
# Examining the Context of the Northside Achievement Zone

A collaborative project between the Macalester College Geography Department and the Northside Achievement Zone

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NAZ

MACALESTER COLLEGE

Cover photo courtesy of NAZ.

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**The authors of this report were enrolled in the Urban GIS course in the Geography Department at Macalester College during the spring semester of 2016.**


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# Acknowledgements


**Photo credit:**
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**Jacob Wascalus**

The authors of this report express great appreciation to all of those who guided us through this project. Firstly, thank you to our community partner, The Northside Achievement Zone, and in particular its CEO and President, Sondra Samuels, who graciously welcomed us, provided an opportunity to apply our GIS knowledge to a worthy cause, and worked to give us a local understanding of the Minneapolis Northside. This project only exists because of the deep commitment displayed by NAZ and its partners to the communities it serves, and we are honored to have been a part of that. We are also grateful to Jacob Wascalus and the Federal Reserve Bank of Minneapolis for their continued support of the Macalester Geography Department as they provided data, advice, and the physical space for the presentation of our findings. Thank you as well to Paul Schadewald of the Macalester Civic Engagement Center for providing funding and support. Finally, the authors wish to thank professor Laura Smith and lab supervisor Ashley Nepp who conceived of, organized, and supervised this project from the start. Without their vision, support, and technical knowledge this project would never have happened.

# Executive Summary

The Northside Achievement Zone (NAZ) utilizes a "wraparound" framework to close the achievement gap and end generational poverty in North Minneapolis. Instead of trying to resolve one problem at a large scale, it takes a place-based approach that centers on one geographic area (the "Zone" in North Minneapolis) and tackles the achievement gap from many different angles. This approach has shown early successes, and affirms that place truly matters. One's surrounding environment is a major determinant of their outcomes later in life, so the Northside Achievement Zone's wraparound framework and geographic focus are both ambitious and effective. To that end, our study also attempted to be comprehensive in its approach, and focused around four overarching themes: population, housing, economics, and health. Just as there is no single solution to ending generational poverty and closing the achievement gap, we felt there was no portion of our research that we should emphasize over another.

The goal of our Spring 2016 Urban GIS (Geographic Information Systems) class was to produce interconnected visualizations of North Minneapolis that support a narrative about the need for a place-based solution. We also sought to explore the comprehensive impact of the Northside Achievement Zone, by documenting the current state of North Minneapolis and ways that the area has changed over time. We entered this project as students and researchers, committed to working on this report impartially and objectively. We believe in the values and mission of the Northside Achievement Zone, and dedicated ourselves to assisting their efforts by producing the information and visualizations that can be found in this report.

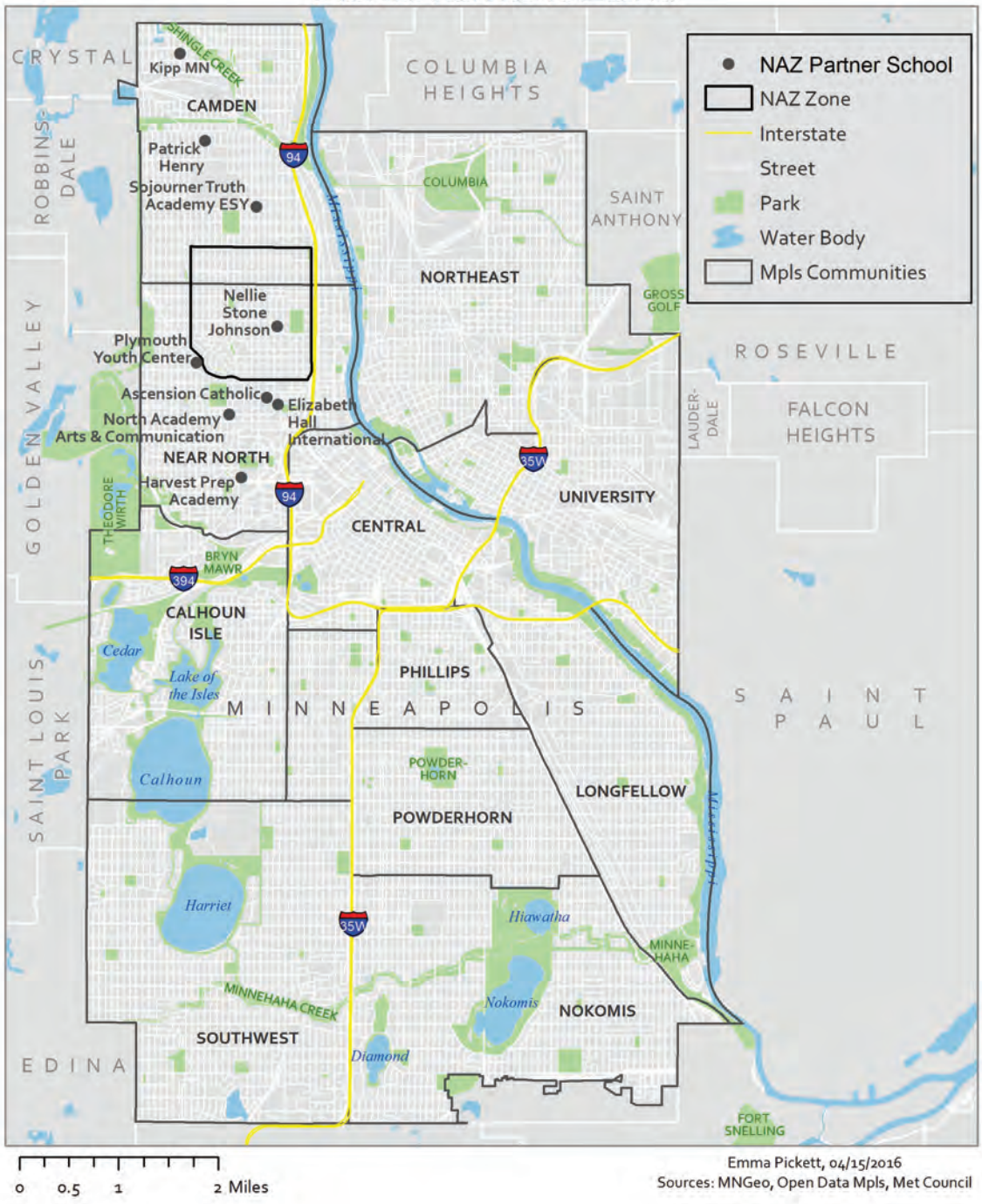
Our report is divided into four themes: population, housing, economics, and health. Each student subgroup was at liberty to determine what variables would be most impactful to research and visualize. The population subgroup explored changes in North Minneapolis' population over time with regard to race, ethnicity, household structure, age, and civic participation, among other variables. They created a snapshot of the Northside's current population, as well as a comparison between the Northside Achievement Zone and the rest of Minneapolis. The housing subgroup explored how the housing stock of North Minneapolis could be either an asset or a hindrance to the efforts of NAZ. By mapping many different variables, such as owner-occupancy, property values, the physical condition of housing, vacancies, and the location of landlords, the housing subgroup outlined disparities that exist between North Minneapolis' built environment and the rest of the city.

Our third subgroup focused on the economic conditions of North Minneapolis, and explored individuals' employment and financial situations as well as the area's business climate. These visualizations sought to display concentrations of poverty in the region, household income, banking activity, unemployment, and the movement of workers from their residences to their workplaces. This subgroup's findings centered around the general lack of employment in the region, racially concentrated areas of poverty, and lack of access to high-paying jobs. The health subgroup explored both personal and public health, as well as accessibility to resources. Their broad definition of health allowed them to explore access to public transit, concentrations of crime, and access to food and healthcare.

By analyzing many of these variables together, we conclude that the place-based, wraparound approach of the Northside Achievement Zone can be effective at tackling generational poverty and closing the achievement gap. Very few of these variables exist in isolation, and approaching them through a comprehensive, holistic approach is incredibly valuable. We hope that the research we present here can support the work of the Northside Achievement Zone and increase public awareness of the numerous structural disparities and inequalities that are present in the Northside. Finally, while we have provided a great wealth of information in this report, we recognize there is still much more research to be done. We therefore hope that this project can lay a foundation for future work to assist the Northside Achievement Zone in their efforts.

# Reference Map: Minneapolis

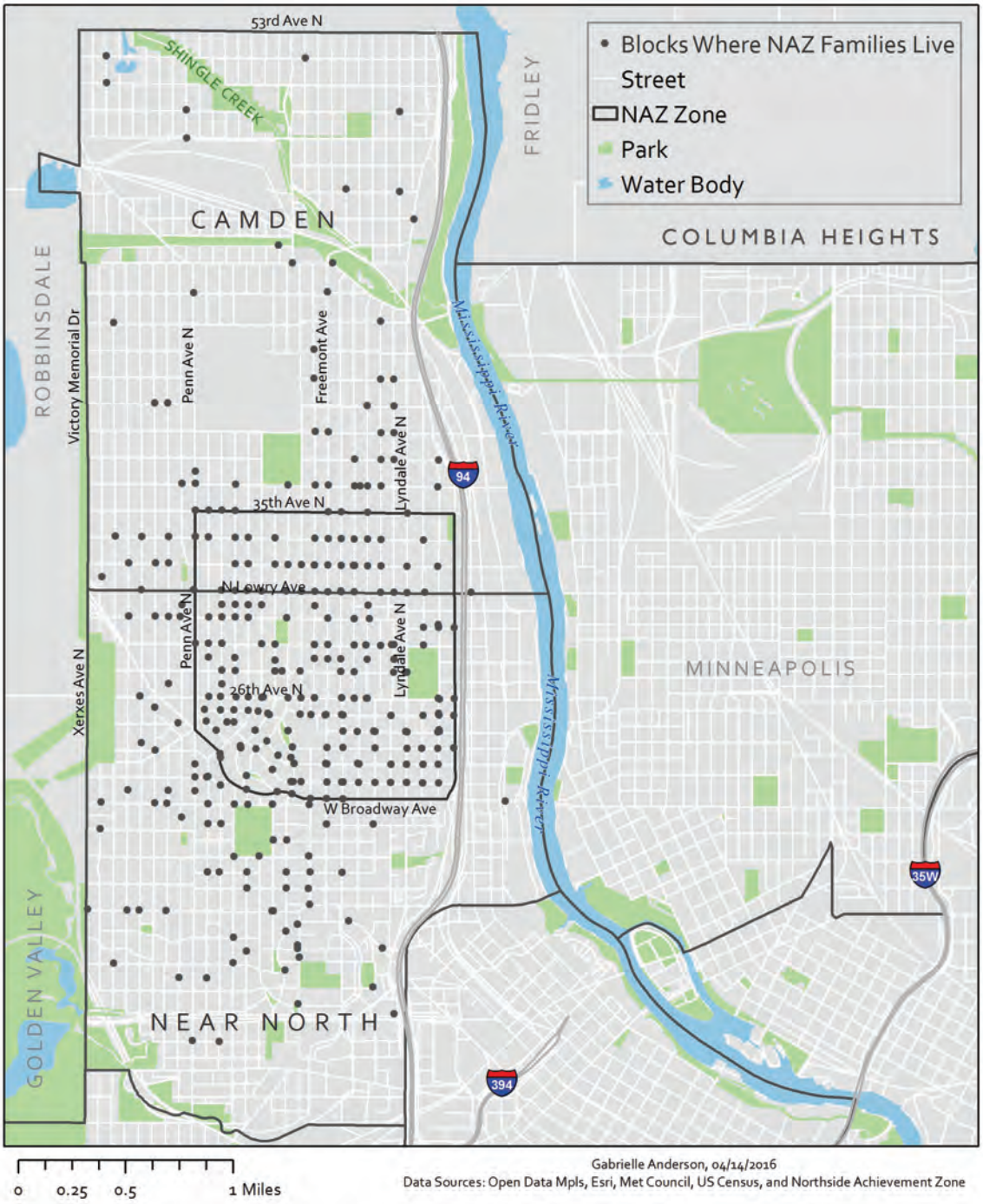
## Minneapolis Communities and the Northside Achievement Zone




Emma Pickett, 04/15/2016
Sources: MNGeo, Open Data Mpls, Met Council

# Reference Map: Northside

# Reference Map: NAZ Participants



# Introduction

During Spring 2016, students in the Urban GIS (Geographic Information Systems) course participated in a community partnership with the Northside Achievement Zone (NAZ). The goals of the Northside Achievement Zone are to close the achievement gap and end generational poverty in the Northside. While the impact of NAZ extends to the whole Northside, its work is centralized around the "Zone," an 18-by-13 block area of North Minneapolis (see **Reference Maps**). In collaboration with partner organizations and schools, NAZ works alongside families to support children throughout their education and put them on a path to college. To accomplish this, NAZ employs a wraparound framework that includes supporting families in housing, employment, and health. This holistic approach accounts for the many factors that can get in the way of children graduating high school with the skills and resources needed to continue their education in college.

Through our partnership with NAZ we hoped to support their place-based and holistic approach by mapping aspects of the Northside of concern to their work. Our job was to research and visualize data that reflects the lives of people on the Northside, and present it in a manner that reinforces the importance of the work that NAZ does. We also asked the question, "What has been the comprehensive impact of the NAZ program on the Northside community?" In approaching this question, we looked to the ways that NAZ is involved in the community and what is affecting the lives of the families with which they collaborate. Our report is divided into four themes: population, housing, economics, and health. In the subsequent chapters, each subgroup has defined individual research questions and identified specific variables related to these themes. To reinforce the story of spatial disparities and the place-based narrative, many variables are compared between the Northside and the city of Minneapolis as a whole.

It is our hope that these visualizations will prove valuable to NAZ in telling their story, conveying the circumstances of the Northside to those who are unaware, and demonstrating the importance of the work they are doing within the community. We hope our research can both reinforce with empirical data what may already be known and also provide useful insight into possible future endeavors for the Northside Achievement Zone.


Photo credit: NAZ

# Section 1: Population

Zachary Hauser—Nathaniel Merrill—Daniel Swanson-Nystrom

## Introduction

In order to understand the population that the Northside Achievement Zone seeks to serve, we undertook the task of mapping and measuring characteristics of this population in the context of the Northside community and the city of Minneapolis as a whole. Using publicly available data collected from the United States Census and the American Community Survey (ACS), along with other sources, we sought to examine the Northside's demographics, not just in 2016, but also throughout the preceding decades. This approach allows us to follow the demographic shifts and changes over time to understand where exactly the Northside is in its population history, where it may be heading in the coming years, and what role NAZ can play in the future.

We pursued two primary research questions. First, we asked how the current-day demographics of NAZ compare to their surrounding areas, namely the Northside (the Near North and Camden communities) and the entirety of Minneapolis. These findings give us the basis for better understanding the area. Second, we explored how the Northside has changed over time, and how these changes compare to larger-scale changes in Minneapolis over the same time period.

To investigate these questions, we explore a wide variety of demographic and social variables relating to the Northside's population. We investigated race/ethnicity, age, and gender makeup of Minneapolis and the Northside to understand present and historical demographics. In addition, we looked at how family structure, voter turnout, and vehicle ownership varies within the Northside and Minneapolis as a whole to understand the distinct community in the Northside. While our analysis may not provide ground-breaking findings, these variables underlie all the analysis done in this report, and provide crucial perspective on the Northside itself, and in the context of its surroundings.

## Variables

The Northside Achievement Zone's stated focus on families, not just school-age children, makes the family make-up of its 'zone' impossible to overlook in our study of the population. Given the Metropolitan Council's designation of the Northside as a Racially Concentrated Area of Poverty, it is important to understand how family structures interact with this. Specifically, economic and social challenges pose a serious obstacle to the success of single mothers and their children.


Photo credit: NAZ

Two other important variables to look at are race and age. For years, the Northside has been a racially concentrated area. For our race variable, we are looking specifically at the African American/Black population because this is the group that has been most heavily represented in the Northside. In addition, the Northside is perceived as having an over-representation of the city's youth population. With such a large concentration of children, services such as education, parks, and recreational facilities are crucial. The CEO of NAZ, Sondra Samuels, stated that "families have to travel over to Northeast [community] and use their waterpark" because of intermittent availability in the Northside, which is indicative of broader service and facility disparities between the Northside community and the rest of the city.

Voter turnout provides a view of the Northside community's political efficacy, its faith in the structure and institutions of government, and its faith in its own ability to affect those institutions. There are a number of theories related to why people do or do not decide to vote and none are universally accepted; however, the voting patterns of different demographic groups are well known. This in turn can tell us a great deal about those groups. In general, those of lower socio-economic and educational status vote less than their wealthier, more highly educated neighbors. This may be due to a lack of interest in politics or in the process of registering and voting. It may also be due to structural challenges to voting such as the time needed to register and vote, distance from a polling place, or the unequal access to knowledge about elections (Piven & Cloward, 2000). Whatever the cause, if there is a difference in voter turnout between the Northside and the rest of the city it should be an area of concern as it suggests that the Northside has a disproportionately small impact on the governance of the city and its own community.

Voter turnout and related information is recorded by the Minnesota Secretary of State for every national and statewide election. This data is collected at the voting precinct level and records the vote total for every ballot measure and candidate for the given year. However, neither the Minnesota Secretary of State nor anyone else, to the best of our knowledge, records the population of voting precincts. Thus the data provided is simply a raw count of votes. In order to find the percentage of the population who voted in a given election by precinct, the voting age population of each precinct has to be estimated. This was done by using 2010 U.S. Census data, the most recent year providing a complete population count, and estimating the age 18 and above population of each precinct based on the population of block groups (a unit of spatial aggregation used by the U.S. Census that is smaller than the typical Minnesota voting precinct). This estimation process resulted in a workable voting age population by precinct over which the voting information could be standardized. The voting age population of each precinct was estimated, not the voting-eligible population. This means that certain groups who cannot legally vote, such as those on parole or probation, or undocumented immigrants, are included. Nevertheless, it is still a good proxy for the voting eligible population, for which there is not data reported. The years 2012 and 2014 were used for the voting data as they are the most recent major election years and provide both a Presidential and midterm election for evaluation. For these two maps it is important to note that while the color scheme is the same the class breaks are different. Thus the color that represents 45% to 50% for 2012 represents 0% to 20% for 2014, and so on.

## Discussion/Analysis

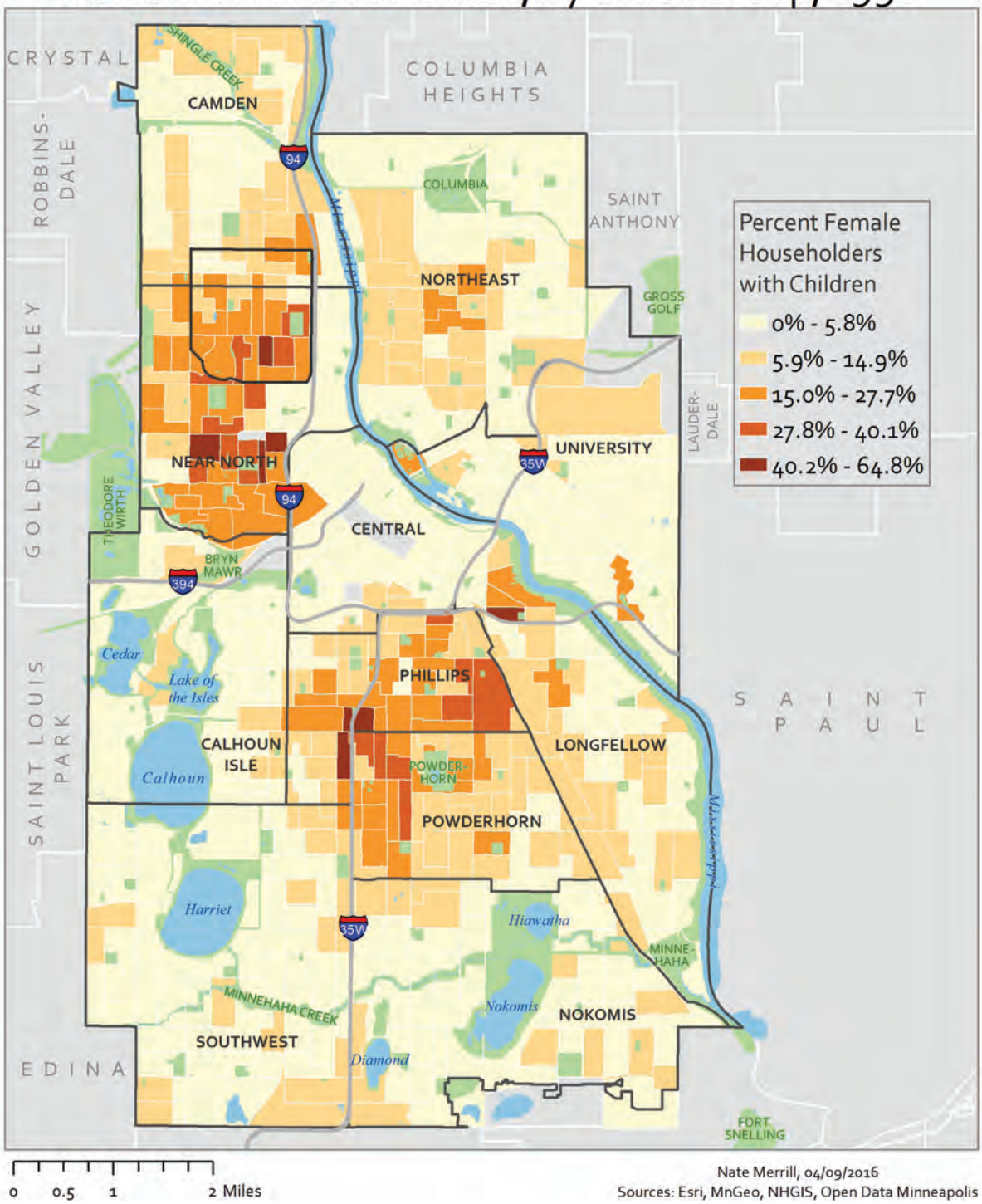
**Figures 1, 2,** and **3** portray female-headed households with children as a percent of all households by block group in 1990, 2000, and 2010, respectively. In 1990, these households were highly concentrated in the southern portion of the Near North community and in Phillips/Powderhorn, with some block groups reaching above 60% in these areas. Since then, overall percentages by block group have declined (especially in the Phillips and Powderhorn communities), but a high concentration of female-headed households with children remains in the Northside (**Figure 3**). **Table 1** also shows that while the percentage of these households has fallen in Minneapolis, it has risen significantly in the Northside (**Table 1**). These figures were calculated from National Historical Geographic Information Systems data, by dividing the total number of households headed by a female with children under the age of 18 and no husband present by the total number of households.

| | Northside | Non-Northside | Minneapolis |
|---|---|---|---|
| **1990** | 15.1% | 7.1% | 8.7% |
| **2000** | 18.2% | 6.7% | 8.7% |
| **2010** | 18.1% | 6.2% | 8.2% |

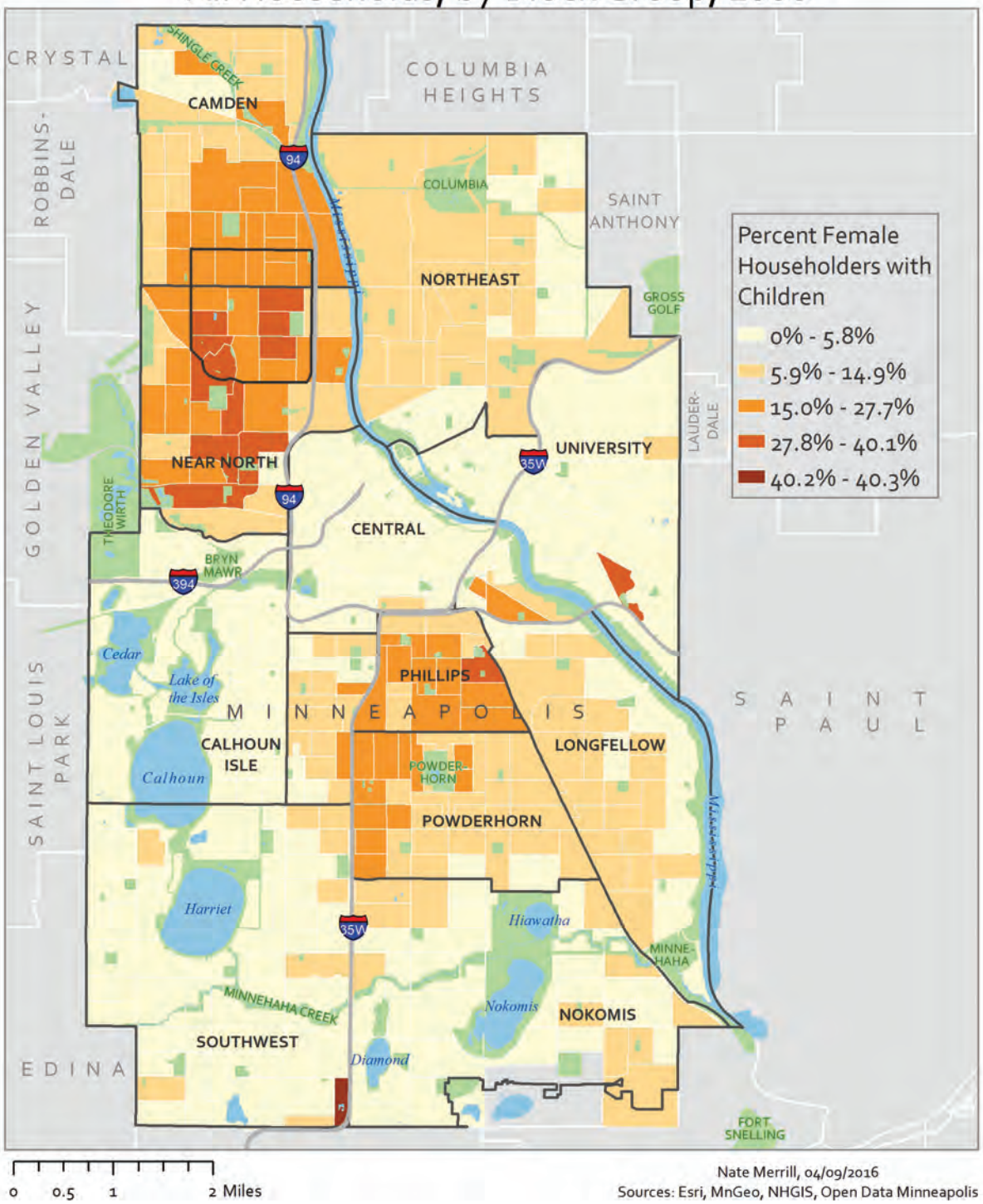
Table 1: Female householders, no husband present, with their own children as a percent of all households by year.

1.1

# Female Householders with Children as a Percent of All Households, by Block Group, 1990

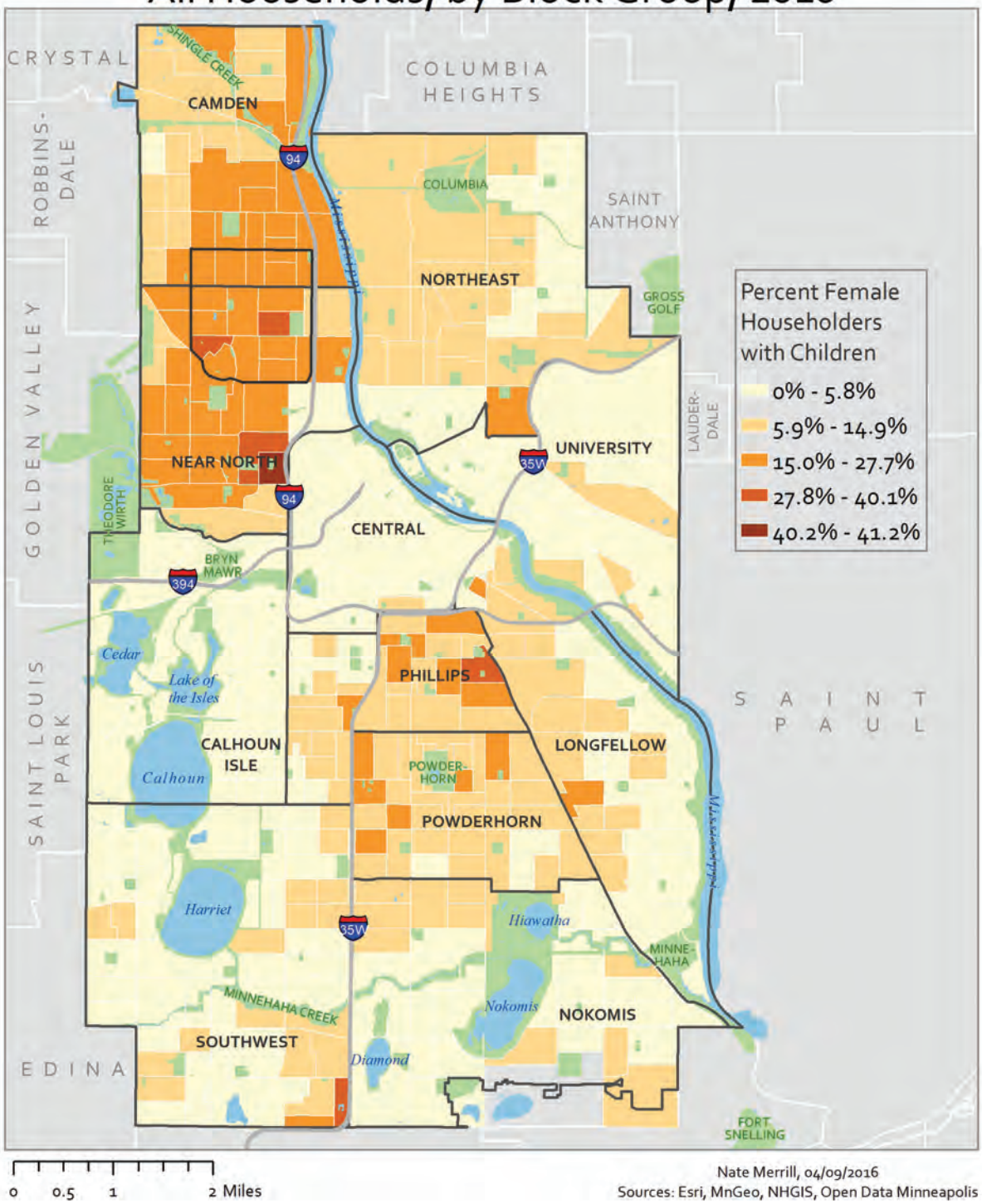


# Female Householders with Children as a Percent of All Households, by Block Group, 2000



1.3

# Female Householders with Children as a Percent of All Households, by Block Group, 2010



There are also disparities in family size between the Northside and the rest of Minneapolis. **Figures 4, 5,** and **6** show family households with four or more people as a percent of all family households in 1990, 2000, and 2010, respectively. We examined this variable in order to understand the distribution of family size in Minneapolis. As we saw previously, the greatest clusters of families with four or more people are in North Minneapolis and the area south of downtown between I-35W and Hiawatha Avenue. While the differences are not so stark, there is also a clear divide between family size in the Northside and the rest of Minneapolis (**Table 2**).

| | Northside | Non-Northside | Minneapolis |
|---|---|---|---|
| **1990** | 39.6% | 25.5% | 27.9% |
| **2000** | 47.7% | 29.4% | 32.6% |
| **2010** | 48.2% | 30.0% | 33.2% |

Table 2: Family households with four or more people as percent of all family households by year.

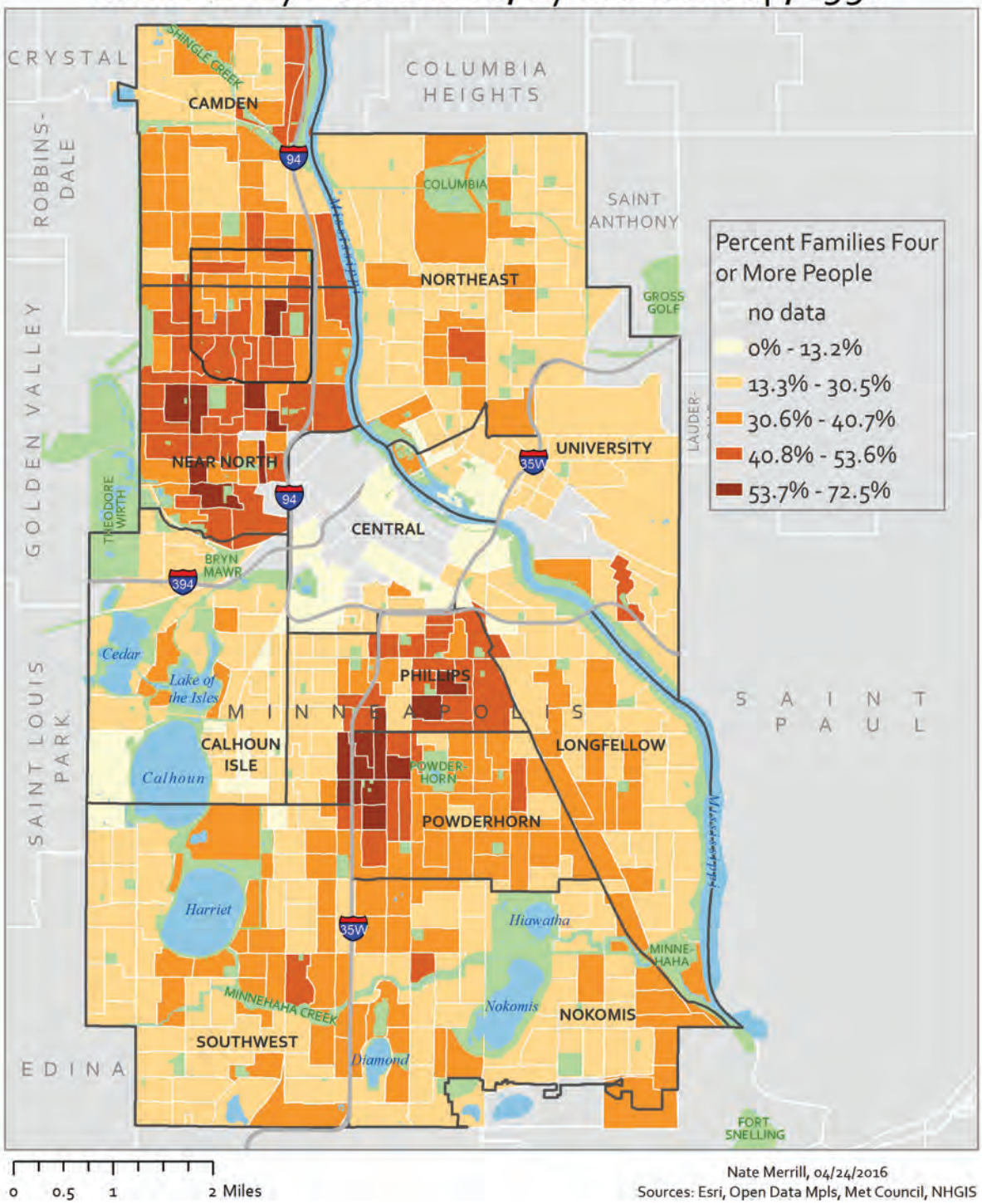
The focus of the racial analysis was based around the African American/Black population in the Northside and in Minneapolis as a whole. Over time from 1980 to 2010, the African American population is concentrated primarily in the Northside area as well as in the Phillips and Powderhorn communities. Starting in 1980, most of the population was concentrated in the Near North area and in Powderhorn (**Figure 7**). The 1990 map shows a similar pattern, but since we are looking at a more detailed scale of analysis (block level in 1990 versus census tracts in 1980), we can see that the Northside concentration of African American population is starting to spread northward (**Figure 8**). In both 2000 and 2010 (**Figures 9, 10,** and **11**), we can see that the African American population is now more dispersed throughout the Northside, and is much less concentrated in the Powderhorn community (**Figure 12**).

Based on a question from Sondra Samuels about a potentially increasing presence of Somali population in the Northside, we decided to examine trends in the Somali population in the city of Minneapolis. To do this, we used 5-year data estimates by the American Community Survey (ACS) from 2009 and compared those to 5-year data estimates by the ACS from 2014. The findings show that there has been an increase of the Somali population in the area around Cedar-Riverside and in the Northeast community along the river (**Figure 13**). It is difficult to rely on these data for precise trends, as the estimates have large margins of error (and should be used with caution).

