

# Northside Seed Grant

*...a program of the Center for Urban and Regional Affairs (CURA)*

## **The Northside Healthy Eating Project: Transportation Access to Affordable Fresh Produce**

**Prepared in partnership with**  
NorthPoint Health and Wellness Center

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## Introduction<sup>1</sup>

“In 2009 the Innovation Group of NorthPoint Health & Wellness Center, Inc. partnered with the Blue Cross and Blue Shield Association to address barriers related to healthy eating in North Minneapolis. As part of the project, a comprehensive food assessment (CFA) was completed that resulted in the formation of a coalition to increase healthy eating in North Minneapolis. One of the several strategies identified to increase healthy eating was to improve access to and availability of fresh produce.”

“The Northside Healthy Eating Project (NHEP) was developed to serve residents of North Minneapolis where food availability, price, and transportation all represent barriers to healthy diets for many individuals. Health problems stemming from poor nutrition are prevalent in North Minneapolis as evidenced by high rates of diabetes and obesity. In 2009, NorthPoint Health and Wellness Center provided medical services to nearly 1,000 patients diagnosed with Diabetes Mellitus – nearly a 24% increase from 2006. Between 56.5 and 62.6% of North Minneapolis residents are overweight or obese based on a body mass index score. According to the U.S. Surgeon General, “the prevalence of obesity in the U.S. more than doubled (from 15% to 34%) among adults and more than tripled (from 5% to 17%) among children and adolescents from 1980 to 2008.”

“North Minneapolis has been described as a “food desert” – an “area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities.” In North Minneapolis, a community that is nearly 82% people of color, many residents experience persistent poverty



Figure 2: Food Desert – Limited access to affordable & nutritious food



Figure 1: NorthPoint Health & Wellness Center

and health disparities. According to the 2000 Census, in the neighborhoods of Camden and Near North, approximately 39% and 59% of the residents respectively, were at 200% of the Federal Poverty Level. This is in comparison to about 20% of the total Hennepin County population. Several health disparities have been also been

<sup>1</sup> The quoted portions of this introduction were obtained directly from NorthPoint Health and Wellness Center’s application for a Northside Community Seed Grant CURA research assistant. The application excerpt effectively provides the history behind this project and need for further study. The original relevant portions of the application are included in Appendix II, including all citations.

reported. The Hennepin County SHAPE surveys, conducted in 2000, 2002 and 2006 show a pattern of persistent health disparities in terms of higher rates of diabetes, heart problems and high blood pressure.”

“Changing these health disparities will require more than encouraging residents to change their eating habits. As is true with most racial and ethnic disparities, the consumption of fresh fruits and vegetables is influenced by a complex set of factors. While there are some individual-level reasons for low consumption of fresh produce in North Minneapolis (individuals choose not to purchase produce); other factors limiting the consumption of fresh produce exist at the institutional and policy levels. In North Minneapolis, a disproportionately low number of African American households have access to vehicles as compared to more affluent neighboring portions of the Twin Cities metropolitan areas. Although there are a few large-scale grocers within driving distance, a substantial portion of residents are not able to set out in vehicles to purchase groceries for themselves and their families. Residents commonly make trips to a corner convenience store to purchase basics, where the availability of fresh fruits and vegetables is not only limited, but expensive.”



Figure 3: Lack of vehicle access limits consumption of fresh produce



Figure 4: Corner stores often have a limited selection of fresh produce and charge higher prices than large grocery stores

This report delves further into improving access to fresh and affordable produce by measuring current accessibility and food insecurity levels, as well as identifying potential transportation-related solutions to low food access. Measures of current accessibility and need are necessary in order to identify areas that are most in need of improved access, and also so that solutions can be targeted at those areas. Increasing access to food can be accomplished in a variety of ways including corner store initiatives, adding supermarkets, community gardening, urban greenhouses, and farmers markets; however, transportation-related options are often overlooked and are therefore of special focus in this report. Potential solutions related to transportation are presented with general overviews and case studies. The purpose of this report is not to identify which option should be selected, but instead to provide a non-biased summary of options, including the positive and negative aspects of each strategy.

## Executive Summary

The Northside Healthy Eating Project (NHEP) was developed to serve residents of North Minneapolis where food availability, price, and transportation all represent barriers to healthy diets for many individuals. At the request of NorthPoint Health & Wellness, this research project was initiated to delve further into improving access to fresh and affordable produce by measuring current accessibility and food insecurity levels, as well as identifying potential transportation-related solutions.

This project involved two phases: 1) a GIS analysis to determine both current access to healthy foods as well as areas of food insecurity, and 2) a literature review to assess transportation related solutions to increase healthy food access in North Minneapolis. The main focus of the GIS analysis was on access to large grocery stores because of their extensive selection and affordability. In addition to mapping accessibility to grocers, an analysis was also done to determine the need for affordable and accessible fresh foods based on the idea of food insecurity. The GIS analysis revealed areas in North Minneapolis with low vehicle ownership, low access to healthy foods, and high levels of food insecurity – a concerning combination.

*“Food Insecurity: Lack of access to safe and nutritious food at levels necessary to maintain a healthy and active life”* (WHO, 2011)

The literature review portion of this report reveals that a number of viable options related to transportation have potential to increase healthy food accessibility in North Minneapolis. All of the options discussed in the report, including public transit, supermarket shuttles, mobile food carts, virtual supermarkets, and mobile produce trucks, could very likely increase access to healthy foods. This report serves simply as a starting point for identifying these options and how they could successfully operate in North Minneapolis.

## Opportunities for Further Research

- Update food insecurity analysis with 2010 Census data
- Identify leakage from West Broadway businesses that may be linked to transit access issues.
- Survey West Broadway businesses to determine interest in a business-funded WBA circulator.
- Delve deeper into public transit access by identifying route frequencies, transfer convenience levels, and specific underserved areas. Use this analysis to pinpoint locations for mobile market stops and to make a case for additional or modified public transit routes.
- Start a conversation with Metro Transit regarding a North Minneapolis circulator route. Assess potential ridership levels and the financial feasibility of a low-fare route.
- Conduct personal interviews with organizations that run the operations presented in the case studies. Financial details and operational specifics were not frequently available for the literature review, but they are crucial to making an informed decision going forward.

## Methodology

This project involved two phases: 1) a GIS analysis to determine both current access to healthy foods as well as areas of food insecurity, and 2) a literature review to assess transportation related solutions to increase healthy food access in North Minneapolis. The GIS analysis is detailed below. The literature review was a basic internet search of various strategies to increase food access via transportation and specific case studies of each, the methodology of which will not be detailed further in this report.

### GIS Analysis - Accessibility

Although the focus area of the requested research was for North Minneapolis specifically, a GIS analysis was done for the entire city of Minneapolis in order to allow for comparison throughout the city. The main focus of the analysis was on access to large grocery stores because of their extensive selection and affordability; however, a brief analysis was also done that addressed accessibility to ethnic markets, fast food, corner stores, and liquor stores (“features”). This additional analysis was included because the North Minneapolis community identified ethnic markets as an important food source, and a number of studies have made note of the disproportionately high access to fast food and liquor stores in low-income neighborhoods that also suffer from low grocery store accessibility.

A name and address dataset for all features was provided by Professor Yingling Fan. The dataset included information on locations throughout the entire Twin Cities metro area; only data within a two-mile radius of Minneapolis was included in the analysis (Fan, 2010). Because fast food, corner stores, and liquor stores were of less focus in this research and high in quantity, the information in the dataset was not verified or modified. More attention was paid to ensure the accuracy of the ethnic and grocery stores. An internet search was conducted to identify any ethnic and grocery stores that may have been excluded from the dataset, and Google maps, including street view, were used when possible for visual verification. Grocery stores included in the analysis were considered to be major grocery stores, defined as consistently having a wide range of affordable and fresh foods. Big box stores such as Target and Walmart were included when their websites indicated that they stocked fresh food. Membership clubs such as Sams and Costco were not included in the analysis because of their exclusive nature. Maps 2-6 in the Appendix identify each of the geocoded features included in the analysis, including features that lie outside of the Minneapolis border.

After the features were identified and geocoded, an accessibility analysis was conducted at the block level. One technique that is frequently used for this type of analysis is to create polygons around features (grocery stores) that indicate a reasonable service area. This technique results in a map that indicates which census blocks are within a given distance of a feature. Although this does indicate which areas are served, it does not reflect which areas are served to a greater degree; it will not indicate which census blocks are accessible to multiple features.

For this reason, the analysis conducted in this report was performed using the cumulative opportunity method. In this method, distance polygons are created around each census block instead of around the features. Accessibility polygons of 0.5-mile (10-minute walk) and 2-mile



(reasonable drive time) radii were created around the center-point of each Minneapolis census block. An intersect was performed between the polygons and each feature class in order to summarize the number of features accessible to each census block. Census blocks were then shaded to display the varying levels of accessibility to each feature (see Maps 7-14 in the Appendix).

Public transit accessibility is also a very important consideration in this analysis. See Map 15 in the Appendix for a map of households with no vehicle according to the 2000 Census. Areas in Minneapolis that have a low percentage of vehicle ownership are naturally more transit dependent. Map 17 in the Appendix shows food store accessibility within a 30-minute transit trip from each census block at 12:00pm. A 30-minute transit trip in this case is one-way, includes walking time to the stop, a 5-minute waiting and transfer time assumption, as well as a maximum of one transfer. This map was created independently of this report as part of an ongoing study by Professor Yingling Fan (Fan, 2010).

### **GIS Analysis – Food Insecurity**

In addition to mapping accessibility to features, an analysis was also done to determine the need for affordable and accessible fresh foods based on the idea of food insecurity.<sup>2</sup> As defined by the World Food Summit of 1996, a household is considered to be food secure “when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life” (WHO, 2011). A household is therefore considered to be food insecure when these conditions are not met. A study was conducted in 2007 by the USDA that attempted to measure food security and food insecurity in the United States (Nord, M, M Andrews, and S Carlson, November 2008). The information in the study was gathered from the 2007 Current Population Survey (CPS) and the results were based on questions “about conditions and behaviors known to characterize households having difficulty meeting basic food needs” (Nord, M, M Andrews, and S Carlson, November 2008). Household demographics were identified and summarized for households that were determined to be food insecure as a result of the study. The demographic summary figures in the study were used in this report to back into an assessment of which areas in Minneapolis are most likely to be food insecure.

The identifying demographics used in the calculation of a food insecurity index in this report were household composition, race, and income-to-poverty ratio. A baseline was selected for each demographic based on cohorts experiencing low percentages of food-insecurity according to the USDA study. The baseline groups for each demographic, respectively, were households with more than one adult, white non-Hispanic, and those with an income-to-poverty ratio of 1.85 and over. Each of these baseline groups was assigned a value of one. Non-baseline households were assigned a multiplier based on their increased chance over the baseline of being food insecure (see Figure 5 on next page). This table indicates, as does the USDA research, that income is the most determinate factor when it comes to household food insecurity.

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<sup>2</sup> (Bjorn, A, B Lee, B Born, P Monsivais, S Kantor, R Sayre, 2008) A similar study was conducted in Seattle & King County, Washington that looked at accessibility combined with food insecurity. The Seattle study was used as a guide for calculating food insecurity levels and creating meaningful maps.

Figure 5: Food Insecurity Multipliers and Calculation

Category	Percent of Households that are Food Insecure	Multiplier (M)
<b>Household Composition (C)</b>		
More than one adult	6.7	1.00
Two-adult family w/ children < 18	10.5	1.57
One person - male	11.2	1.67
One person - female	11.7	1.75
Single parent - male - w/ children < 18	18.0	2.69
Single parent - female - w/ children < 18	30.2	4.51
<b>Race/Ethnicity of Households (R)</b>		
White alone	7.9	1.00
Other	9.6	1.22
Hispanic or Latino	20.1	2.54
Black or African American	22.2	2.81
<b>Household Income-to-Poverty Ratio (I)</b>		
1.85 and over	5.5	1.00
1.50 to 1.84	28.7	5.22
1.00 to 1.49	32.2	5.85
< 1.00	37.7	6.85

**Food Insecurity Score = CM x RM x IM**

Census data from the 2000 census was then downloaded at the block level for Minneapolis. Each block was given a household composition score, a race score, and an income score, based on the demographic breakout of each block and the multipliers calculated above. These three scores were then multiplied together to arrive at a single food insecurity score for each block.

*Food Insecurity = Household Composition x Race x Income*

The scores range from 1.00 to 70.35. A map was then created that indicates the areas of highest and lowest food insecurity in Minneapolis (Map 20 in the Appendix). Finally, an analysis was done in order to identify census blocks in Minneapolis that suffered from both poor accessibility to grocery stores (via transit and 2-mile drive) and a high probability of food insecurity (Maps 21 and 22 in the Appendix).

The information presented in this report is very narrow geographically. For an interesting and easy online mapping analysis tool at the national, state, and county levels, visit the “Your Food Environment Atlas” interactive map at: <http://maps.ers.usda.gov/FoodAtlas/> (Food Atlas, 2010).

## Limitations

Although the research in this report is useful and accurate, certain limitations prevented a more robust analysis:

- **Data:** The data file for the corner, fast food, and liquor stores was not verified. Upon mapping, it was evident that the fast food locations in North Minneapolis were underrepresented. It is not known whether this would be a similar occurrence with the other features and throughout Minneapolis, thereby resulting in at least proportional results, or if some areas may be more accurate than others. Also, ethnic store identification was largely based on name, as this was not a separate category in the data file. This type of identification is not entirely reliable and likely resulted in several incorrect categorizations.
- **Geocoding:** Not all of the store addresses that were geocoded resulted in 100% matches. Although the majority are definitely correct, there is the possibility that a few features are mislocated. The large grocers, of main concern in this report, should be accurate.
- **Accessibility Polygons:** The accessibility polygons in the analysis were done using an “airplane” method; they were simple circle polygons instead of being based off of distance travelled via the street network. A street network analysis would have been more accurate and was attempted; however technology limitations ultimately prevented this type of elaborate evaluation.
- **Transit Information:** The transit information and map files were already completed as part of a prior study and used 2005 data. It is not known how transit routes may have changed in this time. The “food stores” included in the transit accessibility analysis are also not identified and do not necessarily match those used in the rest of this report. Also, the only time used for the transit analysis was 12:00pm and transit routes can vary significantly between day, evening, and weekend times.
- **Bus Route Map:** Current bus route information was obtained from the Metro Transit website in January 2011, and was only included for North Minneapolis. NorthPoint indicated the importance of this information so it was decided that the best information would be the most current information. Therefore, the routes included on this map may not tie with the routes used in the accessibility analysis. The map also does not indicate frequency of the routes, which could be misleading in terms of true accessibility.
- **Census Data:** The data used for the food insecurity index was from the 2000 Census. It is very possible that demographics could have changed significantly since then in certain census blocks.
- **Transportation Solutions and Case Studies:** The literature review resulted in little information for several healthy food access solutions, which may not be reflective of their chances of success. There was little information on the success or failure of different alternatives or financial details and feasibility.
- **Time:** This project was allotted 195 hours of work time. Scope of effort, including level of detail, was adjusted to this allowance.

## **Analysis of Maps / Outcomes**

A series of maps was produced as a result of the accessibility and food insecurity analysis. This section of the report describes each of these maps and highlights interesting results. The maps are listed in order of production while following the procedures outlined in the methodology section; however, for quick reference to the maps with the most telling picture of food access and need in Minneapolis, skip to Maps 15-23. All maps can be found in Appendix III.

### ***Map 1: Minneapolis Neighborhood Map***

This map was created by the City of Minneapolis and is included as a guide for reference in this report to specific areas within Minneapolis (Minneapolis, 2008).

### ***Maps 2-6: Features within a 2-Mile Buffer of Minneapolis***

Because the final analysis includes a summary of the number of features that can be accessed within a 2-mile radius of each census block in Minneapolis, it was necessary to first identify features that were located not only within Minneapolis, but also within the 2-mile buffer surrounding Minneapolis. Subsequent maps do not include the buffer area, so these maps were included as a reference to identify all feature locations that were included in the analysis.. These five maps include the locations of large grocers, ethnic markets, fast food, corner stores, and liquor stores. Actual analysis of these locations will be discussed in subsequent maps.

### ***Maps 7-10: Number of Features within a 10-Minute Walk of Each Minneapolis Census Block***

Because significant portions of the population in some Minneapolis neighborhoods do not have access to a vehicle (see Map 15), an analysis of the number of features accessible within a walkable distance from each census block is important. In this study a walkable distance is considered to be ten minutes, or a distance of 0.5 miles. It is important to remember that shopping trips often involve multiple or heavy bags that are cumbersome to carry for distances greater than this.

**Map 7 – Ethnic Markets:** Areas of highest walkable accessibility vary depending on the feature class being considered. The areas with the highest levels of walkable access to ethnic markets are the Whittier, Cedar Riverside, and Seward neighborhoods, with access to 7-14 ethnic markets within a 10-minute walk. Other areas along Lake Street in south Minneapolis, and Central Avenue in northeast Minneapolis have access to 4-6 ethnic markets. There are several other clusters with access to 1-3 ethnic markets, including clusters in North Minneapolis and Powderhorn.

**Map 8 – Fast Food:** The areas with the highest levels of access to fast food according to the dataset are downtown Minneapolis and Uptown, with a significant number of census blocks having access to 14-52 fast food restaurants within a 10-minute walk. The Cedar Riverside and Fulton neighborhoods have access to 9-13 stores, and pockets with access to 5-8 fast food locations are scattered throughout Minneapolis. North Minneapolis has noticeably low access to fast food with most areas having 0-2 fast food locations within a 10-minute walk. As noted in the limitations section of the report, the accuracy of the information in the dataset for this

feature is questionable because several fast food locations are definitely missing in North Minneapolis. It is not known, however, if this same phenomenon is repeated throughout other neighborhoods, thereby making the results at least proportionally correct.

**Map 9 – Corner Stores:** Walkable access to corner stores is highest in downtown Minneapolis with access to 10-13 stores. Uptown, Phillips, and Powderhorn follow with certain areas averaging with access levels of 6-9 stores. The majority of Minneapolis has walking access to 0-1 corner stores.

**Map 10 – Liquor Stores:** The highest level of liquor store access within a walkable distance is in downtown Minneapolis, showing access to 6-7 stores. Following closely with access to 4-5 stores is the Bottineau neighborhood in northeast. A very large percentage of Minneapolis has walkable access to zero liquor stores.

### ***Maps 11-14: Number of Features within a 2-Mile Radius of each Minneapolis Census Block***

This set of maps was created to present access levels to ethnic markets, fast food, corner stores, and liquor stores within the reasonable driving distance of 2 miles. The results of this analysis did not prove to be very enlightening since all feature classes resulted in rather similar maps. Because each feature class was so heavily weighted with large numbers of features in the downtown Minneapolis or Phillips neighborhoods, all maps show the highest access levels in those two areas with gradually declining access rings emanating from the center. There is variation in the specific characteristics of each descending ring, but nothing that stands out as particularly interesting.

### ***Map 15: Percent of Households without a Vehicle***

Using census block group data from the year 2000, this map depicts the areas with the lowest vehicle access in Minneapolis. In the vast majority of Minneapolis neighborhoods fewer than 15% of households do not have access to a vehicle. That said, there are other neighborhoods where greater than 30% of households do not have access to vehicles. These neighborhoods are very dependent on pedestrian travel modes and public transit, thereby lowering their convenient access to healthy foods. The neighborhoods with the lowest vehicle access levels (30%-over 50% without vehicle) are Central, Phillips, University, and Near North, followed by slightly greater access (15%-30% without vehicle) in Camden, Northeast, and Powderhorn. In general North Minneapolis does show a concentration of low vehicle access.

