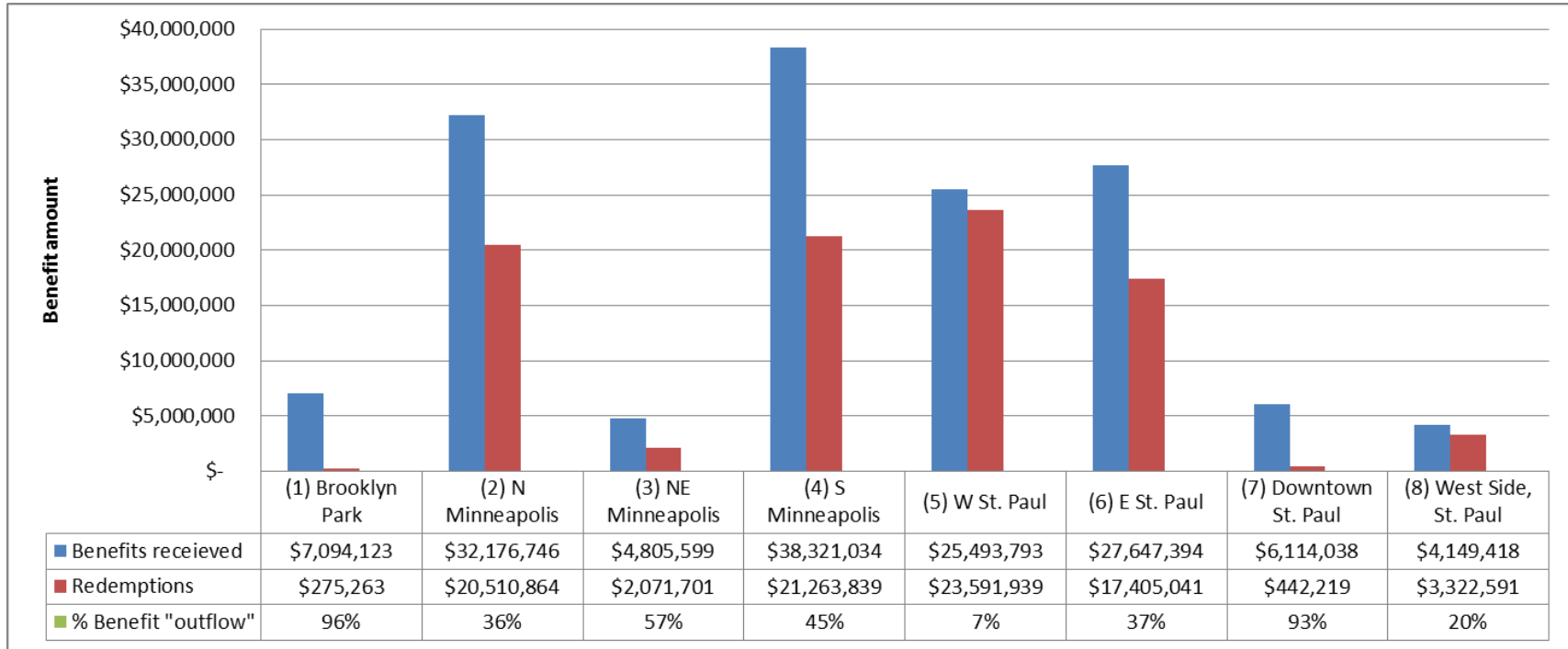


Figure 4: SNAP benefit distribution and redemption totals for study areas shown in figure 2. Totals are for fiscal year 2010.

	Total	Supermarkets/ supercenters		Mid-sized grocers		Convenience stores		Other*		Sustainable		Ethnic	
		Benefit amt.	Pct.	Benefit amt.	Pct.	Benefit amt.	Pct.	Benefit amt.	Pct.	Benefit amt.	Pct.	Benefit amt.	Pct.
Study areas	\$ 86,875,442	\$ 44,070,332	51%	\$ 26,666,789	31%	\$ 13,180,338	15%	\$ 2,957,983	3%	\$ 502,099	1%	\$ 28,993,805	33%
All other areas	\$ 245,544,927	\$ 221,635,758	90%	\$ 9,641,044	4%	\$ 9,765,685	4%	\$ 4,502,440	2%	\$ 1,126,727	0%	\$ 7,790,426	3%

Table 1: Total SNAP redemptions by store type in the eight study areas (combined) and the rest of the Twin Cities, fiscal year 2010.