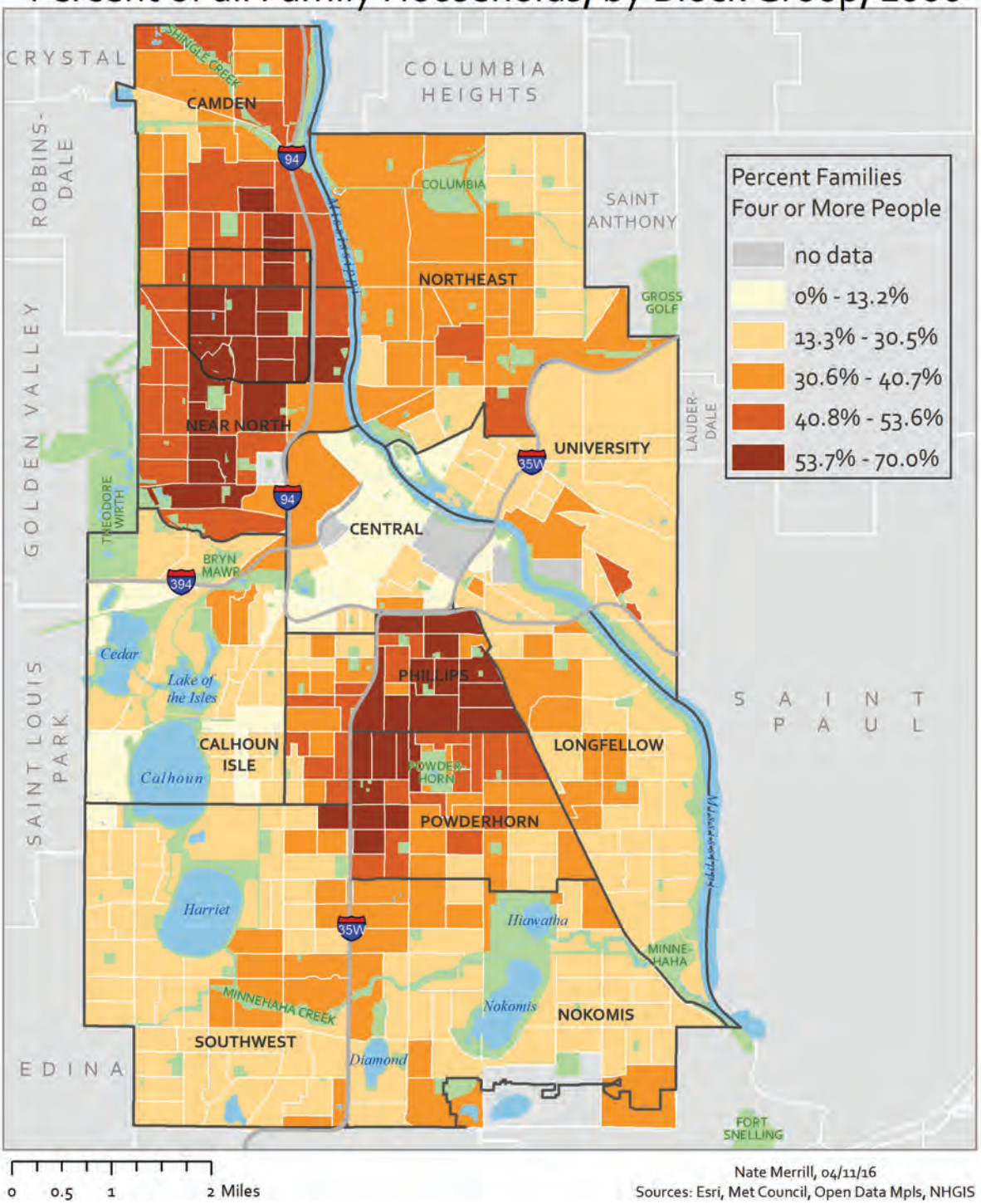

Photo credit: NAZ

1.4

# Family Households with Four or More People as a Percent of all Family Households, by Block Group, 1990

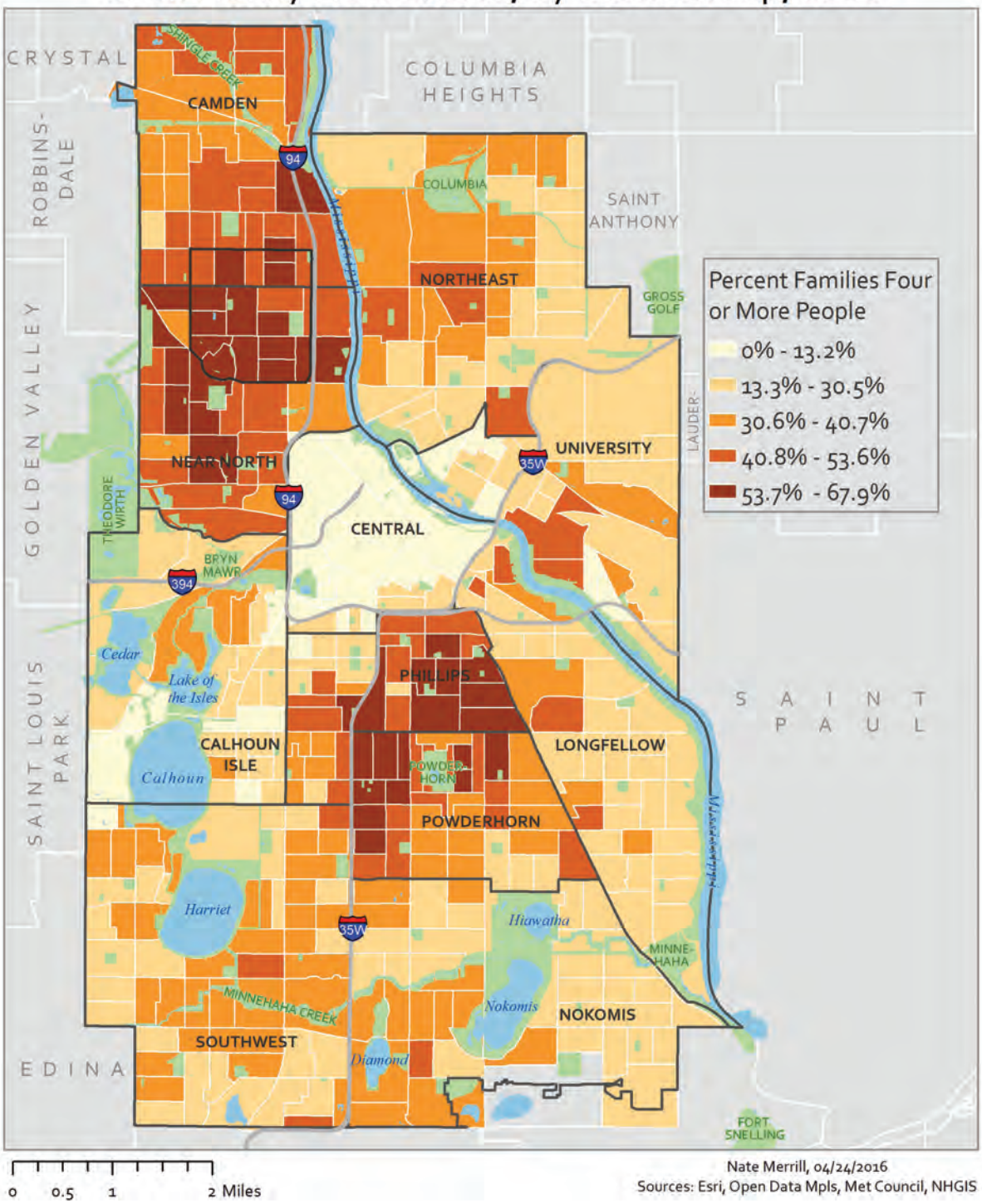


# Family Households with Four or More People as a Percent of all Family Households, by Block Group, 2000



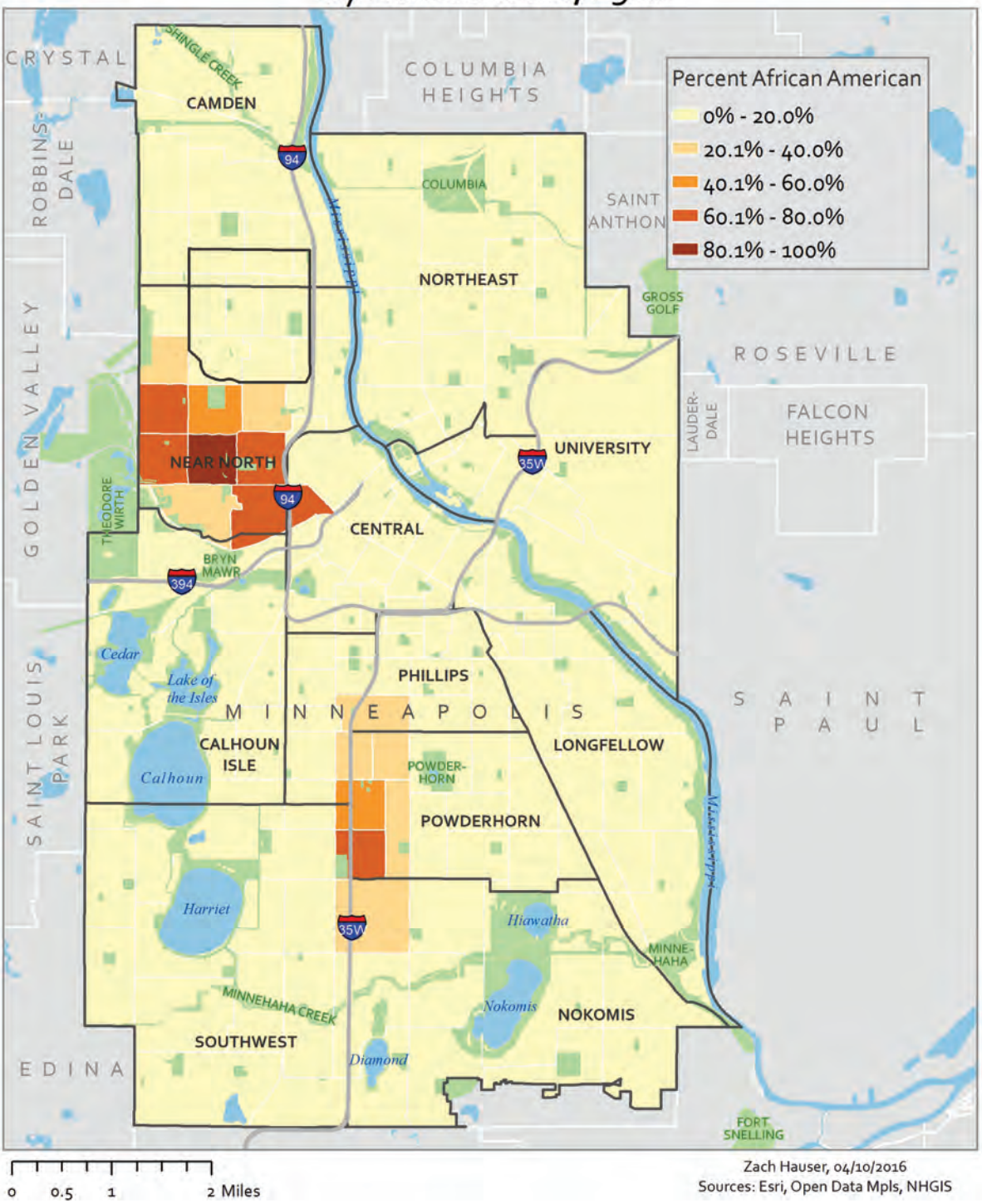
1.6

# Family Households with Four or More People as a Percent of all Family Households, by Block Group, 2010




Nate Merrill, 04/24/2016
Sources: Esri, Open Data Mpls, Met Council, NHGIS

# African American Population in Minneapolis by Census Tract, 1980



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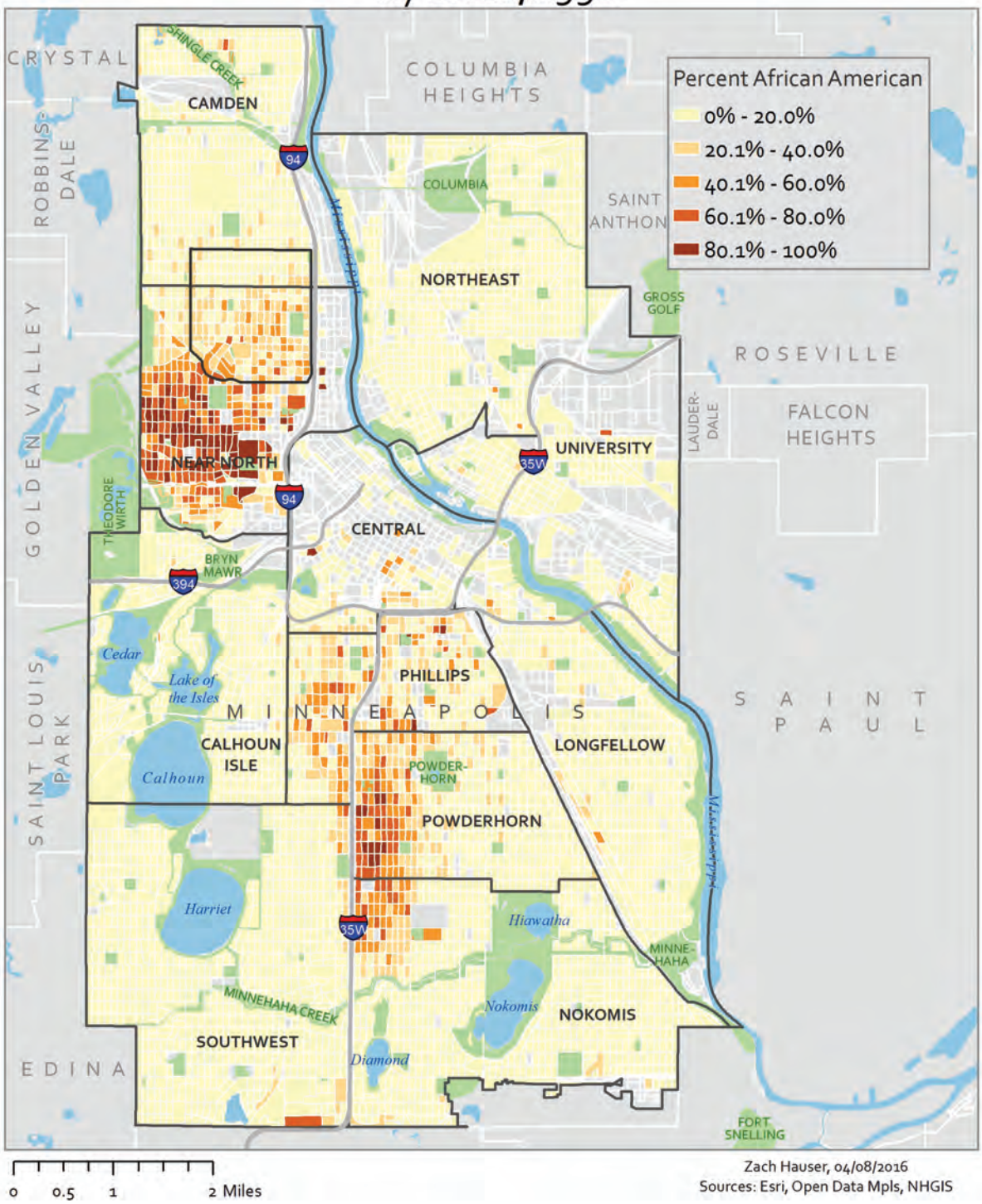
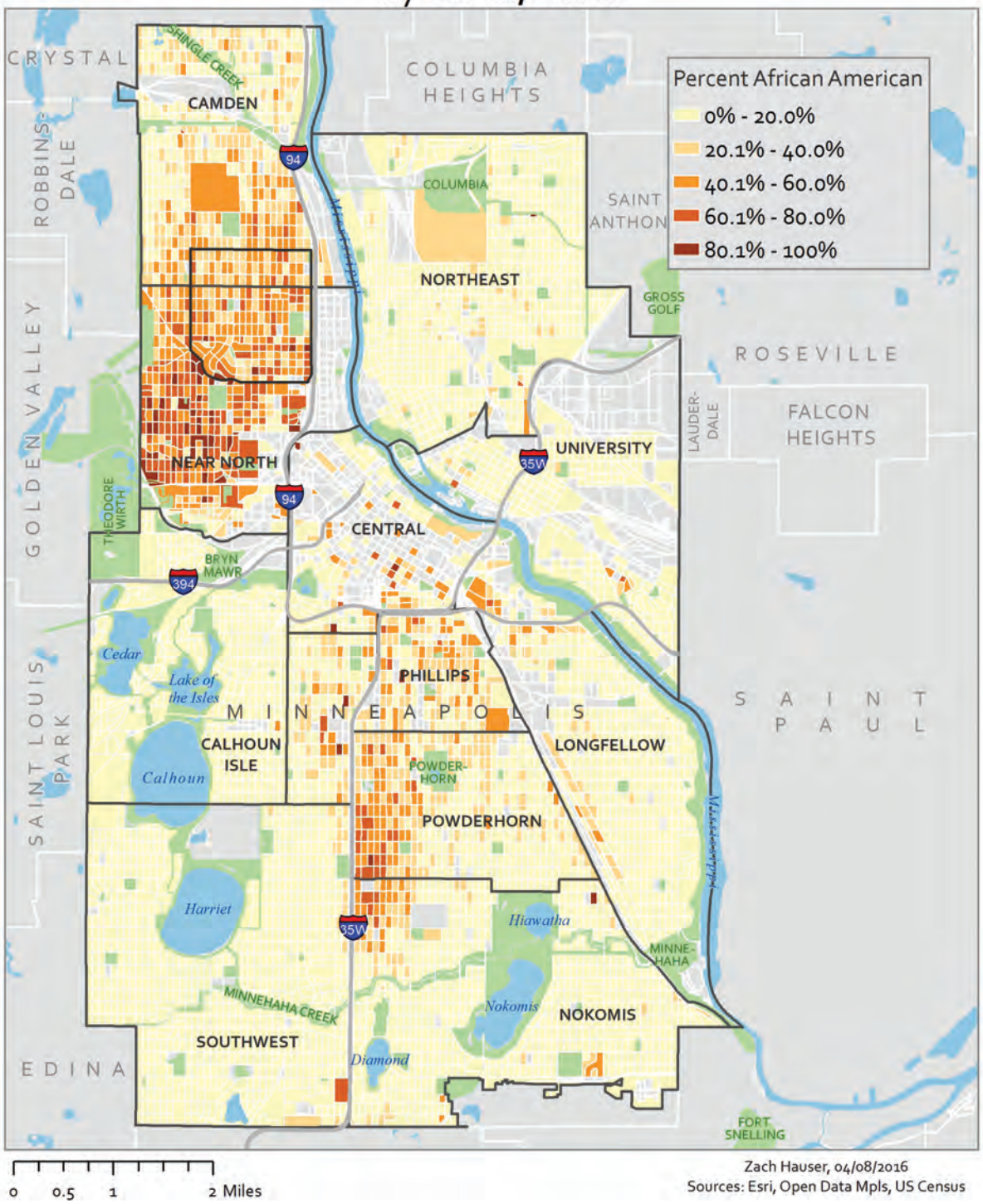
# African American Population in Minneapolis by Block, 1990



# African American Population in Minneapolis by Block, 2000



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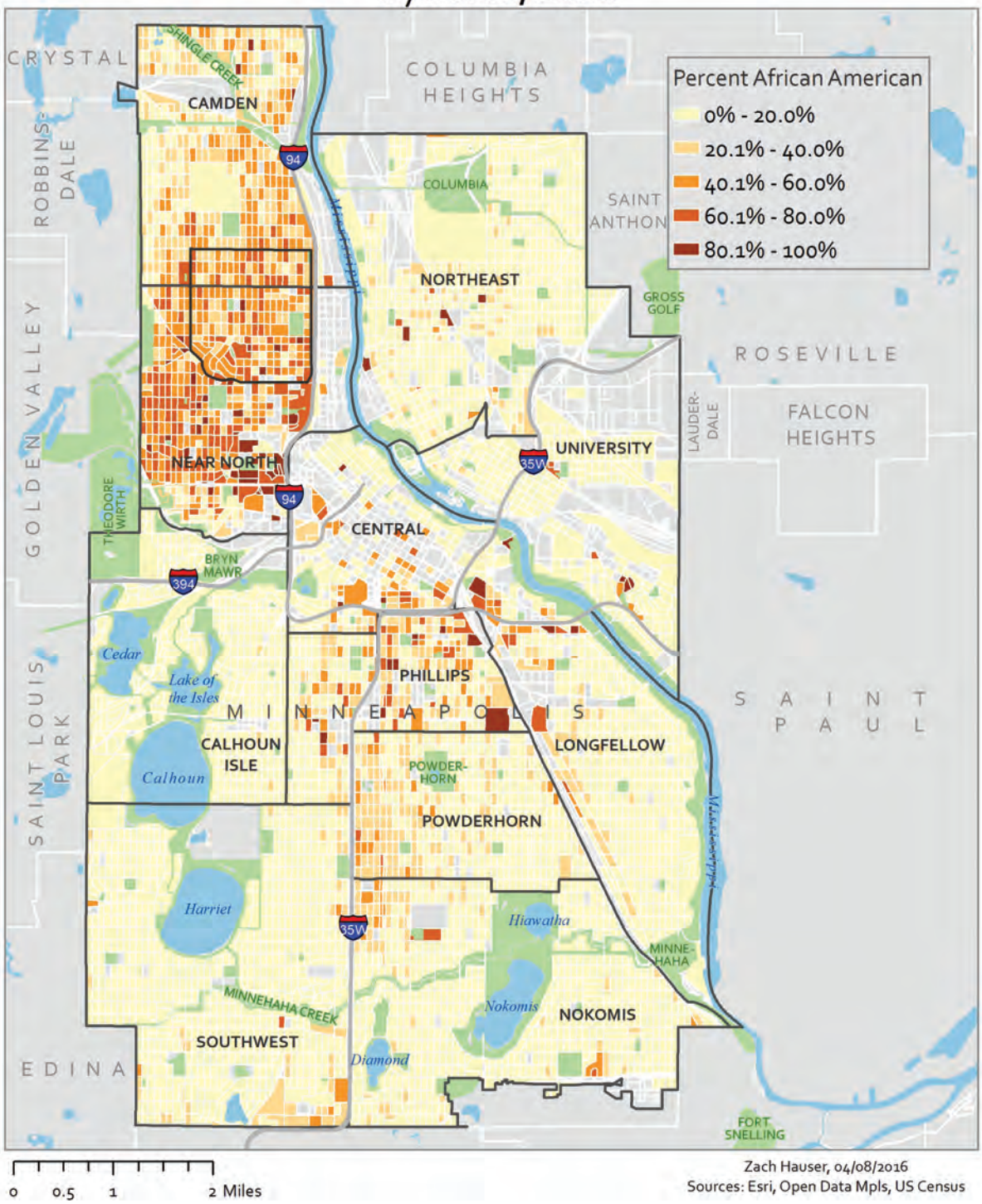
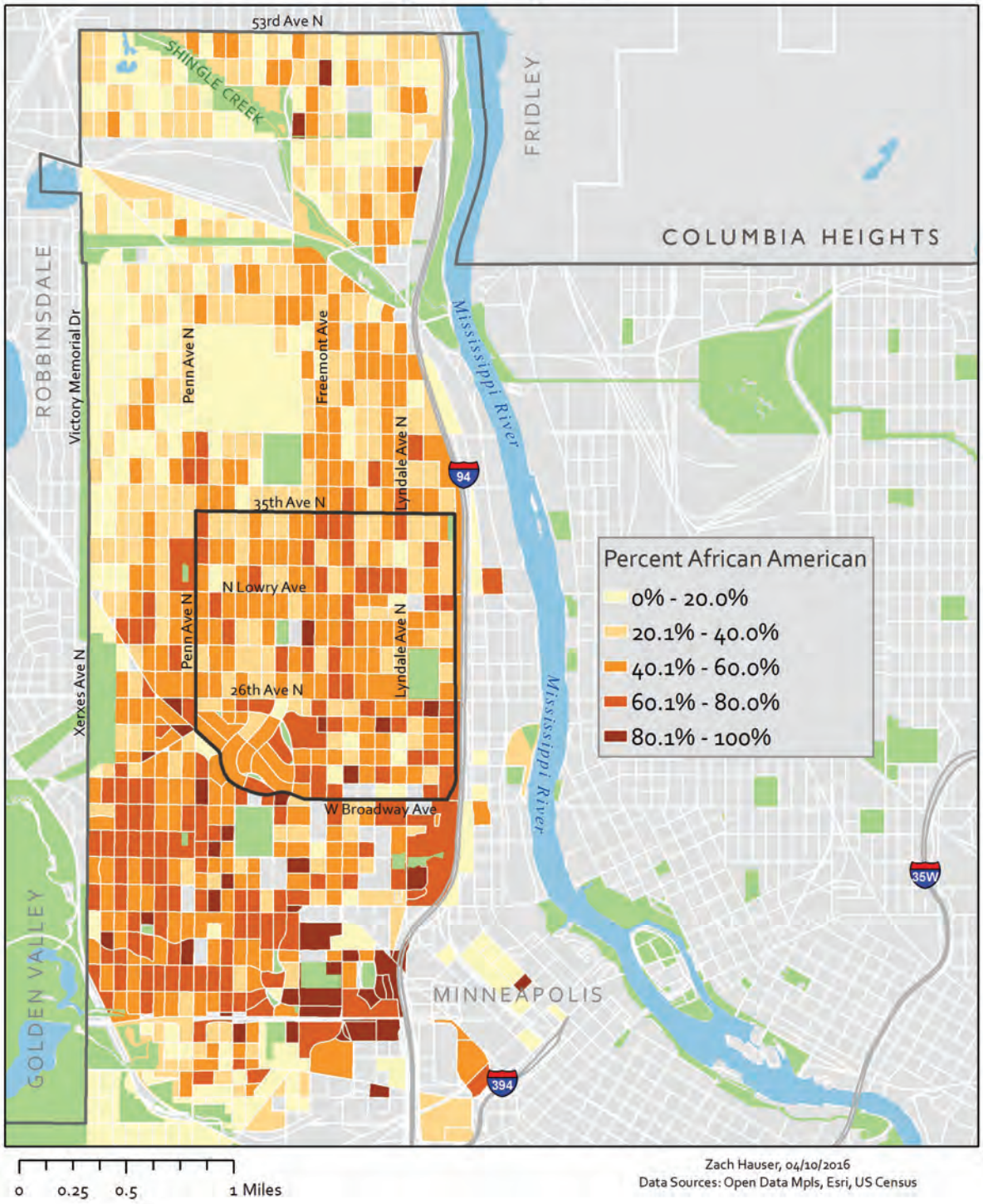
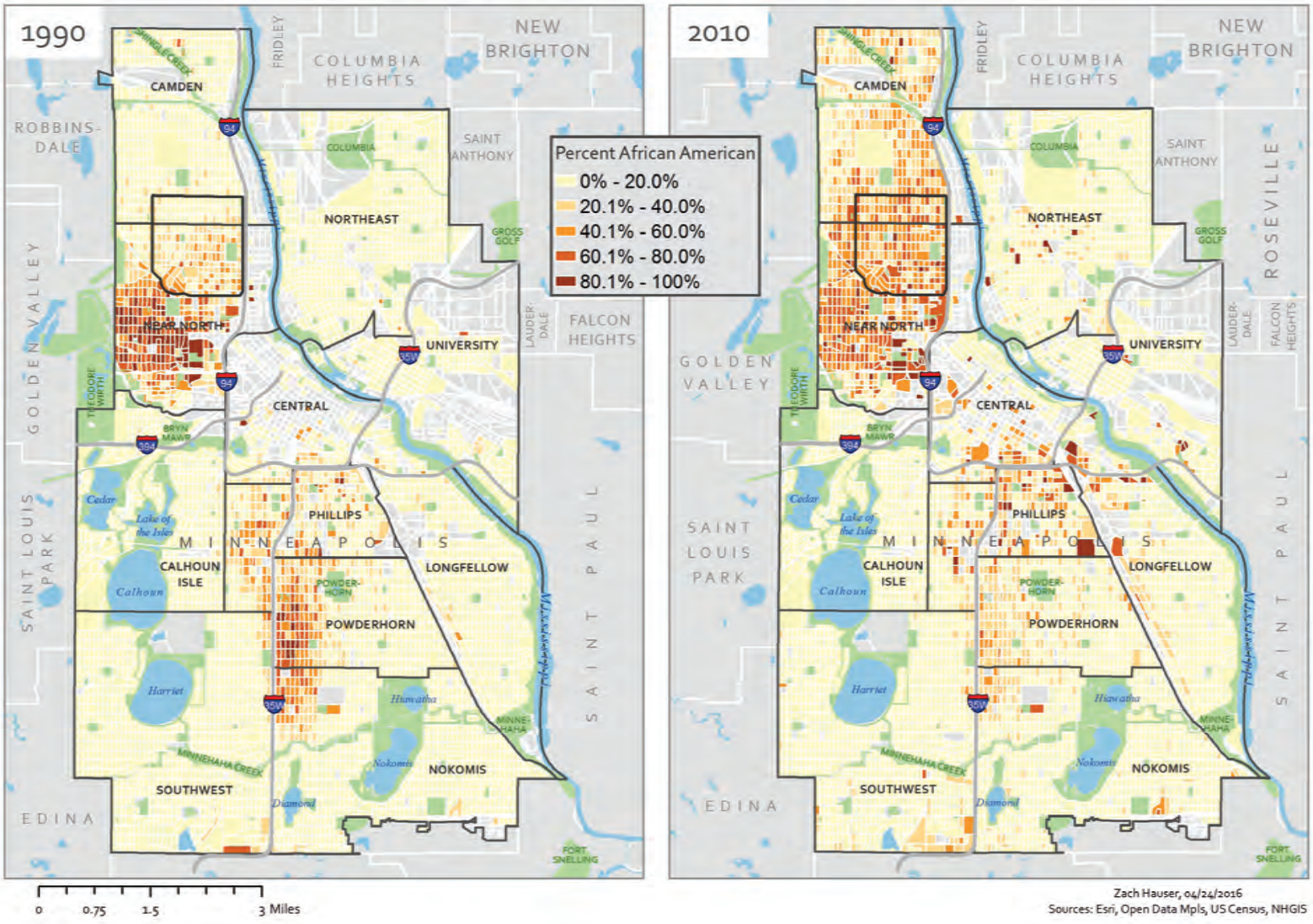
# African American Population in Minneapolis by Block, 2010



# African American Population in North Minneapolis by Block, 2010

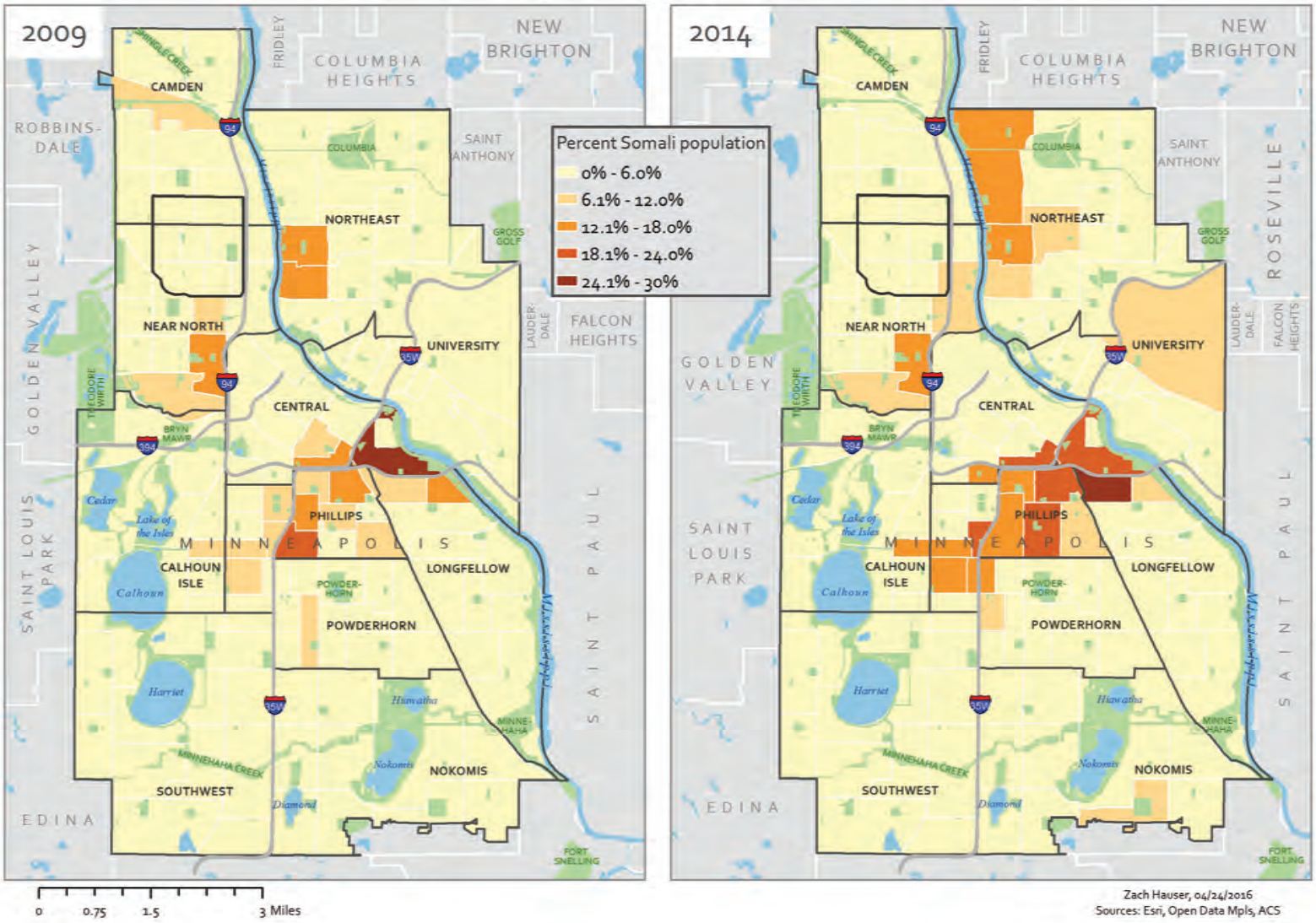


# African American Population by Block




Zach Hauser, 04/24/2016
Sources: Esri, Open Data Mpls, US Census, NHGIS

# Somali Population by Census Tract




Zach Hauser, 04/24/2016
Sources: Esri, Open Data Mpls, ACS

**Figure 14** is based upon data from Census 2000, and **Figure 15** uses Census 2010 data. These figures show the progression of age by block over a 10-year time period. In **Figure 14**, the darker shades show that there is a high concentration of youth in the Northside. Some of these shades lighten by **Figure 15**, showing a lower percentage of youth in the area. Even though the percentages have decreased overall, the Northside area is still home to the majority of youth population in the city of Minneapolis as shown in **Figure 16**.

**Table 3** compares the youth population of the Northside to the city of Minneapolis. Even though there is an overall decrease in youth population both for the Northside and for the city of Minneapolis from 2000 to 2010, the percentages show a consistently higher concentration of youth in the Northside. Even with an overall loss of population under the age of 5 in the Northside from 2000 to 2010, there remains a higher concentration of young children in the Northside as compared to the city of Minneapolis.

The mapped results of the voter turnout data show a clear pattern of lower participation across the parts of the Northside that correspond to higher African American/Black populations. **Figure 17** for the 2014 midterm election shows turnout averaging from around 35% all the way to 60% along the western and northern sections of the Camden community, which as seen in **Figure 11** has a comparatively small African American/Black population in relation to the rest of the Northside. Conversely, the Near North community has consistently low turnouts ranging from just under 20% to 35% and covers an area that is made up largely of African Americans/Black population. When compared to the rest of the city it is clear that voter participation on the Northside, averaging around 28%, is far lower than the city-wide average of 57% and the non-Northside average of over 63%.