### ***Map 16: Number of Large Grocers within a 10-Minute Walk of Each Minneapolis Census Block***

The vast majority of census blocks in Minneapolis do not have walkable access to any large grocery stores. This becomes of particular concern when considered along with the vehicle access issues identified in Map 15. Although each large grocer has a walkable zone surrounding it, there are only 5 small areas with access to more than one large grocer and only 1 area (on Lake Street and Hiawatha) with access to 4 large grocers. This map reveals that a significant percentage of households without access to vehicles also do not have a grocery store within walking distance. This plays a large role in limiting access to healthy foods.

### ***Map 17: Number of Food Stores Accessible within a 30-Minute Transit Trip of Each Minneapolis Block Group at 12:00pm***

Although it was hoped that a transit accessibility analysis could have been performed as part of this research project, time and resource restrictions did not allow for it; however, a similar study, conducted in 2005 of transit accessibility to food stores, was incorporated (Fan, 2010)<sup>3</sup>. Identified at the block group level, a 30-minute one-way transit trip in this map includes walking time to stops, a 5-minute wait transfer time, and maximum of one transfer. Food stores in this case do not coincide with the large grocers identified in this study and are instead those used in the aforementioned 2005 study. Although the inputs of this map may not correlate exactly with the rest of this study, the results are still valuable enough to include in the report.

According to the 2005 study, downtown Minneapolis has the highest access to food stores, at 525-775 stores within a 30-minute transit trip. Relatively high levels of food accessibility are also seen in the Cedar Riverside, University, eastern Phillips, and Uptown area centered around Hennepin Avenue. The lowest accessibility, with access to 0-109 food stores, is seen mostly along the western and southern edges of the city, as well as a large portion of the Camden neighborhoods and adjacent Northeast neighborhoods. According to this data, North Minneapolis is only well-served by transit to food stores along the West Broadway Avenue corridor. This map makes it evident that there are areas of Minneapolis that are underserved by transit when compared to others, and that route additions or modifications are worth consideration.

### ***Map 18: Number of Large Grocers within a 2-Mile Radius of Each Minneapolis Census Block***

This map is effective in showing the disparity in healthy food access throughout Minneapolis. Having access to multiple grocery stores allows a person to comparison shop by price and take advantage of varying selections. Grocers with nearby competition are also motivated to maintain competitive prices. Minneapolis neighborhoods most positioned to take advantage of these accessibility benefits include Phillips, Powderhorn, Calhoun-Isle, and Southwest. These neighborhoods often have access to more than eight large grocers within a 2-mile radius. Conversely, the areas with the lowest accessibility to healthy foods using this measure are the eastern portion of Nokomis, the southern portion of Longfellow, a significant portion of the University and Northeast neighborhoods, and almost the entire North Minneapolis quadrant of Minneapolis. These neighborhoods often have access to fewer than five large grocers within a 2-mile radius.

### ***Map 19: Large Grocer Access within 2-Miles with a 1-Mile Buffer Around Large Grocers***

This map is identical to Map 18 except that it also includes 1-mile buffers around large grocers. The areas of focus on this map are the red sections that lie outside of any buffer zones. These areas not only have poor overall accessibility within a 2-mile radius, but also lack access to at

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<sup>3</sup> Food stores in this transit analysis include the following NAICS codes: 445110 Supermarkets and Other Grocery (except Convenience) Stores, 445120 Convenience Stores, 445210 Meat Markets, 445220 Fish and Seafood Markets, 445230 Fruit and Vegetable Markets, 445291 Baked Goods Stores, 311811 Retail Bakeries, 445292 Confectionery and Nut Stores, 445299 All Other Specialty Food Stores, and 445310 Beer, Wine, and Liquor Stores

least one nearby grocer. These areas of high concern are located primarily in the Camden and Near North neighborhoods located in North Minneapolis, with smaller concentrations in Northeast and University.

***Map 20: Food Insecurity Index in Each Minneapolis Census Block***

This map indicates the food insecurity levels that were calculated using the methodology previously described. Food insecure areas represent populations that often suffer from lack of access to sufficient levels of affordable and healthy food based on their demographic characteristics. High food insecurity scores represent populations with the highest probability of lacking access to healthy foods. The results of this analysis clearly show three areas in Minneapolis that are the most food insecure: Near North, Phillips, and Central.

***Map 21: Minneapolis Census Blocks with High Food Insecurity and Low Transit Accessibility***

This map combines the areas of highest concern in both food insecurity and transit accessibility. Light brown census blocks indicate the areas with the poorest accessibility to food stores via transit, and the orange blocks indicate areas with the highest food insecurity. The rust colored blocks indicate where these two characteristics overlap – the areas with overall highest concern. The rust colored census blocks are all in North Minneapolis.

***Map 22: Minneapolis Census Blocks with High Food Insecurity and Low 2-Mile Radius Accessibility***

Similar to Map 21, this map combines high food insecure areas with the census blocks with the lowest numbers of grocers accessible within a 2-mile radius. Light brown blocks have low grocery store accessibility and orange blocks have high food insecurity. The rust colored blocks indicate where these two characteristics overlap – again, the areas of highest concern. Blocks with this concerning combination are almost entirely contained in North Minneapolis, with the majority of the Near North neighborhood group falling into this category.

***Map 23: North Minneapolis Bus Routes – January 2011***

This map was obtained from the Metro Transit website in January 2011 and includes the most recent bus route information available. Areas outside of Minneapolis are included on this map because it contains grocery stores that North Minneapolis residents are likely to patronize. It is evident that most grocers are accessible via transit; however, the map does not indicate route frequency or ease of transfer. The map may still be useful to help determine blocks that are underserved by transit or potential circulator routes.

## NorthPoint Resident Survey

As part of the Northside Healthy Eating Project, a North Minneapolis resident survey was conducted in 2009 that identified community experiences and perceptions of the Northside food environment. Some of the information learned from the survey is pertinent to this report and should be taken into consideration when reviewing the transportation-related solutions and their variations.

Results and statistics of note include (NorthPoint Health & Wellness Center, Inc., 2010):

- A small portion of respondents indicated they are using WIC, but over 50% are using an EBT card
- There is an 18% gap for fruits and 26% for vegetables between people's preference and actual consumption of fresh produce
- 35% of respondents shop for produce weekly, 22% every 2-3 weeks, 16% monthly, 20% every 2-3 days, 4% every day, and 3% rarely or never.
- A full 85% of respondents purchase produce at Cub Foods on West Broadway, along with 31% shopping at Aldi's on Penn & Lowry
- Only 26% frequently get produce at the farmers market
- There is a general aversion to shopping for produce at convenience stores, often because quality is low and cost is high
- Respondents said that their decision to buy fruits and vegetables is affected both by lack of availability at their preferred store (47%) and available transportation to their preferred store (44%)
- 37% of people said they would be interested in buying produce from farmers markets that deliver to their home
- People were generally very fond of Cub Foods, liking the accessibility, variety of produce, affordability, and year-round selection. They also liked Aldi's and Rainbow because they create price competition
- Response was mixed when asked if there was sufficient access to local ethnic markets
- In some census tracts, up to 40% of households do not have access to a car and live more than ¼ mile from a bus stop
- Affordability is a very large factor in increasing produce consumption



## Transportation Strategies to Increase Healthy Food Access

A variety of transportation-related strategies can be used to increase access to fruits and vegetables. Presented below is a description of each studied strategy, including operational variations, as well as relevant case studies. A number of factors should be considered when comparing which strategy might best suit the current needs of North Minneapolis residents. It is helpful to keep the following in mind when exploring the different options:

- Would it truly increase accessibility?
- Who will operate the project?
- How much will it cost – startup and operation?
- Does the service already exist in some manner?
- Is there competition?
- Will employees be needed? How many?
- What is the food source?
- Would special licensing or permits be required?
- Are any policy changes required?
- What are the limitations?

### Matrix: Increasing Healthy Food Access via Transportation

The following matrix provides a summary of information gathered during the literature review process. The summary is intended as a general guideline to the differences between the transportation-related solutions. The solutions actually run with such variation that there may be cases where the summary table is not representative of a specific operation.

	Brings Food to People	Brings People to Food	Operates Year-Round	Locally Grown Emphasis	Reduced Food Price	Shared Business Benefits	Prepay for Food	Full-Scale Grocery Selection	Can be Volunteer Run	Continuous Access	Geographic Limitations	Healthy Eating Education
Modify Public Transit		●	●			●		●		●		
Circulator Route		●	●			●		●		●		
Shuttle Service		●	●			●		●	●			
Grocery-Run Shuttle		●	●			●		●		●		
Mobile Food Carts	●		●	●	●					●	●	●
Virtual Supermarket	●		●		●		●	●	●		●	●
Mobile Farmers Market	●			●	●		●		●		●	●
Mobile Produce Trucks	●		●		●				●		●	●
Carpools		●	●			●		●	●			

## Public Transit

### Modify/Increase Current Routes

According to the NorthPoint's Resident Survey, a full 17% of North Minneapolis residents use public transportation to get to the grocery store and another 37% either walk, bike, take a taxi, or are driven, with just 42% driving their own car (NorthPoint Health & Wellness Center, Inc., 2010). The residents of North Minneapolis are very dependent on public transit, yet there has been dissatisfaction with the level of service and ease of accessing healthy foods via transit. It is likely that if transit routes were modified or increased, that the percent of people using transit to get to the grocery store would even increase. One option to increasing access is to actually assess and modify current routes to make sure frequency is adequate and transfers are efficient.



Figure 6: Metro Transit routes could be modified to better serve residents



Figure 7: A North Minneapolis circular route similar to this San Pedro DASH route could serve the local community

### North Minneapolis Circulator Route

Another option is to actually add a North Minneapolis circulator route that, although primarily meant to target area grocers, would increase service to points of interest and neighborhoods currently underserved by transit. Although it would be ideal if this route was funded and operated by the Metro Transit, other options do exist. For example, if public transit access to Cub Foods is not ideal, that likely means that other businesses on West Broadway are also not realizing their full sales potential from a population dependent on transit. A West Broadway Avenue Circulator could be branded and funded by a cooperative of Avenue businesses, including Cub Foods.



Figure 8: The LADOT DASH bus

### Case Study: Los Angeles DASH – Los Angeles, California (Downtown Area Short Hop)

The Los Angeles DASH is a circulator bus system, operated by the Los Angeles Department of Transportation (“LADOT”). With 30+ routes operating daily every 5-20 minutes, DASH approaches 7 million passenger trips per year (LADOT, 2010). DASH routes are localized and community minded. “When you need to get around your community, DASH is the way to go. DASH can help you make quick trips to the bank, market, health services and local shops, as well as service to many area schools and colleges”

(LADOT, 2010). The system is becoming increasingly rider-friendly with real-time bus tracking for the downtown routes and live bus maps with current arrival times available via computer or text message. Rides are currently very affordable at \$0.35 for regular fares, \$0.15 for seniors and people with disabilities, and free for transit pass holders or children four and younger. A DASH monthly pass currently costs \$13. A rate hike has been approved and as of July 2011, regular fares will increase to \$0.50 per ride (Zahniser, 2010).

This service obviously is widely used and much more affordable than the typical Metro Transit fare in Minneapolis, even including the DASH rate hike in 2011. This type of service could very possibly be successful in North Minneapolis and provide much-needed localized service. The financial feasibility would have to be considered. Research did not reveal if DASH routes are currently subsidized in any manner.

### Supermarket Shuttle

Supermarket shuttles are run for the sole purpose of connecting people to food via direct shuttle service. Many common examples involve shuttles that run from college campuses and senior homes to grocers – “stop & shops.” These shuttles are often free for the rider and operate on a weekly basis to various locations. Shuttle sites could be set up at North Minneapolis apartment complexes or senior homes, or in diverse neighborhoods with a need for regular direct service to a more distant ethnic grocer.

North Minneapolis may be even better served by another variation on the supermarket shuttle – an incentive-based shuttle service that is operated by a large grocer and provides free or low-cost transportation to shoppers. North Minneapolis is fortunate to have at least one large and affordable grocer, Cub Foods on West Broadway. Using this



Figure 9: A Yale "Stop & Shop" shuttle

style of shuttle, Cub Foods would offer free return-home transportation to anyone spending over \$25 on groceries. This benefits the shopper because they don't have to lug bags of groceries home on the bus. It benefits the store by bringing in additional shoppers who were drawn in by the service, improving customer loyalty, and reducing shopping cart loss. Also, local jurisdictions could be urged to lower parking space requirements for grocers that offer store-initiated shuttle services. This is especially valuable to grocers located in densely populated urban areas where land is at a premium. This program could also be taken corridor-wide by

allowing other businesses to offer the same shuttle service in return for patronage, or be run as a joint venture with a non-profit. Another benefit of this program is that it can start small with one van and build as awareness and demand increases.

**A Supermarket Shuttle Feasibility Study** (Mohan V, Cassady D., 2002)

A study was conducted in 2002 that examined the feasibility of supermarket sponsored shuttles in nine California zip codes. The zip codes were selected because they were characterized by low incomes, high population densities, and low car ownership (similar to North Minneapolis demographics). The study assumed program operation from 8am-9pm, with a free ride home earned with a \$25 purchase. Programs most often used a 15-passenger van and were either operated by the store or contracted out, with benefits and disadvantages to each approach. A breakeven analysis showed that

within 2-5 months of buying a van and within 4-10 months of



Figure 10: UCLA Supermarket Saturdays shuttle schedule

contracting out, a break-even point could be achieved in most zip codes, assuming 10% of households currently without a car used the shuttle. If 15% of households without a car used the shuttle, a profit could actually be made. The results of the study revealed that all 61 zip codes in California with similar demographics should be considered potential locations for supermarket sponsored shuttles.

**Case Study: Numero Uno Market – Los Angeles, California** (Mohan V, Cassady D., 2002)

The Numero Uno Market is a small chain that is growing with the help of its “Shoppers Van Shuttle Service.” They operate nine vans out of one location that make an estimated total of 27,000 trips per year, serving approximately 2,209 passengers per week. The vans operate in a radius of 3-8 miles around the store. The program costs including drivers, operating costs, and maintenance, amount to less than 1% of gross store revenues.



Figure 11: Vallarta Supermarkets shuttle - "Shop with us and we'll take you home!"



Figure 12: The Martha O'Bryan Center repurposed an old school bus to use for their supermarket shuttle

**Case Study: Grocery Shuttle Bus – Nashville, Tennessee** (NewsChannel5.com, 2010)

This grocery shuttle service is run by the Martha O’Bryan Center, a faith-based family resources center. Similar to the situation in North Minneapolis, many people in Nashville rely on public transportation. The shuttle is an old school bus, costs one dollar per person, and currently runs three times per month, with the financial ability to extend service to twice per week if needed.

The \$5,000 it costs to operate the program was financed through a volunteer fund raiser and a corporate donation.



Figure 13: Example of a produce stand or mobile food cart

**Mobile Food Carts or Fruit Stands**

A mobile food cart is a small-scale portable market that sells only fruits and vegetables in an open-air setting. It is often operated as a sole proprietorship and frequently sells food supplied by local farmers. These are an attractive solution to increasing access to healthy food because they can be placed and operated in low-income neighborhoods where health foods are most lacking and easily moved as necessary. Relatively little funds are

required to start and operate mobile food carts, and they can create an entrepreneurial opportunity for local residents. The disadvantages of food carts include exposure to harsh weather conditions, recruiting enough interested operators, and financing operator assistance.

### Case Study: Green Carts – New York, New York

In order to address the lack of access to healthy foods in New York, the city created the Green Cart program. The program made 1,000 permits available for Green Cart placement in neighborhoods designated as having poor food access. There was concern among businesses that the carts would hurt their sales, but since Green Carts are only allowed where current access is poor, this issue did not materialize.

The city offers workshops for people who would like to operate a Green Cart, covering topics such as cart manufacturers, required permits, the application process, financing, food sourcing, and location. Total start-up costs for cart operators fall somewhere within the range of \$3,500 - \$5,500 (McMahon, 2010). The city does offer micro loans to cover operator start-up costs, made possible by a 1.5 million dollar grant (NYC Green Cart, 2011). It is still a relatively new program and its viability has been met with mixed opinion. Some vendors report that carts in low-income neighborhoods are not doing very well, while others have seen a lot of business.

According to food policy coordinator Ben Thomases, “it’s a good business... you are not going to get rich doing it” (Saxena, 2010). However, sales have been seen to increase significantly with the installation of food stamp machines.

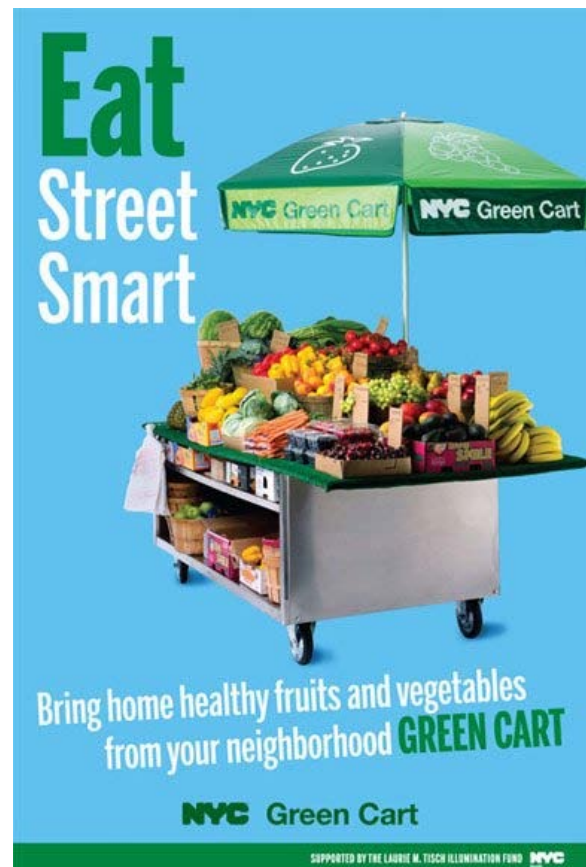


Figure 14: New York City Green Carts

### Virtual Supermarket Delivery

The virtual supermarket concept allows people to order their groceries online and have them delivered either to their home or to a nearby neighborhood location. The service can be incredibly convenient and often increases access to not only fruits and vegetables, but also to a full-scale grocery store selection. Coborns Delivers does already offers this type of service in the Twin Cities, however prices are generally somewhat higher than a big-box grocer, and the delivery fee for orders under \$50 is \$9.95 (Coborns, 2009). When money is tight, as it often is in low-income neighborhoods, these extra fees are not practical. The other issue with virtual grocery ordering is that not every household has access to the internet. If internet access were made available at local libraries or schools, if a delivery fee were not charged, and if food were still affordable, then this could be a good option for North Minneapolis.



Figure 15: Creative partnerships can result in increased food access for the community

**Case Study: SHARE Food Buying Club – Milwaukee, Wisconsin (SHARE , 2011)**

SHARE is a non-profit volunteer-run operation that offers food at 30%-50% off grocery store prices. These low prices can be achieved because they buy their food on the national wholesale market, just as the large grocers do. SHARE does attempt to supply local fruits and vegetables during the growing season in order to save money on shipping, but the organization now serves 20,000 people all on the same day which is too large for local growers alone to supply. Food available through the program includes: “meats, fruits and vegetables, certified organic produce, dry goods, and many other grocery items, as well as complete family dinner packages for the holidays” (SHARE , 2011).

Anyone is allowed to participate in the program; there are no membership fees or income restrictions, and volunteer hours are not required. Food orders can be placed on their website or with a paper form, and they accept cash, check, credit, debit, and Quest/Link/Bridge cards. They distribute the food the community locations like churches and community centers, most often on Saturday mornings.