## Initial Findings

### ***#1: Most low-income, urban communities have a net “outflow” of SNAP benefits, most often to suburban areas***

This study identified eight areas with a high concentration of SNAP clients (figure 3). In each of those areas, benefit distribution to clients was significantly higher than benefit redemptions at area stores (figure 3). This net “outflow” of SNAP dollars indicates that SNAP clients often use their benefits at stores outside their immediate residential neighborhood. This is true even in neighborhoods like north Minneapolis and east St. Paul that have major supermarkets within their boundaries. Data from study participants also confirms this trend, with the average food shopping trip being 3 miles or more in length, even longer for trips to supermarkets (table 1). While access to a vehicle had a small effect on trip length, those without a car often travelled a mile or more to get food, either sharing a car with others or using public transit.

### ***#2: Study participants used a wide variety of food sources—not just one particular store***

The 217 shopping trips logged by participants in this study used 153 different food sources. The majority of these were to groceries of various kinds, though fast food, restaurants, food shelves, and meals with friends and family were also recorded (Table 2). Participants made trade-offs between these food sources based on prices, location, and the availability of particular food items. There was rarely one single store that participants said they liked best.

### ***#3 Supermarkets and big box stores play the largest role in providing food for SNAP clients, but stores in low-income neighborhoods are often seen negatively.***

In the eight high poverty areas where SNAP benefit usage was analyzed, 51% of benefits were spent at superstore s and

		<i>N. Mpls</i>	<i>S. Mpls</i>
	# of people	18	20
	Avg. monthly income	\$ 895	\$ 1,363
<b>Trips</b>	Total	98	119
	Supermarket	37	25
	Mid-sized grocer	12	16
	Convenience	14	23
	Fast food	16	28
	Restaurant	5	13
	Other	14	14
<b>Cost</b>	Total	\$ 2,519	\$ 2,701
	Supermarket	\$ 1,297	\$ 1,254
	Mid-sized grocer	\$ 877	\$ 726
	Convenience	\$ 109	\$ 199
	Fast food	\$ 143	\$ 261
	Restaurant	\$ 92	\$ 169
	Other	\$ -	\$ 69
<b>Distance (miles)</b>	Average for all trips	3.6	2.8
	Supermarket	4.1	3.8
	Mid-sized grocer	1.6	1.5
	Convenience	3.4	0.6
	Fast food	5.8	2.8
	Restaurant	5.2	4.6
	Other	1.3	4.0

Table 2: Summary of data from the food shopping trips of case study participants by neighborhood

supercenters (table 1). This is in stark contrast with other, largely suburban areas, where 90% of benefits were spent at these stores. In both cases, SNAP clients most often shopped at these large retailers (e.g., Cub Foods, Rainbow, SuperTarget, WalMart), but in the study areas these stores had a significantly smaller role. This difference is at least partly explained through interviews with study participants, in which they consistently complained about the higher prices, lower food quality, and generally poor customer service they experienced at stores in their neighborhoods. While they still spent more money at supermarkets than any other store type (table 2), these participants often went to suburban supermarkets, which they saw as having better quality and lower prices. Trips to supermarkets were consistently *longer* than the average of all food trips (table 2), illustrating this point.

***#4: Discount grocers, such as Aldi, are often used due to their lower prices, but many participants also had concerns about the quality of food at these stores.***

“Mid-sized markets,” a category that includes discount markets, ethnic grocers, and food co-operatives, took in a much larger percentage of SNAP dollars in low-income neighborhoods than they did in the Twin Cities metro as a whole—31% in SNAP study areas compared to just 4% elsewhere (table 1). Discount markets—Aldi and, in north Minneapolis, So Low Foods—played a key role in this trend. Many case study participants reported using these stores as food options in their neighborhood because of their low prices and convenience. The trip distance to these stores was significantly *lower* than the average for all shopping trips, showing that participants often used stores that were close to home. However, some refused to shop at these stores due to poor food quality. Instead, these participants found other ways of stretching their dollars, including using coupons or shopping at a mix of stores based on sale prices.

“No, no. Absolutely not. My health is more important than anything else, and if they’re telling me it’s outdated stuff, if I eat too much outdated stuff, pretty soon I might become outdated.”