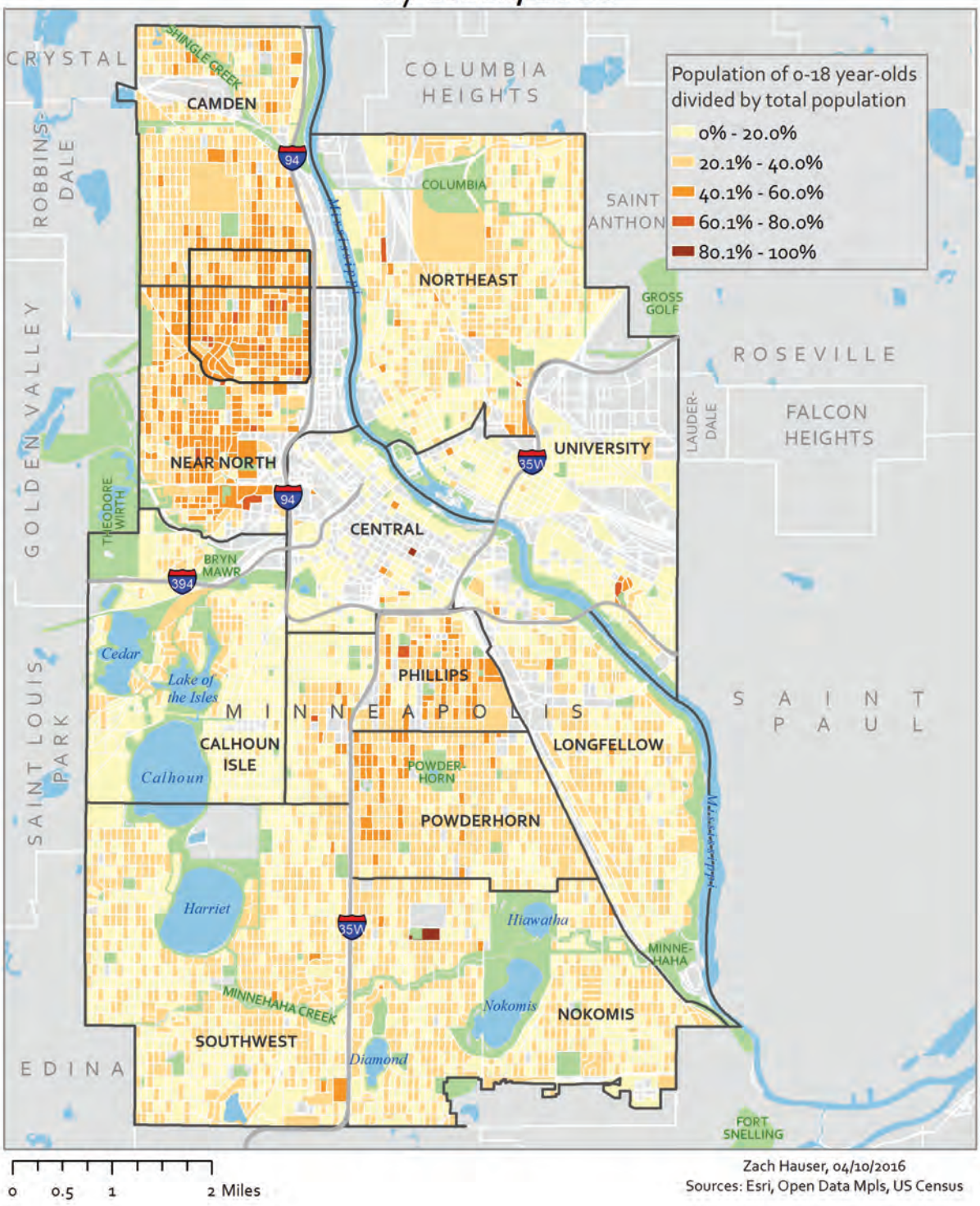
The low participation rate may be explained by the fact that 2014 was a midterm election year, not a Presidential election year. Midterms have lower turnouts than Presidential elections in general, and while in recent years African Americans have voted at higher rates than whites during Presidential elections, they still vote at lower rates than white voters during midterm elections. Still, the voter turnout in 2014 for the Northside was notably lower than the 36% national turnout for that year. It should be noted that other minority groups such as Asian-Americans and Hispanics/Latinos vote at considerably lower rates than either the White or African American/Black populations across all elections (Elliott & Clement, 2014).

A similar pattern is visible in **Figure 18** for the 2012 Presidential election map. The west and north Camden precincts have a turnout of 65% on the low end and nearly 98% in the highest voting precinct. In contrast, the precincts that make up the Northside Achievement Zone have turnouts that range as low as 47% and as high as 62%. Again, the Northside taken as a whole has a lower turnout than the rest of the city. The Northside average is 62% as compared to the city-wide average of 70% and the non-Northside average of 72%. For 2012 the Northside turnout, while wildly uneven, was in line with the national average of 62%, although lower than the national African American/Black average of 66% (Elliott & Clement, 2014).

| | Total Population | Total Youth Population (0-18) | Percent Youth (0-18) | Total Population Under 5 | Percent Under 5 (by Total Pop.) |
|---|---|---|---|---|---|
| **2000** | | | | | |
| **Northside** | 71,053 | 25,989 | 36.6% | 6,607 | 9.3% |
| **Minneapolis** | 391,083 | 83,794 | 21.4% | 25,700 | 6.6% |
| **2010** | | | | | |
| **Northside** | 63,779 | 20,241 | 31.7% | 6,014 | 9.4% |
| **Minneapolis** | 388,711 | 78,449 | 20.2% | 26,832 | 6.9% |

Table 3: Breakdown of youth by year in the Northside and Minneapolis.

# Percent 0-18 Year Old Population in Minneapolis by Block, 2000



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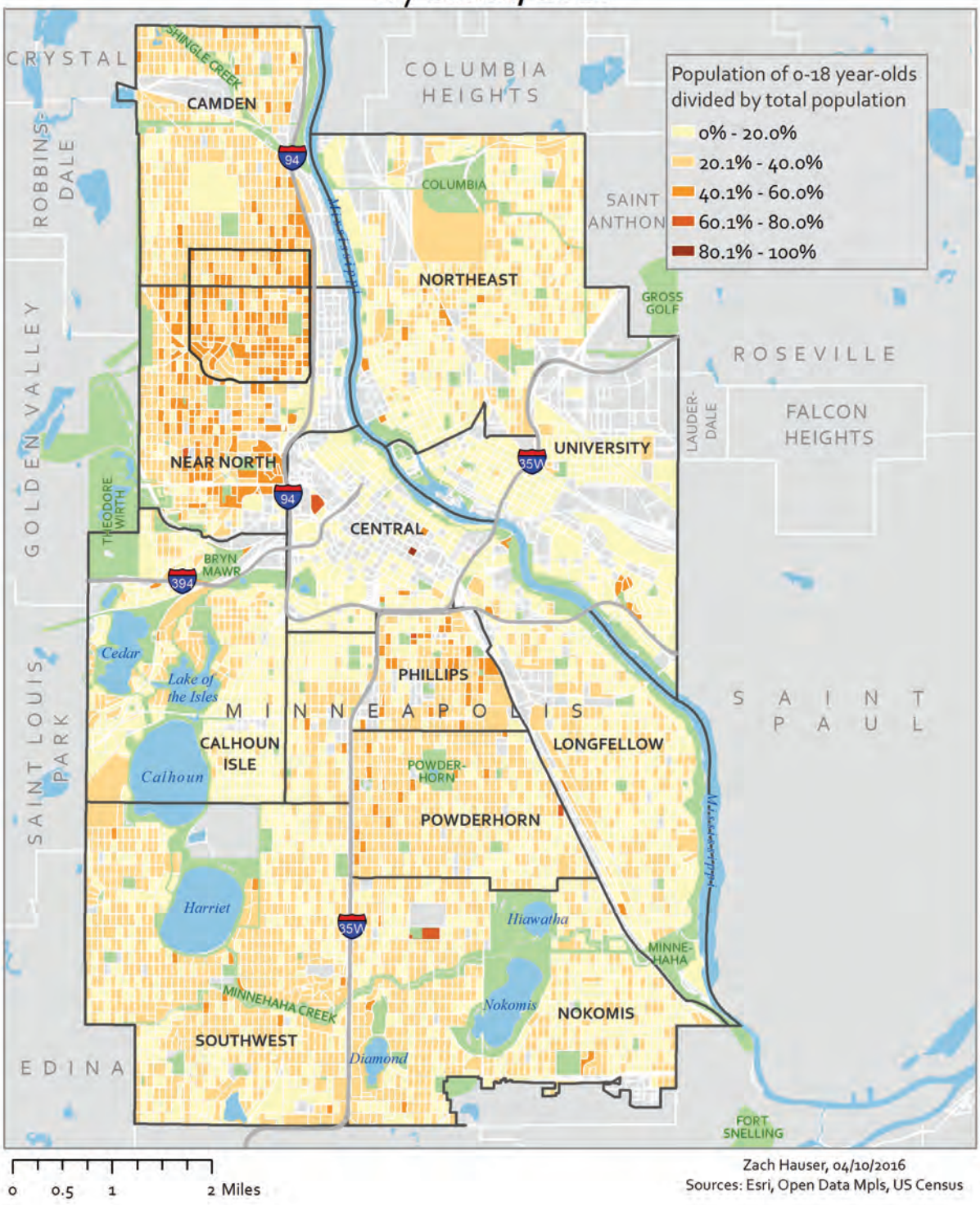
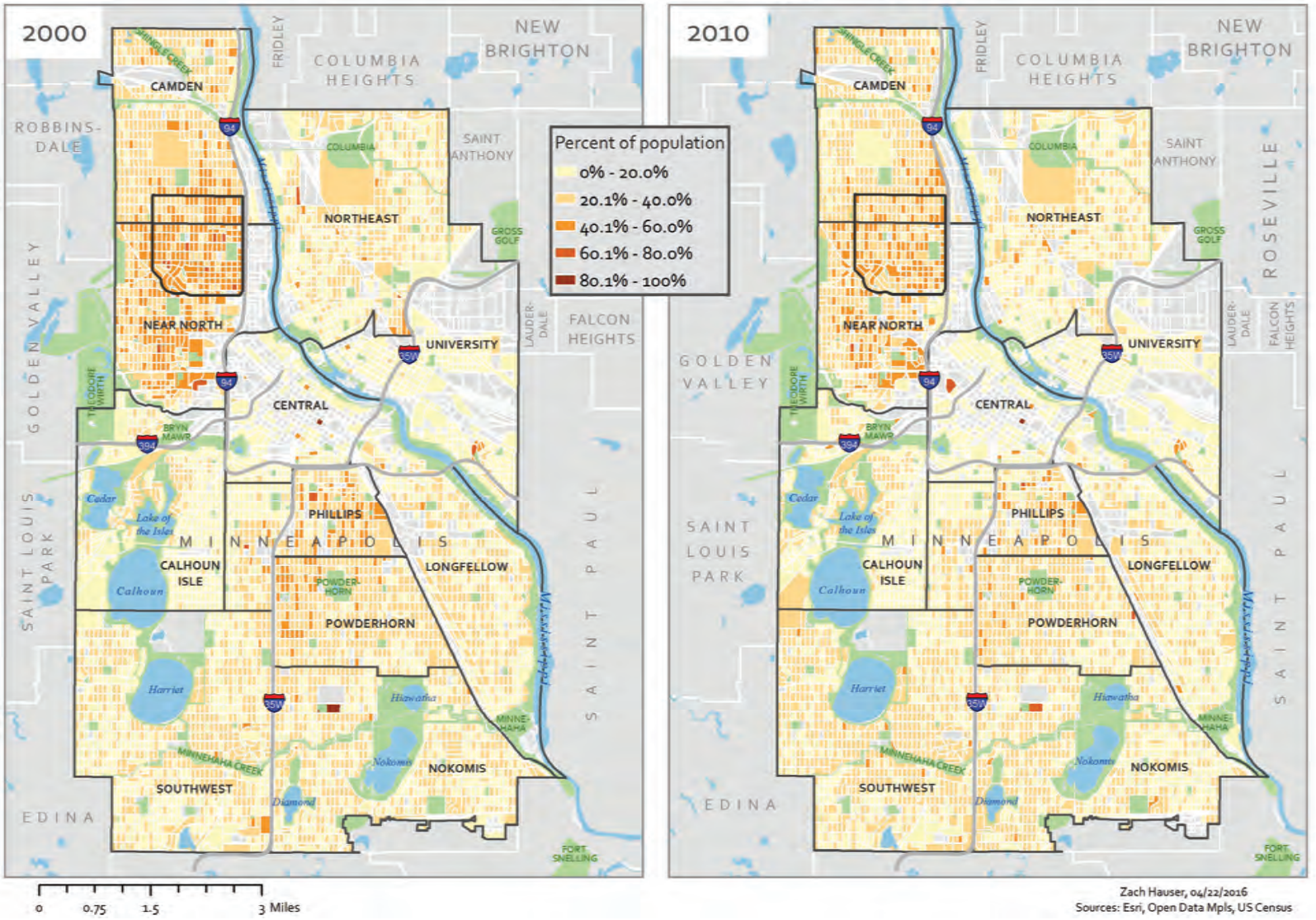
# Percent 0-18 Year Old Population in Minneapolis by Block, 2010



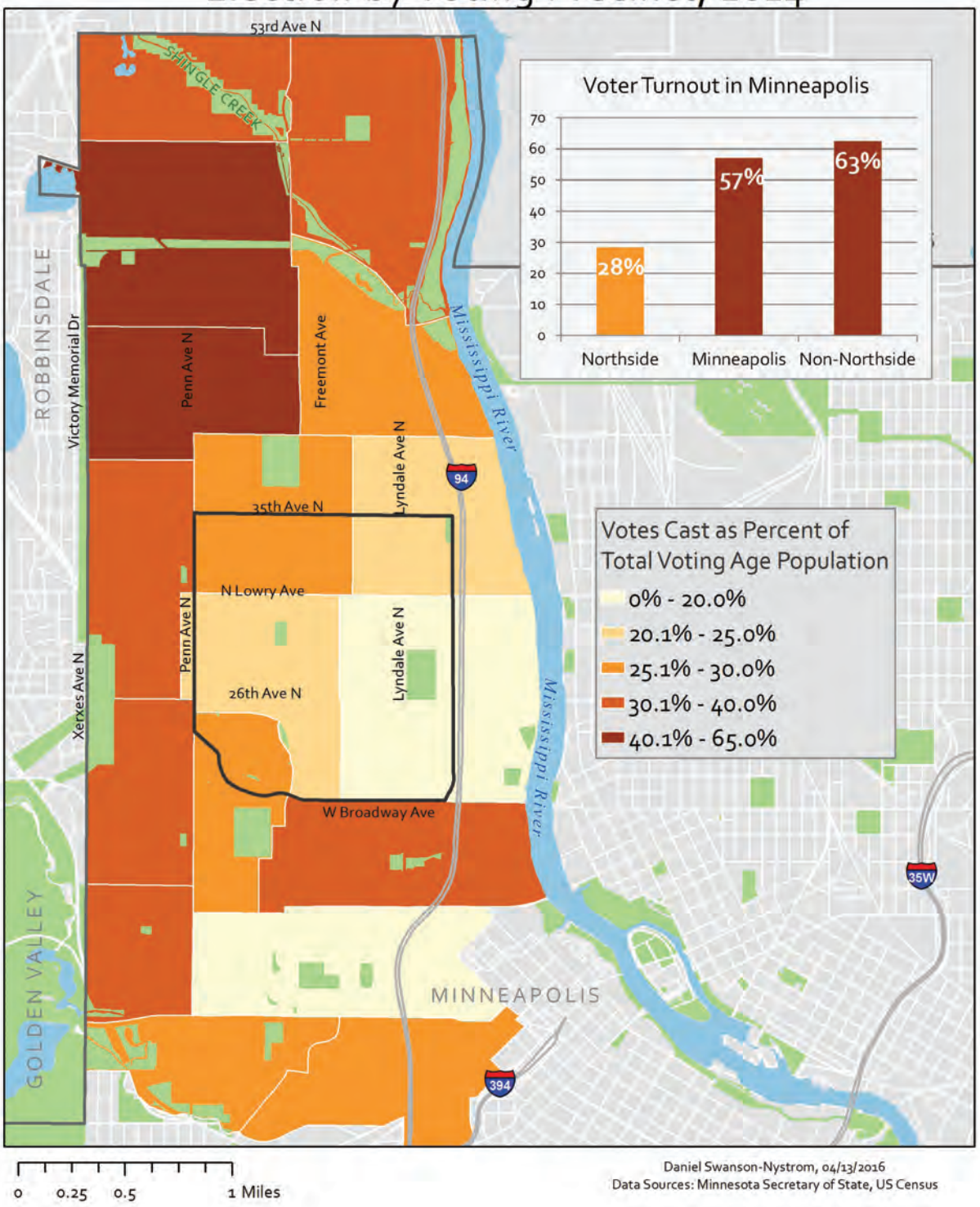
# Percent Youth 0-18 in Minneapolis by Block




Zach Hauser, 04/22/2016
Sources: Esri, Open Data Mpls, US Census

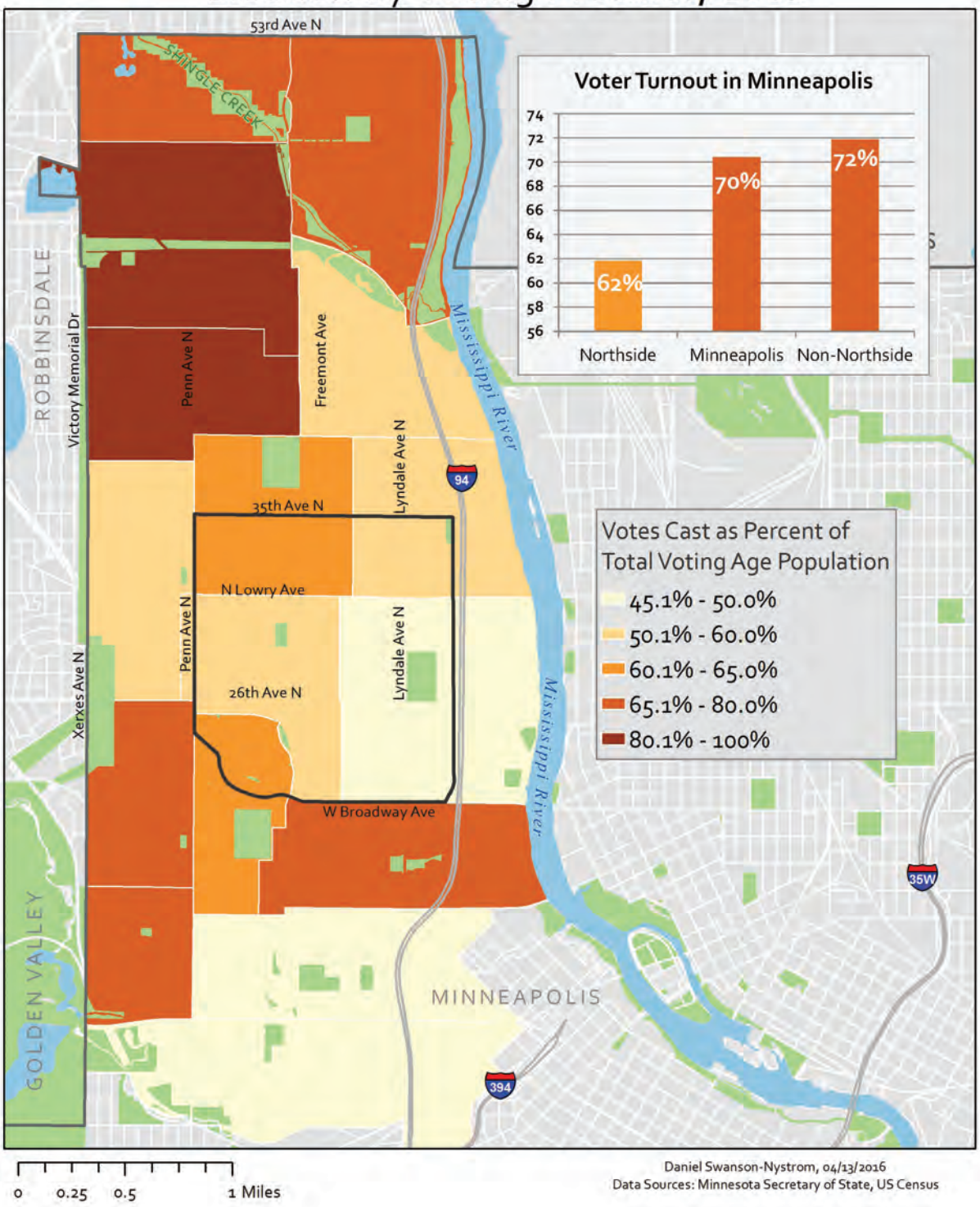
I.17

# Percent Voting in Midterm Election by Voting Precinct, 2014




Daniel Swanson-Nystrom, 04/13/2016
Data Sources: Minnesota Secretary of State, US Census

# Percent Voting in Presidental Election by Voting Precinct, 2012



This trend of low turnout in comparison to the rest of the city is especially troubling when taken in tandem with the pattern of high youth concentrations on the Northside in **Figure 15**. As stated by Supreme Court Justice Ruth Bader Ginsburg in writing for the majority in the case of Evenwel v. Abbott, "Nonvoters have an important stake in many policy debates—children, their parents, even their grandparents, for example, have a stake in a strong public-education system—and in receiving constituent services, such as help navigating public-benefits bureaucracies." This stake must be represented by others in their community come election day. But a low turnout among those of voting age and a high youth population means that the Northside contributes fewer voters per capita than the rest of the city by a wide margin.

## Conclusions

Overall, the population makeup of the Northside area is mostly African American/Black and predominantly young. The concentration of African American population has been intensifying in the area since 1980. The youth population has also continued to be very concentrated in the Northside since 2000. In addition, there is a greater proportion of female householders with children in the Northside than in the city of Minneapolis as a whole, a gap that has only widened since 1990. Family sizes in the Northside also differ from the whole of Minneapolis.

Further research on the topic of voting could be fruitful as it is possible to map voter turnout from the past and to follow it into the future. Additionally, the data available allows for the mapping of voting based on specific candidates up for election and based on individual ballot initiatives. This wealth of information could provide insights into the political preferences and desires of the Northside population. It should be noted that no percentages used for this map are exact as the method for determining precinct level population is imperfect.

In terms of addressing the gap between voter turnout on the Northside and the rest of the city it is necessary to understand the factors that deter or prevent people from voting on the individual level, whether these be personal choices such as a lack of faith in the political system or structural barriers such as distance to a polling place. In many instances, the Northside is not the only neighborhood with these characteristics. Similar distributions are visible in many of these maps, with concentrations in the Northside, Phillips, and Powderhorn. While these neighborhoods are distinct entities, their similarities should be considered, along with the conditions in the city of Minneapolis that created the concentrations of these social characteristics.

# Section 2: Housing

Hannah Bonestroo—Katelyn Kack—Joseph Klein—Ben Vargo

## Introduction

As the Northside Achievement Zone works to combat generational poverty with a focus on addressing the achievement gap, a comprehensive analysis of the current state of housing on the Northside must be undertaken. Research shows that quality of living conditions are crucial in order to establish a strong foundation not only for early childhood achievement, but also overall household well-being. Without quality housing, all family members struggle with unnecessary externalities and therefore find it more difficult than other families to achieve their full potential. Whether it be maintaining employment, saving money, or getting a good grade in school, the quality of one's housing is an important foundation. Housing is thus an integral part of the equation when it comes to solving generational poverty with a focus on closing the achievement gap.

The issue of housing quality has great significance in North Minneapolis, as low-quality housing and issues related to the existing housing stock have been historically linked to issues of systemic racism. It is important that NAZ and its partners are successful in overcoming these issues; presenting them with data-driven feedback on their progress so far and what progress can still be made is of the utmost importance. Our goal is to analyze and assess multiple variables of housing in North Minneapolis both historically and currently, in order to find trends and provide NAZ with this crucial information. With this research, we wish to assess whether or not the housing on the Northside is negatively or positively impacting the goals of the Northside Achievement Zone. Housing-related characteristics that would negatively impact their goals include high rates of and long-term poor-quality living conditions, low market values, vacancies, foreclosures and unsafe mortgage rates, absentee landlords, and low rates of homeownership. Through a comprehensive analysis of these variables at multiple scales, we hope to reach informative conclusions about the current effects housing has on the work of NAZ.

## Physical Condition of Housing

Information about the physical condition of housing in Minneapolis is collected by the Minneapolis Assessor's Office, and is a reflection of the level of repair needed for exterior features such as windows, foundations, siding, and porches. We have chosen to include this variable and the accompanying dataset in our analysis of housing conditions because physical characteristics of housing are strongly linked to the health of individuals and families in a number of different ways. Poor structural conditions lead to an

Photo credit: Laura Smith

estimated 4 million emergency-department visits and 70,000 hospital admissions per year (Pollack et al., 2008). These injuries are highly likely to affect school attendance for youth, and adults' ability to work. Because employment is often unstable for adults in Northside communities, physical injuries can negatively impact the financial state of many families and further perpetuate generational poverty.

Housing quality has psychological impacts as well. One study has found that "when families lived in poor quality housing, parents experienced more psychological stress, and children showed elevated levels of emotional problems . . . adolescents also showed lower school success in core academic subjects" (Coley et al., 2013, p. 2). By mapping the physical quality of housing, we can discern to what level these negative physical and psychological impacts are potentially occurring in Northside communities currently and in the recent past.

**Figure 1.a** shows housing conditions at the parcel level within the Northside Achievement Zone for the year 2016. There are 4,023 parcels in the "Zone," and 54% of them (2,165) are considered to have structures whose physical quality is below average. Of these 2,165 parcels, 3.1% of them (68) received a rating of "poor," which is the lowest possible grade. Only 8% (328) of parcels have housing with average or above-average quality, and only 32 parcels received ratings of "good" or "excellent."

This is a current snapshot of housing quality in the zone, and paints a picture that suggests much improvement can be made. Subsequent figures will put these conditions into context with the rest of the Northside and Minneapolis, and others will analyze the temporal trend of housing quality between 2013 and 2016.

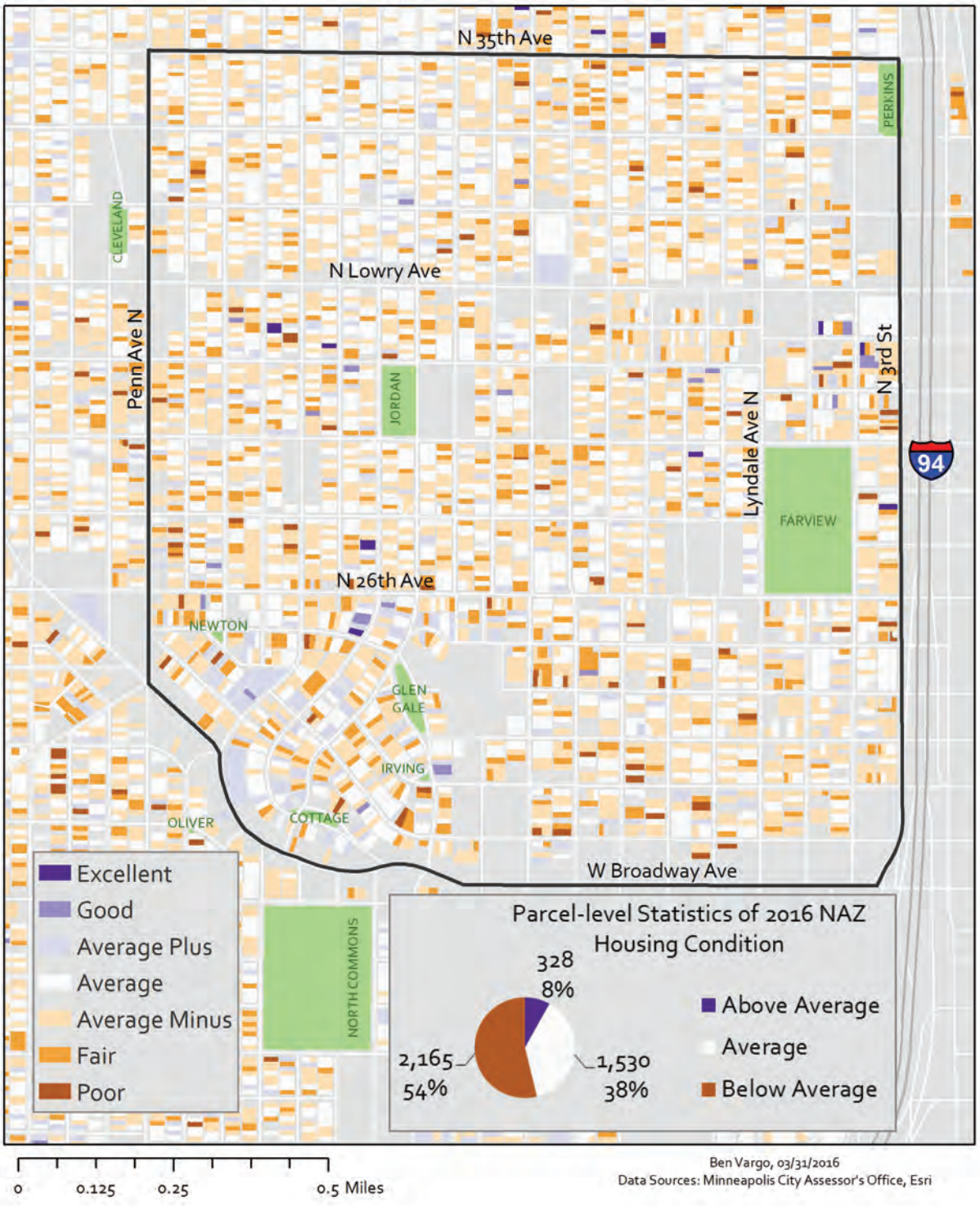
**Figure 1.b** maps housing quality for all of North Minneapolis aggregated to the block level for the year 2016. The "Zone" lies at the center of a swath of below-average housing that covers most of North Minneapolis. Out of the 17,772 parcels in North Minneapolis, 7,041of them (40%) are rated below average for housing quality. Furthermore, the vast majority of blocks receiving the two lowest ratings ("fair" and "poor") are either within or adjacent to the "Zone." West and northwest Camden appears to be an outlier in this overall trend, with a swath of "average" housing. The southeast corner of Near North also contains a number of blocks with higher-quality housing. This pattern creates a band of poor-quality housing that stretches from the southwest to the northeast in North Minneapolis. If we consult the reference map of NAZ participant families, one can see that this band of low-quality housing follows a similar pattern of where the majority of NAZ families live.

**Figure 1.c** shows housing quality for all of Minneapolis for the year 2016, also aggregated to the block level. It is here that we begin to see the strongest patterns in housing quality. As was suggested in **Figure 1.b**, there is a clear band of low quality housing stretching across North Minneapolis, with NAZ at its heart. There is an extremely sharp gradient at the border between Near North and Calhoun-Isle, where blocks abruptly change from being below-average to above-average in housing quality. There is a clear chain of high-quality housing that follows the Grand Rounds, and then follows the Kenilworth Corridor (soon to host the new Southwest Light Rail Extension project) into the Central community (downtown). This immediately shifts to below-average housing at Glenwood Ave. and Olson Memorial Highway. Incidentally, this border is the historical "redline" between North Minneapolis and Central Minneapolis. While Phillips and Powderhorn have their share of low-quality housing, nowhere is it more concentrated than in North Minneapolis, and particularly around the "Zone."

**Figure 1.d** is a map of 2016 housing condition hotspots by block in Minneapolis. Purple represents statistically significant clusters of housing whose quality has received above-average ratings for 2016. Brown represents statistically significant clusters of housing whose quality has received below-average ratings for 2016. What this map highlights is the statistically significant and therefore undeniable clusters of poor-quality housing that exist in North Minneapolis. The patterns are similar to those portrayed in earlier maps, but in this case the patterns have been confirmed through statistical analysis. There is a clear band of poor-quality housing stretching across North Minneapolis, with a strict cutoff to the south where the ratings suddenly improve.

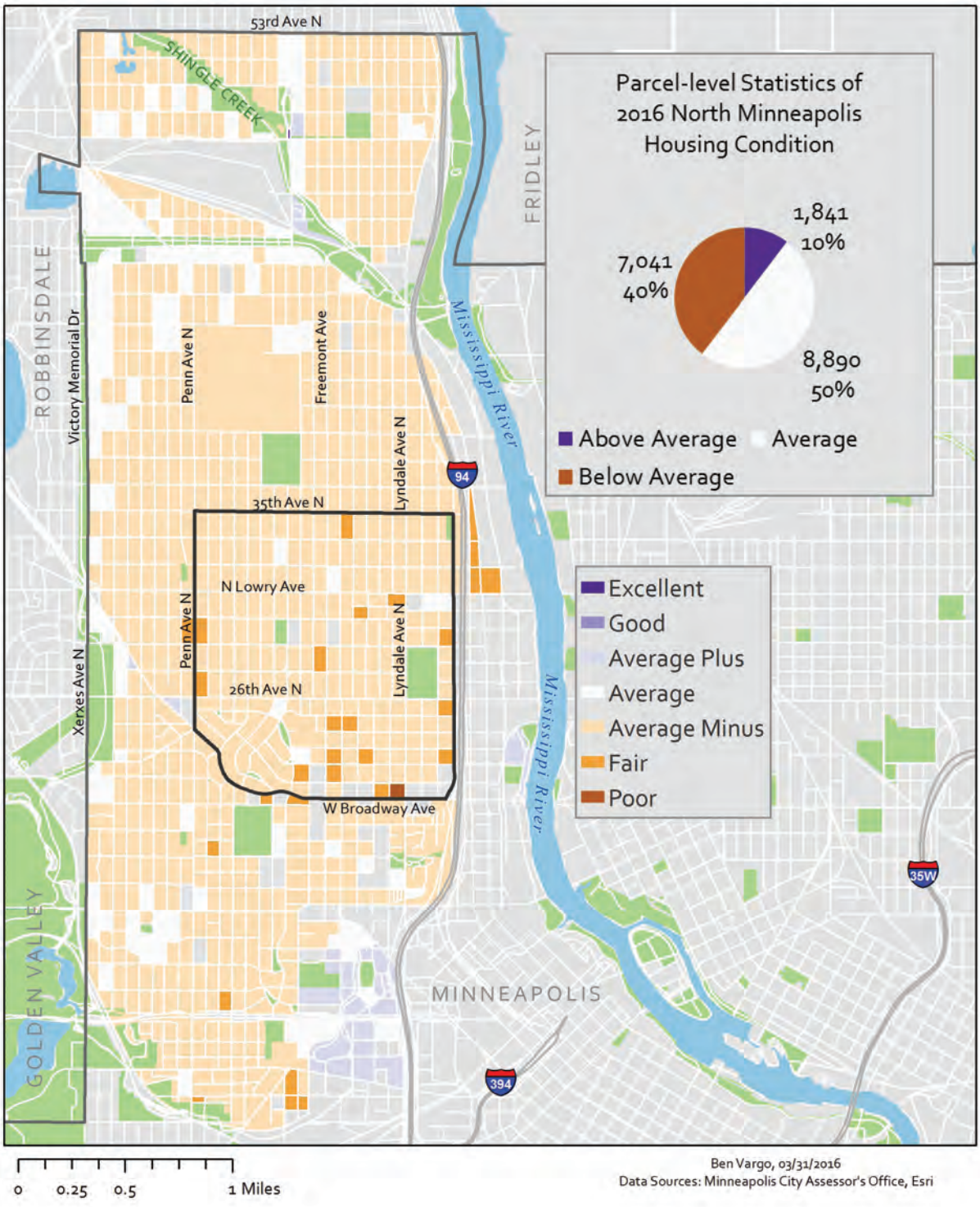
**Figures 1.e** through **1.g** are identical to **Figures 1.a** through **1.c** in terms of the data portrayed, its aggregation, and its classification into categories. However, these maps show data for the year 2013, and are all slightly different in terms of the percentages of parcels falling into above-, below-, and average categories. For example, for 2013 in the "Zone", 57% of parcels received below-average ratings, as opposed to 54% in 2016. The number of parcels with average ratings is 37%, compared to 38% in 2016. And finally, 6% of parcels are above average in 2013, versus 8% in