Figure 16: The Baltimoremarket ordering process in action at the library

**Case Study: Baltimarket – Baltimore, Maryland (BALTIMARKET, 2011)**

Baltimarket is a joint venture between the City of Baltimore Health Department, Santoni’s Supermarkets, Enoch Pratt Library, and MICA (Maryland Institute College of Art).

Recognizing that internet access is not always accessible, Baltimarket has created a virtual supermarket system that operates out of local libraries. Community members come to the library on ordering day (once a week) and place their orders for Santoni’s groceries. Their orders are delivered to the library for pickup the next day. This setup allows people to avoid long

grocery lines, walks home, or stressful bus rides. Computers and assistance are all provided at the library. Baltimarket accepts cash, credit/debit, checks, and EBT. There are no delivery charges, sign up costs, income restrictions, or minimum or maximum orders. Participants can

order anything Santoni's sells; there are no food restrictions, including cold food like ice cream and frozen foods. Santoni's weekly sale prices apply and there is a 10% discount for seniors as well as money-saving coupons for frequent use or referrals. The beauty of this model is that operation need not be restricted to libraries; the virtual supermarket shopping could also occur in other community locations such as schools, senior homes, or even apartment complexes – anywhere close to a residential base that also has enough space to set up some laptops and distribute food.

## Mobile Farmers Markets / Mobile Produce Trucks

An increasingly popular method of bringing healthy food directly to people in low-income communities is through van or bus delivery to neighborhoods. Mobile farmers markets and produce trucks both operate in this fashion and are therefore included in the same category; however, there are some key differences between the two. Mobile farmers markets often only deliver locally-grown produce and only during the growing season, which varies between operations but generally falls between April and October. Mobile produce trucks operate year-round and have multiple food suppliers, although there is often still a focus on connecting local farmers to the community. This food distribution method is generally well-received by the community, however, many operations are still relatively new and have not yet been the focus of a measurable impact study.



Figure 17: Mobile markets bring fresh produce directly to the community

Each mobile farmers market or produce truck operation runs with slight variations that fit their particular community and resources. Following is a summary of some of the different options in terms of distribution, food selection, ordering, price, operation, and extras.

### Distribution

Food distribution is almost always focused in low-income communities. Depending on the operation, trucks make deliveries to homes, colleges, churches, hospitals, elementary schools, apartments, central or busy neighborhood locations, public housing sites, or businesses. The delivery location selected should be what makes sense based on need and accessibility in each individual community. The most common delivery frequency appeared to be weekly, with some operations starting out as monthly and some increasing to twice-weekly based on demand.



Figure 18: Partners for Active Living and Hub City Farmers Market partnered to operate this Mobile Market in Spartanburg, SC



For larger operations, the truck often runs daily, but visits different sites each day. This type of regular delivery schedule can increase use of the service, with lines sometimes forming even before the delivery van arrives, but also risks restricting use to only people who are available during that time-slot. The actual distribution of food from the truck to shoppers also varies. Some trucks are large enough that all food is stored on the vehicle and people board to shop. Other trucks simply haul the food in, with the food being unloaded and actually distributed to people on the sidewalk or in a building at the location.

### *Food Selection*

The food selection method falls into two broad categories: pre-made food baskets or individual pick-and-choose. The pre-made food baskets, sometimes referred to as grub boxes, share bags, or market bags, often vary in size. For instance, one operation offers a ½-bushel family share, a ¼-bushel couple’s share, a ¼-bushel all-organic share, and a salad-only share. This type of pre-made food basket program often operates using CSA (community support agriculture) model with people committing to purchase a certain quantity of food, and often offers only locally-grown food during the region’s growing season. The locally-grown food that is supplied is often very fresh with some operations delivering food from farm to people same-day. Year-round operations supplement locally-grown food sources with purchased or donated food from local vendors and grocers. In one case, Wegmans grocery store gave the mobile market access to the store’s local growers at the same pricing level that the grocer receives. Wegmans also sells produce to the mobile market operation at cost (Garry, 2010). In order to promote urban agriculture, some mobile markets allow for “trade-in” at the market; for example, if a person grows green beans in their backyard garden, they can bring them to the market and trade them in for corn at no cost.



Figure 19: A variety of healthy fruits and vegetables are distributed out of trucks, on nearby sidewalks, or in community buildings



Figure 20: Rural Resource's Mobile Farmers Market



Figure 21: Farm Fresh Mobile Market



Figure 22: Massachusetts Avenue Project's Mobile Market



Figure 23: Another variation on the mobile produce truck

### Ordering

The method of ordering also varies among mobile markets. Markets that sell pre-made baskets often require pre-ordering as well. Orders can be called in or emailed, mailed-in via paper form, or submitted online; not all ordering methods are available at all markets. A few of the CSA-style operations require memberships or one-time joining fees, but this is actually rather rare. Markets where people select their fruits and vegetables on-site do not require any type of ordering.

### Price

Mobile markets increase access to healthy foods not only by providing delivery services, but also by offering foods at reduced prices. In fact, the produce generally costs 30%-50% less than grocery store prices (Lyon, 2010). Several programs, usually those run by food banks or that distribute to public housing, even offer food for free (HEAC-CCROPP Story Bank, n.d.) (City Harvest, 2010). Further discounts are often offered for buying larger quantities. Several operations charge a fee for delivery direct to people's homes, and food is sometimes subject to sales tax. Almost every mobile market accepts cash, checks, credit/debit, food stamps, WIC vouchers, SNAP (Supplemental Nutrition Assistance Program), and EBT (Electronic Benefits Transfer).

### Operation

Successful mobile markets are run by a variety of organizations, often in partnership. Current operators include local farmers, non-profits, food banks, community development corporations (CDCs), foundations, and health departments. Some markets are run by paid staff and some have an army of volunteers. The delivery vehicles also range in style – anything from repurposed ice cream trucks, to old school busses, box trucks, RVs, or delivery vans. A nice feature of the mobile market is that the operation can start small with minimal suppliers and just one vehicle, and grow slowly as demand or funding increases. The mobile market does not appear to be

entirely self-supporting, but can also be operated without exorbitant cost to the organization

running the program, especially considering the degree of benefit seen by the community. For example, according to Gorge Grown, a mobile market that operates in Washington and Oregon, “[it] was born out of a community meeting and piloted in 2008 with the help of local donors. We purchased a 1994 Ford box truck, outfitted it with coolers, shelves, and a reconfigured stand-up freezer unit, and hit the road. For the past two years we have operated the Mobile like a business: it requires only a small amount of outside funding (approximately \$5,000) to break even based on revenue” (Gorge Grown, 2010). Demand was so high in one location for Gorge Grown’s produce that a local entrepreneur decided to open a permanent food cart, allowing Gorge Grown to move their operations to another site needing their service.

### *Extras*

Many mobile markets not only provide healthy foods, but also place emphasis on the bigger, healthy-food picture by focusing on education. Tasting and cooking demonstrations are conducted at stops to teach people how to use produce in new and tasteful ways. Some markets provide information at the stops on community gardening, nutrition, and food stamp eligibility. The larger operations have even been known to hold festivals or cultural events.

### **Case Study: Capital District Community Gardens Veggie Mobile – Troy, Albany, and Schenectady, New York (Veggie Mobile, 2010)**

The Veggie Mobile was started in 2008 and its success prompted the addition of 7 new stops in the summer of 2010. Operated out of a box truck complete with refrigerators, display shelves, solar panels, and a booming sound system that plays music at stops, this produce aisle on wheels stays plenty busy. The market averages four stops per day, Tuesday through Saturday ranging from 11:00am – 5:30pm, and operates year round. Stops are an hour in length, occur at public housing projects, senior centers, and other densely-populated locations, and include cooking demos and tastings. The Veggie Mobile offers a huge selection of produce – as much as 45 varieties at one time, with the weekly selection depending on price, seasonality, and demand. The produce is very affordable; bananas at the grocery store are \$0.99/lb but only \$0.59/lb on the mobile market and a head of iceberg lettuce is \$1.00 at the grocery store and 3 for just \$1.00 on the Veggie Mobile (Groll, 2008). The market food is made even more affordable because they accept EBT cards, WIC vouchers, and Farmers Market Nutrition Program checks; the market does not accept credit or debit cards.



Figure 24: People board the Veggie Mobile to select their foods



Figure 25: The Veggie Mobile operates rain or shine... or snow



Figure 26: A young boy helps himself to some curious looking vegetable in the Veggie Mobile



Figure 27: A view from inside the Veggie Mobile

A host of volunteers assist in the daily operation of the Veggie Mobile, but the program was largely made possible by a five-year, \$500,000 grant from the New York State Department of Health's Hunger Prevention Nutrition Program. Other donations from throughout the region help support start-up and operational costs. The Veggie Mobile is a very impressive operation, and although the funding level may not be possible in Minneapolis, some good lessons in strategy and operation may be learned from this case study.

Additional informational resources for the Veggie Mobile include two great videos and a wonderful blog that is kept very current. An article posted on *All Over Albany* provides good answers to some common questions (see Appendix I) (Pasko, 2009).

**Video 1:** [http://www.youtube.com/watch?v=89k5p\\_\\_e4xg&feature=player\\_embedded](http://www.youtube.com/watch?v=89k5p__e4xg&feature=player_embedded)

**Video 2:** [http://www.youtube.com/watch?v=gyFWQ29f0X8&feature=player\\_embedded](http://www.youtube.com/watch?v=gyFWQ29f0X8&feature=player_embedded)

**Blog:** <http://theveggie-mobile.blogspot.com/>

**Article:** <http://alloveralbany.com/archive/2009/06/04/the-veggie-mobile---questions-and-answers>

**Case Study: Growing Power Farm-to-City Market Basket Program – Milwaukee & Madison, Wisconsin, and Chicago, Illinois (Bybee, 2009) (Growing Power, 2010)**

Growing Power is more than just a mobile market program. According to their website, Growing Power “implements their mission [to provide equal access to healthy food] by providing hands-on training, on-the-ground demonstration, outreach and technical assistance through the development of Community Food Systems that help people grow, process, market and distribute food in a sustainable manner” (Growing Power, 2010). Although Growing Power has measurably impacted food access through innovations in food production, education, and growing methods, the focus of this report will be strictly on the Market Basket portion of the organization. For valuable details and to understand the full impact and scale of this organization, visit the Growing Power website at [www.growingpower.org](http://www.growingpower.org).

The Market Basket program operates year-round. Spring, summer, and fall produce is obtained from Growing Power’s farms and the Rainbow Farmer’s Cooperative – a collective of over 300 small-scale farmers. During the winter, the food is supplied by southern growers in the Rainbow Farmer’s Cooperative, local wholesalers, and Growing Power’s own green houses. Market Baskets are delivered weekly to neighborhoods and community centers, with orders being due on Wednesday for Friday or Saturday pickup. The community has come to rely on Growing Power not only for healthy and affordable food, but also for the sense of community that they develop at distribution sites.

**Types of Growing Power Market Baskets:**



**Figure 28: The Regular Market Basket \$16, serves 204 people**



**Figure 29: The Junior/Senior Market Basket \$9, serves 1-2 people**



**Figure 30: The Sustainable Market Basket; Certified Organic - \$27, serves 1-2 people**

### *Additional Mobile Markets in Action*

The following mobile markets are all in operation, the varying specifics of which were detailed in this report. For additional information on each type of market please refer to their respective websites which are identified in the works cited section of the report.

- **Mobile Farmers' Market** – Rural Resources. Greeneville, TN. (Rural Resources, 2010)
- **San Joaquin County's Mobile Farmers Market** – San Joaquin Emergency Food Bank. Stockton, CA. (HEAC-CCROPP Story Bank, n.d.)
- **Mobile Market** – Partners for Active Living and Hub City Farmers Market. Spartanburg, SC. (Shackleford, 2010)
- **Mobile Market** - Community Food Co-op of Utah. Salt Lake City, UT. (The Mobile Market, 2010)
- **SHARE Mobile Market** – non-profit food buying club. Milwaukee, WI. (SHARE, 2011)
- **Farm Fresh Mobile Market** – A Market for the People, Southside Interfaith CDC. Syracuse, NY. (Alfonso, 2010) (Garry, 2010)
- **Gorge Grown Mobile Farmers' Market** – Gorge Grown Food Network. Columbia River Gorge counties in OR & WA. (Gorge Grown, 2010)
- **Buffalo Grown Mobile Marketplace** – Massachusetts Avenue Project (MAP). Buffalo, NY. (Mass-Ave, 2010) (Metzger, 2009)
- **City Harvest Mobile Market** – New York City Housing Authority (NYCHA). Sites in the Bronx, Staten Island, Brooklyn, NY. (City Harvest, 2010)
- **Veggie Mobile** - Capital District Community Gardens. Troy and Albany, NY. (Veggie Mobile, 2010)
- **People's Grocery Mobile Market**. Oakland, CA. Used to operate a mobile market but they stopped it in order to focus their efforts on opening a full-scale supermarket. (People's Grocery, 2011)
- **Growing Power Market Basket Program**. Milwaukee & Madison, WI, and Chicago, IL. (Growing Power, 2010)
- **Fresh Stops** – City Fresh. Cleveland, OH. (City Fresh, 2010) (Masi)



Figure 31: Brings a whole new meaning to "Super Size Me!"

### *Carpools or Jitneys*

Other options related to transportation that may increase access to healthy foods are carpools, jitneys and transit oriented development (TOD). There was not a lot of research on carpools specifically related to grocery store access, but informal carpools could be formed by residents in order to help neighbors and friends reach the grocery store. It could be rather complicated to develop an organized carpool system for all of North Minneapolis. Jitneys, or share taxis, are defined by the Merriam Webster dictionary as "unlicensed taxicabs." Although not researched thoroughly for this report, an informal conversation with someone familiar with North Minneapolis revealed the current use of jitneys at the Cub Foods on West Broadway; informal cabs offer rides home at prices much lower than licensed taxis. While this situation is not ideal because of safety issues, it does potentially indicate a need for a service similar to this such as a supermarket shuttle van.

## Conclusion & Recommendations

Sufficient access to affordable and healthy foods should be a standard in any community. North Minneapolis community members who took part in NorthPoint's healthy eating resident survey indicated that there was a gap between the amount of fresh produce they would like to consume and the amount that was accessible. This accessibility issue was reinforced in this report with a GIS analysis that identified areas in North Minneapolis suffering from comparatively insufficient access to large grocers via automobile and transit. The GIS analysis also revealed high levels of food insecurity in North Minneapolis. The combination of insufficient grocery access, high levels of food insecurity, and low vehicle ownership levels results in an unhealthy environment in North Minneapolis.

There has been a lot of focus on farmers markets and community gardening as a means of addressing the accessibility deficiency; however, transportation-related solutions have received less attention. This report reveals that a number of viable options related to transportation have potential to increase healthy food accessibility in North Minneapolis. All of the options discussed in this report including public transit, supermarket shuttles, mobile food carts, virtual supermarkets, and mobile produce trucks could very likely increase access to healthy foods. This report serves simply as a starting point for identifying these options and how they could successfully operate in North Minneapolis.

## Opportunities for Further Research

- Reassess food insecurity levels using 2010 Census data for a more accurate representation.
- Attempt to further support the need for healthier food access by mapping health factors (such as heart disease) in Minneapolis.
- Identify sales leakage from West Broadway businesses that may be linked to transit access issues.
- Survey West Broadway businesses to determine interest in a business-funded WBA circulator.
- Delve deeper into public transit access by identifying route frequencies, transfer convenience levels, and specific underserved areas. Use this analysis to pinpoint locations for mobile market stops and to make a case for additional or modified public transit routes.
- Start a conversation with Metro Transit regarding a North Minneapolis circulator route. Assess potential ridership levels and the financial feasibility of a low-fare route.
- Perform a study that looks further into the affordability portion of the low-access equation. Identify which grocers are charging less and accept food assistance programs such as WIC and EBT.
- Conduct personal interviews with organizations that run the operations presented in the case studies. Financial details and operational specifics were not frequently available for the literature review, but they are crucial to making an informed decision going forward.

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Cover: <http://ucanr.org/blogs/food/index.cfm?tagname=food>

Figure 1: <http://www.northpointhealth.org/>

Figure 2: <http://www.cdc.gov/features/fooddeserts/>

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Figure 6: <http://www.metrotransit.org/bus.aspx>

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Figure 17: <http://nolafoodcoop.org/category/mobile-market/>

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Figure 20: <http://www.ruralresources.net/>

Figure 21: <http://www.giffordfd.org/Initiatives/CommunityProjects/FarmFreshMobileMarket/tabid/1886/Default.aspx>

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Figure 23: <http://www.ashlandwi.com/articles/2010/09/14/health/doc4c864f8acd559747725474.txt>

Figure 24: <http://theveggiemobile.blogspot.com/p/market-stops.html>

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Figure 28, 29, 30: <http://www.growingpower.org>

Figure 31: [http://gallery.craftech.com/linvilla/album\\_016/Vegetable+Truck+3.JPG.html](http://gallery.craftech.com/linvilla/album_016/Vegetable+Truck+3.JPG.html)

# Appendix

## Appendix I: Your Veggie Mobile Questions Answered

### Your Veggie Mobile Questions Answered

posted Jun 4, 2009

Vegging at St. Sophia.

By Jessica Pasko

A few weeks ago, AOA told you that the Veggie Mobile was a finalist in an international competition. And based on the comment thread that ensued, it seemed like a lot of you were pretty curious about the whole thing.



So I caught up with Veggie Mobile Coordinator EJ Krans to get the whole scoop...

(And by the way, when he's not selling veggies, you can catch EJ playing around town with Sgt. Dunbar and the Hobo Banned and We are Jeneric.)

### What's a typical day on the veggie mobile like?

The short answer is: dizzying. We start by pulling out the produce we already have in stock. There are usually two or three full-time staff helping to get the truck loaded and out on the road. We bring stored produce onto the truck and organize it into our display shelves while one of our team makes a list, orders produce and drives our Community Gardens van down to the Menands market to pick up new stock. We then determine the price per pound of the produce we just bought and update the price boards on the truck. Load up takes about two hours total. Then we're on the road.

We have three or four stops a day, Tuesday through Saturday, and they're all over the Capital Region so we spend a lot of time in the cab of the truck. That's where the Veggie Mobile team holds its meetings and where we listen to plenty of music too. At each stop the two Veggie Mobile staffers on duty will maneuver our 175 pound ramp into place, set up our cash register and scale, pull out our wooden step, our shopping baskets and our open sign

Also the set up and take down can be particularly fun when we have eager customers waiting for us to open up and we're often still serving a customer when we really ought to be on the road driving to our next stop.

### Who buys from you?

Our customers run the spectrum. We have children like Kyle from Griswold Heights, who has been coming to the Veggie Mobile with his mother for two years now, or Tatianna from Martin Luther King Apartments, who just recently became a regular visitor and always asks us first thing if we remember her name. We also serve a lot of senior centers where most of our customers are regular weekly friends. So we serve all ages, races and creeds, we have young families, seniors, black, white, Latino, and Asian. Most of our customers are low income but we don't discriminate. We just make it more likely that our customers will be low-income or fixed income seniors by putting our market stops in those communities.

**Which are the most popular stops? Where do you tend to see the most visitors to the veggie mobile? Do you seem to have a lot of regulars?**

Our most popular stops are South Mall Towers in downtown Albany on South Pearl on Friday mornings from 11-12:30, and Kennedy Towers in Troy on Thursdays from 2-3:00ish. Those are consistently very busy, the truck is regularly crowded and our stock is usually decimated after those particular stops but they are not always the busiest, some weeks our Yates Village or Ten Eyck Apartments stops in Schenectady are incredibly busy, and Ida Yarbrough Apartments on North Pearl in Albany, a new stop since April 2009, is becoming busier and busier each week.