-One participant on whether he shops at the discount grocer in his neighborhood

***#5: Ethnic retailers were also often used by study participants for specific food items, but seldom as a primary food source.***

Ethnic retailers also played a large role in participants’ food shopping, accounting for 28% of SNAP benefits spent in the eight study areas. This included both groceries—stores with a significant amount of produce and/or meat—and smaller stores. Case study data showed that these stores were used by both immigrant and non-immigrant groups. Hmong and Latino study participants went to these stores for specialized ingredients such as produce and prepared foods. These stores were also used by non-immigrant study participants for their fresher quality meats and expanded selection of items such as noodles or bread. The generally higher prices and lower overall selection of these stores usually meant that these stores were “fill in” shopping for participants, after staples had already been purchased at supermarkets or discount grocers.

***#6: Local and sustainable food sources, such as food cooperatives and farmers' markets, play a minor role in low-income communities and are largely seen as too expensive and inconvenient.***

Sustainable food sources received a very low percentage of SNAP benefits. On a per store average, food cooperatives in the Twin Cities had average redemptions only slightly less than other small groceries of similar size. Interviews with study participants found that many found these stores too expensive, and many participants said they did not fit in culturally with other customers at these stores. Participants also seldom described using farmers' markets in their neighborhoods, though they said that the higher quality and lower prices of these markets were desirable. The limited hours and difficulty getting to these markets were main barriers. Several participants did describe using the downtown Minneapolis Farmers' Market due to its expanded hours and location at a transit hub.

***#7 Decisions about how and where to shop are often shaped by social networks and available transit options.***

Study participants who lacked a car did not necessarily shop close to home. They often asked for rides or borrowed vehicles from friends or family, sometimes bartering services like childcare in return. Those who used public transit for their food shopping prioritized a direct route over distance. Instead of shopping at the grocery closest to their house, participants would take the route that resulted in the least amount of walking or bus transfers, making the carrying of groceries an easier task. Children or friends were sometimes included on shopping trips to help carry groceries home. Even for those with a car, the costs of gas and repairs sometimes meant having to rely on others to help with shopping trips. Participants also had a network of secondary "homes"—those of extended family members, partners, or friends where they spent significant amounts of time and purchased food.

"To go to Northpoint, I got a ride because I was talking to my neighbor down the street and I said, 'Don't you want to go to the food shelf?' And she was like, 'Yeah, I think I do.' So we just jumped in her car and went to the food shelf."

## **Implications**

***Proximity based measures do a poor job of showing food access***

Most current research on food deserts and food access use distance to the nearest store as a measure of food access. However, both the SNAP data and case study sections of my project show that people often choose not to shop at the stores closest to their homes, especially in the case of supermarkets. While distance based measures may highlight real discrepancies in the types of stores available across different neighborhoods, many other factors also contribute into people's decisions about how and where to get food. Future research on food access should take these factors into account.

***Opening new supermarkets isn't enough***

Many cities, such as Chicago, Philadelphia, and New York City, have programs in place meant to lure large food retailers into low-access neighborhoods. Yet the data from this study shows that while people may make use of these supermarkets, many still end up

getting their food outside their neighborhoods. Residents often see these local stores as poorly run or overly expensive, find other stores more accessible via transit or car sharing, or shop near the homes of friends and family in what they see as better neighborhoods. Ensuring that large stores offer the same prices and food options across neighborhoods is one suggestion provided by this research. A focus on equitable and transit focused development may also provide a more holistic framework for addressing food access and the factors that shape it.

### ***Food and transit are closely linked***

While much research has focused on how to get healthy foods into low income neighborhoods, relatively little attention has been paid to how people get to sources of healthy foods. However, participants in this study often voiced frustration at how difficult it was to use public transit when shopping for food, even in their own neighborhoods. Many study participants used food options in downtown Minneapolis, including Target and the Minneapolis Farmers' Market, because the major transit hub located in these places makes them convenient stops. In the case of farmers' markets, creating multiple small sites may do less to improve access than finding ways to locate larger markets near transit centers. Similarly, designing transit systems that improve ease of access to major food sources may also make using these sources less time consuming for neighborhood residents.