# Housing Condition in NAZ by Parcel, 2016

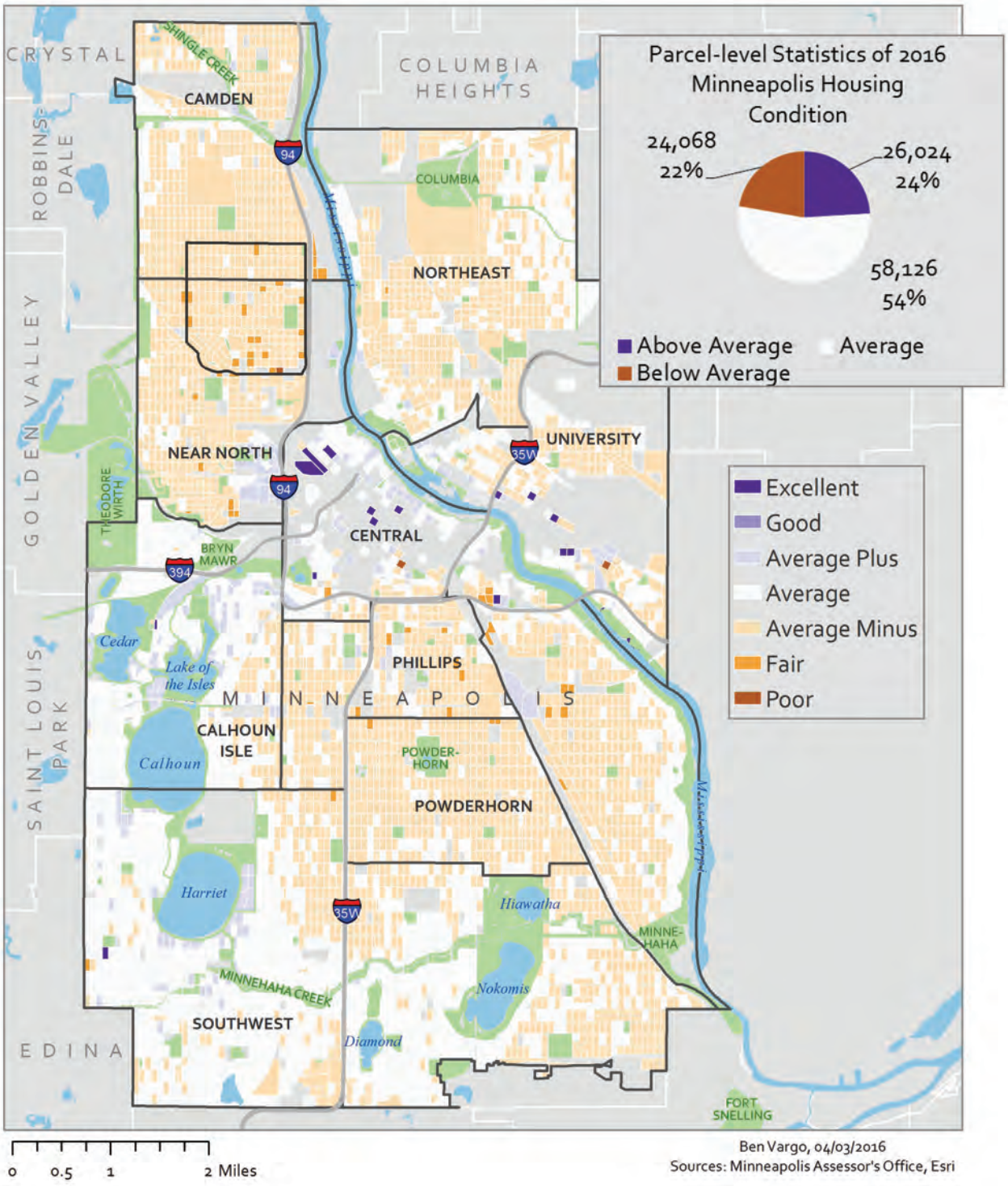


2.1b

# Housing Condition in North Minneapolis by Block, 2016

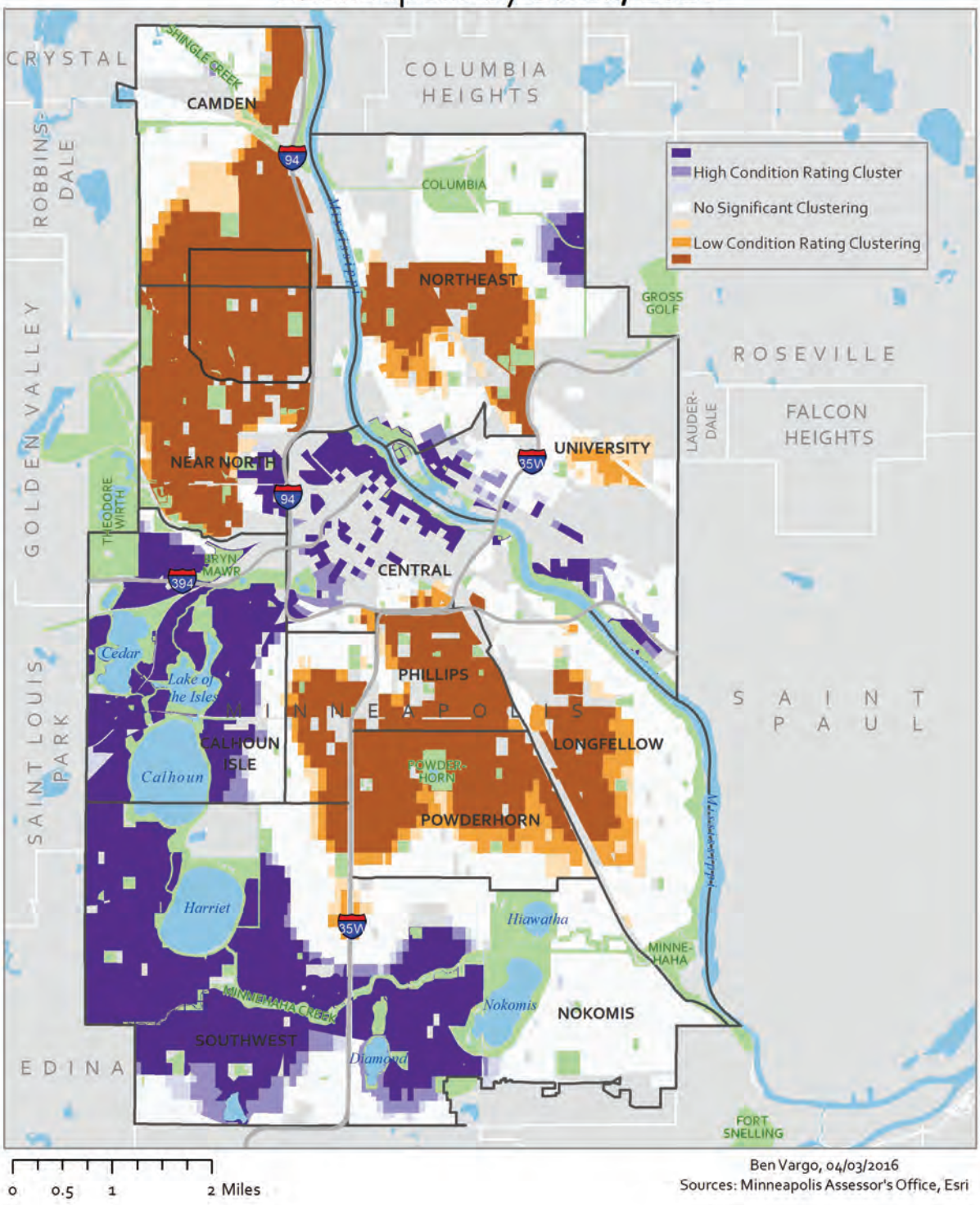


# Housing Condition by Block, 2016

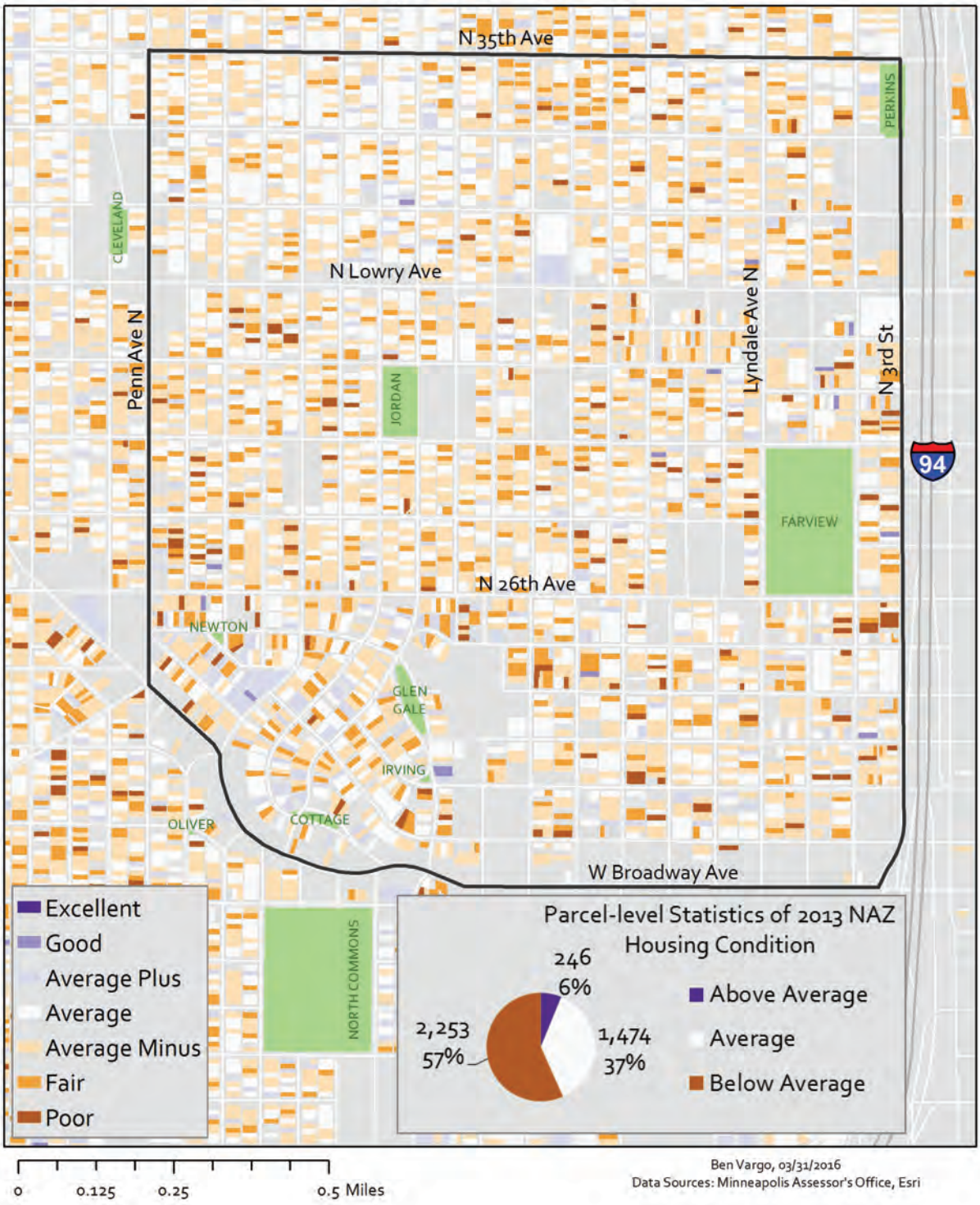


2.1d

# Statistically Significant Housing Condition Rating Clusters in Minneapolis by Block, 2016

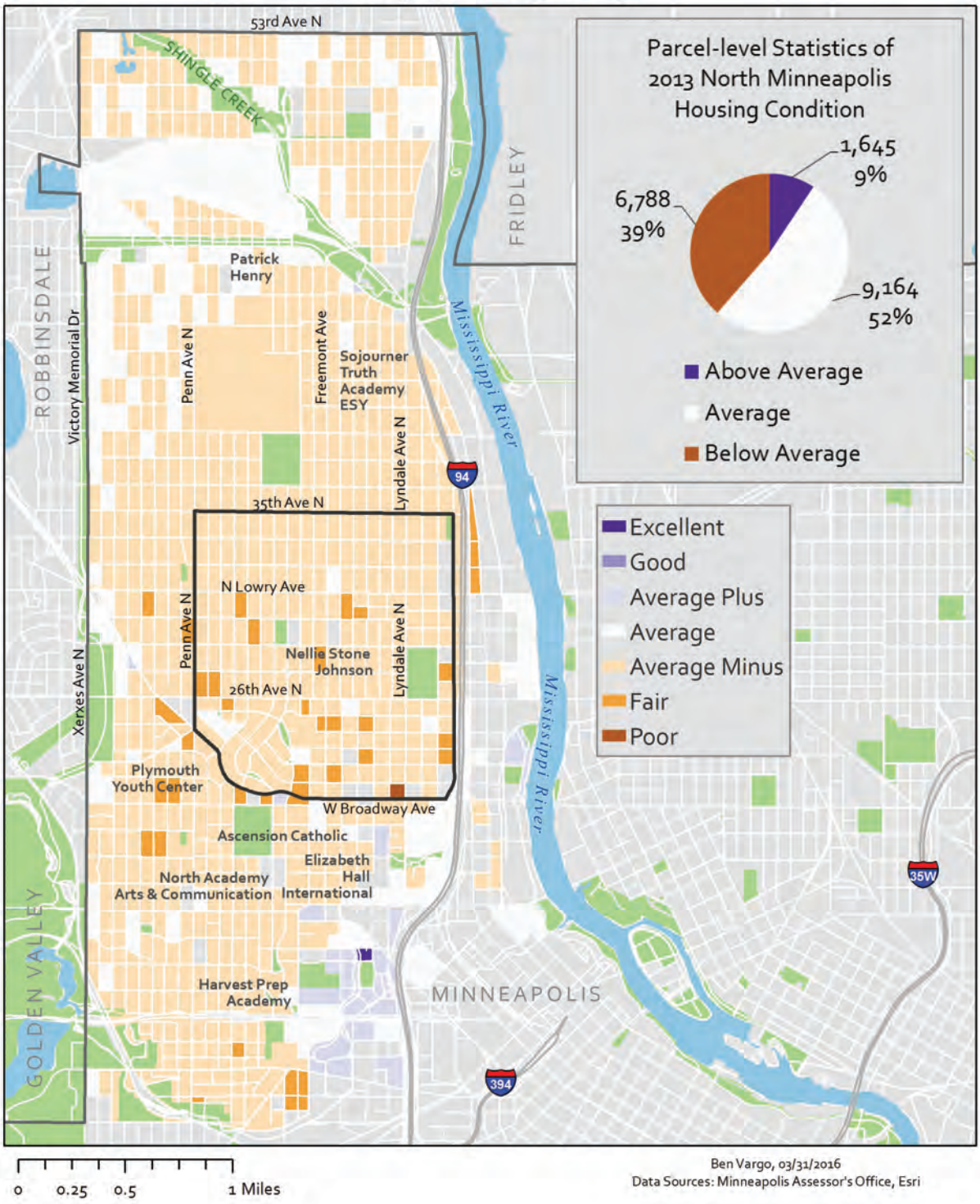


# Housing Condition in the Northside Achievement Zone by Parcel, 2013

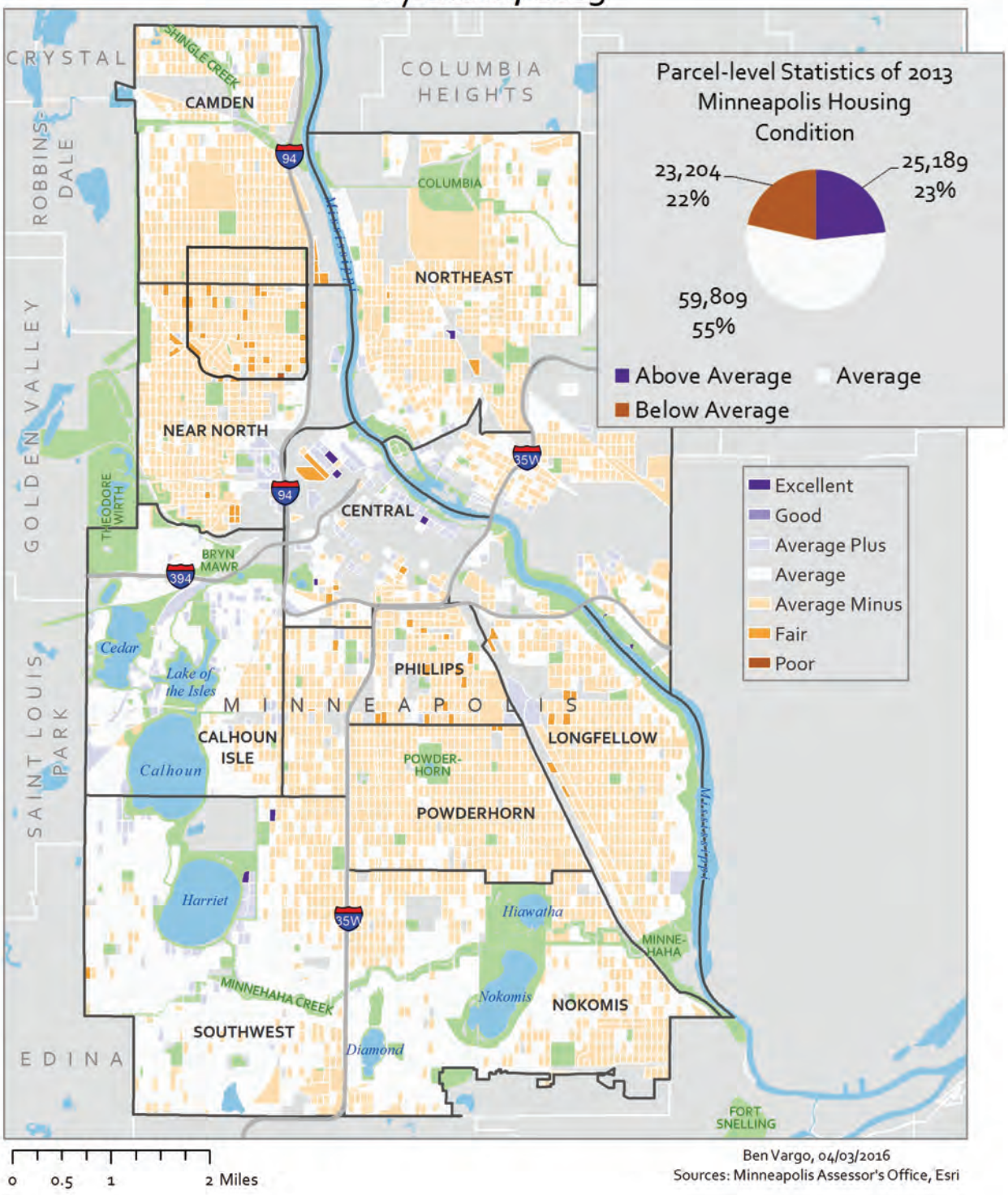


2.1f

# Housing Condition in North Minneapolis by Block, 2013



# Housing Condition in Minneapolis by Block, 2013



2016. For the city of Minneapolis (**Figure 1.g**), there is virtually no difference in terms of the visual pattern.

**Figure 1.h** is a map of 2013 housing condition hotspots by block in Minneapolis. The statistically significant clusters of below-average and above-average housing conditions shift slightly between 2013 and 2016. The cluster of statistically significant below-average housing on the Northside actually grows between 2013 and 2016 (**Figure 1.d**), spreading up into the east side of Camden. The band of above-average housing that follows the Grand Rounds through Calhoun-Isle recedes a small amount, with an eastern boundary shifting west. The cluster of below-average housing around Phillips and Powderhorn also shrinks. However, as previously stated, the cluster of below-average housing on the Northside grows significantly.

**Figure 1.i** is a parcel-level map of change in housing condition between 2013 and 2016 within the NAZ boundary. Five percent of parcels improved their condition ratings between 2013 and 2016, while 7% decreased. There is no discernible pattern of where increases and decreases occurred. It also must be made clear that an increase in housing condition does not necessarily mean that housing condition improved from below average to above average. While this could indeed be the case, it is just as likely that a parcel went from being far below average to just slightly below average, or from being slightly above average to being far above average.

**Figure 1.j** is a map of change in housing condition between 2013 and 2016 at the block level in North Minneapolis. Seven percent of housing condition ratings increased, and 6% decreased, following similar values for the scale of the "Zone." However, at this scale there is a definite pattern of where increases and decreases occurred. Most increases are located in the north and northwest areas, as well as in the southeast corner of the Northside. Most decreases in condition ratings occurred in a band that stretches from the southwest corner up through the northeast. This is the same pattern that below-average housing conditions followed in both the 2013 and 2016 maps.

While this analysis of housing conditions is quite straightforward, it offers some strong implications for the work of NAZ to end the achievement gap and generational poverty. While the temporal analysis of the change between 2013 and 2016 shows slight improvements to certain areas of North Minneapolis, these improvements are not located in areas where NAZ families tend to live, and the "Zone" is located in the heart of housing that is below average in terms of quality, and where quality on average continues to decrease. The "snapshots" in this analysis for 2013 and 2016 also suggest that for housing quality in North Minneapolis – and in the "Zone" especially – housing quality is in a highly undesirable state from multiple perspectives. As discussed above, the physical and psychological health of Northside families is disproportionately at risk of being impacted in their own homes. With decreases in housing condition comes an increase in the likelihood that the housing condition will have negative psychological or physical effects for all members of a household, thus compromising their ability to go to school, to be an effective parent, or to go to work. Furthermore, the financial costs of any physical injuries are too much to bear for many families, and the time commitment of going to doctors' offices or urgent care clinics may force many Northside residents to choose between keeping their jobs or their health.

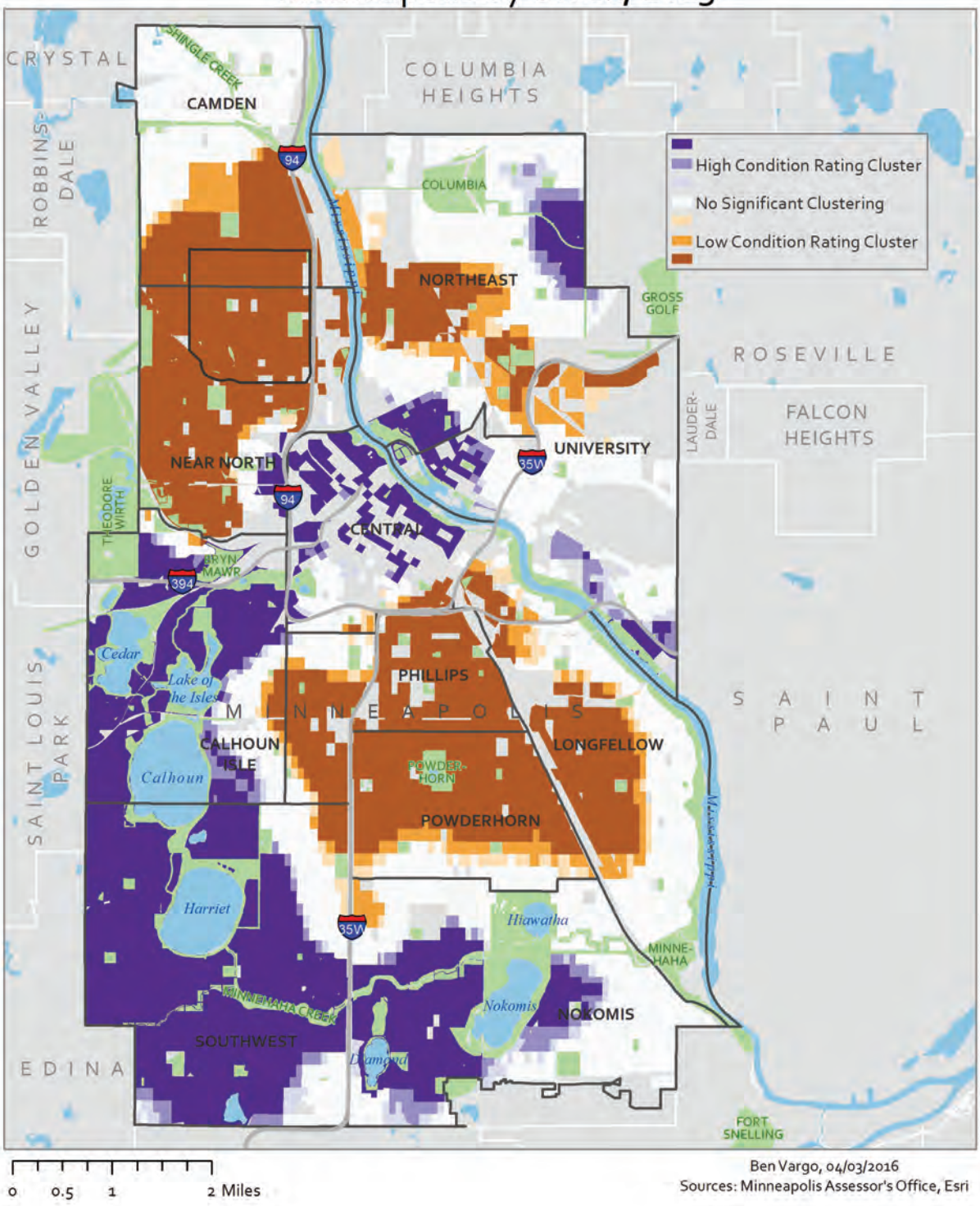
For this reason NAZ's "wraparound" approach to solving generational poverty is incredibly important in the Northside. If the quality of housing on the Northside was better than it is, NAZ would not need to focus on housing as a contributor to the well-being of Northside residents. However, because the housing on the Northside is for the most part quite poor, and is thus potentially having adverse effects on families and their well-being, it is imperative that NAZ utilize a wraparound approach that focuses on housing along with other factors explored in this report.

## Estimated Market Value

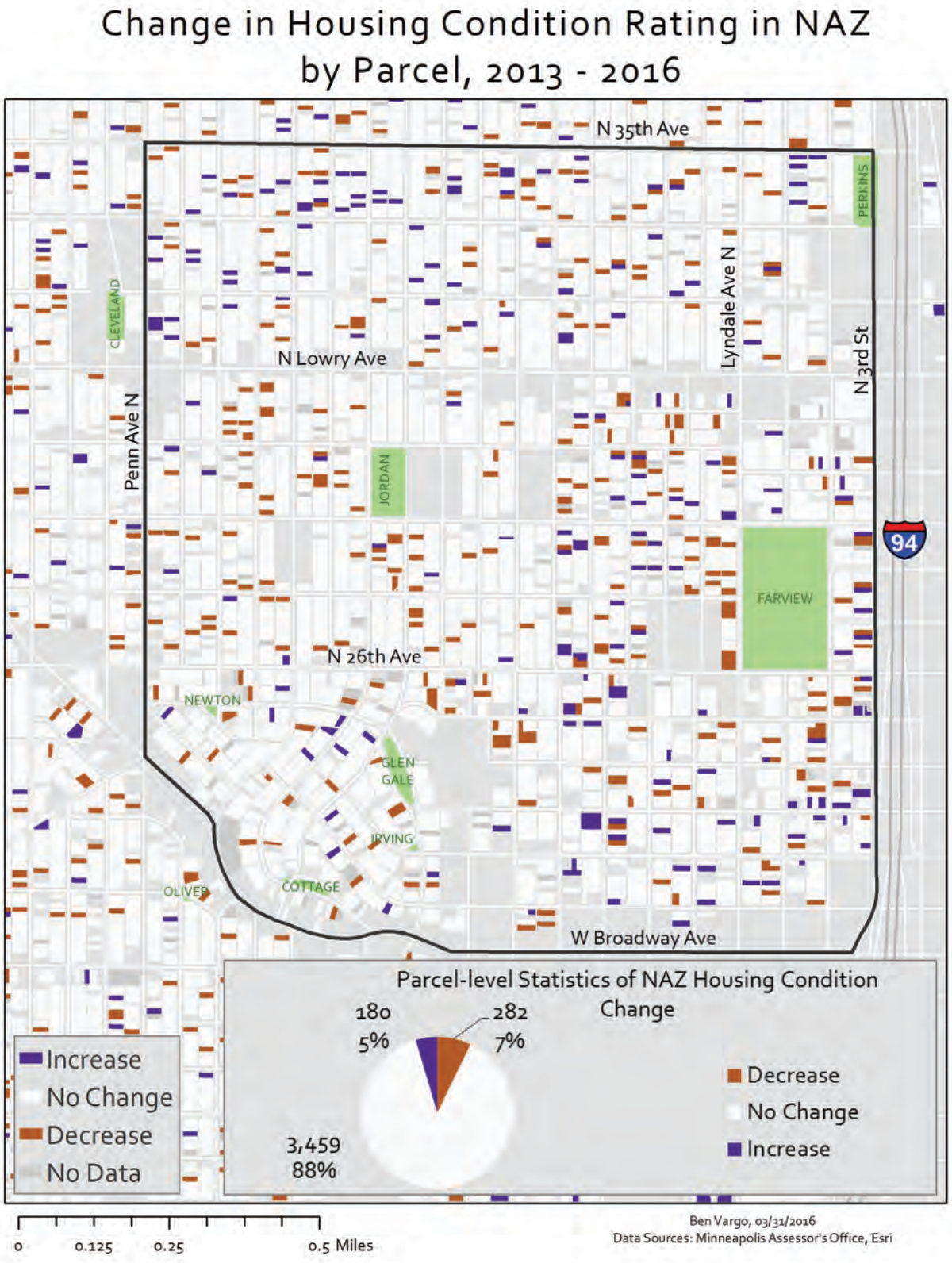
Estimated Market Value (EMV) was another variable examined within the housing theme. Total EMV consists of both the value of the land and the value of structure(s) on the property. As we were looking to find trends in housing across the "Zone," the Northside, and Minneapolis at large, we investigated the patterns of EMV at these three scales as well. EMV is not directly correlated to educational outcomes but is correlated to physical condition of housing, which can tell us about the out-of-school learning environment for students and the overall well-being of the families and community. EMV is highly reflective of physical condition rating. Across all three scales, we see similar patterns of high and low EMV in the same areas of excellent or poor housing conditions.

The data for EMV was made available from the Metropolitan Council for the years 2002-2015, at the parcel level. The parcel level provides for a very detailed visualization of spatial patterns. This is

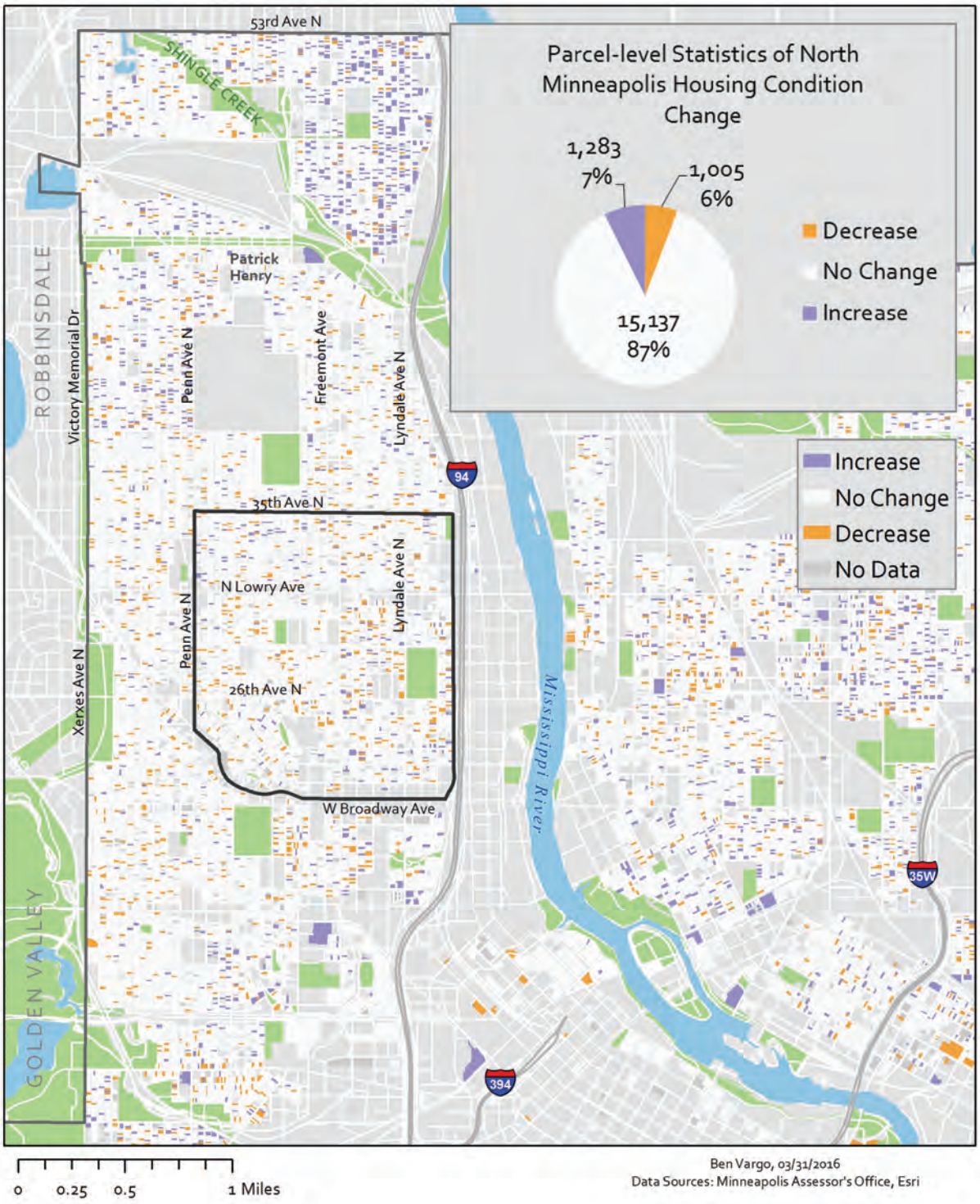
# Statistically Significant Housing Condition Rating Clusters in Minneapolis by Block, 2013



2.1i


Change in Housing Condition Rating in NAZ
by Parcel, 2013 - 2016
N 35th Ave
N Lowry Ave
N 26th Ave
W Broadway Ave
Penn Ave N
Lyndale Ave N
N 3rd St
CLEVELAND
JORDAN
PERKINS
FARVIEW
NEWTON
GLEN GALE
IRVING
COTTAGE
OLIVER
94
Increase
No Change
Decrease
No Data
Parcel-level Statistics of NAZ Housing Condition Change
180
5%
282
7%
3,459
88%
Decrease
No Change
Increase
0
0.125
0.25
0.5 Miles
Ben Vargo, 03/31/2016
Data Sources: Minneapolis Assessor's Office, Esri

# Change in Housing Condition by Parcel, 2013 - 2016



especially important when looking at different areas of the "Zone" and the Northside. Data from 2010 and 2015 were used to examine recent trends and to match up with the earliest stages of the NAZ program.

**Figures 2.a** and **2.b** display estimated market values in the Northside for the years 2010 and 2015 respectively. **Figure 2.a** shows EMV by parcel in 2010. We see a fairly consistent range of values for the entire Northside, indicated by the darker brown shades representing higher categories of market values for each parcel. There are only a few parcels classified into the lowest EMV category, as indicated by the light yellow shade. We can also see that the Northside does not differ dramatically from the overall pattern of higher market values across all of Minneapolis. This pattern is shown in the inset map in the top right corner. The inset shows EMVs for all of Minneapolis for 2010.

**Figure 2.b** displays the same scale but in the year 2015. If we first look at the inset map in the top right corner, we see that the Northside has EMVs that are much lower than those across the rest of Minneapolis. The Northside stands out with low market values (shaded in light yellow) in comparison to the higher market values (shaded in brown) in the rest of Minneapolis. Comparing **Figure 2.a** to **Figure 2.b**, we see that the shading in the Northside is much lighter around the "Zone" in 2015. In order to look more specifically at this change, the next few figures focus solely within the NAZ boundary.

**Figures 2.c, 2.d,** and **2.e** display estimated market values within the NAZ boundary. In 2010 (**Figure 2.c**), the pattern of higher EMVs is consistent with the pattern seen in **Figure 2.a**, and there is not much differentiation in shading. By 2015 (**Figure 2.d**), there is much more differentiation in values within the NAZ boundary. The pattern is similar to a checkerboard with higher and lower EMVs both represented. **Figure 2.e** confirms the trend of decreasing EMVs within the NAZ boundary from 2010 to 2015, showing the percentage change in EMV over this time span. Percent change was calculated by taking the difference between the 2015 EMV and 2010 EMV and dividing by the 2010 EMV. The majority of the zone has experienced a negative percentage change from 2010 to 2015, with only a few parcels for which the percentage change was positive (indicated by shades of purple). It may be helpful to look to the housing condition data or crime data for further insight on this trend.