**One thing many people were concerned about is whether or not the Veggie Mobile is open to everyone. I think there's some worry that if people who aren't as low-income are utilizing the Veggie Mobile, it will take away from those who really need it. Has this ever been a problem?**

As I said before, we don't discriminate. Most of our customers are low-income simply because we target those communities but we have never turned anyone away. Having said that, however, if you can afford to buy produce at the grocery store, have a car, and some discretionary income, then you're not our target population. We target low income people who live far from grocery stores, who don't have easy transport to grocery stores, or who might not be able to afford eating healthy. Or to put it another way: we target people whose access to healthy eating is blocked by price or mobility obstacles. It is for these people that we designed a market that moves so it can come into their neighborhood and sell them high-quality low-cost produce.

We can sell our produce at a lower price than supermarkets because we don't need to make a profit on the produce we sell. Capital District Community Gardens is a not-for-profit organization and has secured private and government grants in order to run the Veggie Mobile project, to pay salaries and cover costs.

The benefits of pricing the produce this way are more than we originally anticipated. Not only do people buy more produce when it is cheaper they are also open to trying things they may never have had the opportunity to try before, or to try things they didn't really like the first time. Most importantly they are excited to eat those fruits and vegetables they didn't see as absolutely necessary before when their money was stretched thin by the high prices of staples.

By comparing prices to local grocery stores we found that selling at wholesale price saves our customers approximately 45% on their produce bill [*editors: click on the price board photo to see today's prices*]. We then encourage our customers to spend as much as they would have before; we nudge them to buy more healthy foods than they could have or would have before. And we are finding that our customers are in fact buying more and they are telling us that they are happier for it. And healthier too.

# Appendix II: Excerpt from the Northside Community Seed Grant Application Form

## Northside Community Seed Grant Application Form

### 1. Briefly describe your organization.

The mission of NorthPoint is "Actively partnering to create a healthier community." For more than 40 years NorthPoint has been committed to the vision of a safe, healthy North Minneapolis community that is a desirable place to live, work and raise children. At NorthPoint our belief is "health happens in healthy communities," and we are dedicated to continually improving the "health" of the entire community. As such, the primary objective of all of NorthPoint's programs and activities is to improve the health outcomes and enhance the overall quality of life for all North side residents. Our aim is to leverage the human and financial capital that exist and has been invested in the community and serve as the "hub" for the integration of and easy access to a range of critical health care and human care services that are essential to addressing the root causes of the community's health and social economic disparities. NorthPoint's integrated approach focuses on addressing these issues in a holistic fashion. The Innovation Group is the internal research and evaluation unit of NorthPoint Inc.

In 2009 the Innovation Group contracted with Blue Cross Blue Shield of Minnesota, an independent licensee of the Blue Cross and Blue Shield Association, to address barriers related to healthy eating in North Minneapolis. During the first year of the project we identified community leaders to serve as project advisors for a comprehensive food assessment (CFA). As a result of the CFA, members of the advisory group committed to forming a coalition to increase healthy eating in North Minneapolis by a) improving access to and the availability of fresh produce; b) through cross generational and cross cultural programming; c) through physical changes to the community; and d) through formulating and advocating for policies that will lead to improvements in the North Minneapolis food environment. We selected a coalition model because there is ample evidence in the literature that well-functioning coalitions are able to accomplish the types of sustainable community changes we are seeking, better than individual organizations can accomplish alone.

### 2. Briefly describe the specific neighborhood, community, or group that will be served by the proposed project (including, if possible, demographic and geographic description).

The Northside Healthy Eating Project (NHEP) serves residents of North Minneapolis where food availability, price, and transportation all represent barriers to healthy diets for many individuals. Health problems stemming from poor nutrition are prevalent in North Minneapolis as evidenced by high rates of diabetes and obesity. In 2009, NorthPoint Health and Wellness Center provided medical services to nearly 1,000 patients diagnosed with Diabetes Mellitus – nearly a 24% increase from 2006.<sup>4</sup> Between 56.5 and 62.6% of North Minneapolis residents are overweight or obese based on a body mass index score.<sup>5</sup> According to the U.S. Surgeon General, "The prevalence of obesity in the

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<sup>4</sup> NorthPoint Health and Wellness Center (2010). Universal Data Systems (UDS) Report

<sup>5</sup> Hennepin County Department of Health (2003). SHAPE 2002 Racial and Ethnic Databook: Survey of the Health of Adults, the Population, and the Environment. Retrieved May 28, 2010 from <http://hennepin.us/files/HennepinUS/HSPHD/Public%20Health%20Protection/Assessment/SHAPE/2006/AdultDataBookFinal.pdf>

U.S. more than doubled (from 15% to 34%) among adults and more than tripled (from 5% to 17%) among children and adolescents from 1980 to 2008.”<sup>6</sup>

### **3. What is the title of the proposed project?**

The Northside Healthy Eating Project: Transportation Access to Affordable Fresh Produce

### **4. Project Description.**

- a. Describe the specific problem to be addressed and the nature of the project designed to address the problem.

North Minneapolis has been described as a “food desert”<sup>i</sup> - an “area in the United States with limited access to affordable and nutritious food, particularly such an area composed of predominantly lower income neighborhoods and communities.”<sup>ii</sup> In North Minneapolis, a community that is nearly 82% people of color, many residents experience persistent poverty and health disparities. According to the 2000 Census, in the neighborhoods of Camden and Near North, approximately 39% and 59% of the residents respectively, were at 200% of the Federal Poverty Level. This is in comparison to about 20% of the total Hennepin County population.<sup>iii</sup> Several health disparities have been also been reported. The Hennepin County SHAPE surveys, conducted in 2000, 2002 and 2006 show a pattern of persistent health disparities in terms of higher rates of diabetes, heart problems and high blood pressure.<sup>iv</sup>

Changing these health disparities will require more than encouraging residents to change their eating habits. As is true with most racial and ethnic disparities, the consumption of fresh fruits and vegetables is influenced by a complex set of factors. While there are some individual-level reasons for low consumption of fresh produce in North Minneapolis (individuals choose not to purchase produce); other factors limiting the consumption of fresh produce exist at the institutional and policy levels. In North Minneapolis, a disproportionately low number of African American households have access to vehicles as compared to more affluent neighboring portions of the Twin Cities metropolitan areas. Although there are a few large-scale grocers within driving distance, a substantial portion of our residents are not able to set out in their vehicles to purchase groceries for themselves and their families. Residents commonly make trips to a corner convenience store to purchase basics, where the availability of fresh fruits and vegetables is not only limited, but expensive. In order to develop strategies for improving access to fresh and affordable produce via transportation, among other things, we need to know more about what has been done in similar urban centers to improve transportation options and to understand the local policy environment, potential costs, and other factors that could either support or constrain efforts to enhance the existing transportation system.

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<sup>i</sup> A Study of Retail Food Store Locations and Nutrition in Hennepin County, MN. Hennepin County Community Health Department (2002).

<sup>ii</sup> United States Department of Agriculture (USDA) Food Conservation, and Energy Act of 2008. Title VI, Sec 7527.

<sup>iii</sup> United States Census 2000 as reported by Hennepin County (2002) SHAPE Survey Geographic Data Book. Retrieved March 3, 2010 from:

<http://hennepin.us/files/HennepinUS/HSPHD/Public%20Health%20Protection/Assessment/SHAPE/2002/GeographicDataBook20030716.pdf>

<sup>iv</sup> Hennepin County SHAPE Surveys (2000, 2002, 2006) Retrieved March 3, 2010 from <http://hennepin.us/SHAPE>

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<sup>6</sup> U.S. Office of Health and Human Services, Office of the Surgeon General (n.d.). The Surgeon General’s Vision for a Healthy and Fit Nation Factsheet. Retrieved May 28, 2010 from [http://www.surgeongeneral.gov/library/obesityvision/obesityvision\\_factsheet.html](http://www.surgeongeneral.gov/library/obesityvision/obesityvision_factsheet.html)