### **Next steps for this research project**

In the coming months, I will continue to analyze this study data and consider options for follow-up studies. This includes the following:

- Continuing to investigate how gender, ethnicity, and neighborhood differences among study participants may contribute to different patterns of food access.
- Analyze how the use of SNAP benefits have changed over time, especially when new food stores open in low-income neighborhoods.
- Compare the use of SNAP benefits across cities to see how different transit systems or urban forms matter to the ways people use their benefits.
- Use transportation surveys to look specifically at the mobility patterns of neighborhood residents as they relate to food shopping.

### **Acknowledgements**

This project was completed as part of my doctoral program in the Department of Geography, Environment and Society at the University of Minnesota. A Doctoral Dissertation Research Improvement grant from the National Science Foundation (award 1203612) provided financial support, as did multiple fellowships from the University of Minnesota. I received research assistance and interviewing space through the University Research and Outreach Center (UROC) at Minnesota. Several community groups aided in publicizing my study and providing input on the research itself. These included HCMC, Asian Media Access, Learning in Style, North Point Health and Wellness Center, CLUES, Hmong American Partnership, and the Hmong American Mutual Assistance Association. Lastly, I am grateful to my research assistants, who assisted with the “grunt work” of this project: Kevin Karner, Aaron Keniski, Pa Houa Moua, and Leslie Ashton.



## More (mostly academic) research on food deserts

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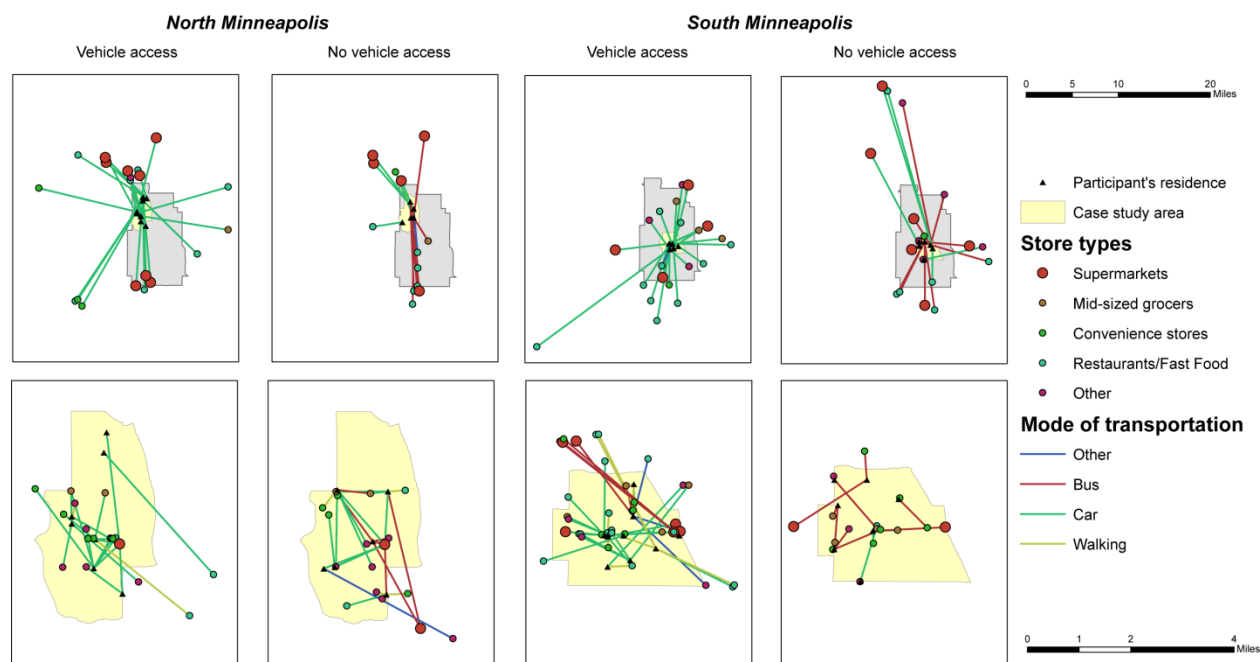


Figure 5: Shopping trips of study participants, broken down by neighborhood of residence and access to a vehicle. The top row is trips outside the neighborhood, and the bottom row is trips inside the neighborhood. Lines are from residence to food source.

An electronic version of this report, along with maps of the SNAP data I used, are available online at <http://jerry.shannons.us/initial-research-results-white-paper.html>