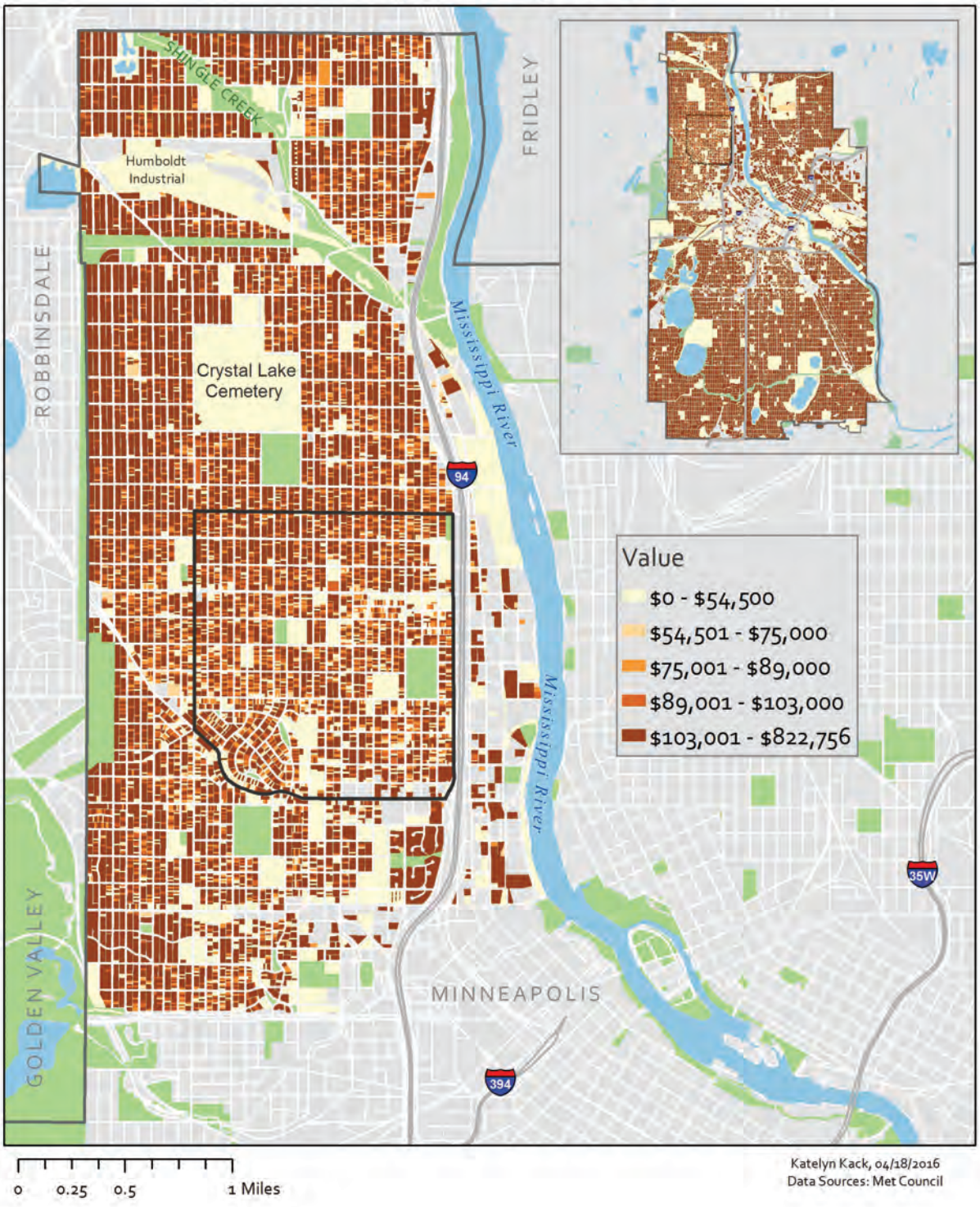
**Figures 2.f** and **2.g** depict EMV by parcel for the city of Minneapolis in 2010 and 2015, respectively. In 2015 (Figure 2.g), the median EMV for Minneapolis was $146,000 and the median EMV for the Northside was $81,500. Almost all of the EMVs in the Northside are lower than the median. Not surprisingly, the areas of highest value in the city are located in the Southwest and Calhoun-Isle communities. The overall patterns of EMV do not change between the two years.

## Housing Tenure

Owning a home embodies the American dream. Research has consistently shown that homeownership allows households to accumulate wealth and higher social status. We have chosen to include housing tenure as a variable for analysis because of the potential positive effects that homeownership can have on educational achievement, civic partnership, health benefits, crime reduction, public assistance, and property maintenance and improvement. All are social benefits that NAZ aspires to achieve, particularly educational achievement. A report from the National Association of Realtors shows that homeowners are five times less likely to move than renters and hence are embedded into the same neighborhood and community for a longer period and are able to develop important social ties that can bring stability to a neighborhood ("Social Benefits," p. 5). Social cohesion and strong ties are paths through which resources for social control are made ("Social Benefits," p. 7). Stability is an especially important issue facing North Minneapolis, which experiences high rates of poverty, because "the mover rate among those living below the poverty level is almost twice as high as those living above the poverty line" ("Social Benefits," p.6). Another study conducted by William M. Rohe and Leslie S. Stewart found that "homeowners, unlike renters and landlords, have both an economic and a use interest in their properties. This combination of interests seems to provide powerful incentives for owner-occupants to maintain their properties at a higher standard and to join organizations that protect the collective interests of homeowners in the area" (Rohe & Stewart, 2013, p. 71).

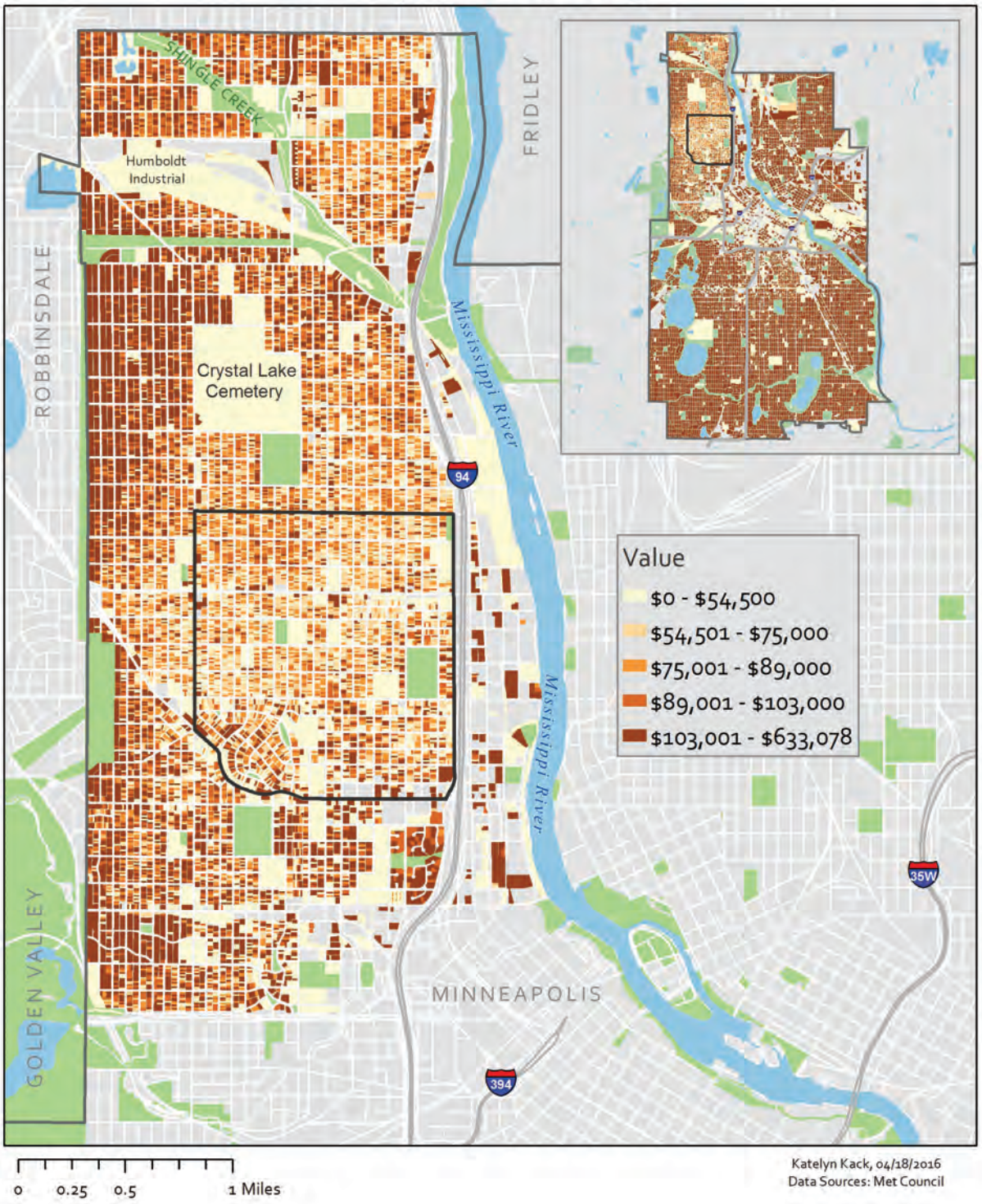
The effects of homeownership on educational attainment have also been well documented. A study by Richard K. Green and Michelle J. White analyzed three data sets: the Panel Study of Income Dynamics (PSID), the Public Use Microsample of the 1980 Census of Population and Housing (PUMS), and High School and Beyond (HSB) to measure the benefits of homeownership on children. The analysis of all three data sets "supported the hypothesis that homeowning by parents is a statistically significant and economically important determinant of whether their children stay in school, even when [controlled]

# Estimated Market Value in the Northside by Parcel, 2010

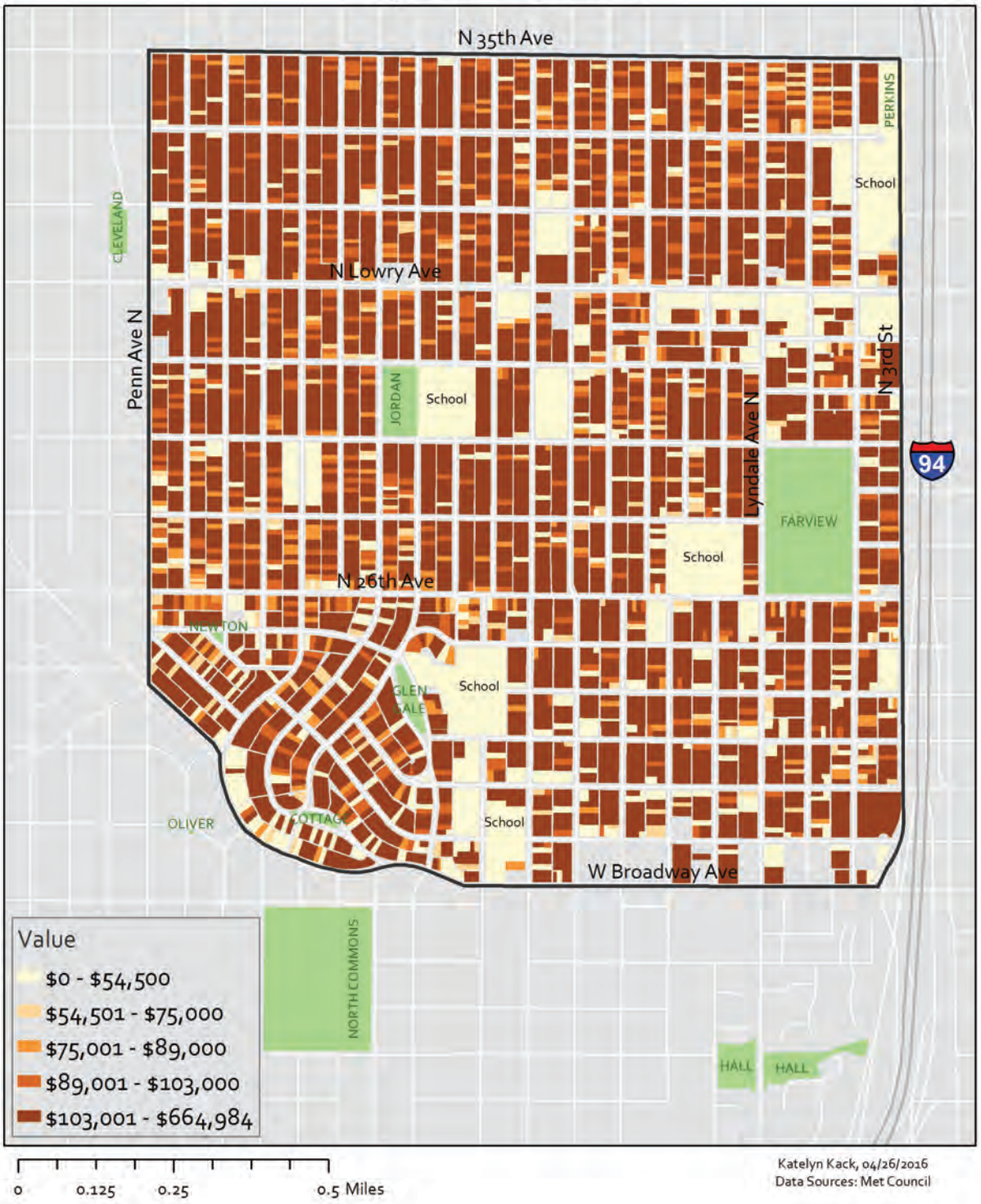


2.2b

# Estimated Market Value in the Northside by Parcel, 2015

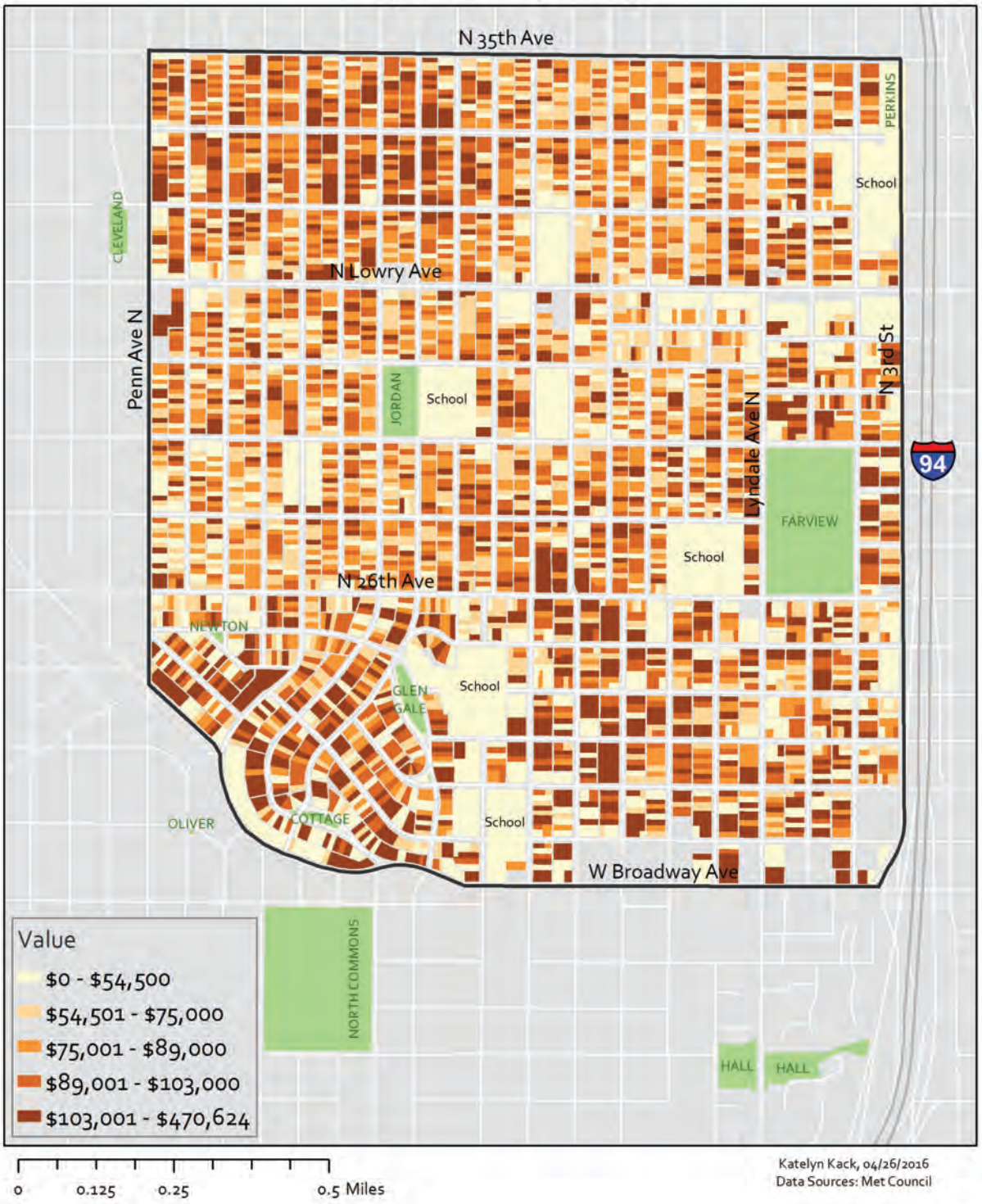


# Estimated Market Value in the NAZ by Parcel, 2010

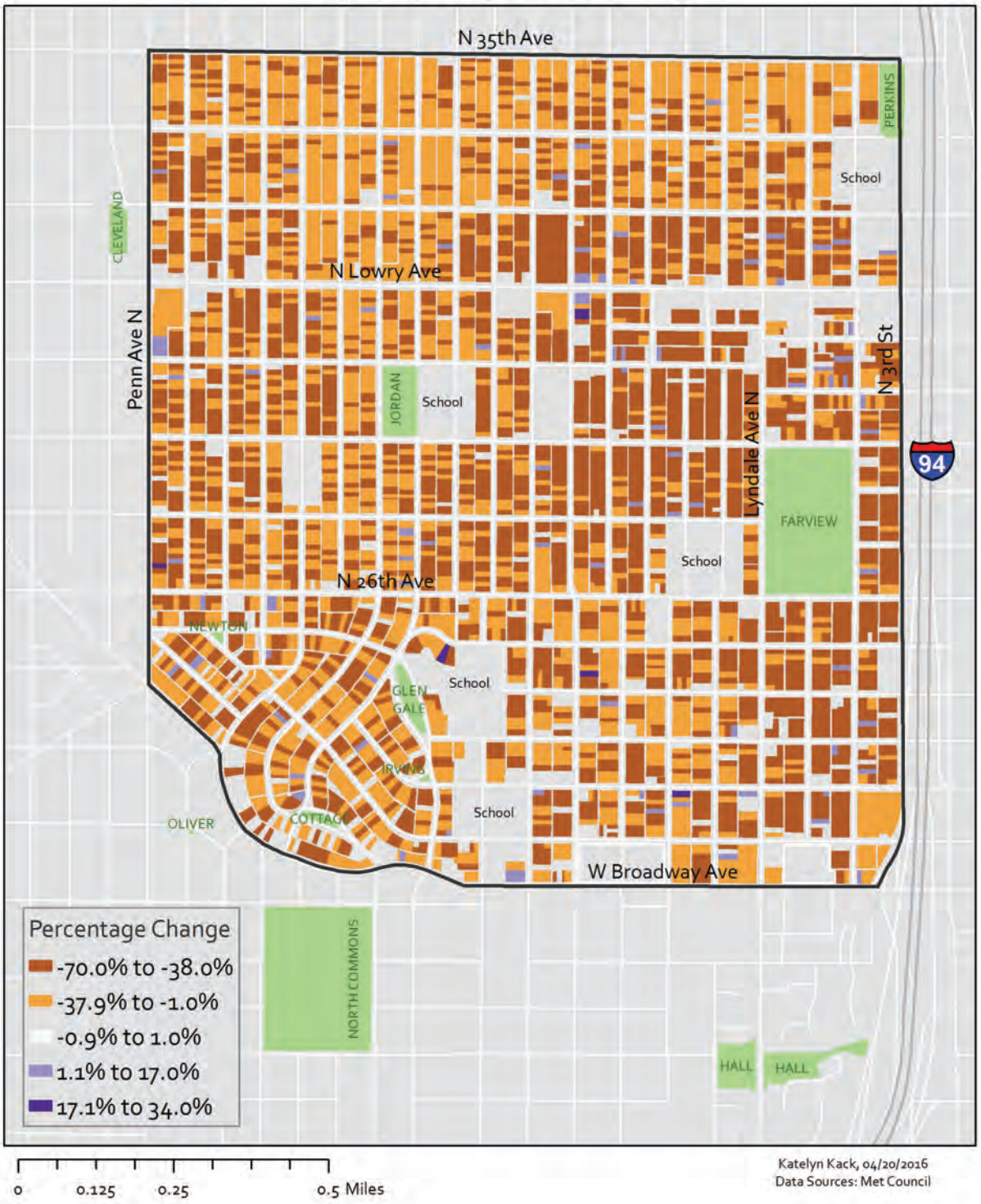


2.2d

# Estimated Market Value in the NAZ by Parcel, 2015

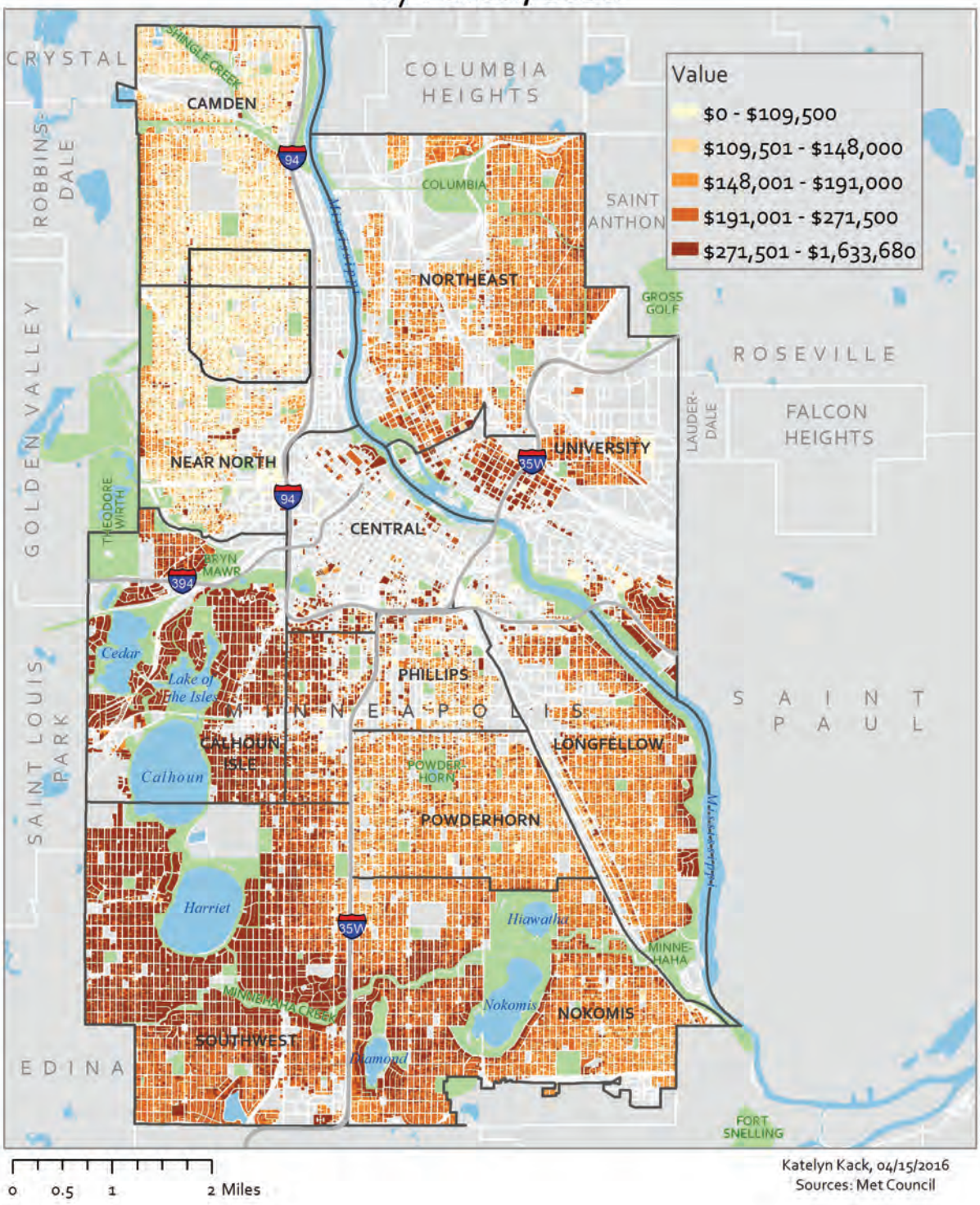


# Change in Estimated Market Value in the NAZ by Parcel, 2010-2015

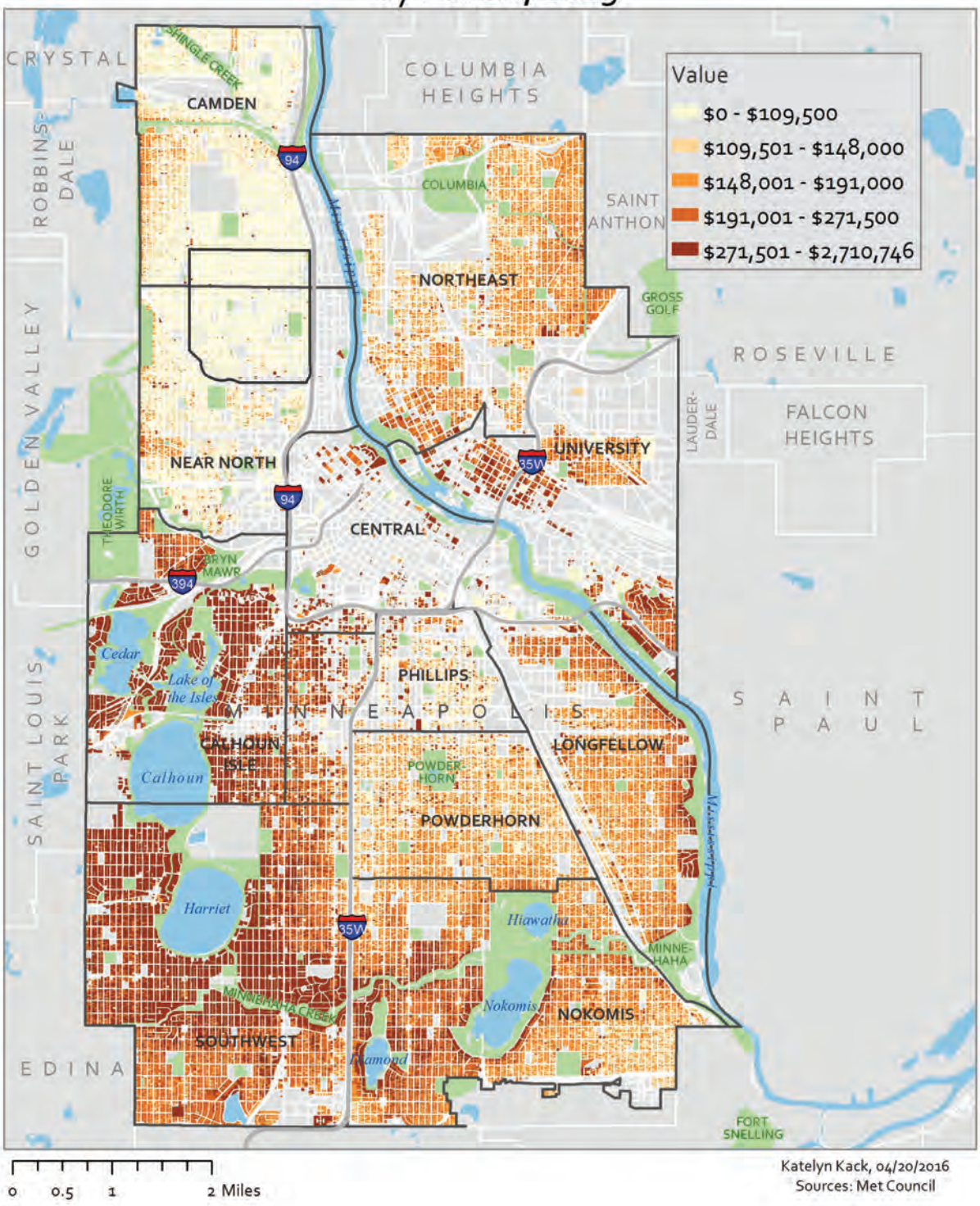


2.2f

# Estimated Market Value in Minneapolis by Parcel, 2010



# Estimated Market Value in Minneapolis by Parcel, 2015



for a large number of other factors that prior research suggests are important" (Green & White, 1997, p. 452). Evidence from the data sets "suggests that homeowning has an important effect on the probability of children staying in school until age 17 and that the effect is strongest for children of low-income households" (Green & White, 1997, p. 446). Additionally, "since children of homeowners are more likely to graduate from high school than children of renters, and high school graduates earn more, children of homeowners have higher expected future incomes than children of renters" (Green & White, 1997, p. 458).

**Figure 3.a** uses U.S. Census data to portray by block group the percent of Minneapolis housing units which were owner-occupied as opposed to renter-occupied. The darker brown shade represents block groups with a higher percentage of housing units that were owner-occupied. Using raw values from the U.S. Census for each block group, the percentages were calculated by dividing the number of households that were owner-occupied by the total number of housing units in that block group. The maps depict 2000 and 2010 housing tenure using data from the SF1 (Summary File 1) which contains data compiled from all people and about every housing unit.

The map on the left in **Figure 3.a** shows the percent of housing units that were owner-occupied in Minneapolis by block group in 2000 and indicates that in 2000 North Minneapolis had a relatively high percentage of housing units that were owner-occupied. In North Minneapolis, 22 out of 71 (30.9%) block groups were between 60-80 percent owner-occupied and another 22 out of 71 (30.9%) block groups were 80-100 percent owner-occupied. This means that 61.8% of the total block groups in North Minneapolis were over 60% owner-occupied. However, it is apparent that North Minneapolis was less owner-occupied than the communities of South Minneapolis including Southwest and Nokomis.

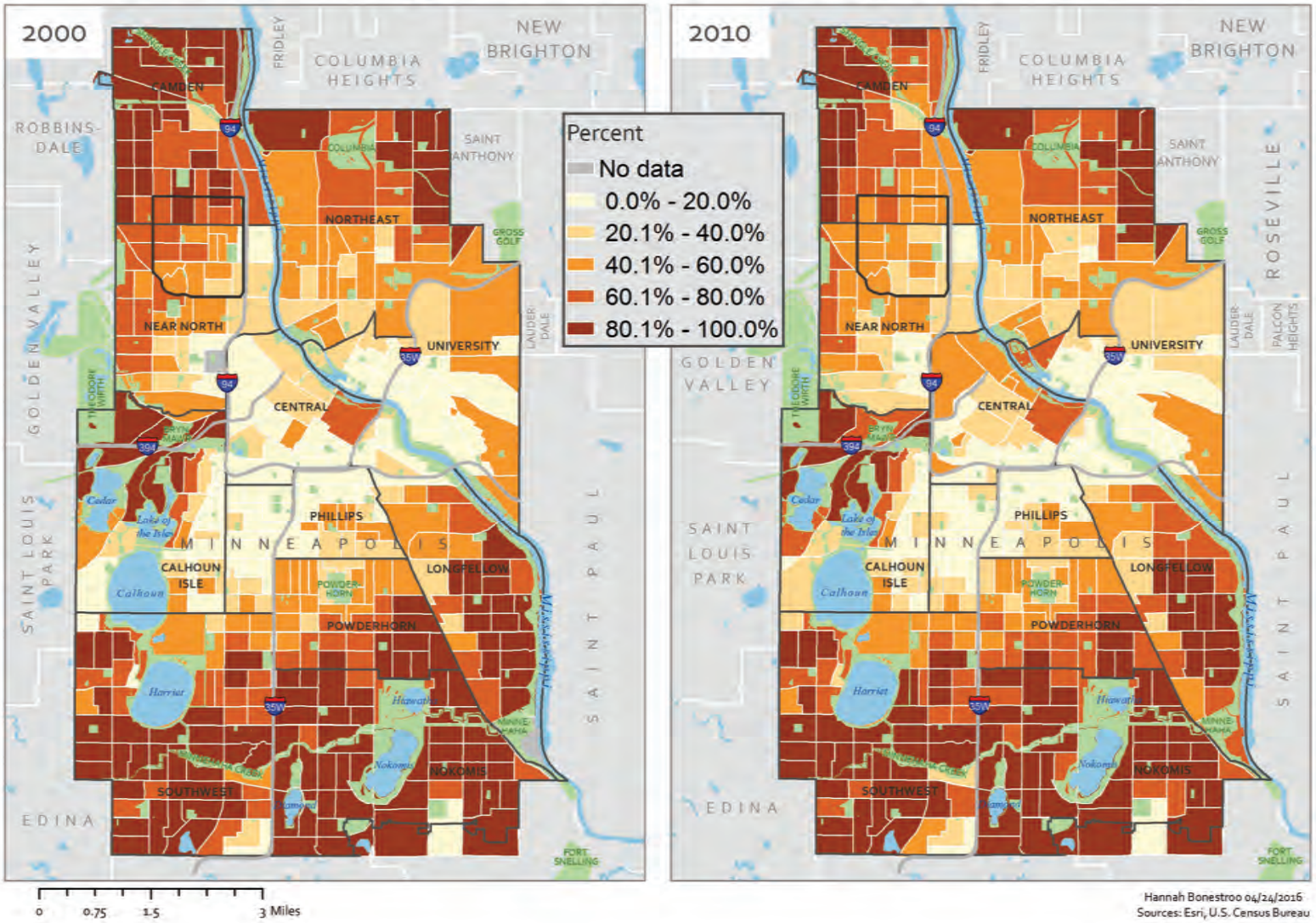
The map on the right in **Figure 3.a** shows the percent of housing units that were owner-occupied in Minneapolis by block group in 2010. By 2010 the percentage of housing units that were owner-occupied decreased. This decrease is particularly evident in North Minneapolis where only 16 out of 65 (24.6%) block groups were 60-80 percent owner-occupied and only 11 of the 65 (16.9%) were 80-100 percent owner-occupied. This means that by 2010 only 41.5% of the block groups in North Minneapolis were over 60% owner-occupied. This 20.3% decrease represents a significant change over the ten-year period, and North Minneapolis continues to have a lower percentage of owner-occupied housing units by block group than South Minneapolis.

**Figure 3.b** uses U.S. Census data to portray the percent of housing units by block group in Minneapolis which were owner-occupied as opposed to renter-occupied, considering only those units occupied by householders who identified racially as "white alone" in the U.S. Census. The darker brown shade represents block groups with a higher percentage of housing units that were owner-occupied. The percentages were calculated using raw values from the U.S. Census for each block group; dividing the number of households that were owner-occupied by the total number of housing units in that block group.

The map on the left in **Figure 3.b** shows the percent of housing units that were owner-occupied in Minneapolis by block group in 2000 for housing units occupied by householders who identified racially as "white alone" in the U.S. Census. The map on the right in **Figure 3.b** shows the corresponding percent for 2010. These maps show that out of all householders, white-alone householders were more likely to own their home in both 2000 and 2010. In 2000 for white-alone householders in North Minneapolis, 18 out of 71 (25.3%) block groups were 60-80 percent owner-occupied and 39 out of 71 (55.0%) block groups were 80-100 percent owner-occupied. This means that 80.3% of block groups in North Minneapolis were over 60% owner-occupied for white-alone householders in 2000. Unlike for all householders, for which homeownership decreased substantially by 2010, the percentage of block groups in North Minneapolis with over 60% owner-occupancy for white-alone householders remained constant (at 80%). However, in 2010, fewer block groups (26 of 65 (40.0%) of all block groups in North Minneapolis) fell in the 80-100 percent owner-occupied range and more block groups were now between 60-80 percent owner-occupied (26 out of 65 block groups (40.0%)).

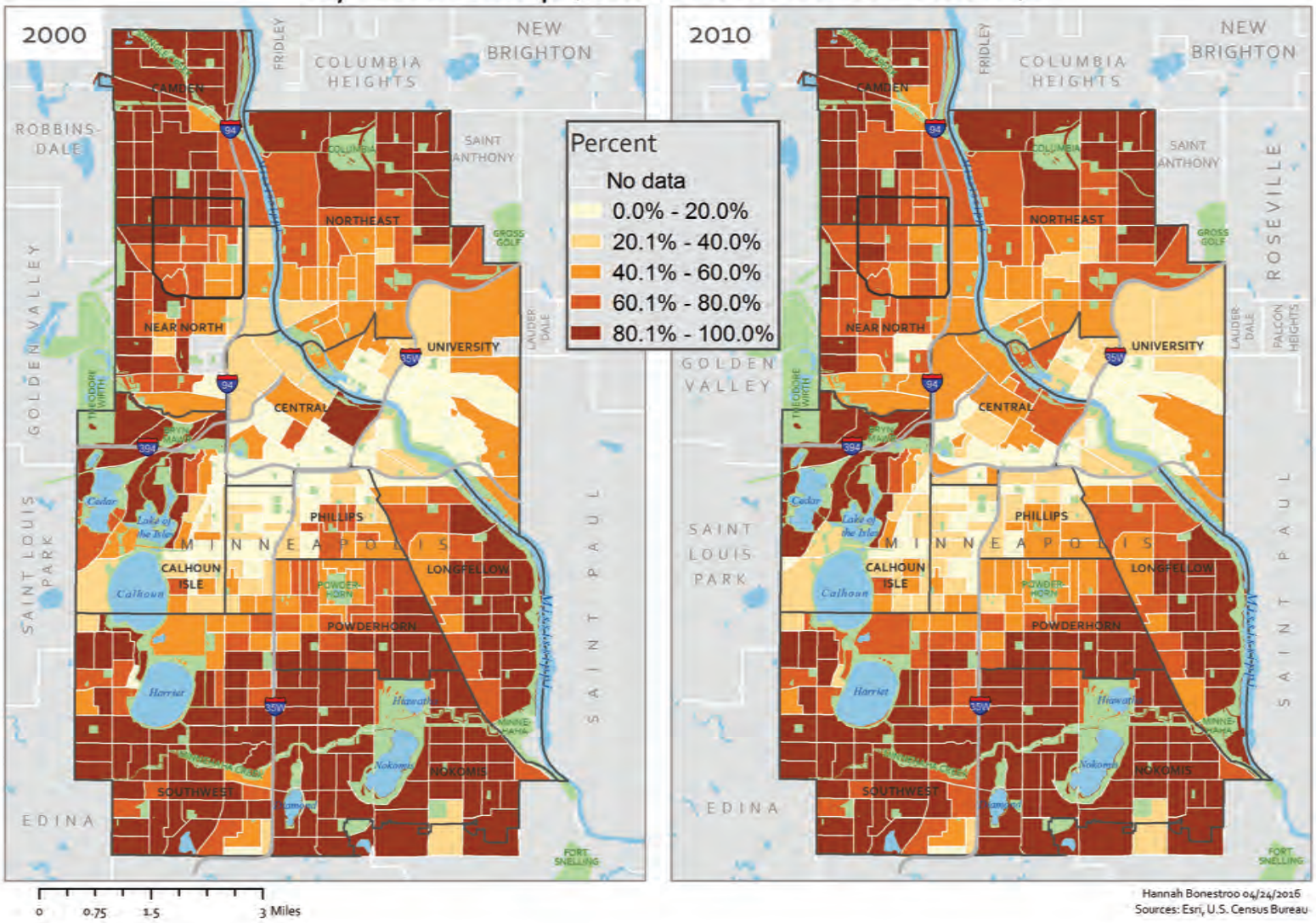
**Figure 3.c** uses U.S. Census data to portray the percent of housing units by block group in Minneapolis which were owner-occupied as opposed to renter-occupied, considering only those units occupied by householders who identified racially as "Black or African American alone" in the U.S. Census. The darker brown shade represents block groups with a higher percentage of housing units that were owner-occupied. The percentages were calculated using raw values from the U.S. Census for each block group; dividing the number of households that were owner-occupied by the total number of housing units in that block group.