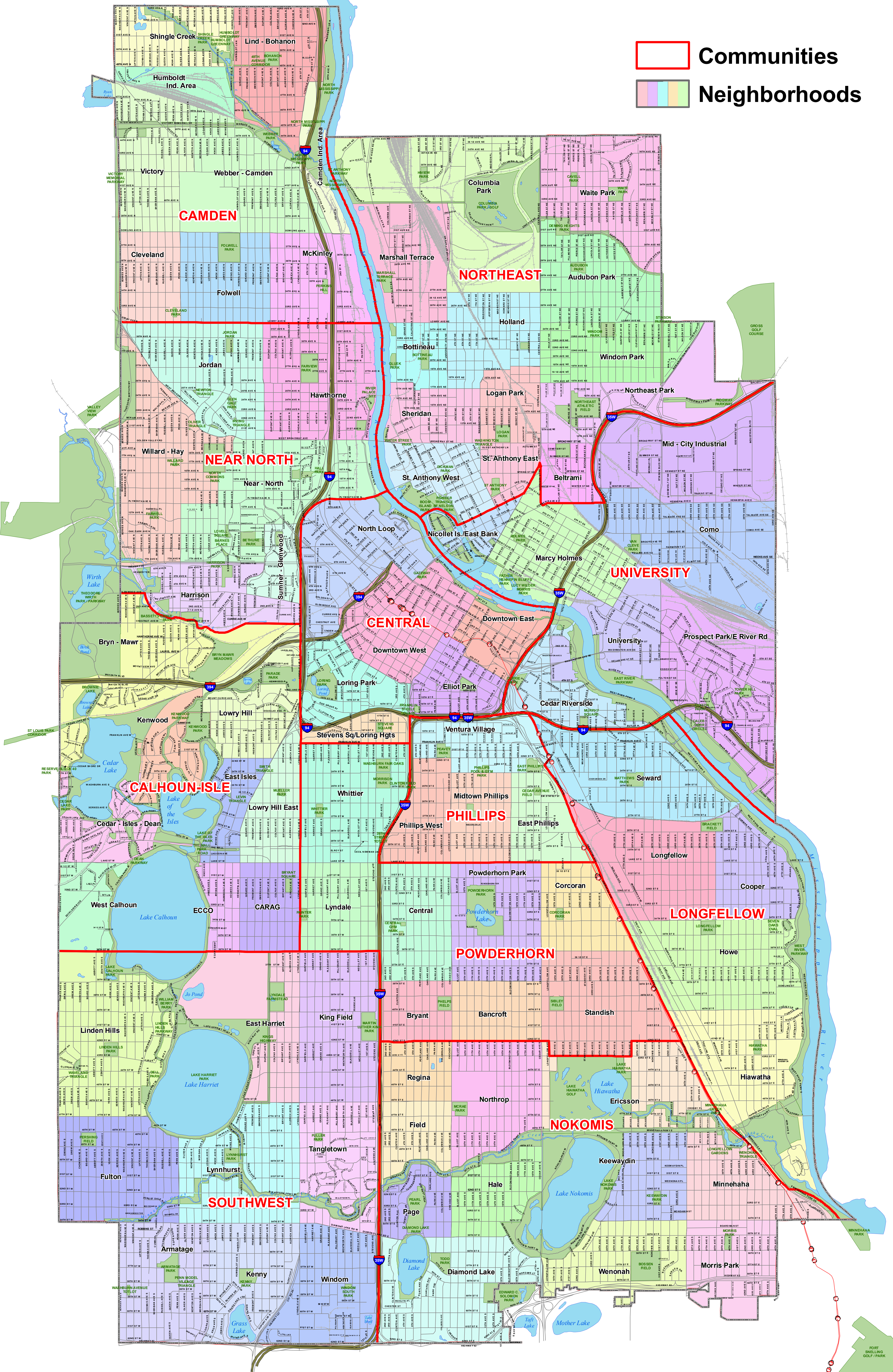


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# Appendix III: Maps

 **Communities**

 **Neighborhoods**

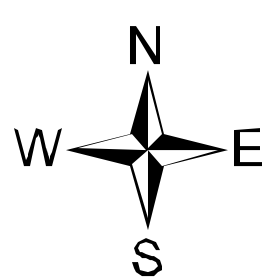


# City of Minneapolis

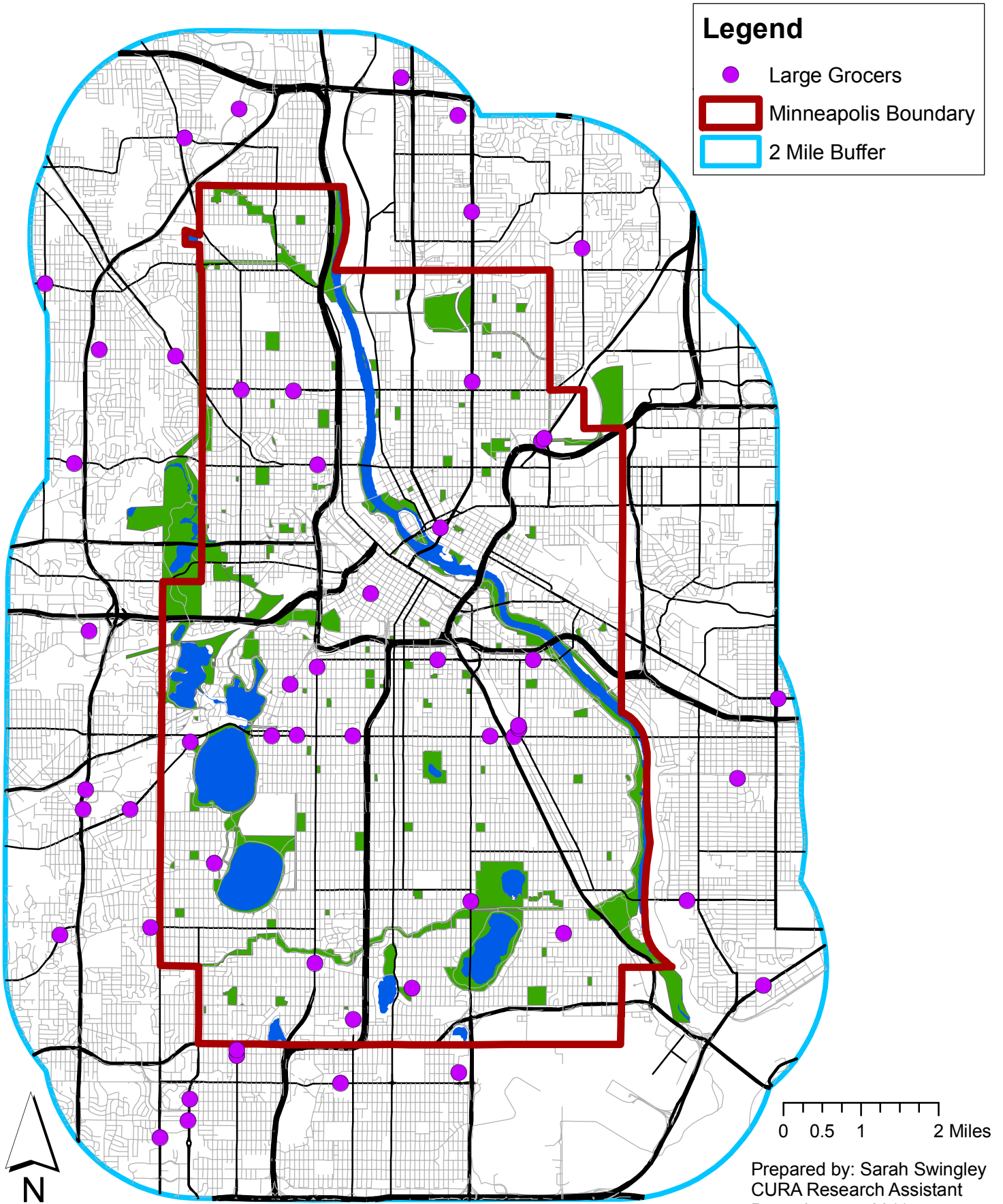
## Neighborhoods & Communities

Created July 3, 2008

0 0.25 0.5 1 Miles



# Map 2: Large Grocers within a 2-Mile Buffer of Minneapolis



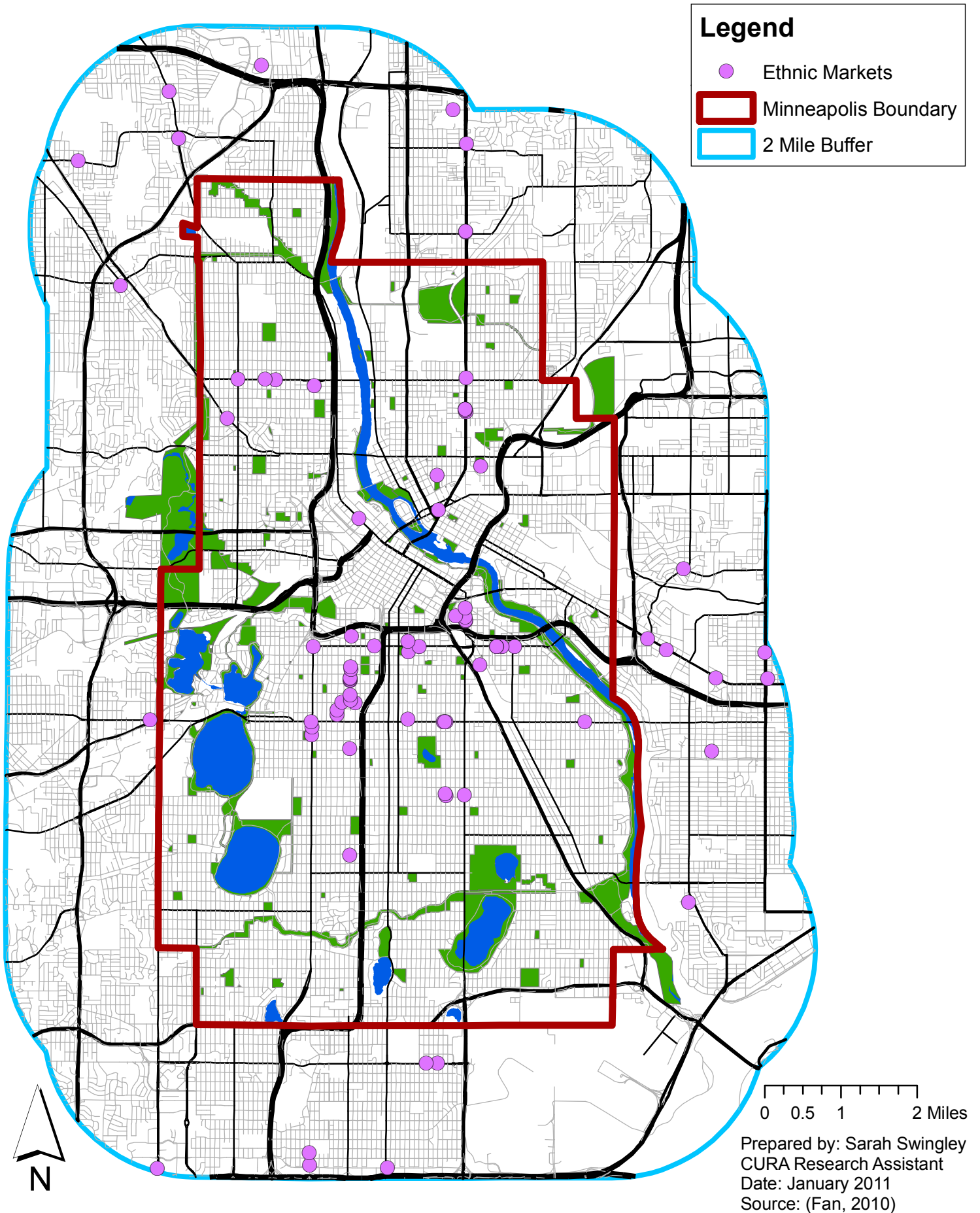
## Legend

- Large Grocers
- ▭ Minneapolis Boundary
- ▭ 2 Mile Buffer

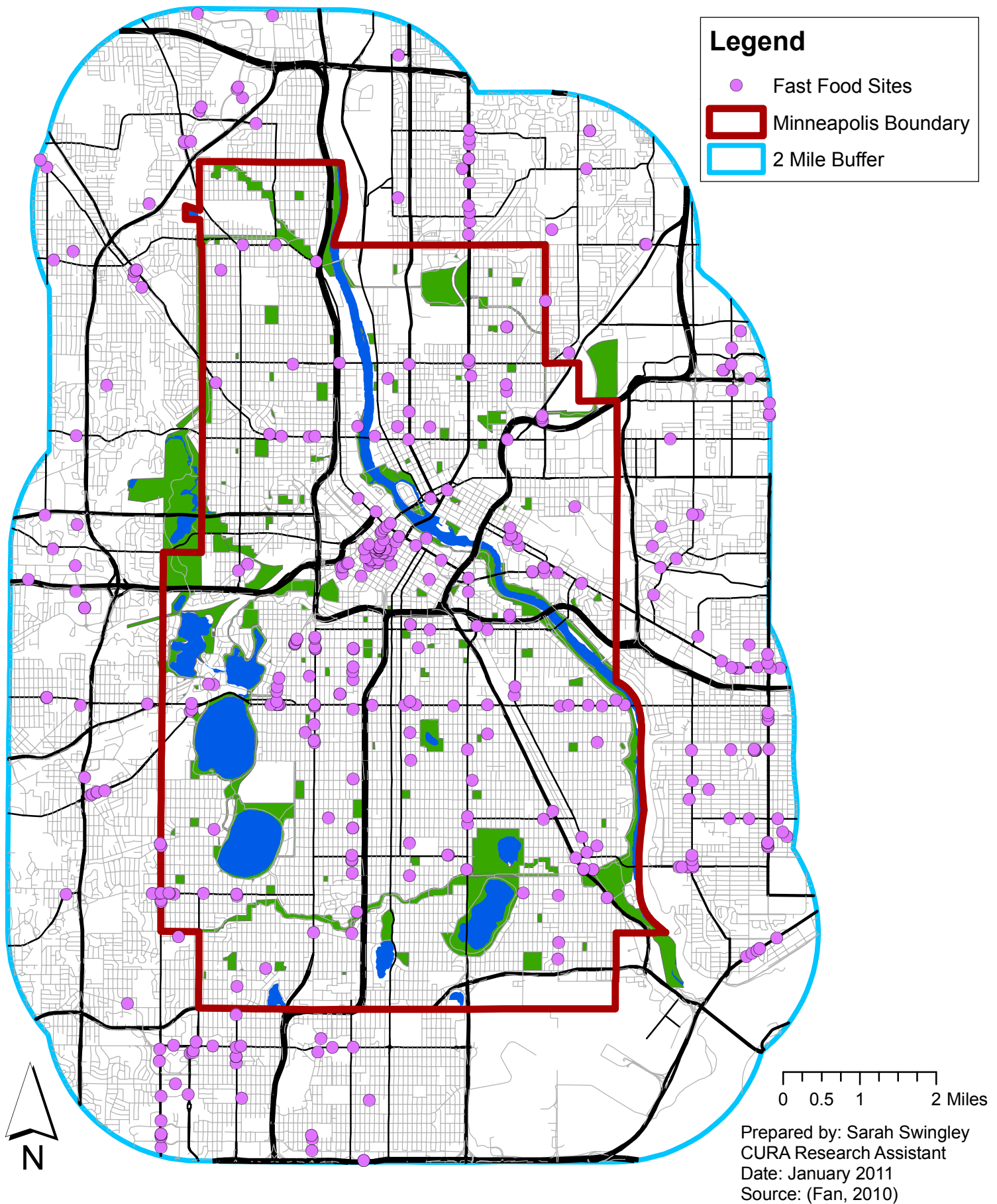
0 0.5 1 2 Miles

Prepared by: Sarah Swingley  
CURA Research Assistant  
Date: January 2011  
Source: (Fan, 2010)

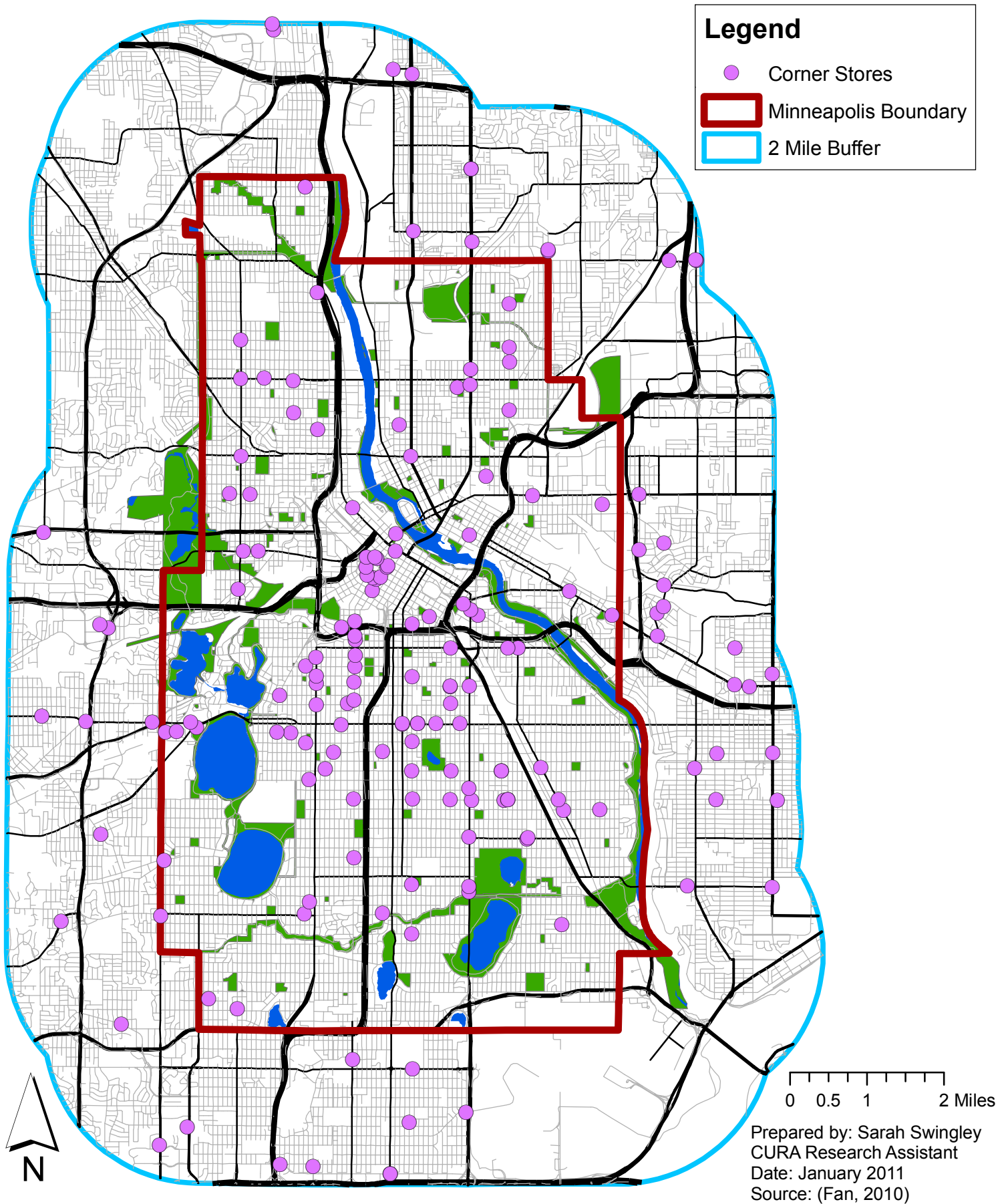
# Map 3: Ethnic Markets within a 2-Mile Buffer of Minneapolis



# Map 4: Fast Food Sites within a 2-Mile Buffer of Minneapolis



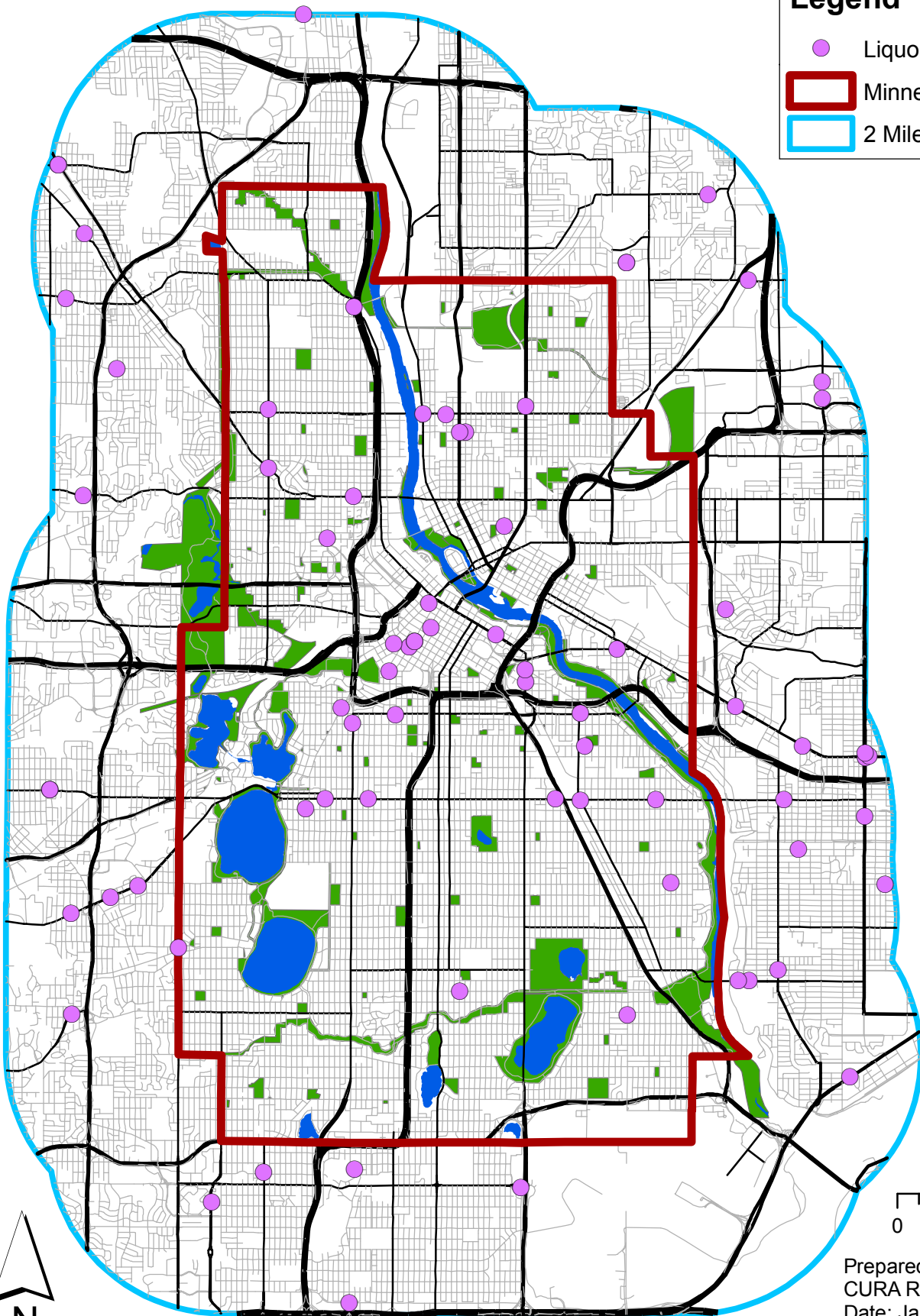
# Map 5: Corner Stores within a 2-Mile Buffer of Minneapolis



# Map 6: Liquor Stores within a 2-Mile Buffer of Minneapolis

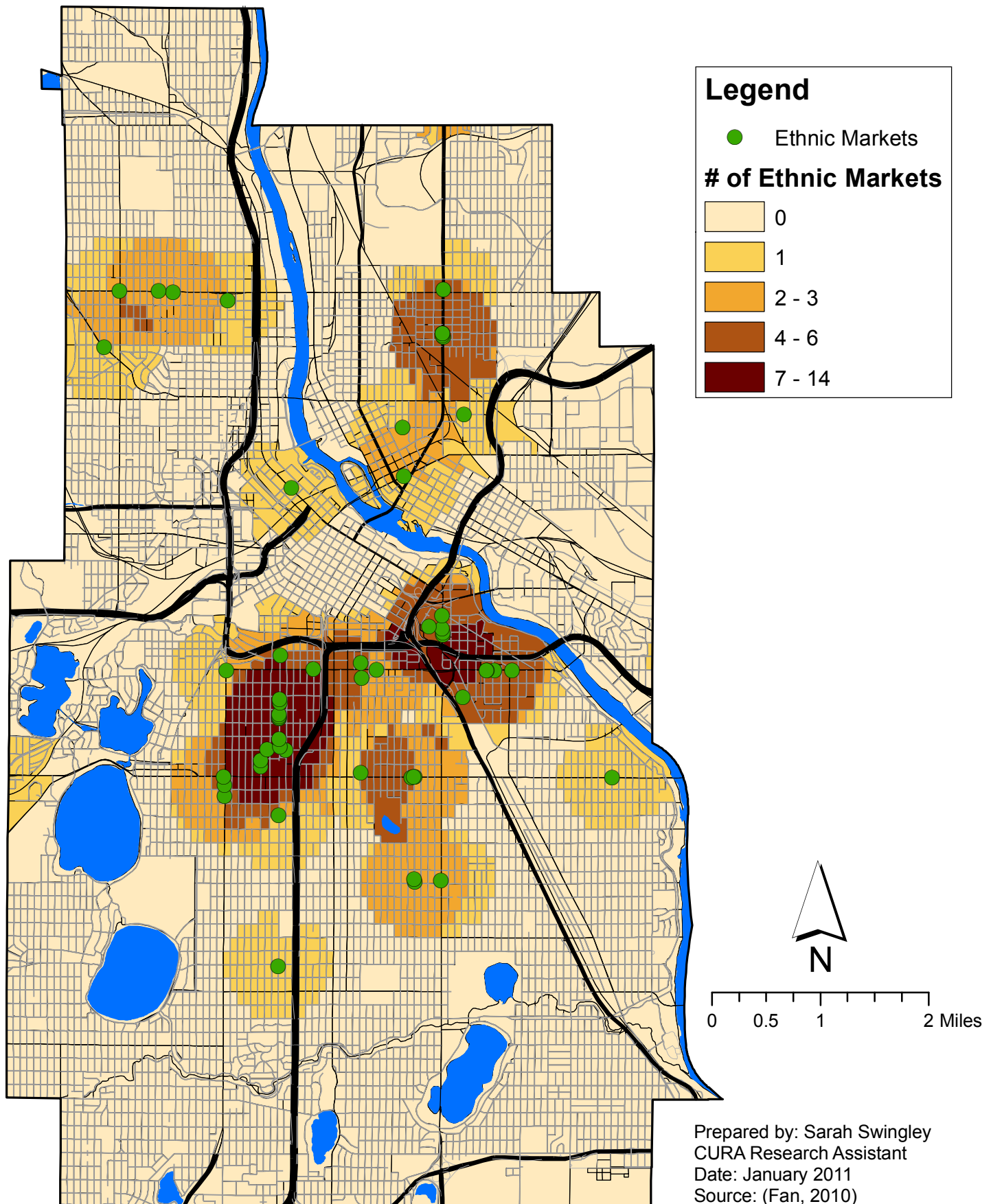
**Legend**

- Liquor Stores
- ▭ Minneapolis Boundary
- ▭ 2 Mile Buffer



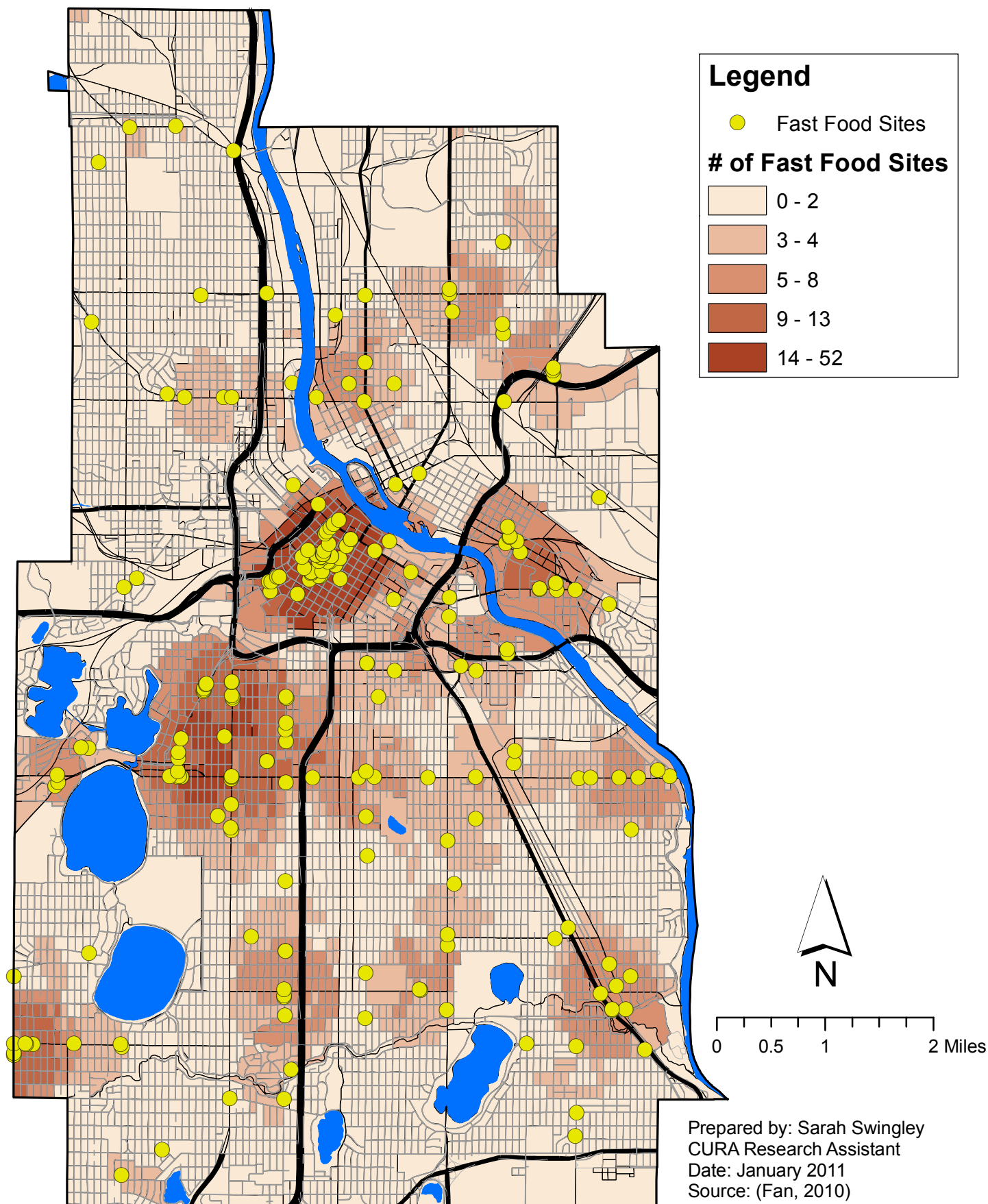
Prepared by: Sarah Swingley  
CURA Research Assistant  
Date: January 2011  
Source: (Fan, 2010)