# Percent of Housing Units that are Owner-Occupied by Block Group




Hannah Bonestroo 04/24/2016
Sources: Esri, U.S. Census Bureau

# Percent of Housing Units that are Owner-Occupied by Block Group (White Alone Householders)




Hannah Bonestroo 04/24/2016
Sources: Esri, U.S. Census Bureau

The U.S. Census Bureau only has data available for "Black or African American alone" householders and does not provide data for householders who identify as "Black or African American alone or in combination with one or more races." Thus, a portion of the Black or African American population is not included for the tenure variables. However, the difference in count for "Black or African American alone" householders versus "Black or African American alone or in combination with one or more races" householders is small enough and has even enough distribution across Minneapolis that the conclusions drawn from these maps should not be significantly impacted.

The map on the left in **Figure 3.c** shows the percent of housing units that were owner-occupied in Minneapolis by block group in 2000 for housing units occupied by householders who identified racially as "Black or African American alone" in the U.S. Census. The map on the right in **Figure 3.c** shows the corresponding percent for 2010. These maps show that out of all householders, Black or African American alone householders were less likely to own their home in both 2000 and 2010. In 2000, for Black or African American alone householders in North Minneapolis, only 27 out of 71 (38.0%) total block groups were between 60-80 percent owner-occupied. Only 8 out of 71 (11.2%) block groups were between 80-100 percent owner-occupied. This means that in 2000 only 49.2% of the total block groups in North Minneapolis were over 60% owner-occupied for Black or African American alone householders. This value is significantly lower than that for all householders (61.9%) and for white alone householders (80.3%).

The map on the right in **Figure 3.c** shows that by 2010 the disparity in homeownership for Black or African American alone householders had increased dramatically. By 2010, only 5 out 65 (7.7%) block groups in North Minneapolis were between 60-80 percent owner-occupied, and 0 block groups in North Minneapolis were between 80-100 percent owner-occupied, for Black or African American alone householders. For Black or African American alone householders, only 7.7% of total block groups in North Minneapolis were over 60% owner-occupied in 2010 compared to 41.5% for all householders and 80.0% for white alone householders. This shows that the homeownership gap among different populations widened significantly in only one decade and illustrates the housing tenure disparity issues in North Minneapolis.

## Foreclosures

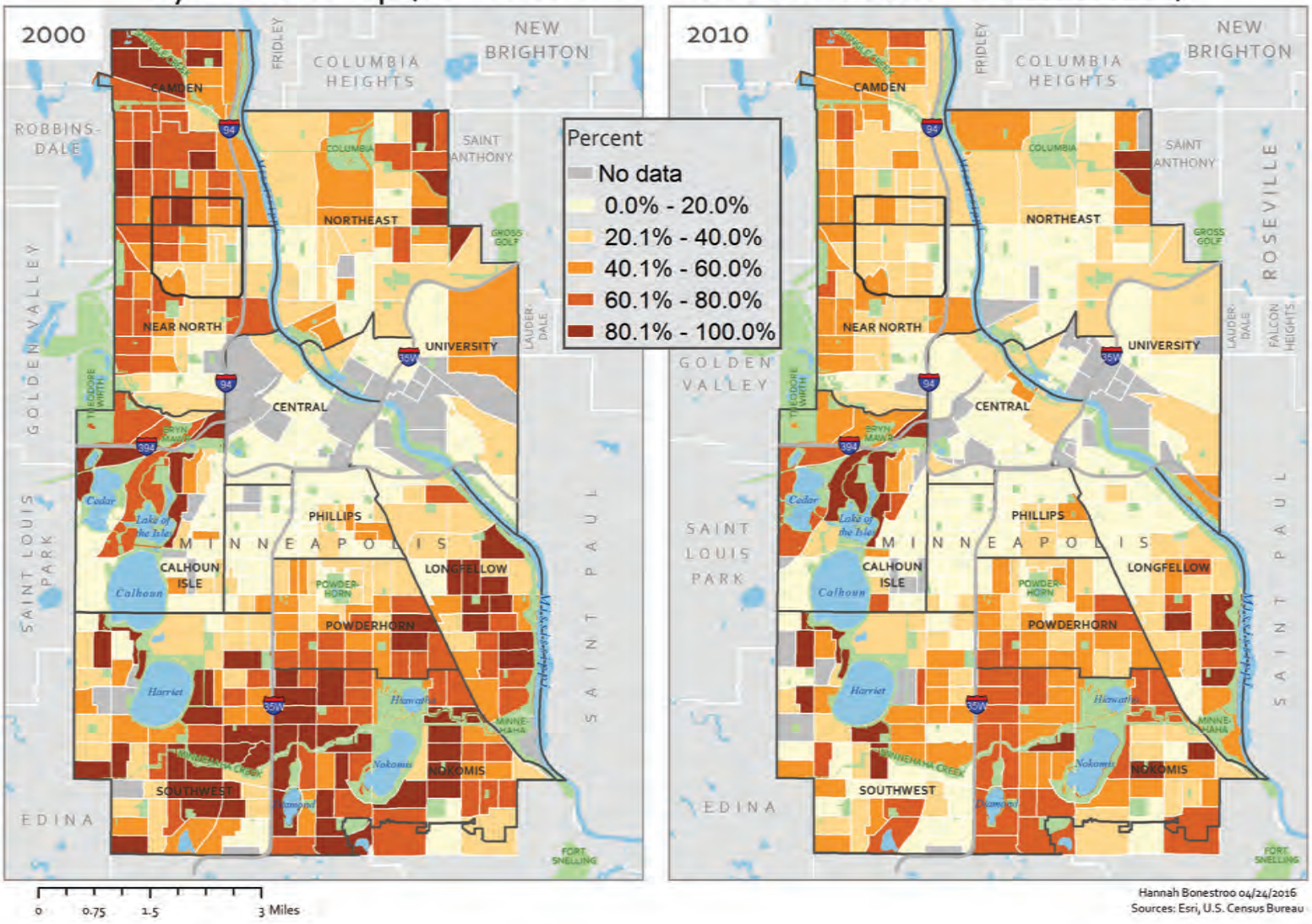
Foreclosures are another important variable when considering housing and examining the health of a neighborhood. There are both financial and non-monetary costs of foreclosures that households must endure. Perhaps the most important financial cost, "beyond the loss of accumulated equity, is restricted access to future credit markets" (Gerardi & Willen, p. 13). Non-monetary costs include the hardship of losing one's home, which can lead to instability and effects on family life such as divorce or health problems. Under certain scenarios, foreclosure can also have negative effects at the neighborhood level. Research has shown that these effects are strongest in poor, urban neighborhoods when clusters of vacant, neglected properties can develop from widespread foreclosures. These clusters of foreclosures can lead to increased criminal activity and lower neighborhood property values (Gerardi & Willen, p. 8).

**Figure 4.a** uses data from the Hennepin County Sheriff's Office, which records every new foreclosure in Hennepin County. This map displays every new foreclosure in Minneapolis for the year 2015. We performed statistical analysis on the locations of foreclosures, and found the mean center, median center, and directional distribution of foreclosures in the city of Minneapolis. The mean center and median center are located toward the northwest, close to North Minneapolis. The directional distribution portrays one standard deviation away from the mean and median center. In this case, the directional distribution is quite spread out but oriented towards North Minneapolis. This statistical analysis shows that North Minneapolis is a hotspot for foreclosures in Minneapolis, and as the research suggests, this could have negative impacts on the neighborhood, especially if the foreclosed properties end up being vacant for long periods of time.

## Residential Vacancies

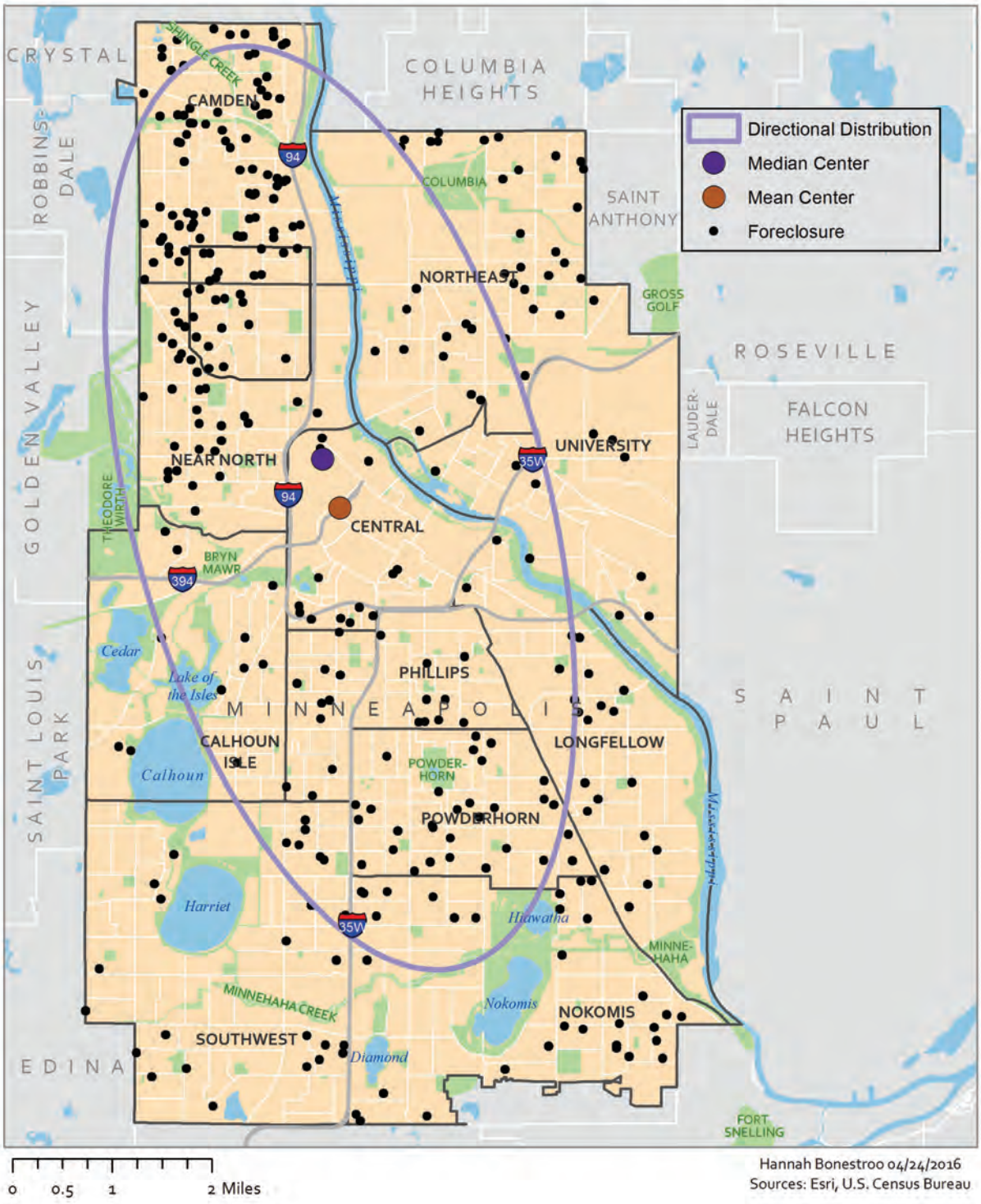
Neighborhoods with a high presence of vacant housing face issues when it comes to livability, safety, and an intact built environment. Across North Minneapolis, neighborhoods are plagued by vacancies – housing that was once previously occupied but is now abandoned, and empty lots that are zoned for residential use but are not being used as such. A high presence of vacancies can lead to issues with community development, safety, and perceptions of a community. Recognizing this, the City of Minneapolis has a vested interest in selling and turning over vacant properties, strongly encouraging homebuyers and investors to purchase vacant lots for low prices (Roper, 2015). While vacant housing poses many problems for a neighborhood, it also may identify areas that are full of opportunity. Today's vacant lots

# Percent of Housing Units that are Owner-Occupied by Block Group (Black or African American Alone Householders)




Hannah Bonestroo 04/24/2016
Sources: Esri, U.S. Census Bureau

# Foreclosures in Minneapolis, 2015



may become tomorrow's parks, community gardens, or sites of new housing. Identifying vacant lots, as well as concentrations of vacant housing, allows a community to visualize its assets and vulnerabilities and plan around those features in the future.

North Minneapolis has much higher rates of vacant housing than the city as a whole, as shown in **Figure 5.a.** The differences in vacancy rates per community across Minneapolis vary starkly. Areas such as Southwest Minneapolis, Longfellow, Powderhorn, and sections of Northeast have vacancy rates under 2%, signifying a major portion of their housing stock that is intact and occupied. However, vacancy rates in North Minneapolis (and, to a lesser extent, Phillips) are much higher. Inside the Northside Achievement Zone boundary, the vacancy rate is 11.45%. In the Near North community (which contains most of the Northside Achievement Zone), the vacancy rate was 9.66% in 2016, meaning that almost one out of every ten homes is either vacant or an empty lot.

**Figure 5.b** further explores this trend, as it shows the percentage of each block group that is vacant within North Minneapolis. Speaking about "North Minneapolis" monolithically is inaccurate, as there are still clear disparities inside this area of the city in terms of concentrations of vacant housing. Extreme northwestern Minneapolis, near the border with Robbinsdale, has very low rates of vacant housing, while areas near the heart of the Northside Achievement Zone have much higher rates. This trend can further be visualized through **Figure 5.c**, which symbolizes every vacancy in Minneapolis as of 2016. The disparities in vacant housing are prevalent here, with an extremely high concentration of vacancies in North Minneapolis as compared to the rest of the city. Some blocks in other parts of the city (such as Southwest Minneapolis) have few to no vacancies, while there are very few areas of North Minneapolis that have not been affected by vacancies.

The distribution of vacancies has remained fairly proportional over time, as seen in **Figure 5.d**. This map explores how the number of vacancies per block group has changed over the past few years, comparing data from 2011 (on the left) to 2016 (on the right). Larger circles on each map indicate a higher preponderance of vacancies in each block group. The observation that vacancies are concentrated in North Minneapolis – specifically inside the NAZ boundary – is enforced by these maps, which show the persistence of these vacancies. In 2011, North Minneapolis had 52.2% of the city's vacancies despite containing only 15.9% of the entire city's housing stock. Over the past five years, there has been little to no observable decrease in the number of vacancies in North Minneapolis. Reducing that number, and making the built environment more intact, will require a concerted effort to rehabilitate existing housing and construct new housing on vacant lots.

**Figure 5.e** zooms in on just the Northside Achievement Zone, and explores individual parcels that we have classified as vacant, to the best of our knowledge. Parcels shaded in orange are empty houses which are currently abandoned and not being used for residential use, as identified by the City of Minneapolis. Parcels in purple are empty lots that are zoned for residential use, but not currently being used as such. The former are classified by the City of Minneapolis and are a part of the city's Vacant Building Registry, while the latter properties are identified by the Metropolitan Council. Data from the Metropolitan Council is up to date as of October 2015, while data from the City of Minneapolis is up to date as of March 2016. Exploring vacant houses at the level of individual properties allows us to see where exactly these houses are concentrated across the Northside Achievement Zone and how they are distributed by block. Much of the area inside the Northside Achievement Zone is in proximity to at least one, if not more, vacant properties, reflecting that there are very few parts of the zone left untouched by this phenomenon.

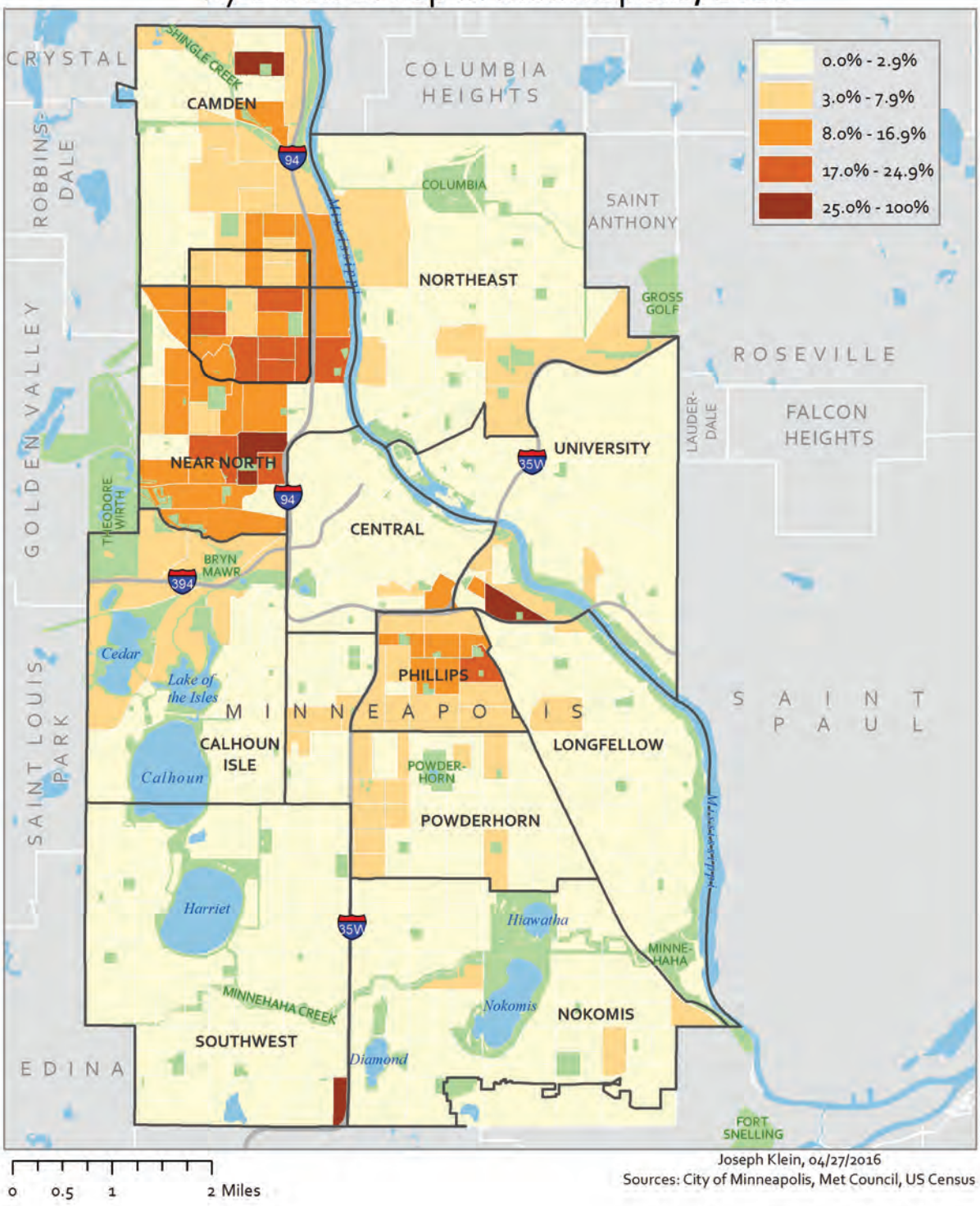
Between the publication of this data and our completion of this analysis, there may have been new construction or new demolitions, which would change the results of this map, yet are not reflected here. Going forward, identifying areas with high levels of vacancies can be important to analyzing whether or not a particular community is cohesive and physically intact. Blocks with high levels of vacancies will be home to less people as a whole, making it more difficult for someone to establish bonds and develop a community with their neighbors. Vacant parcels can also become sites of crime in a neighborhood. On the other hand, sites that are vacant may also offer the most potential for a neighborhood. A vacant lot can be reclaimed as a community garden or park, or can be the site of new construction which enhances a neighborhood.

## Non-Emergency 311 Complaints

The City of Minneapolis offers a non-emergency 311 number, which residents can use to submit complaints or identify nuisances. The City's website advertises 311 as a hub for renters to submit complaints against landlords, in addition to reporting nuisances

2.5a

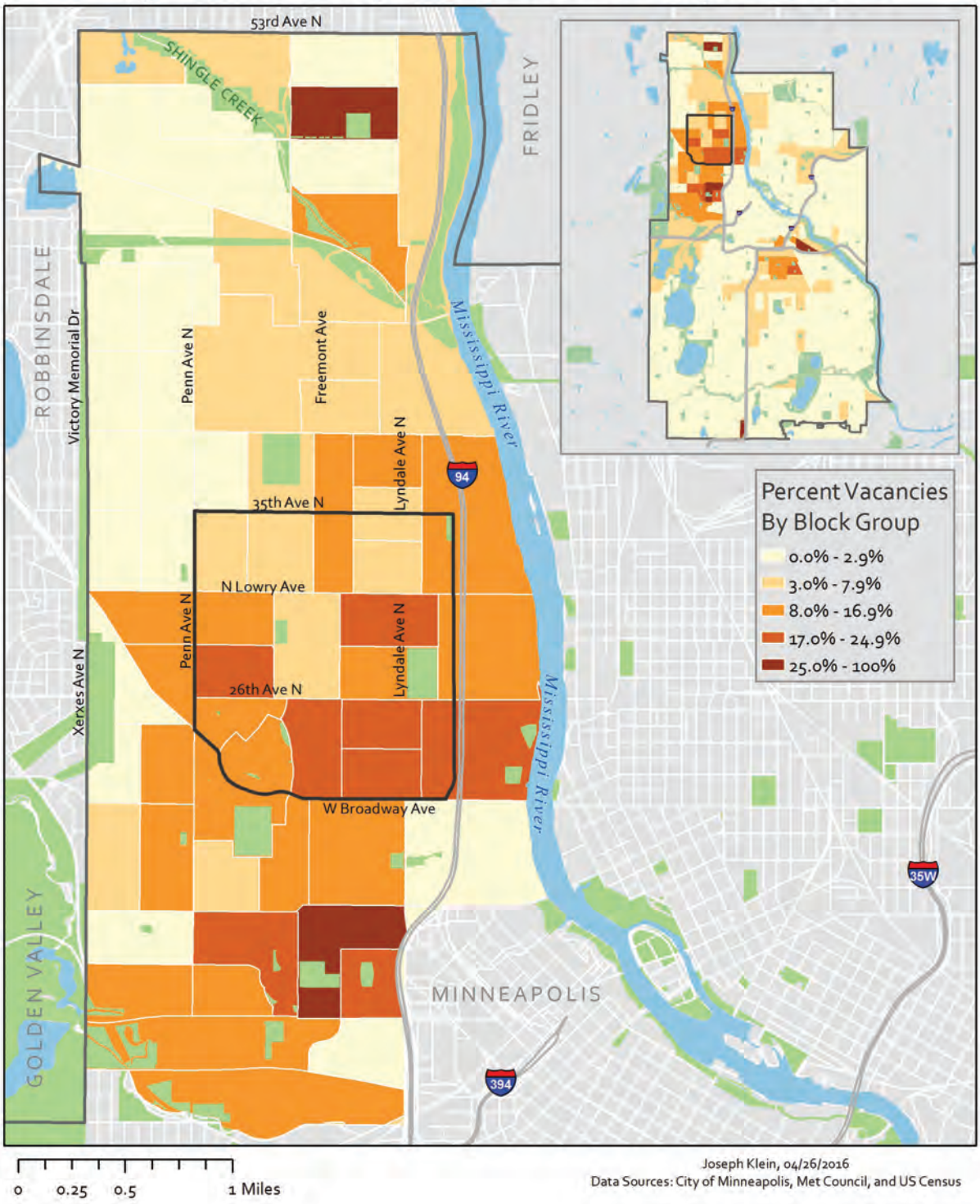
# Percent of Residential Properties that are Vacant by Block Group in Minneapolis, 2016



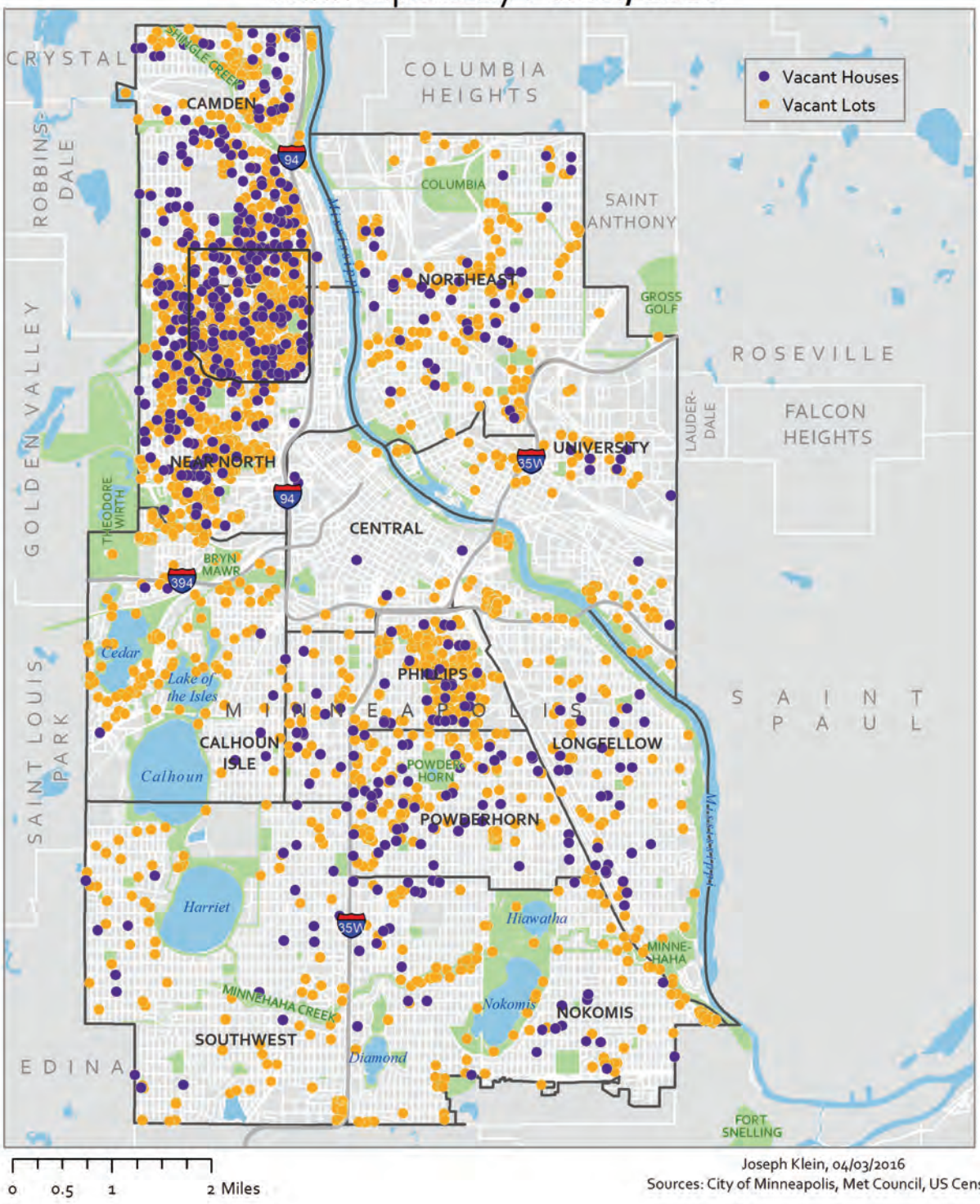

Joseph Klein, 04/27/2016
Sources: City of Minneapolis, Met Council, US Census

2.5b

# Percent of Residential Properties that are Vacant by Block Group in North Minneapolis, 2016

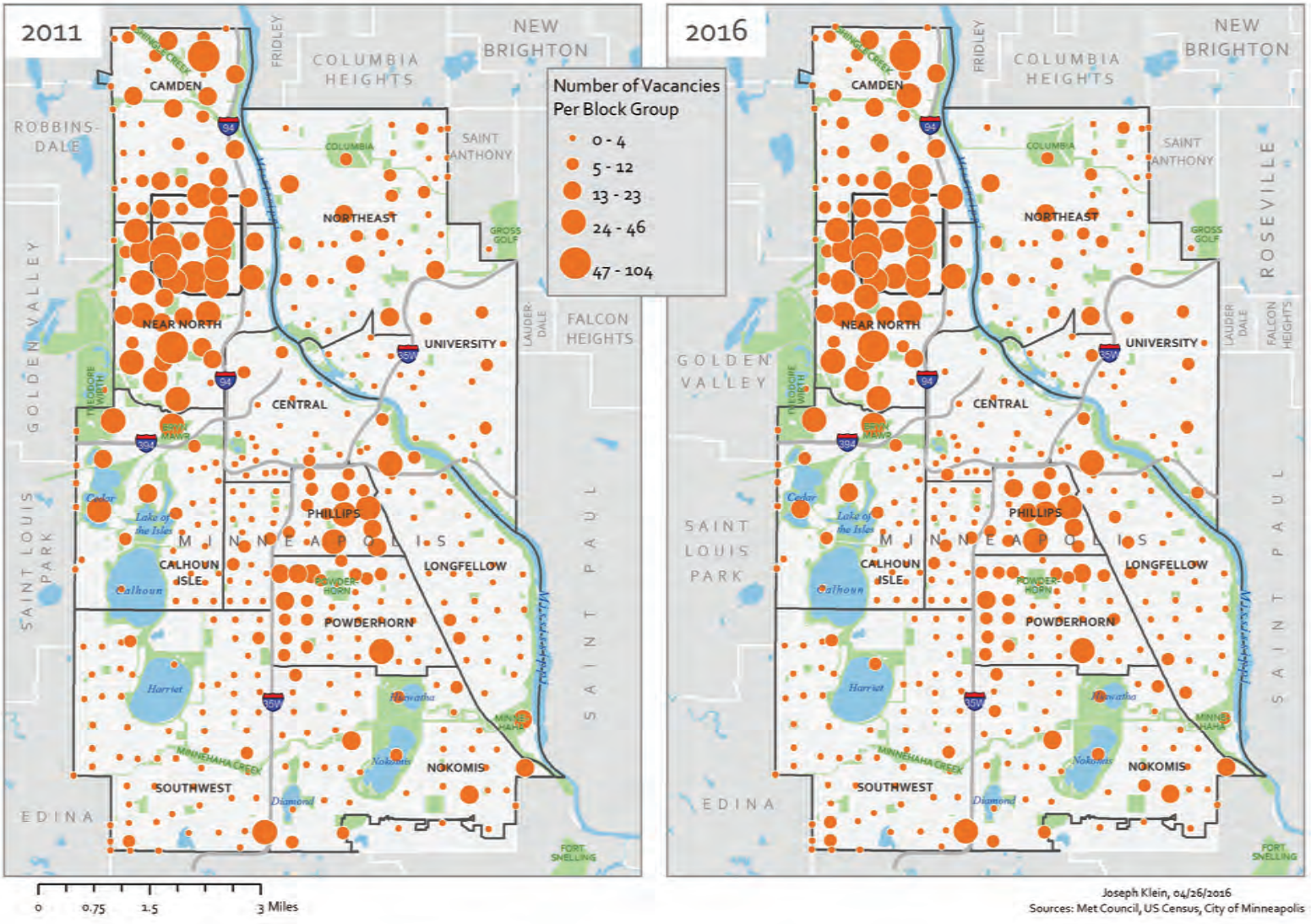


# Residential Housing Vacancies in Minneapolis by Parcel, 2016

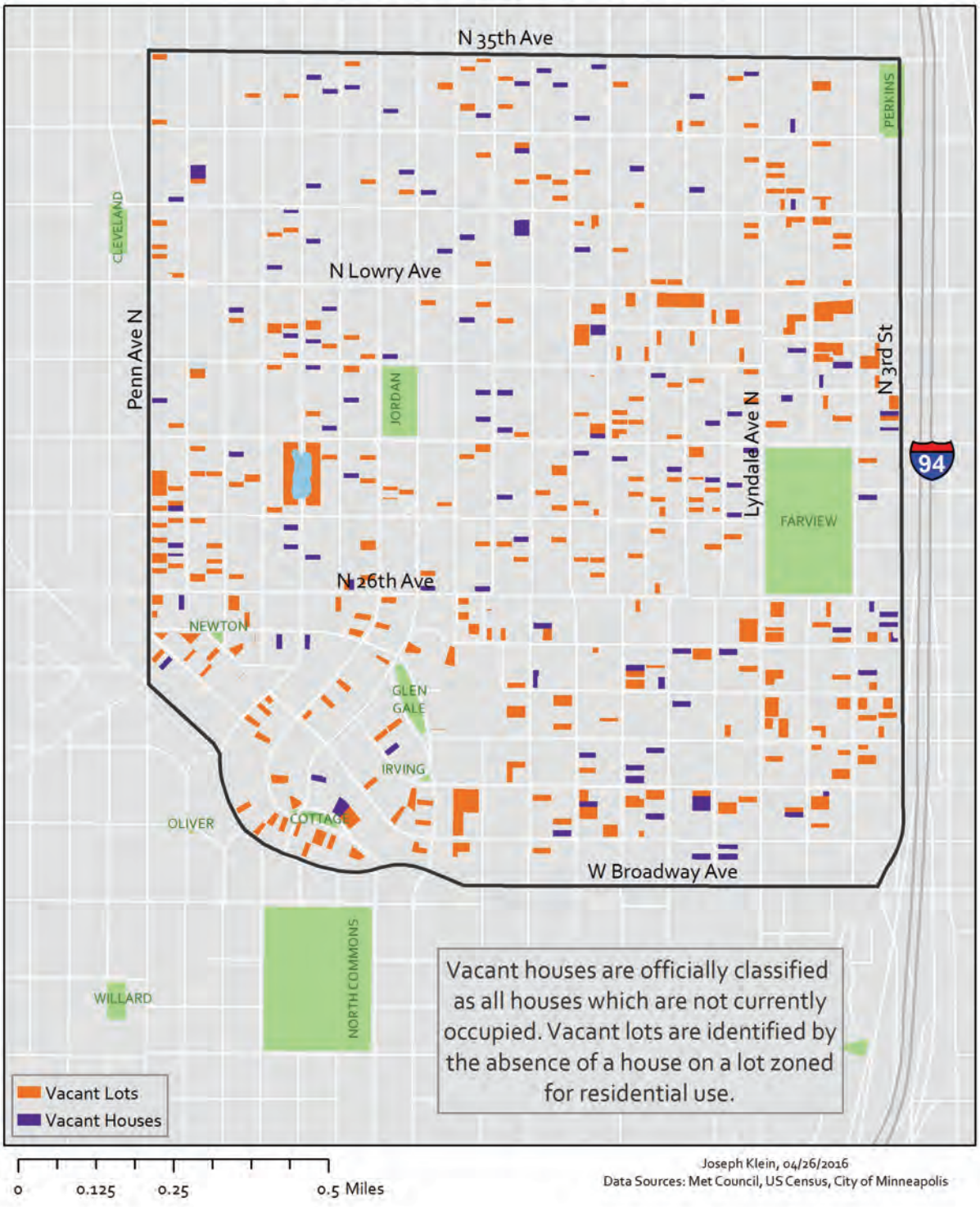



Joseph Klein, 04/03/2016
Sources: City of Minneapolis, Met Council, US Census

# Residential Vacancies by Block Group in Minneapolis



# Vacancies in the Northside Achievement Zone, 2016



such as potholes, abandoned vehicles, poorly upkept properties, graffiti, or animals causing a nuisance. We obtained access to the City of Minneapolis' 311 data from 2011-2015 and mapped the spatial distribution of those complaints to explore whether the Northside has had a disproportionate number of complaints over those years.

The definition of "property-related complaints" at this point in time, comes from the City of Minneapolis, and vaguely refers to all 311 complaints that were filed against a private property. These include complaints about poor residential conditions of a building, as well as what the city classifies as "exterior nuisances." There is no information available on who is filing these complaints, yet it is likely that the initiators of these complaints are both renters submitting 311 complaints against their own landlords, or other community members identifying buildings close to their own that need upkeep. The origin of these calls is also not known. While the City of Minneapolis offers extensive data on where and when these calls were reported, the spatial information provided refers to the subject of the complaint, rather than where the complaint was filed.

**Figure 6.a** shows the number of 311 complaints relating to property that were registered by neighborhood from 2011-2015. North Minneapolis has exceedingly high numbers of complaints within its boundaries when compared to the remainder of the city. Inside the Northside Achievement Zone boundary, 6,081 complaints were registered against private properties – much higher than the totals of other communities across Minneapolis. The spatial distribution of these complaints is unequal, as North Minneapolis (defined by the communities of Near North and Camden) received 36 percent of the city's complaints during that time frame, while constituting only 17 percent of the city's housing stock. These disparities suggest both poor physical condition of housing and the built environment in the Northside, as well as perceptions by neighbors and other residents that the area's housing warrants complaints to the city.

**Figure 6.b** explores what percentage of all of Minneapolis' property complaints fell within a particular neighborhood. In North Minneapolis, the Jordan neighborhood – encompassing the southwest part of the Northside Achievement Zone – has the highest percentage, containing over 4.9% of the city's complaints despite having a lower percentage of the city's population. Jordan, as well as the adjacent neighborhoods of Willard-Hay, Folwell, and Webber-Camden, had relatively higher proportions of property-related complaints compared to the far southern part of the Northside (the Harrison neighborhood) and the far northwest (along Victory Memorial Parkway). Despite these local differences in complaint distribution, clear trends can be seen citywide in that the Northside was a larger recipient of property complaints than any other part of Minneapolis. Areas such as Calhoun-Isle and Southwest Minneapolis received very low percentages of the city's property complaints, while parts of North Minneapolis – including neighborhoods inside the Northside Achievement Zone – had disproportionately high levels of complaints registered against them.

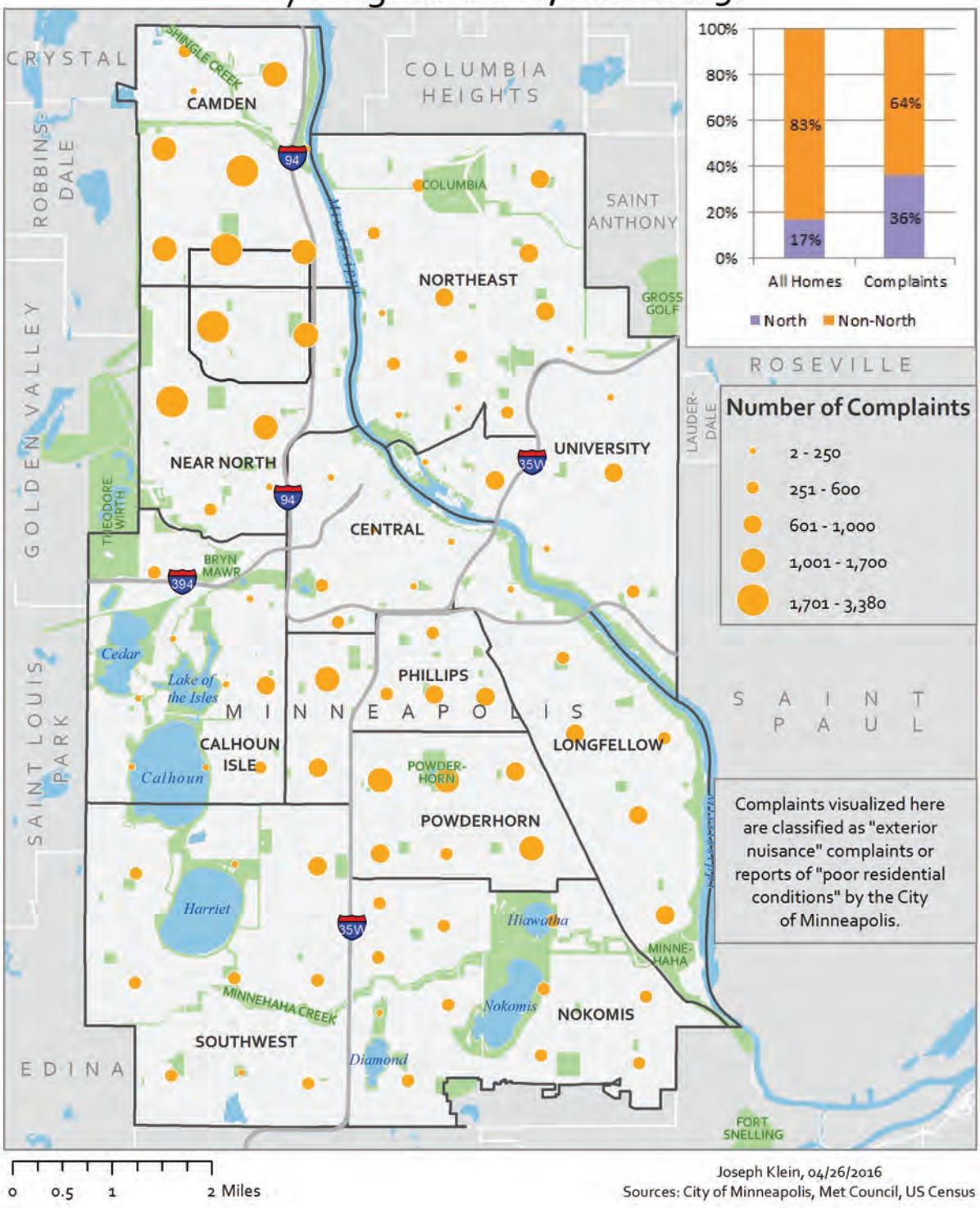
Higher levels of 311 complaints in a neighborhood, especially when compared to the rest of a city, may indicate one of two things: it may suggest that the housing stock and physical conditions of an area are lower to the point that there are more factors to register complaints against, or it may suggest a more vigilant population that is more effective at enforcing code violations and reporting nuisances. There is no way of interpreting which phenomenon is at work in the Northside, but when high levels of complaints are compared to other factors of the Northside's housing stock – more foreclosures, more vacancies, lower property values, and lower housing conditions – it is possible to theorize that there are more factors at work in the Northside that can have complaints registered against them. Identifying parcels and areas with high levels of complaints can indicate a community's identification of an area as a problem or a nuisance, and can offer direct, democratic information on where individuals want their city to improve.

## Location of Landlords

As our research showed a movement from owner-occupied to renter-occupied housing from 2011 to 2016, the role of landlords has become increasingly more important in North Minneapolis. Landlords and property managers that are living and working in the same community in which they manage properties are arguably more connected to that community, and more invested in the upkeep of their properties. Such landlords are less likely to be distant from their communities, and less likely to forego maintenance and upkeep in order to increase profits.

We analyzed where landlords for rental properties in North Minneapolis are located, to explore whether there is any disconnect between landlords and their rental properties. This analysis used data on active Rental Licenses from the City of Minneapolis, to determine landlords who provided a contact address in North Minneapolis (using a proxy of zip codes

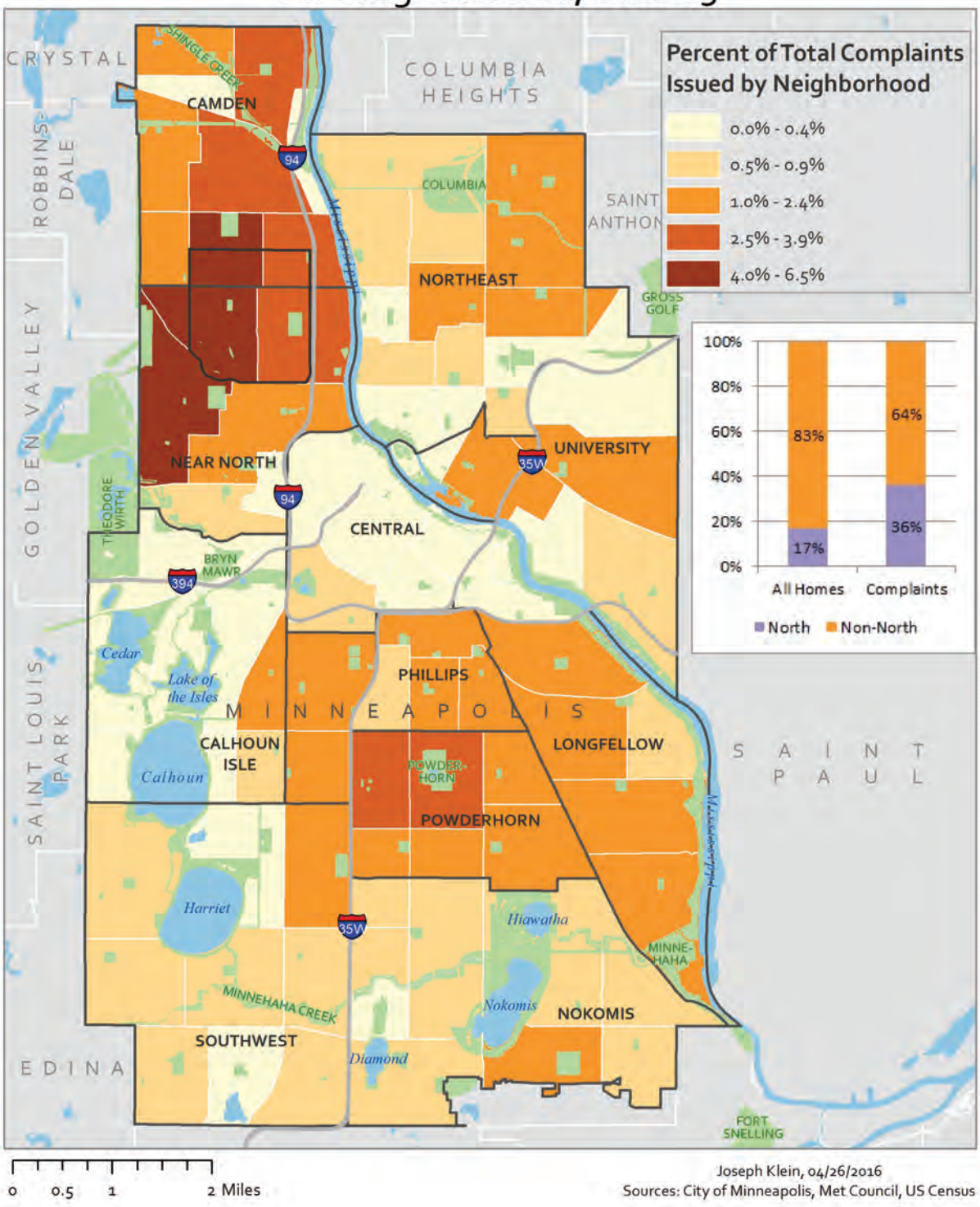
# Property-Related 311 Complaints By Neighborhood, 2011-2015




Joseph Klein, 04/26/2016
Sources: City of Minneapolis, Met Council, US Census

2.6b

# Non-Emergency 311 Property Complaints Per Neighborhood, 2011-15




Joseph Klein, 04/26/2016
Sources: City of Minneapolis, Met Council, US Census

55411 and 55422 to represent the Northside). In 2016, North Minneapolis (defined as the Near North and Camden communities) had 5,489 active rental licenses. This number is higher than the actual number of rental buildings, as multi-unit buildings have licenses for each individual unit. Out of the 5,489 licenses, 978 had landlord contact information that included a mailing address in North Minneapolis. This means that only 17.82% of all rental properties in North Minneapolis have a landlord that is "present" in North Minneapolis (through their contact address), and the vast majority of rental property owners in North Minneapolis are not connected to the community on a regular basis. Another 1,031 of the total 5,489 rental licenses were issued to property owners located elsewhere in Minneapolis. Combining those two figures, just over one-third of all North Minneapolis rental property had direct connections to the city in which it is located. The vast majority of rental properties in North Minneapolis are managed by landlords located throughout the metropolitan area, throughout many different suburbs. A sizable number were located in outstate Minnesota, even more removed from the Northside community.

**Figures 7.a** and **7.b** explore landlords' connection to the communities they work in at a broader level. **Figure 7.a** shows the percentage of all rental properties in North Minneapolis that are managed by landlords who provided a business address located within North Minneapolis. Throughout the Northside, those percentages are incredibly low; most block groups have less than one-quarter of their rental properties managed by landlords from North Minneapolis. The only areas with relatively high percentages of landlords in North Minneapolis were located just west of Downtown and in the North Loop, areas with very different demographics than the rest of the Northside.

**Figure 7.b** explores what percentage of landlords are located within Minneapolis as a whole, rather than only within the Northside. With this new measurement, the number of landlords mapped with a direct connection to the Northside increases, but in many areas it is still below one-half of all rental properties. While not working in North Minneapolis directly, a substantial proportion of North Minneapolis' landlords are located elsewhere in the city. Areas near Harrison and the North Loop have higher percentages of "connected" landlords than the rest of the Northside, while moderate percentages of renters within the NAZ boundary have "connected" landlords (most block groups indicate between 36 and 44 percent of rental units have a landlord that is located within the city limits).

**Figures 7.c** and **7.d** continue this same analysis, but instead look at the block-level distribution of present and absent landlords. The trends seen in **Figures 7.a** and **7.b** are replicated here, as North Minneapolis again has relatively low percentages of landlords located in the Northside, but more that are located elsewhere in the city of Minneapolis.

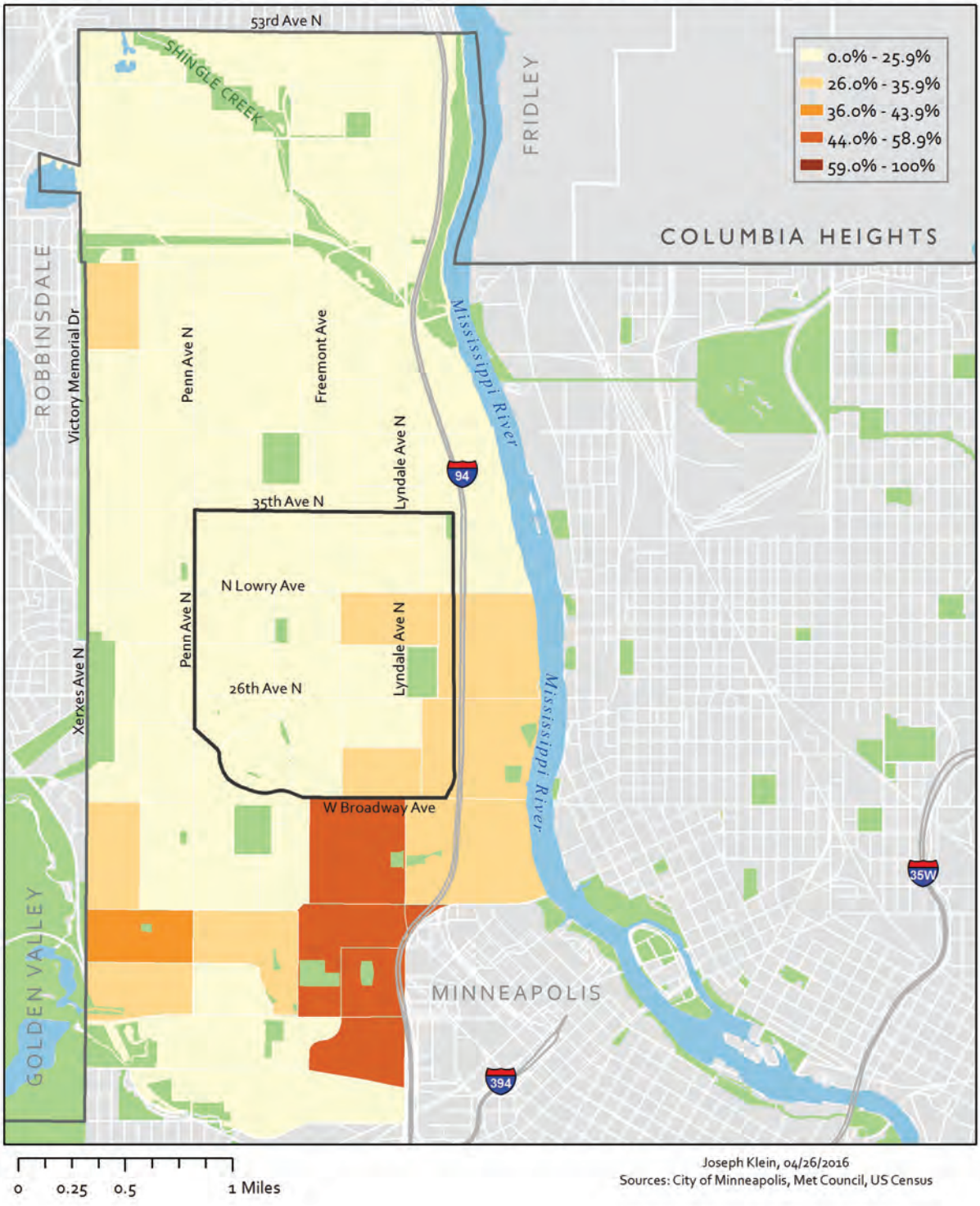
The location of landlords has implications for their connections to a community or their level of investment in the properties that they manage. Landlords that are located elsewhere and not on the ground near the properties they own may see their rental properties as a tool to turn a profit, rather than a way of directly investing in a community. For further analysis, we encourage exploring connections between the location of landlords and other variables associated with housing, such as physical condition, vacancies, and non-emergency complaints, to explore whether there is any correlation between a landlord's location and the physical condition of a property. This analysis could be used to identify landlords that are letting their properties decay and serve as a blight to the community. Remedying the disconnect between landlords and the Northside would be beneficial for the continued work of the Northside Achievement Zone program.

## Conclusion

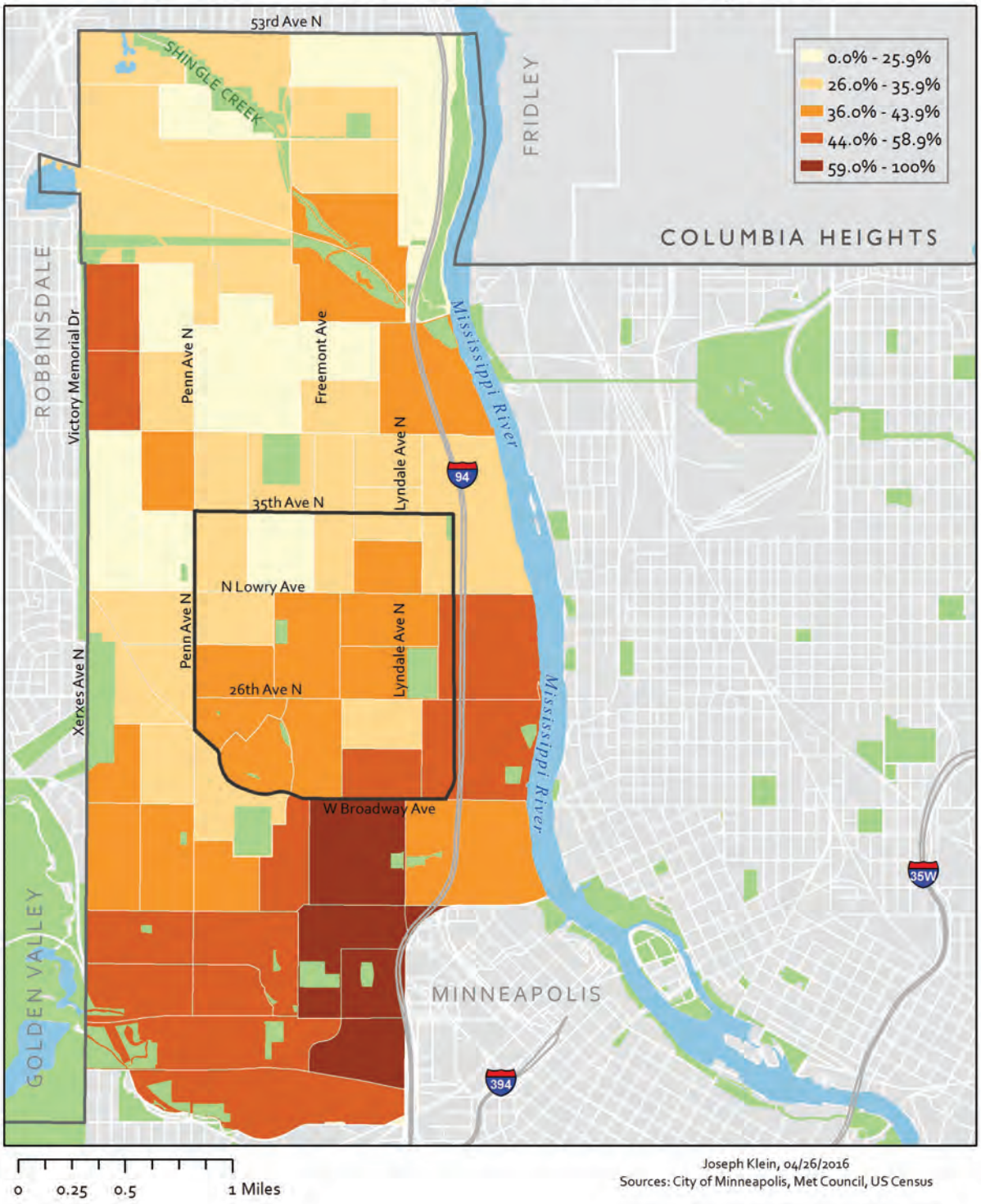
Research shows that quality of living conditions are crucial in order to establish a strong foundation not only for early childhood achievement, but also overall household well-being. Without quality housing, all family members struggle with unnecessary externalities and therefore face more difficulties than other families in achieving their full potential. Through our comprehensive analysis of multiple variables of housing, we have found that NAZ and the surrounding Northside area possess trends of poor-quality living conditions in many aspects. NAZ and the Northside as compared with the rest of Minneapolis have low market values, high rates of vacancies and foreclosures, and low rates of homeownership. These results indicate that the NAZ program's goals could be negatively impacted by the poor-quality housing of the area. Housing is an important foundation for quality of one's life and thus an integral part of the equation when it comes to solving generational poverty and closing the achievement gap. The results we found demonstrate that housing will remain a significant challenge for the NAZ program in the future.

2.7a

# Percentage of Rental Properties by Block Group With Landlords Located In North Minneapolis, 2016

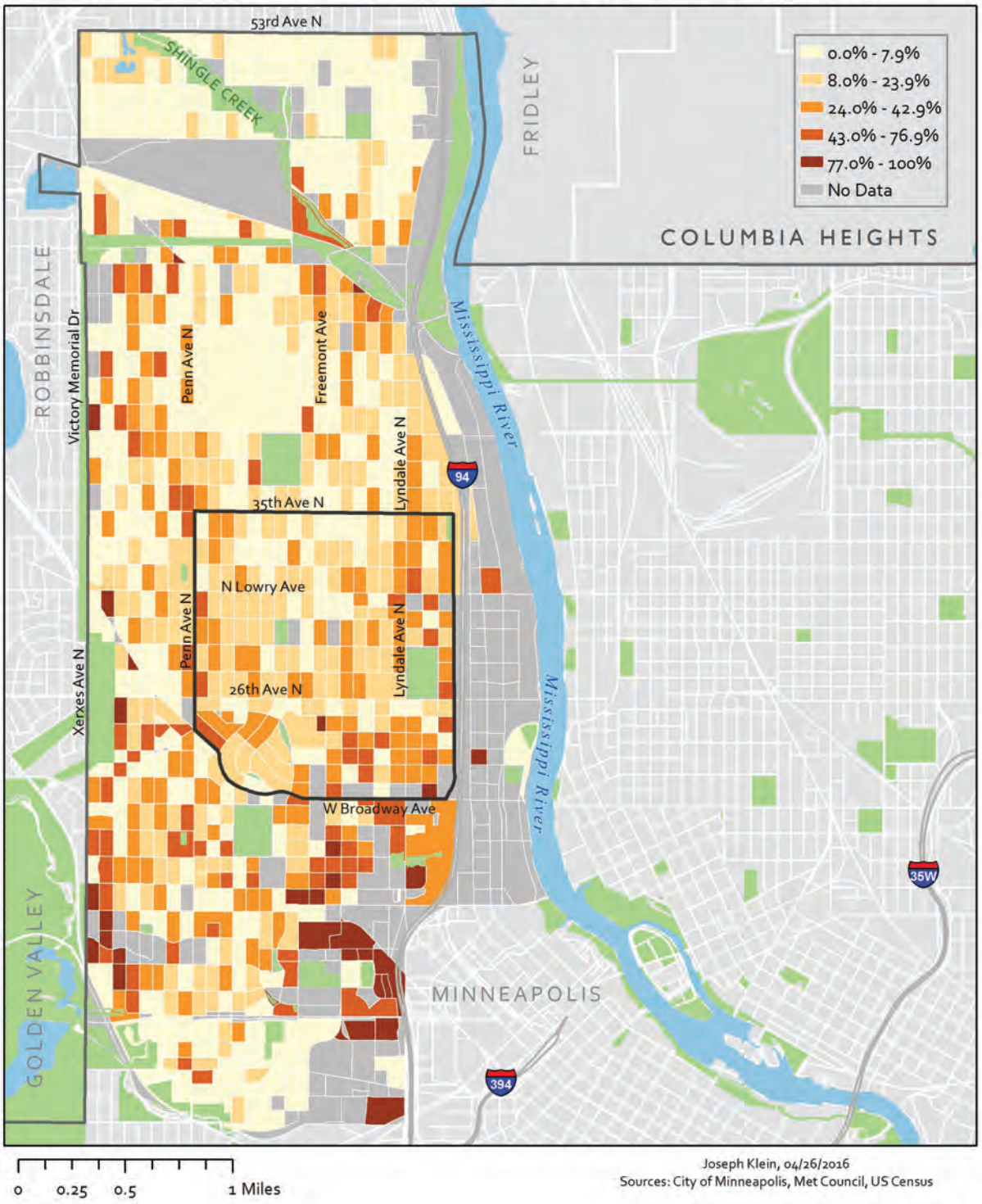


# Percentage of Rental Properties by Block Group With Landlords Located In Minneapolis, 2016

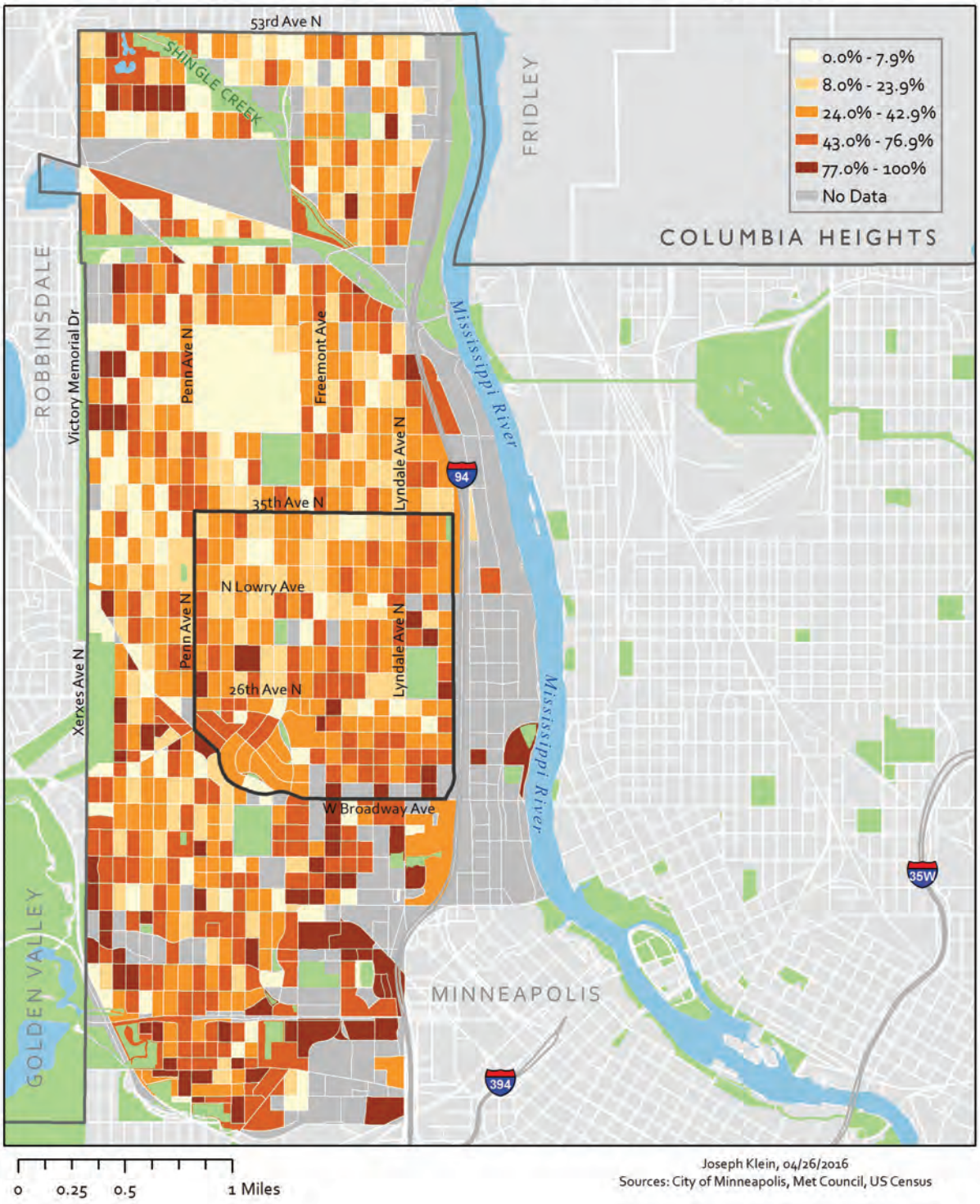


2.7c

# Percentage of Rental Properties By Block With Landlords Located in North Minneapolis, 2016



# Percentage of Rental Properties By Block With Landlords Located in Minneapolis, 2016



# Section 3: Economics

Soobin Choi—Jonathan Eber—Emma Pickett—Jonathan van Arneman

## Introduction

The goals of the Northside Achievement Zone (NAZ) are cyclical in that a healthy economic environment proves conducive to learning, and well-educated students contribute to a healthy economic environment. Thus, analyzing economic characteristics of Northside residents may indicate ways in which the achievement gap NAZ aims to eliminate may be influenced by economic factors. In addition, it is an assessment on how NAZ's work in financial management and skill training may have an impact on the economic characteristics of the area's residents. In this chapter, we use GIS software to create visualizations to spatially analyze economic variables that we believe highlight many important characteristics of the Northside's economy. This chapter will show both a relatively current snapshot of economic characteristics as well as changes in economic characteristics over time, providing NAZ with information to further assist residing families and possible ways in which its efforts have impacted the Northside community.

## Research Questions

- How do household economics (household incomes, employment, personal banking, etc.) compare between the Northside and Minneapolis?
- Where are the pockets or concentrations of poverty or affluence in Minneapolis?
- What do the patterns and characteristics of business development in the Northside show?
- How do our studied economic indicators support or perpetuate one another?

## Economic Health Variables

### Median Household Income

Mapping median household income of residents in the Northside provides us with the range of incomes present in the study area, highlighting concentrations of poverty and/or wealth. It also acts as a proxy for residents' job quality and overall standard of living. More specifically, by mapping median household income over time and according to race, we can better understand how the Northside's economic environment has shifted and identify improvements or declines in financial conditions for certain races.

### Employment

Employment is an important indicator of economic stability as well as mobility. By analyzing variables such as unemployment rate, job distribution between genders, and location of workplaces relative to home, we can examine the employment landscape not only immediately surrounding NAZ but also see how the Northside compares to the greater metropolitan area. As employment generates competition, especially in more business-oriented districts, traditionally marginalized population groups are disadvantaged. We focus our analysis on workers' commutes to workplaces in terms of distance and time as well as the composition of full-time workforce based on gender in order to underscore issues regarding access to work and to identify the need for further support for full-time working females. Findings may demonstrate that NAZ plays an essential role in helping develop an active community fostering generations of people not only able but also willing to strive for long term financial stability and ultimately eliminate the achievement gap. Findings can also assist NAZ in identifying other factors that may contribute to various patterns of employment in the Northside, and better support its participant families to improve the economy of not only their immediate households but also those of future generations.

### Banking and Investment Activity

By analyzing the amount of money contributed to bank accounts or the investment patterns of Minneapolis residents we can better understand the economic stability of residents and how they are planning for their futures. This may demonstrate areas of importance or value as well as standard of living among residents on the Northside. Furthermore, with economic variables like checking account amounts, savings accounts, investment in stocks, or retirement contributions, we can understand the past economic activity of Northside residents as well as what we can expect for economic conditions in the future.

### Business Development and Business Ownership

We believe that business development on the Northside is tied to economic vibrancy and stability of the residents living there. We chose to map busi-

ness development because the introduction of new businesses into an area suggest that 1) Individuals are willing to invest in this specific community because of its potential (location, safety, consumer preferences); 2) Investors believe that the purchasing power of the residents will keep their business afloat; and 3) Residents from this specific community have access to credit and capital in order to open up small businesses. Additionally, an outcome of NAZ's parental career training and financial education is the development of locally-owned businesses. Therefore, we chose to look at independent businesses opened in the region. We focus our spatial analysis on small businesses owned by minorities and women, in order to look for an environment of inclusivity, particularly when it comes to traditionally marginalized groups who continue to be affected by Minnesota's achievement gap. We compare women- and minority-owned businesses to the total number of businesses in the region, to account for varying densities of businesses in the city. Additionally, we choose to look at the number of economic sectors that women- and-minority owned businesses on the Northside represent, when compared to the total number of sectors represented in the city, as women and minorities often have fewer options in the type of business they can open and tend to cover fewer sectors (Wang, 2013).

Lastly, we look at rates and locations of 'high risk' businesses, or businesses that have a history of making extremely late payments. This variable highlights the importance of economic longevity and perseverance. While the economic resources required to open a business are one thing, the resources required to stay open are another.

## Methods and Data

We retrieved 2010 to 2014 Median Household Income data from the 2014 American Community Survey (ACS). These data are five-year estimates based on cumulative samples collected at the block group level. The ACS, rather than collect data at a certain point in time, collects data continuously, resulting in rather high margins of error, especially for small geographic areas such as block groups (because they have much smaller sample sizes). This is important to consider when analyzing these maps. Some values, when factoring in the margins of error, could fall under multiple categories or classifications. The 1999 Median Household Income data were obtained from the 2000 U.S. Census. These data have much smaller margins of error than the ACS data.

To calculate percentage of income spent on the consumer spending variables (owned dwellings, rented dwellings, and college tuition), we took the 2014 average for the given variable and divided it by 2014 Median Household Income data obtained from the ACS. Both data sets are enumerated by block group.

Employment data were gathered from the 2014 ACS, OnTheMap Application, and Minnesota Compass; the latter two sources draw data from the Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (Beginning of Quarter Employment, 2nd Quarter of 2002-2014). Again, the ACS data are five year-estimates that are collected at the block group level. However, OnTheMap data is represented at ZIP code level. Zip code areas 55411 and 55412 were used as a rough areal delineation of the Northside region. Using the raw data from aforementioned sources, we generated percentage values that are more suitable for spatial interpretation. To compare symbolized data within the Northside to the data for all of Minneapolis, we have one legend for each set of comparisons so that the class intervals are identical between the two geographical extents. The classes of intervals have been generated through the natural breaks classification system in order to represent block groups with similar data values together in one class.

We gathered data for Savings Accounts, Checking Accounts, Retirement Contributions, and Investment Activity from the ESRI Consumer Expenditure Data, which compiles data from the Bureau of Labor Statistics. This comprehensive dataset includes annual data for everything that consumers spend money on and is as detailed as consumption for individual food items. The dataset reports information to the block group level and that is what is visualized on our maps. It is important to note that for all of the maps visualizing banking or investment activity, there is no standardization and the comparisons shown are of raw numbers. While the use of choropleth maps (maps with lighter or darker shades to show different concentrations or intensities) is generally discouraged for visualizing raw data, we believe that in this case raw numbers paint a more accurate picture of the disparities between the Northside and the rest of Minneapolis. For example, a block group in Near North whose residents save an average of 10% of their income is definitely not equivalent to a block group in Calhoun-Isle whose residents save an average of 10% of their income. Mapping the raw numbers helps to visualize disparities in real amounts.