# Map 7: Number of Ethnic Markets within a 10-Minute Walk of Each Minneapolis Census Block

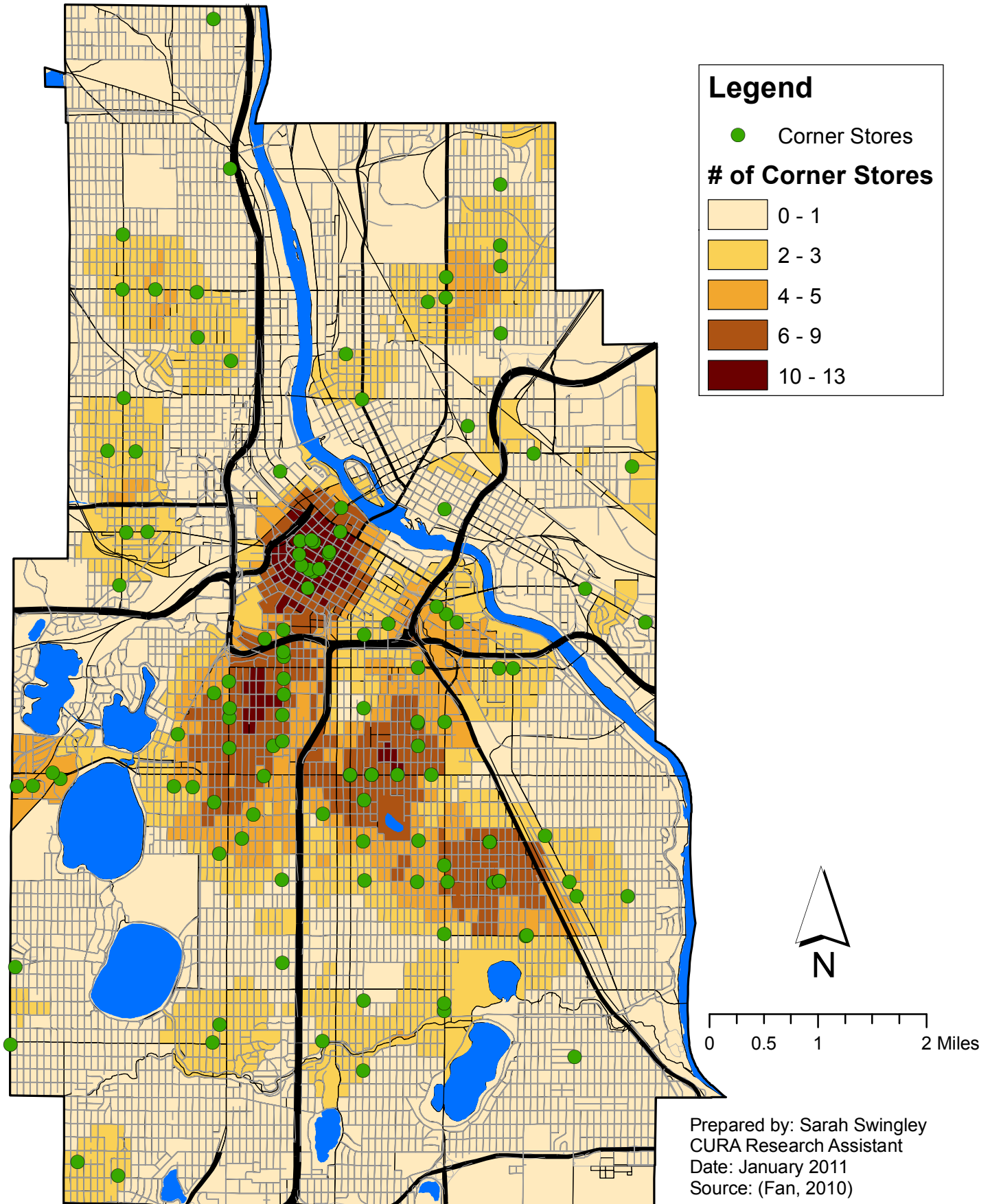




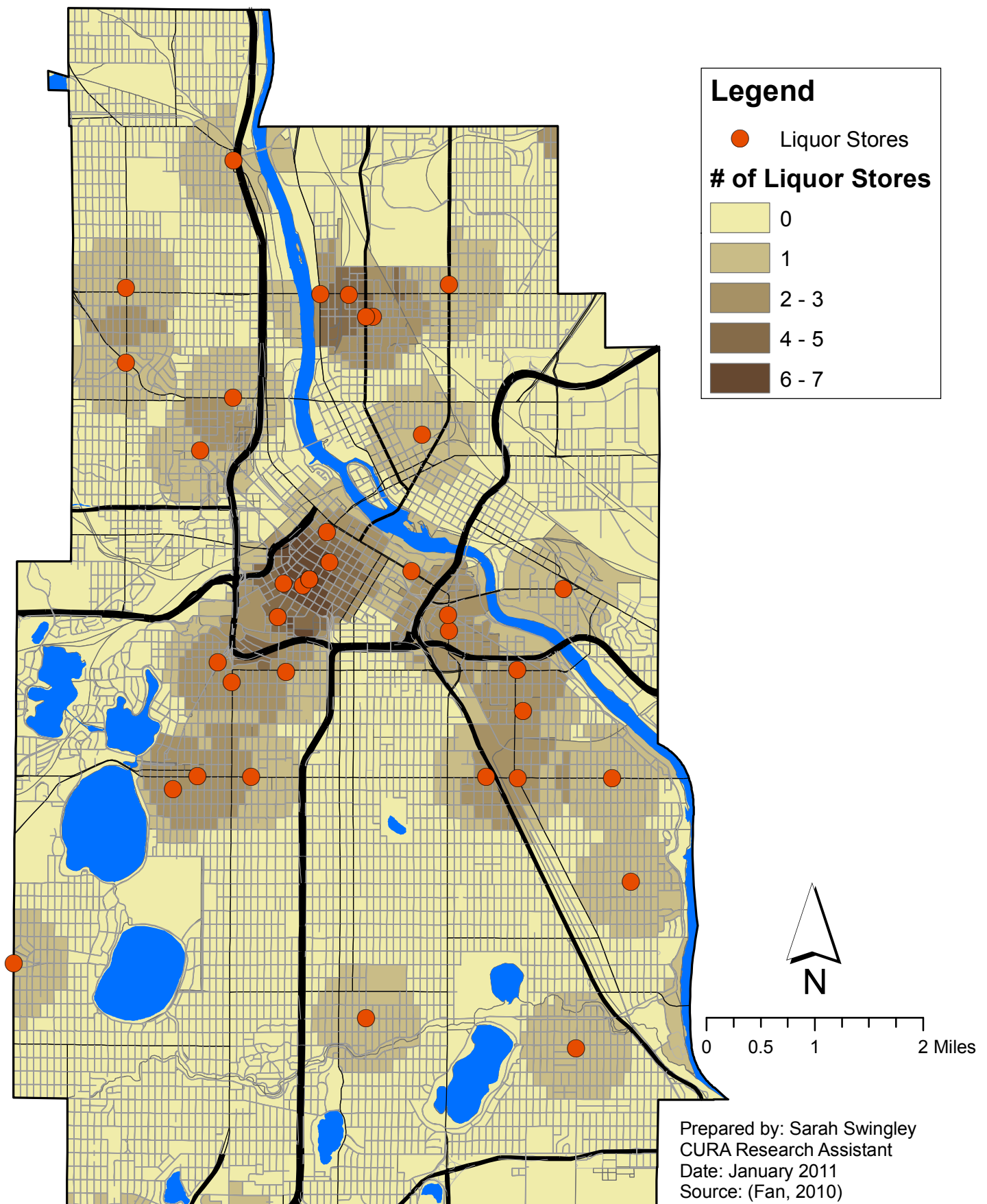
# Map 8: Number of Fast Food Sites within a 10-Minute Walk of Each Minneapolis Census Block



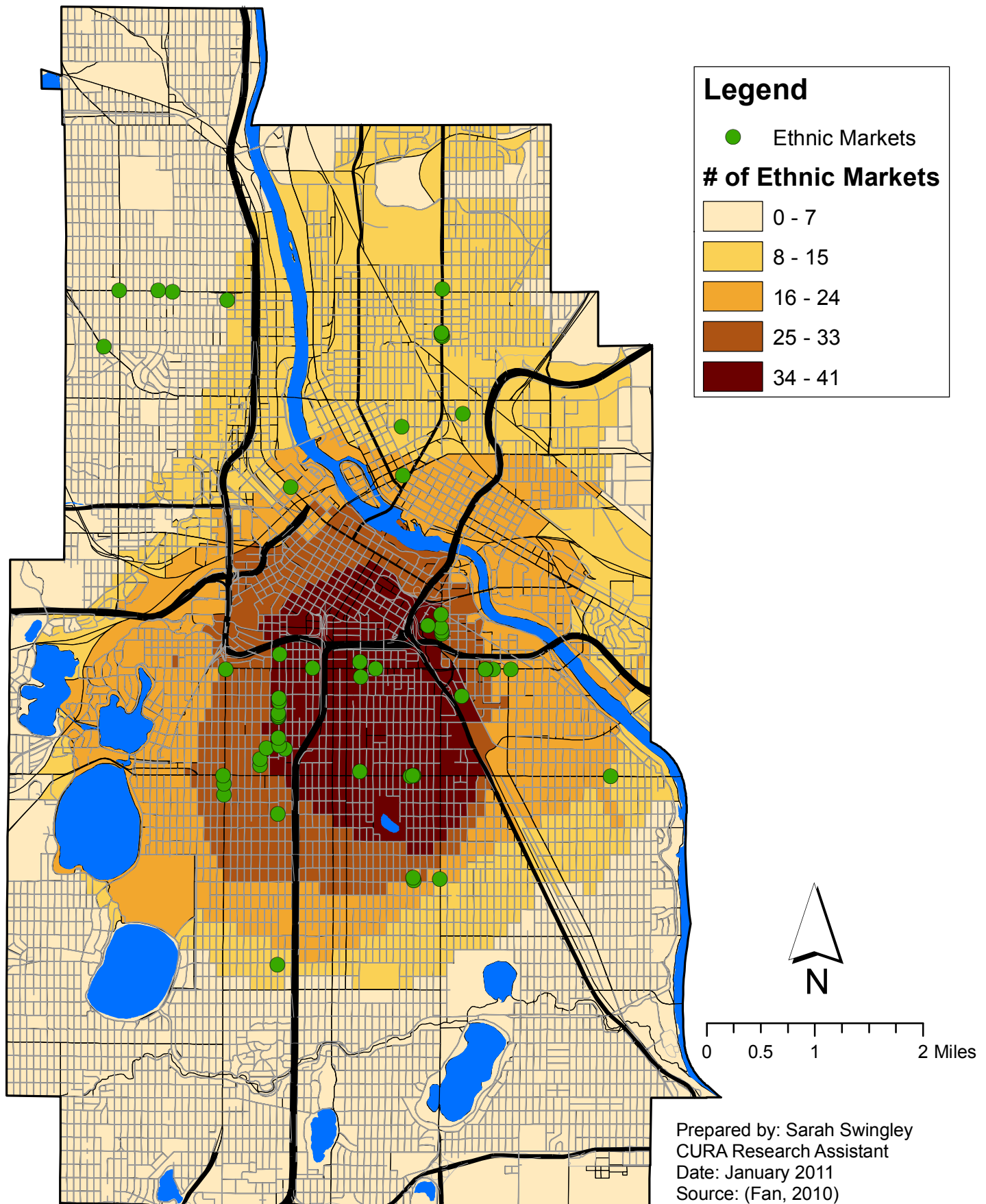
# Map 9: Number of Corner Stores within a 10-Minute Walk of Each Minneapolis Census Block



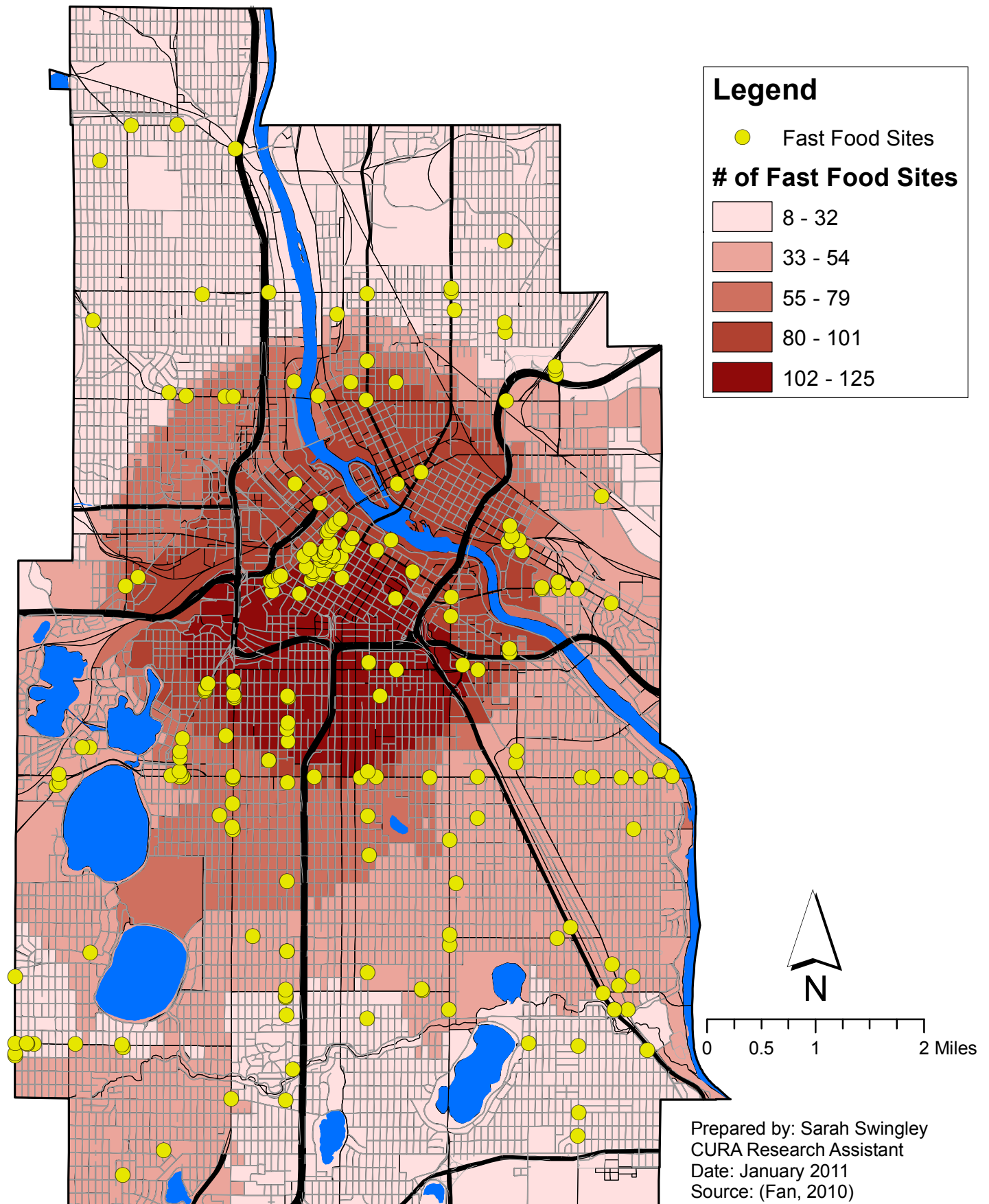
# Map 10: Number of Liquor Stores within a 10-Minute Walk of Each Minneapolis Census Block



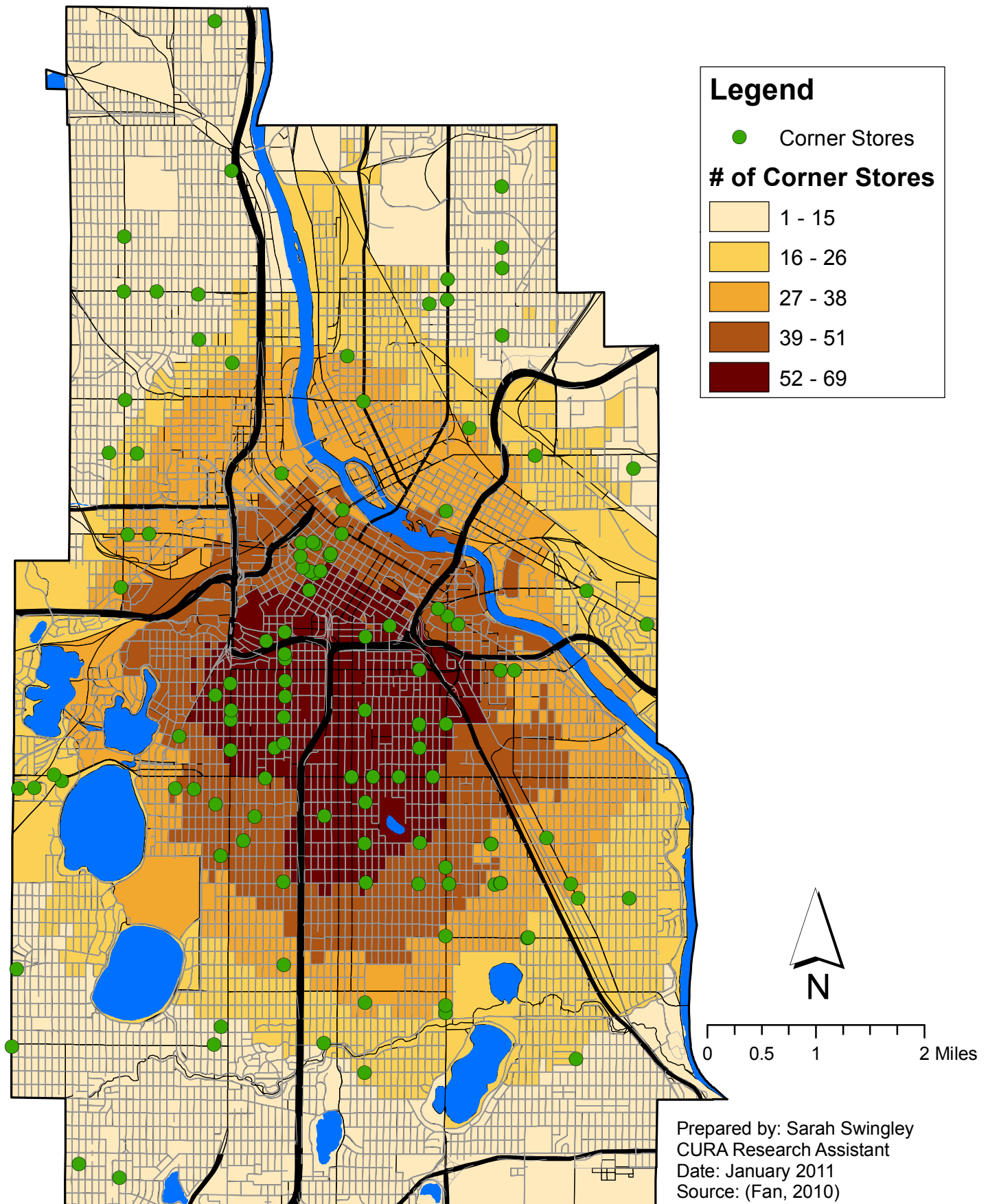
# Map 11: Number of Ethnic Markets within a 2-Mile Radius of Each Minneapolis Census Block



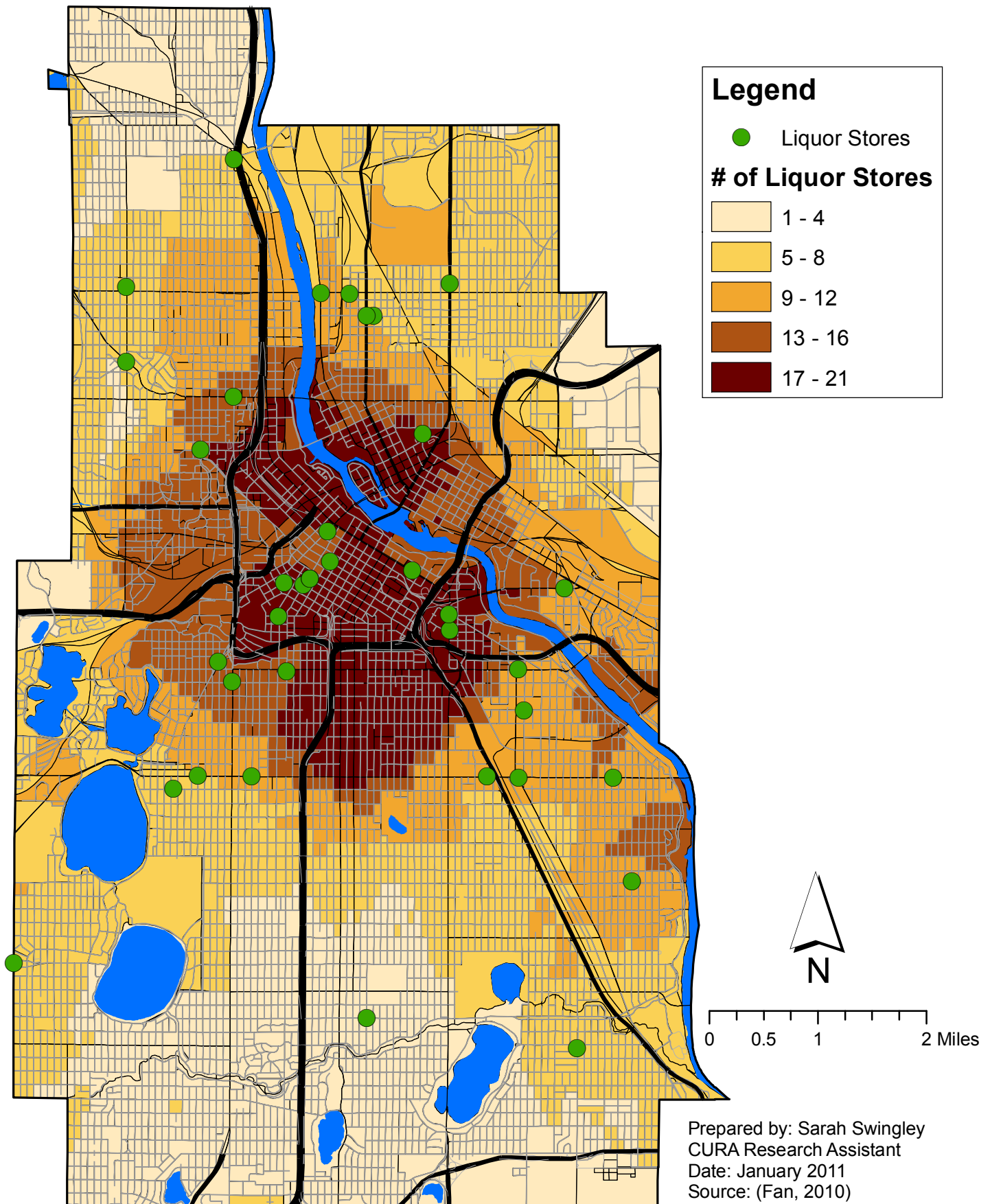
# Map 12: Number of Fast Food Sites within a 2-Mile Radius of Each Minneapolis Census Block



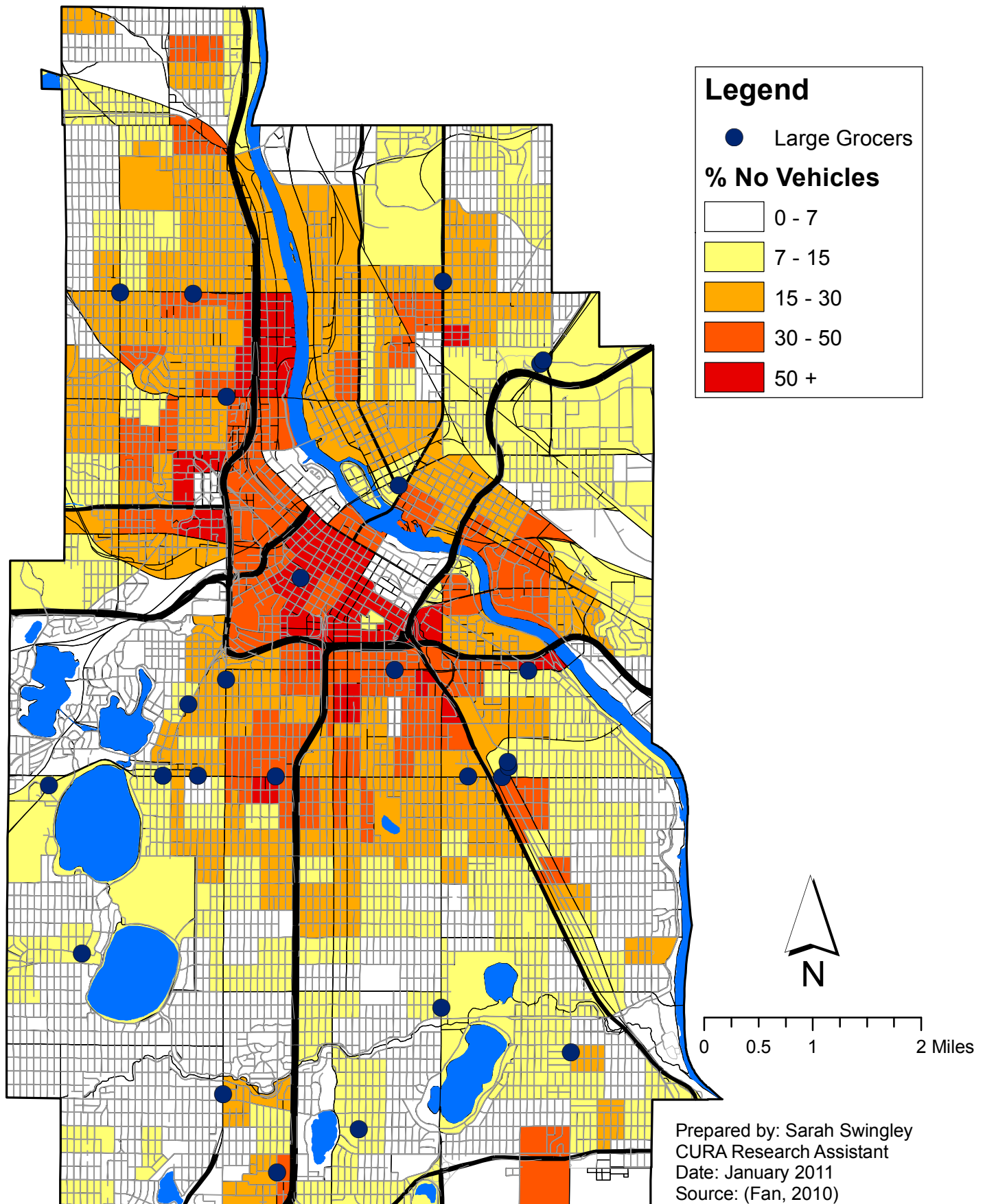
# Map 13: Number of Corner Stores within a 2-Mile Radius of Each Minneapolis Census Block



# Map 14: Number of Liquor Stores within a 2-Mile Radius of Each Minneapolis Census Block

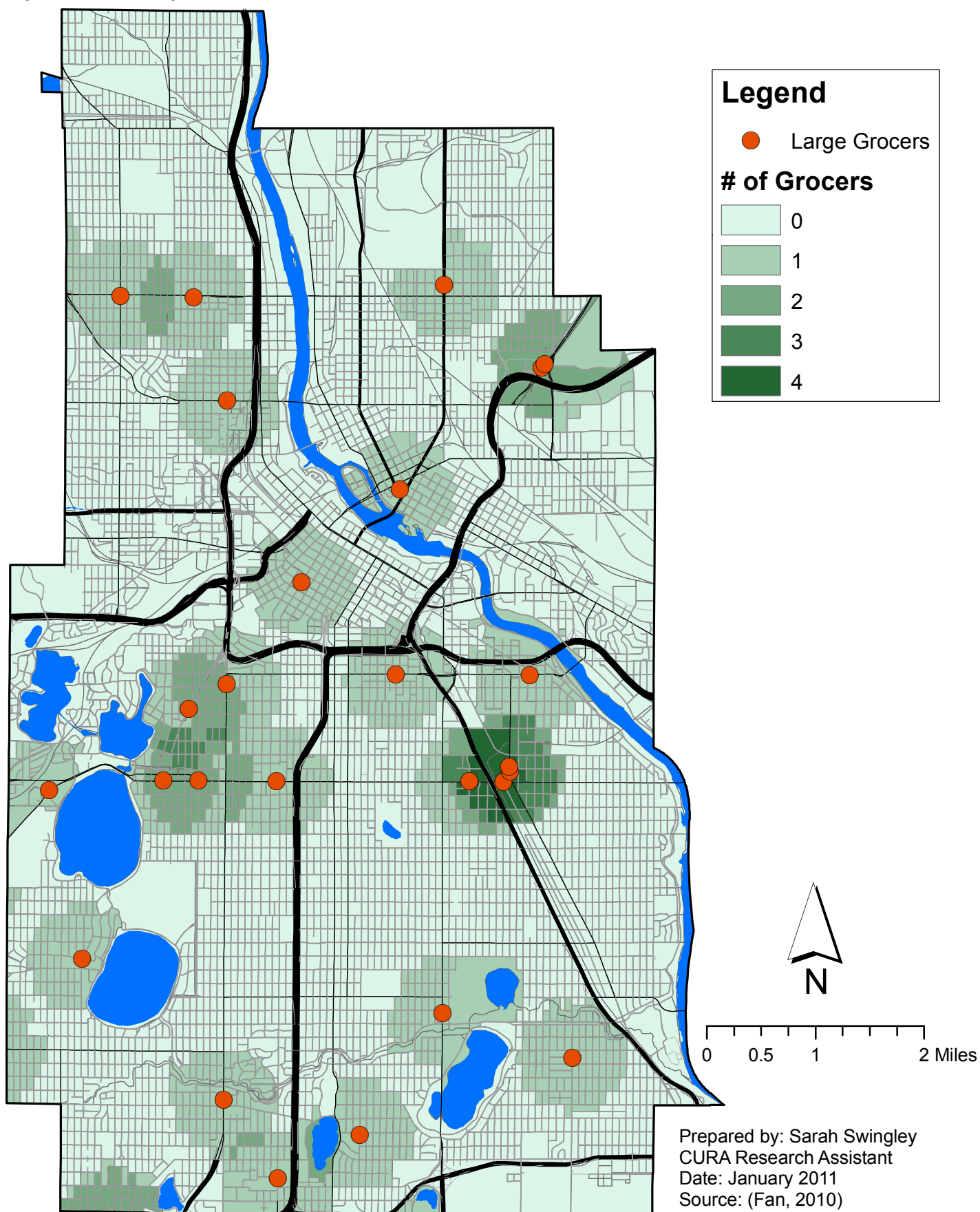


# Map 15: Percent of Households in Each Minneapolis Census Block with Zero Vehicles in Year 2000

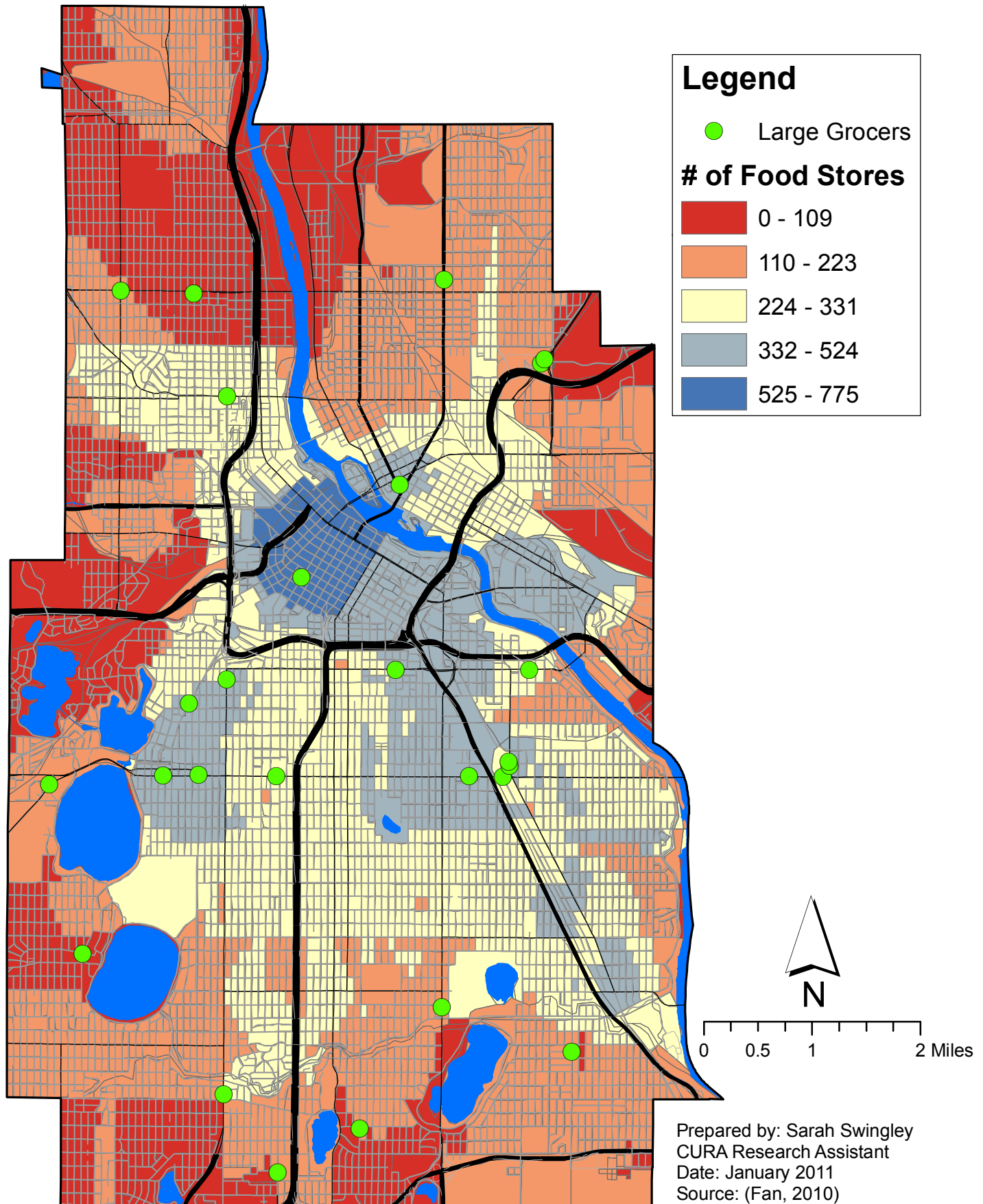




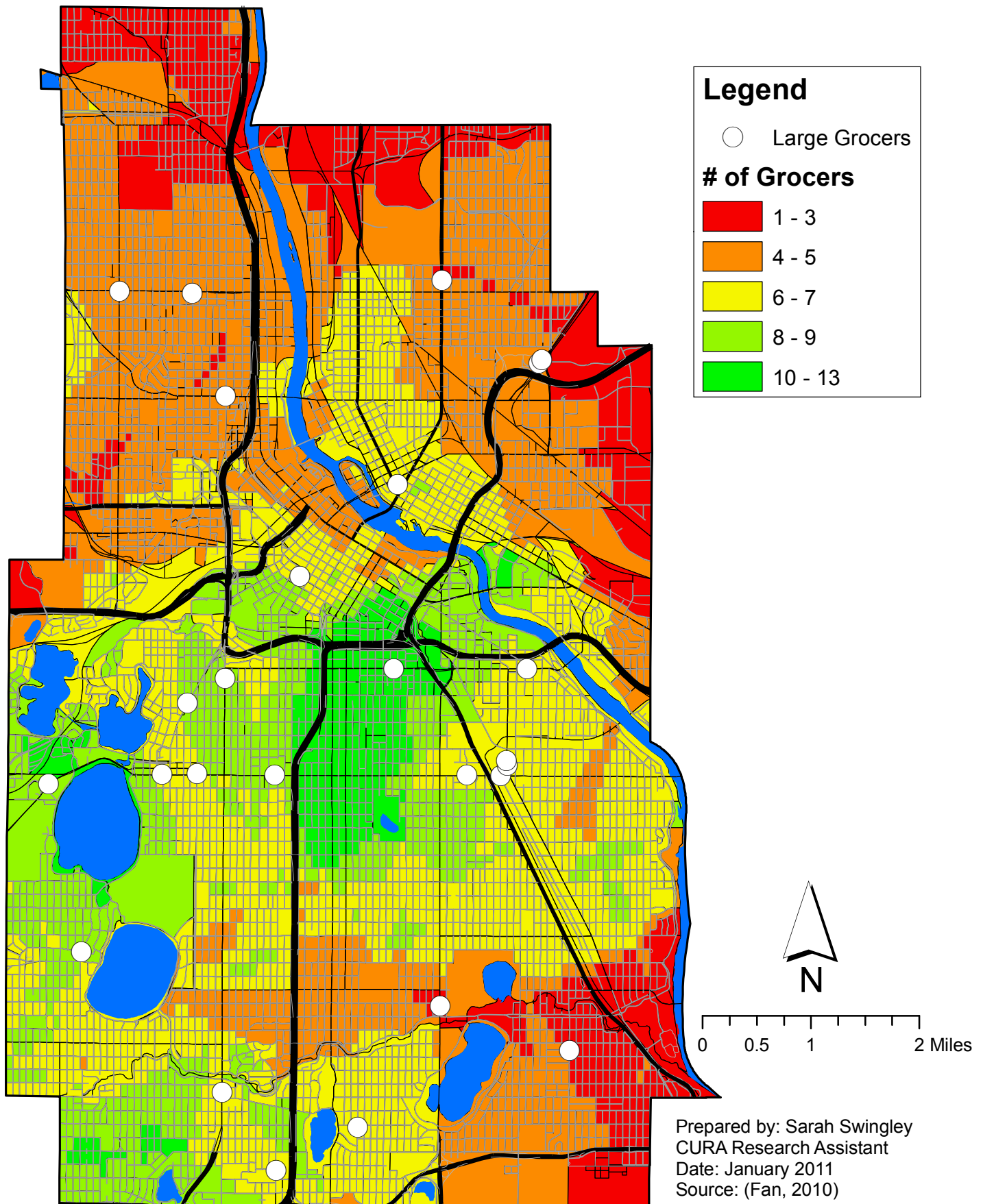
# Map 16: Number of Large Grocers within a 10-Minute (1/2 Mile) Walk of Each Minneapolis Census Block



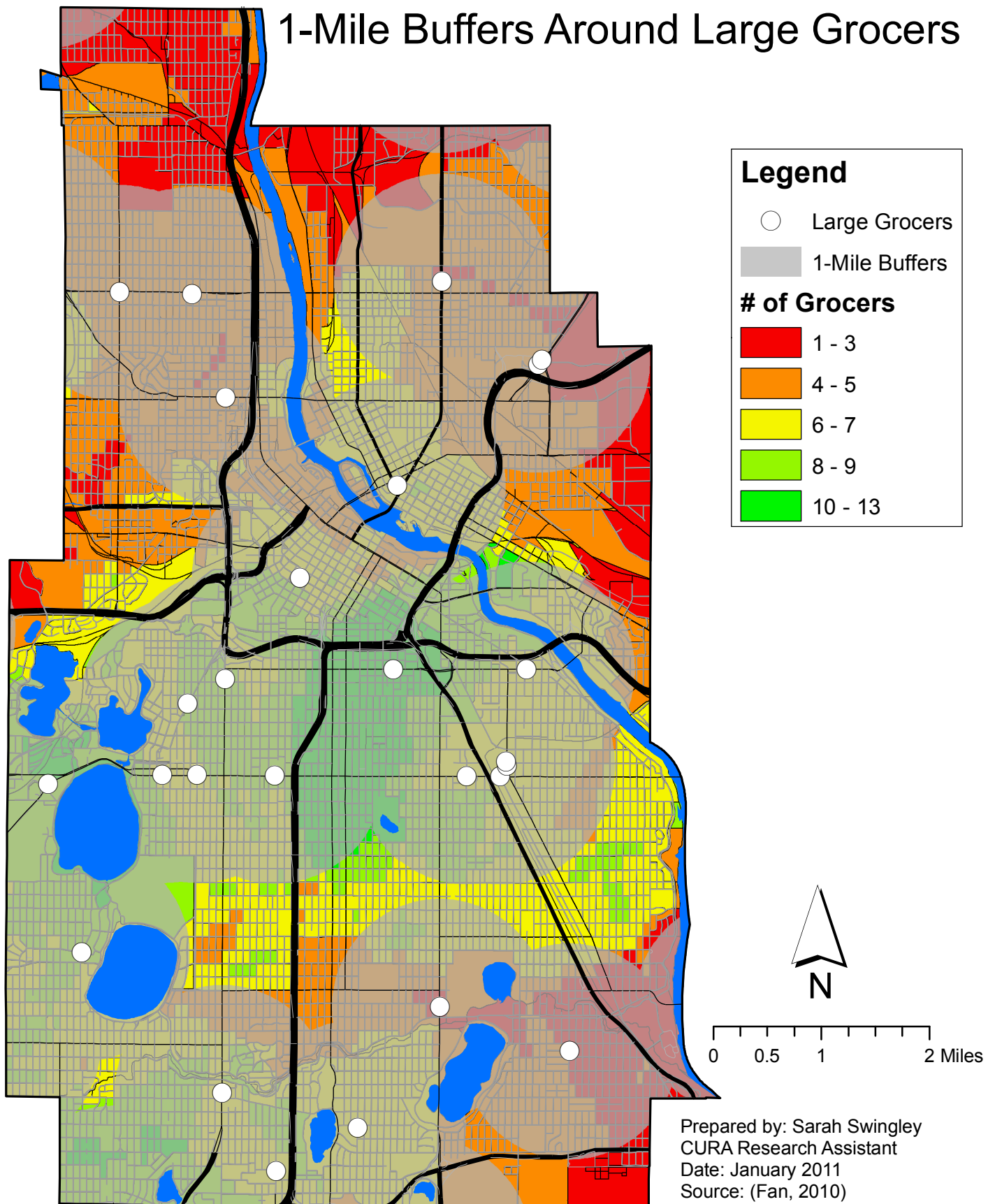
# Map 17: Number of Food Stores Accessible within a 30-Minute Transit Trip at 12:00pm in 2005



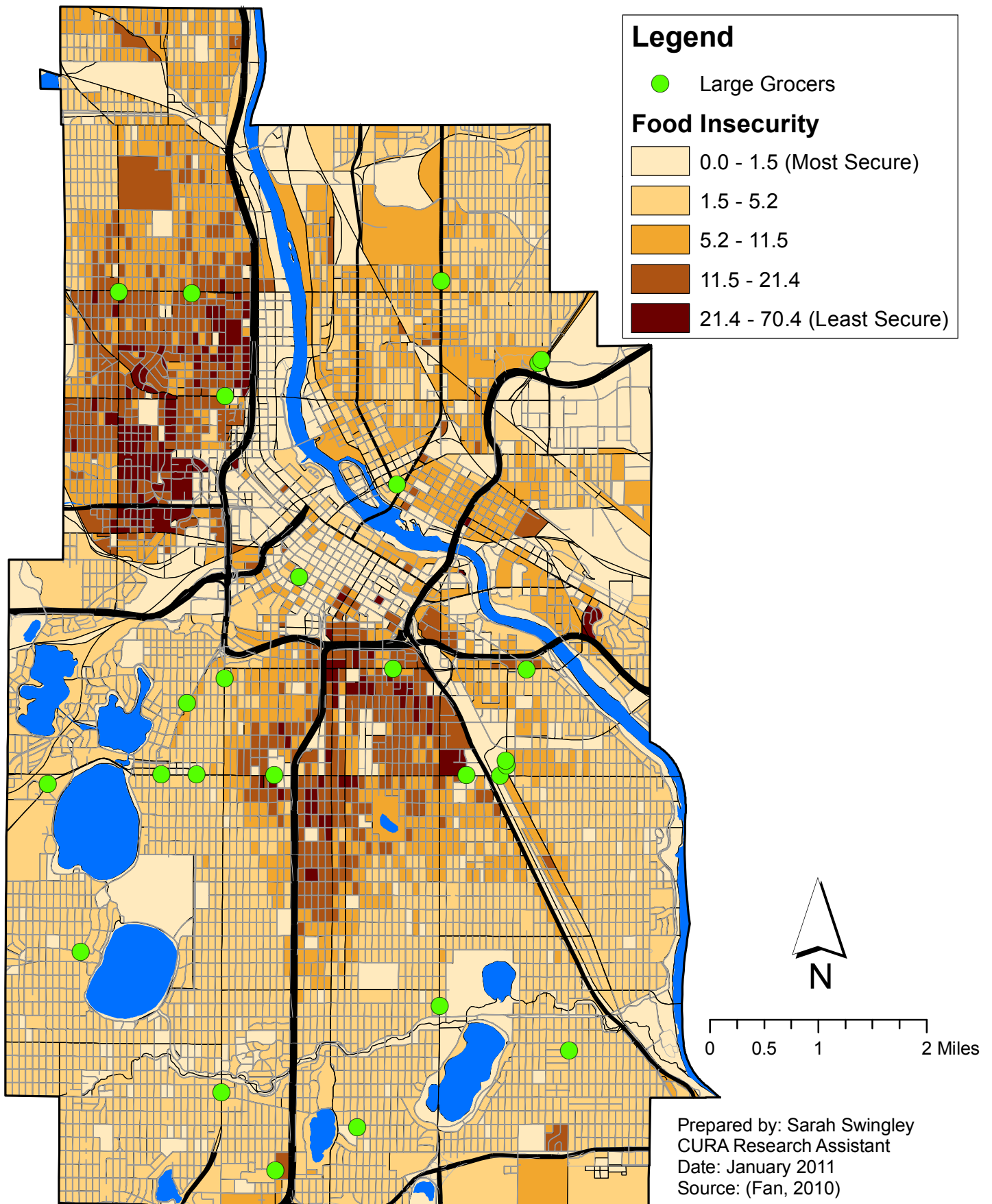
# Map 18: Number of Large Grocers within a 2-Mile Radius of Each Minneapolis Census Block



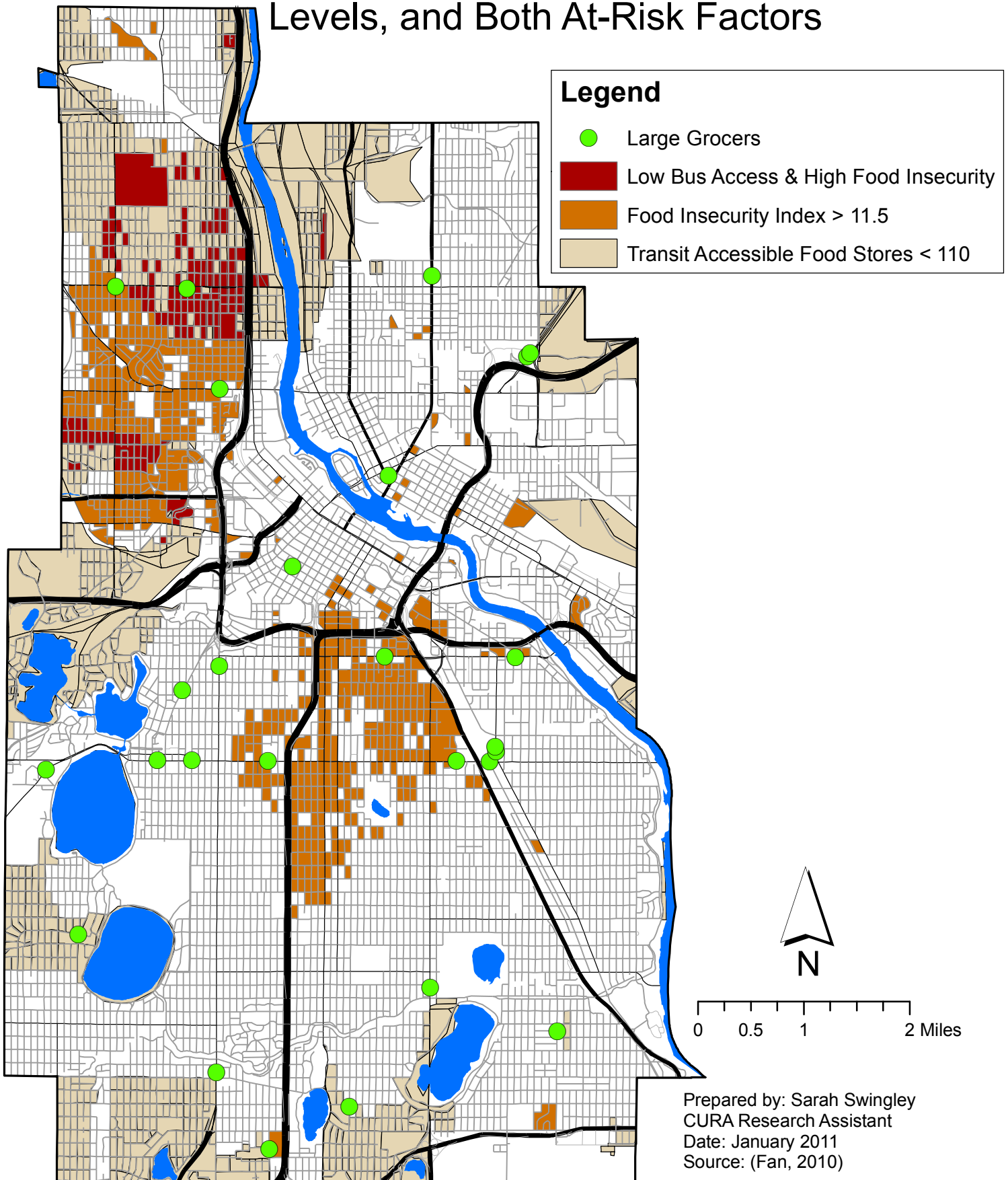
Map 19: Number of Large Grocers within a 2-Mile Radius of Each Minneapolis Census Block with 1-Mile Buffers Around Large Grocers



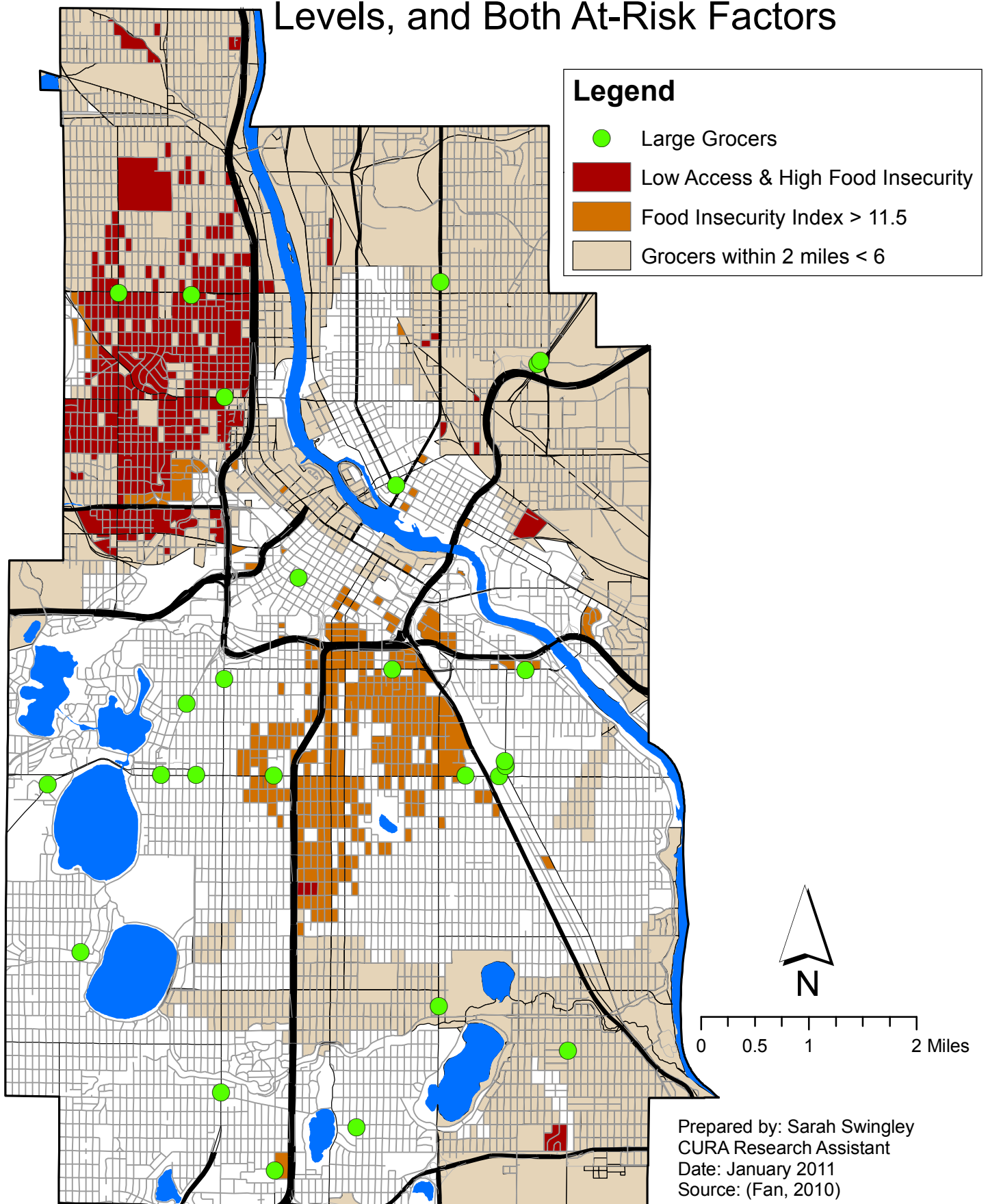
# Map 20: Food Insecurity Index in Each Minneapolis Census Block



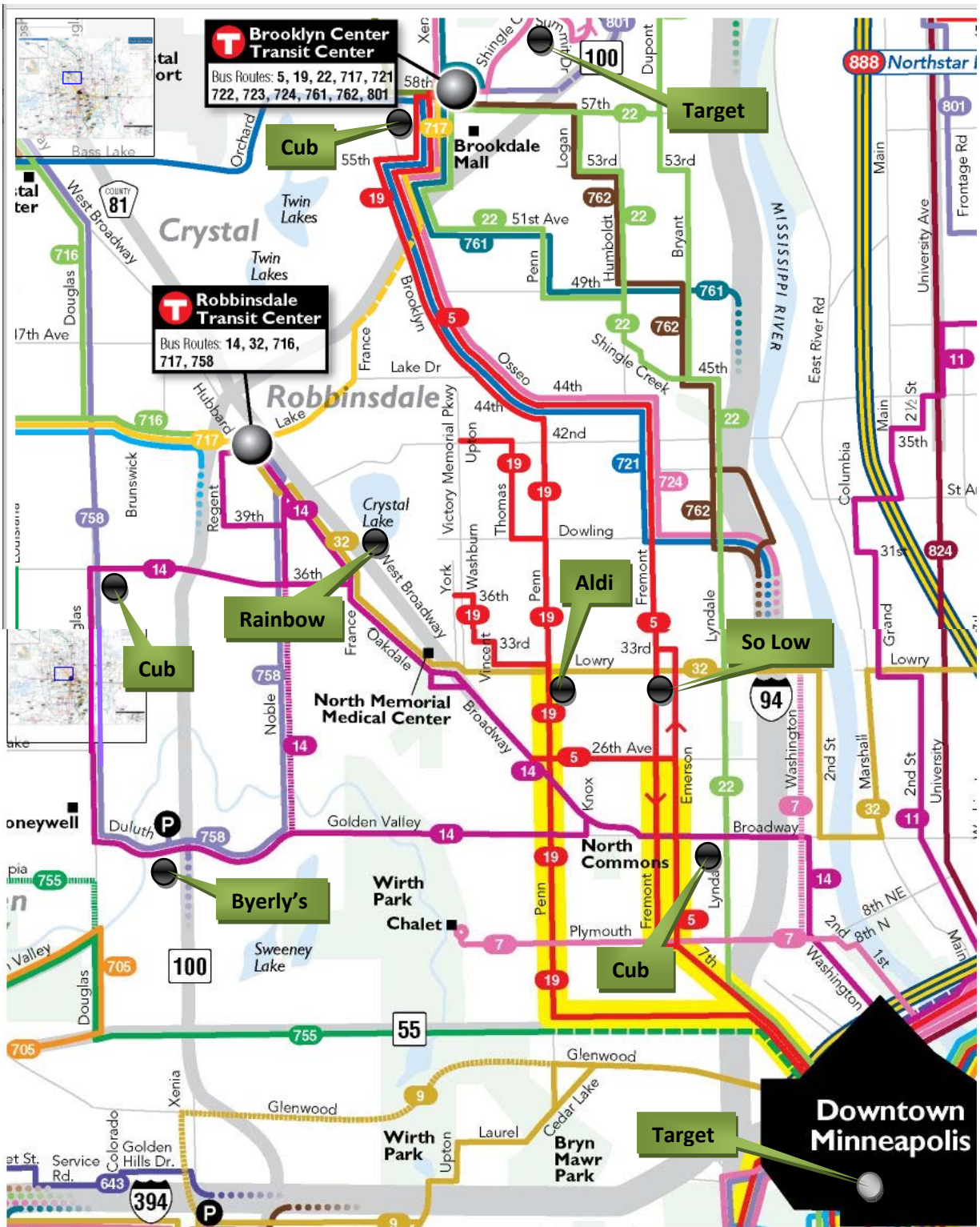
# Map 21: Census Blocks in Minneapolis with Low Grocery Store Accessibility via Transit, High Food Insecurity Levels, and Both At-Risk Factors



# Map 22: Census Blocks in Minneapolis with Low Grocery Store Accessibility within 2 Miles, High Food Insecurity Levels, and Both At-Risk Factors



# Map 23: North Minneapolis Bus Routes – January 2011



(Yellow highlighted lines indicate high frequency routes)

Prepared by: Sarah Swingle – CURA Research Assistant  
 Source: Metro Transit