Data regarding business development came exclusively from the "Million Dollar Database" compiled by the commercial data firm Dun & Bradstreet. The database consists of LLCs and corporations with information about ownership, type of business, and geographic coordinates. Our version of the "Million Dollar Database" had several limitations. First, this dataset was obtained by Macalester College from the University of Minnesota in 2013 for the specific purpose of studying riverfront development in Minneapolis, and therefore, the database only contains information for Minneapolis zip codes with riverfront land, leaving out a sizeable portion of southwest Minneapolis. Additionally, there is only a single iteration of this data source, so comparisons of the "business environment" over time are difficult. Instead, temporal analysis must be based on the year established of current businesses. In our analysis, we hoped to identify small businesses, whose owners reflected the diversity of the Northside as a whole, so we considered only single-location businesses or small company headquarters, excluding large corporation branches whose ownership is not directly tied to the Northside. The business locations are displayed as points on a map to show exact locations, as well as aggregated to the block group level in order show densities or the percentage of businesses in an area with a certain attribute. All data was displayed through equal interval class breaks, which means the range of values encompassed by each category is equal.

It is important to consider issues of validity and subjectivity when looking at the profiles of business owners, since the ownership of many businesses is difficult to interpret. Many of these issues arise with chain, or corporate business ownership, though small business ownership is affected too. Dun & Bradstreet makes decisions about owner profiles if a woman or minority individual owns at least 51% of a company, are U.S. citizens, and are involved in day-to-day operations. Additionally, we cannot make assumptions about the history of ownership (e.g. whether businesses have maintained the same ownership for their entire existence). Therefore, in our maps showing the location of minority- and women-owned businesses, we call these maps "North Minneapolis Businesses Owned by Minorities/Women Opened Between 1998 and 2008" rather than "Minority-Opened Businesses."

To count the number of economic sectors covered by businesses in North Minneapolis, we used each business' two-digit SIC (Standard Industrial Classification) code, which like more current NAICS codes, represents the major industrial sector that a business or LLC is categorized by.

## Median Household Income

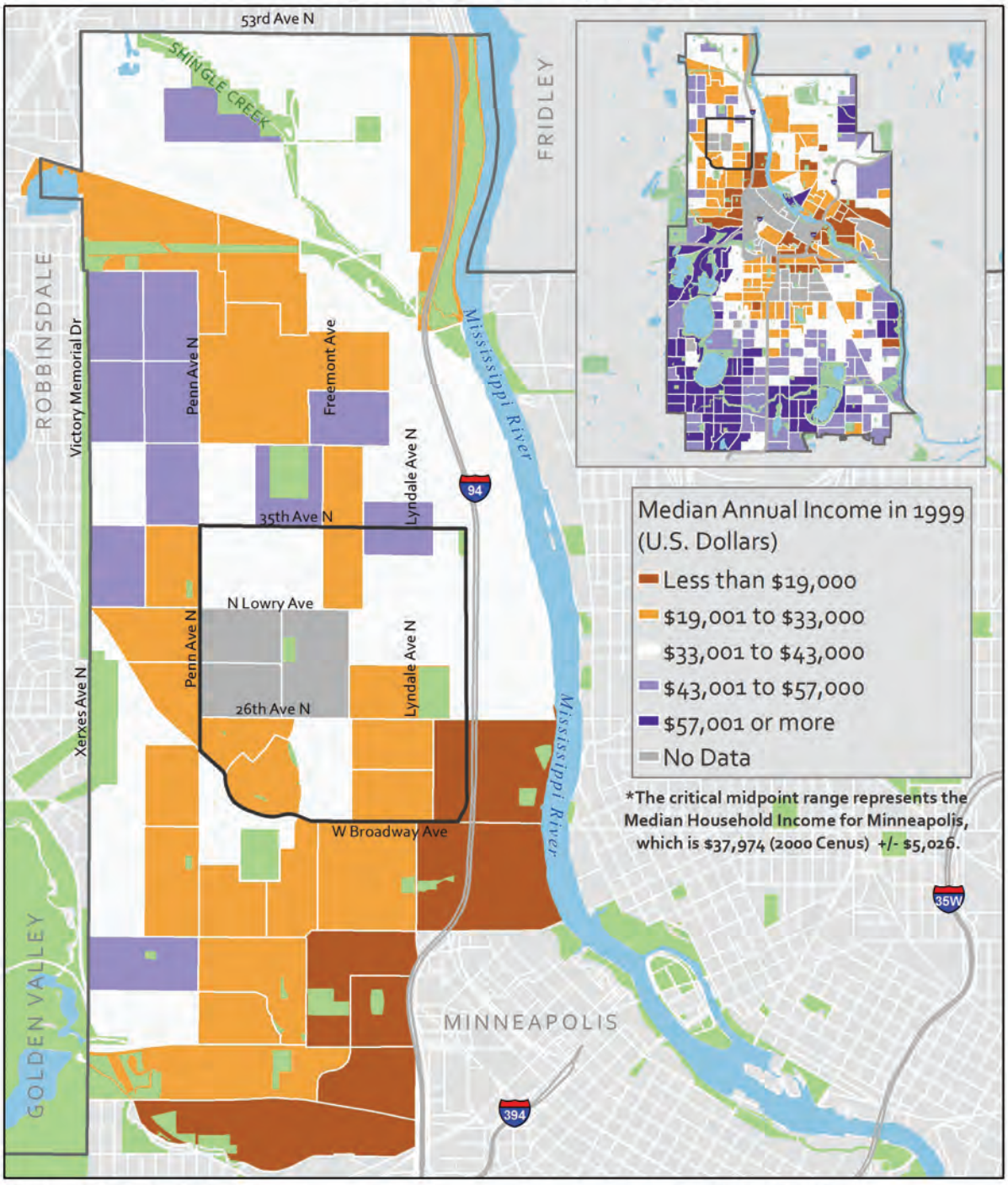
**Figures 1a** to **1f** all feature a map of the Northside visualizing the specified variable with an inset of the entire city of Minneapolis displaying that same variable. This allows for easier comparison between the two different geographic scales.

The figures also employ a diverging color scheme. For **Figures 1-a, 1-b,** and **1-c**, the critical midpoint is the 2000 median household income of Minneapolis according to the 2000 U.S. Census ($37, 974 +/- $5,026). For **Figures 1-d, 1-e,** and **1-f**, the critical midpoint is the 2014 median household income of Minneapolis according to the 2014 ACS ($50,767 +/- $5,033). Block groups displayed in brown indicate a median household income less than the overall Minneapolis median income, while those displayed in purple have a median household income greater than the overall Minneapolis median income. Block groups symbolized in gray "indicate that either no sample observations or too few sample observations were available to compute an estimate," according to the U.S. Census Bureau.

**Figure 1-a** displays median household income in North Minneapolis (defined as the Camden and Near North communities) for 1999. According to this map, a significant portion of the block groups in the southern half of the Northside falls into the lowest income categories. In greater Minneapolis, the lowest-income block groups are clustered in parts of the Central, Phillips and University communities with the two highest-income categories occurring most predominantly among block groups in the southern half of Minneapolis, especially around the lakes.

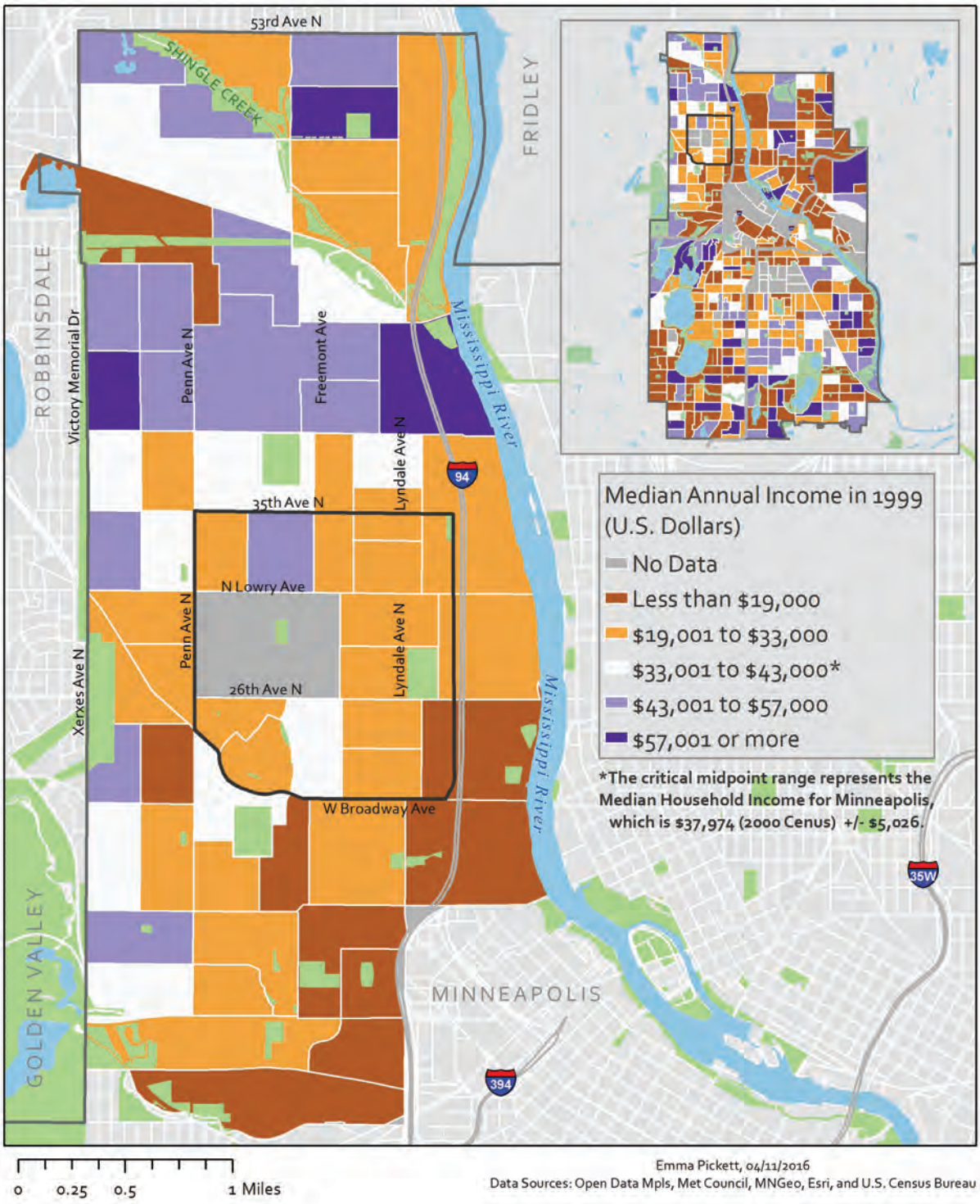
**Figure 1-b** visualizes median household income of Black or African American alone householders in North Minneapolis for 1999. A majority of the block groups in the Northside are symbolized in brown, meaning they fall below Minneapolis' median income. These block groups, falling into the lower two income categories, are located mainly in the center and southern half of the Northside. When looking at all of Minneapolis, we observe that most of the block groups also fall into the lower two income categories. Unlike the pattern of overall median income shown in **Figure 1-a**, in which the block groups in the south-

# Median Household Income in North Minneapolis by Block Group, 1999

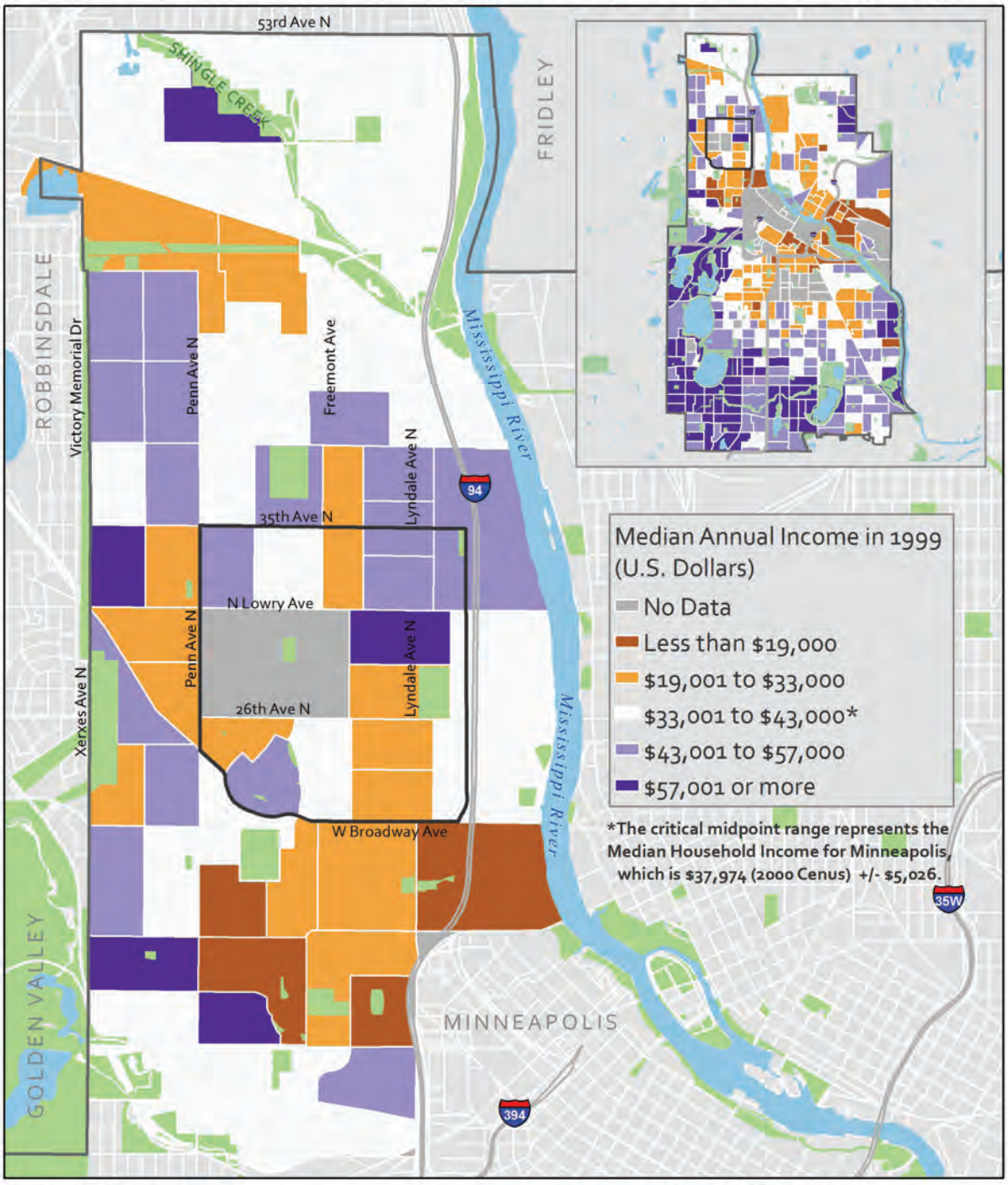


3.1b

# Median Household Income of Black or African American Alone Householders in North Minneapolis by Block Group, 1999

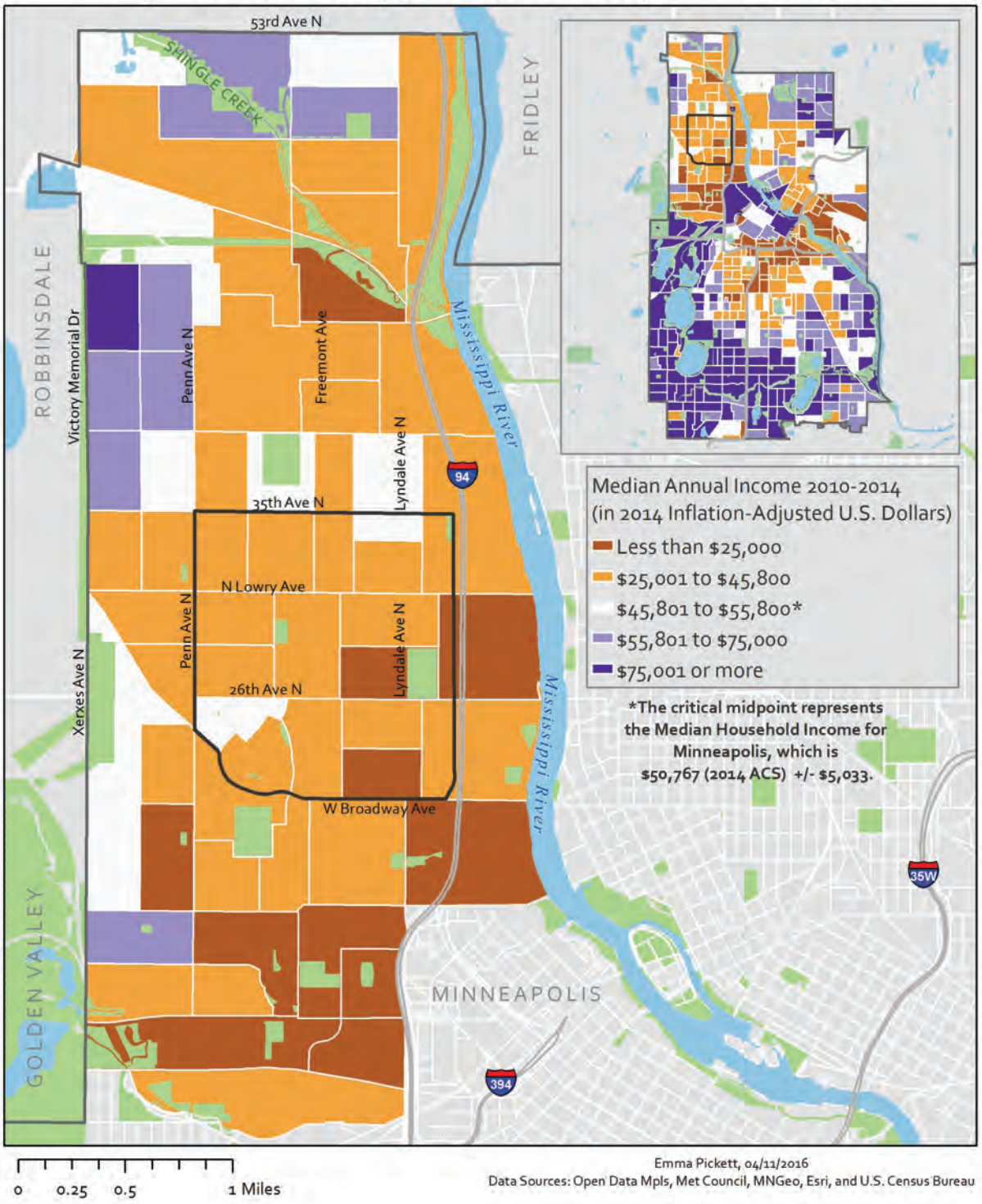


# Median Household Income of White Alone Householders in North Minneapolis by Block Group, 1999

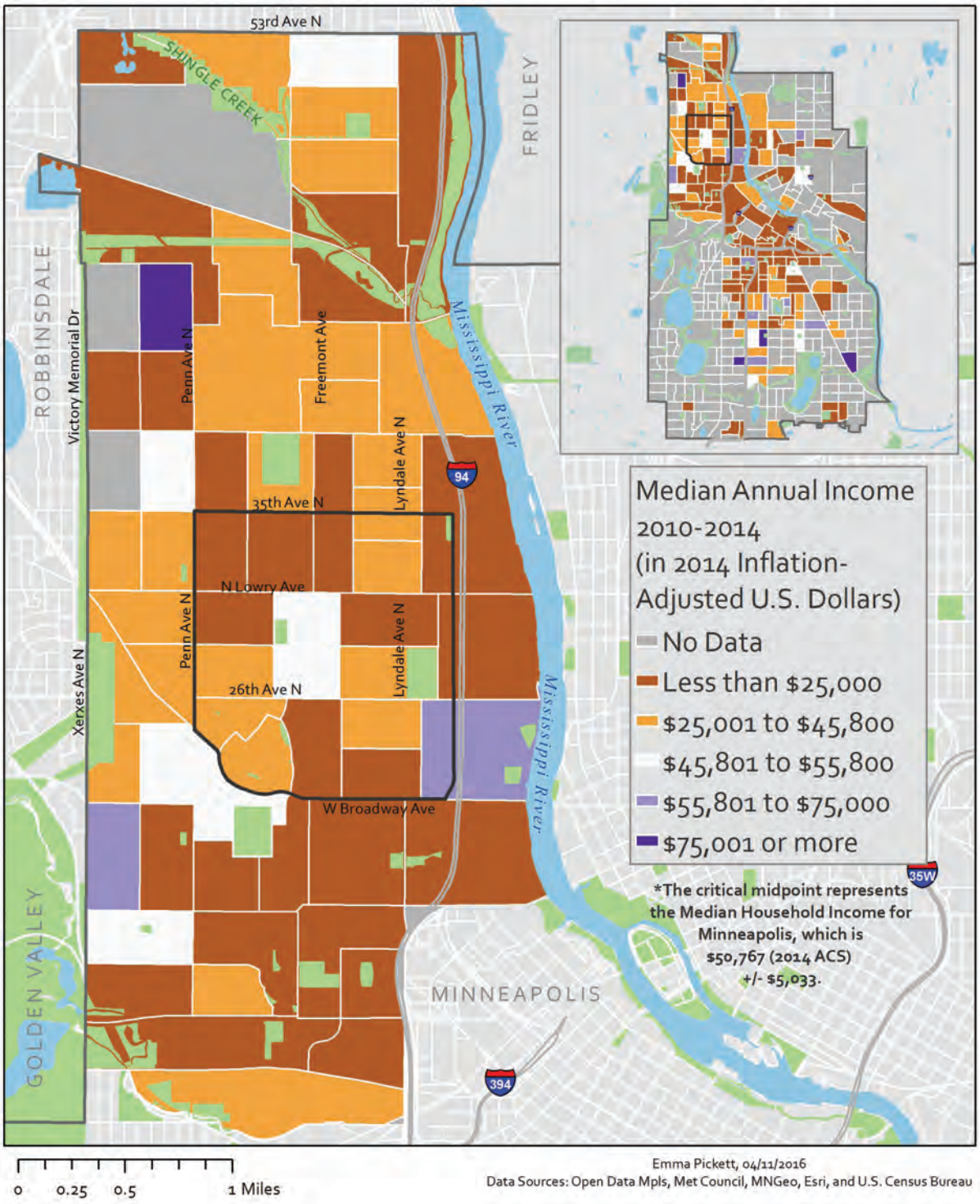


3.1d

# Median Household Income in North Minneapolis by Block Group, 2014 ACS 5-year Estimate

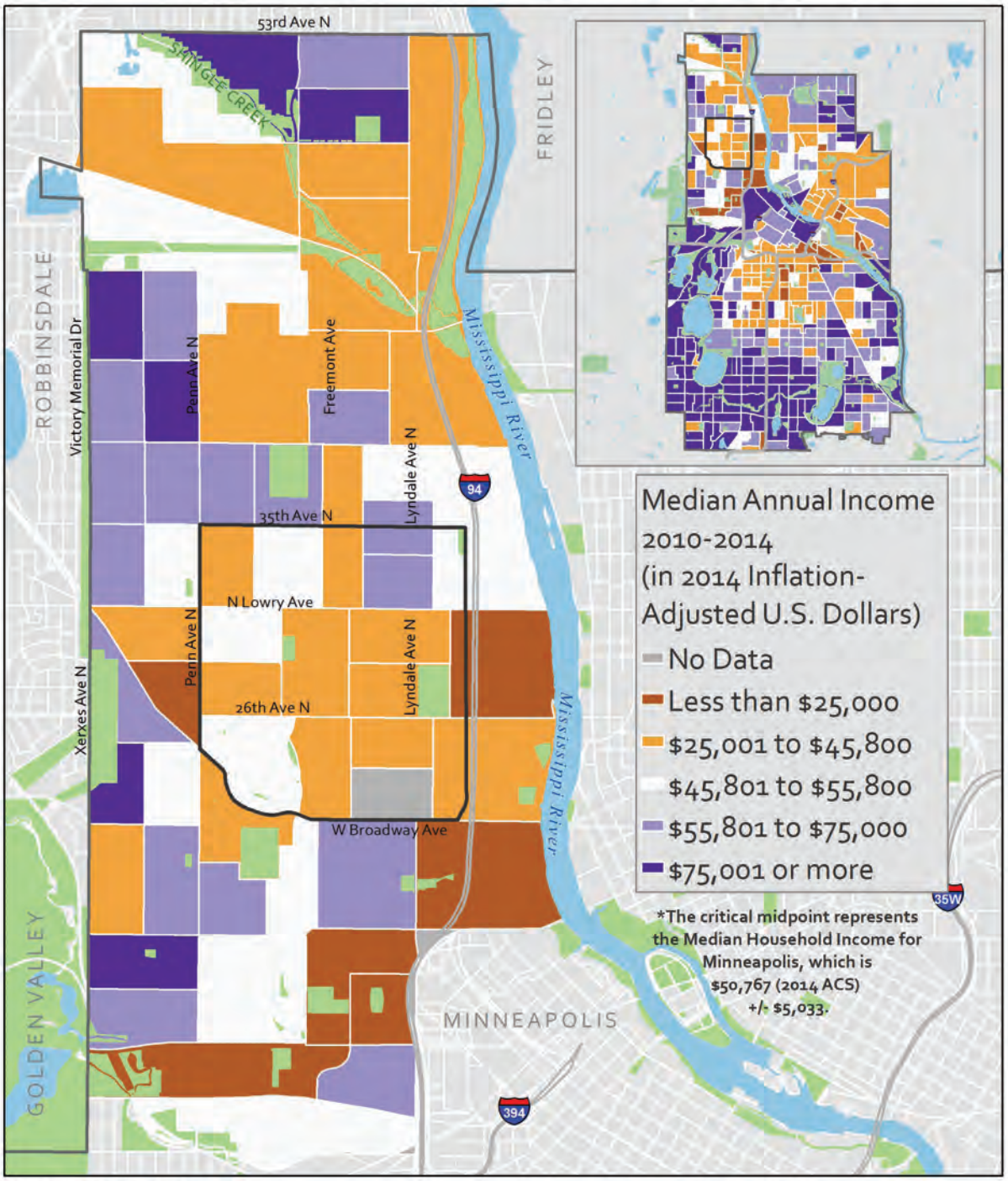


## Median Household Income of Black or African American Alone Householders in North Minneapolis by Block Group, 2014 ACS 5-year Estimate



3.1f

# Median Household Income of White Alone Householders in North Minneapolis by Block Group, 2014 ACS 5-year Estimate



ern portion of Minneapolis were largely above the city's median, a significant proportion of the block groups for Black or African American householders in South Minneapolis are below the Minneapolis median.

**Figure 1-c** features median household income of White alone householders in North Minneapolis for 1999. From this map, we observe that for the most part the block groups are evenly dispersed among the income categories. Minneapolis as a whole shows strong clustering of high incomes for white householders in the southern half of the city around the lakes. Clustering of lower median incomes for white householders occurs in parts of the University, Central, and Phillips communities. Both of these findings align with trends we observed in our map of overall median household income for 1999 (**Figure 1a**).

**Figure 1-d** displays median household income in North Minneapolis for 2014. This map continues to show that the majority of the Northside's block groups have median household incomes less than the overall median income for Minneapolis, whereas very high median household incomes appear in the southern half of the city.

**Figure 1-e** displays median household income of Black or African American alone householders in North Minneapolis for 2014. Nearly all the block groups in the Northside (and even across the city) display median household incomes for Black or African American alone householders that are less than the overall median for Minneapolis.

**Figure 1-f** displays median household income of White alone householders in North Minneapolis for 2014. As indicated by the Minneapolis inset map, a majority of the block groups in southern and western Minneapolis show that median household incomes of White householders are above the overall median for Minneapolis. However, in the Northside as well as in the Phillips and University communities, there is a significant concentration of median household incomes for white alone householders that are less than the overall median for Minneapolis.

**Figures 1-g, 1-h,** and **1-i** were created by taking the average of the amount spent on a given variable from the 2014 ESRI consumer expenditures data and dividing it by ACS 2014 median household income data. These maps employ a graduated color scheme with yellow representing the lowest percentage of income spent and brown representing the highest percentage of income spent.

**Figure 1-g** features the percentage of annual income spent on owned dwellings in North Minneapolis by block group for 2014. The map of the Northside depicts higher percentages spent on owned dwellings in Camden, as well as among several block groups dispersed throughout the southern half of the Northside, four of which fall into the highest percentage category of 26% or more. In the rest of the city, high percentages spent on owned dwellings appear to occur mainly along the outer edges of Minneapolis with central areas of the city dominated by lower percentages.

**Figure 1-h** features the percentage of annual income spent on rented dwellings in North Minneapolis by block group for 2014. As illustrated on the map, higher percentages of income spent on rented dwellings occur in the central and northern parts of Minneapolis. Low percentages occur in the southern part of the city, where nearly all of the block groups fall into the "less than 10%" category.

**Figures 1-g** and **1-h** may indicate that because wealthier populations live in the southern half of Minneapolis and have higher incomes, they spend smaller percentages of their income on rent. These maps could also indicate that fewer people in South Minneapolis rent, but rather own dwellings.

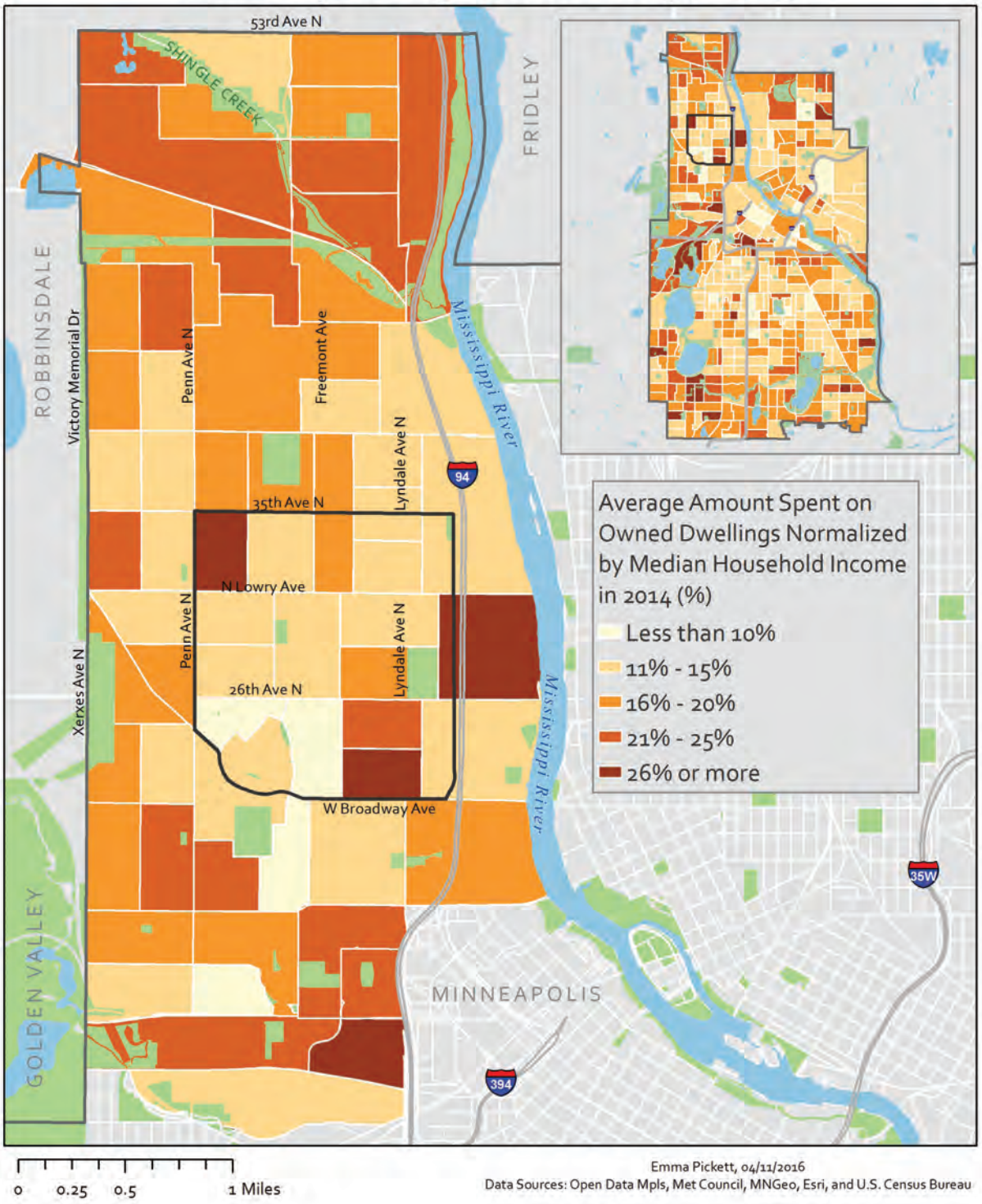
**Figure 1-i** denotes percentage of annual income spent on college tuition in North Minneapolis by block group for 2014. The Northside's highest percentages are located amongst a few block groups in the southeast corner. Looking at Minneapolis, the central and eastern parts of the city contain clusters of block groups featuring relatively high percentages of income spent on college tuition. One must take into consideration that the eastern cluster along the Mississippi River is located in the University neighborhood, where the University of Minnesota's campus is located and is most likely the reason it has higher percentages among its block groups.

## Employment

In Minnesota, one can legally start working at the age of 16. However, given various circumstances of education or maturity, not everyone who is 16 years old and above may be actively seeking employment. Therefore, for this analysis we have narrowed down our study age group to between ages 20 and 69. In this

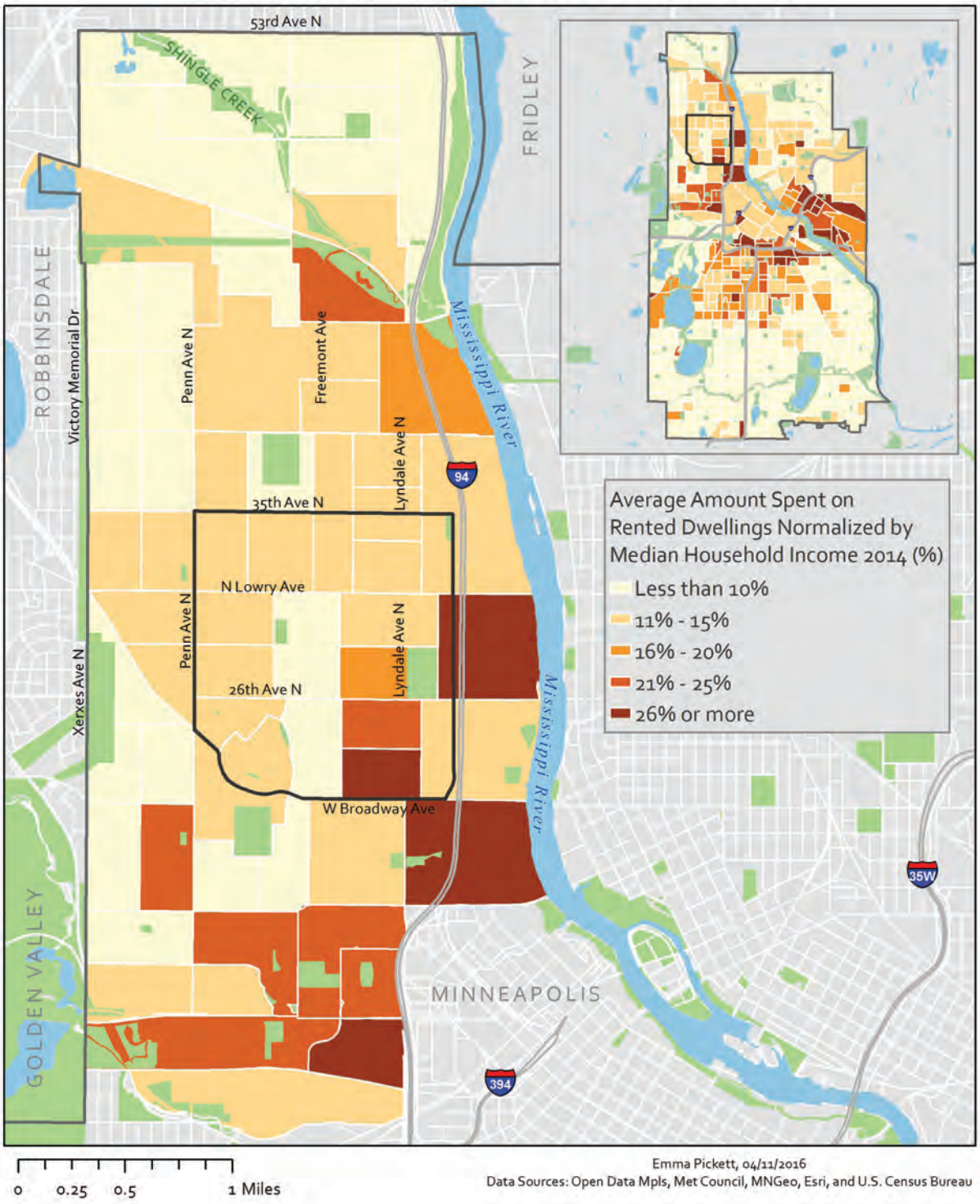
3.1g

# Percent Income Spent on Owned Dwellings in North Minneapolis by Block Group, 2014



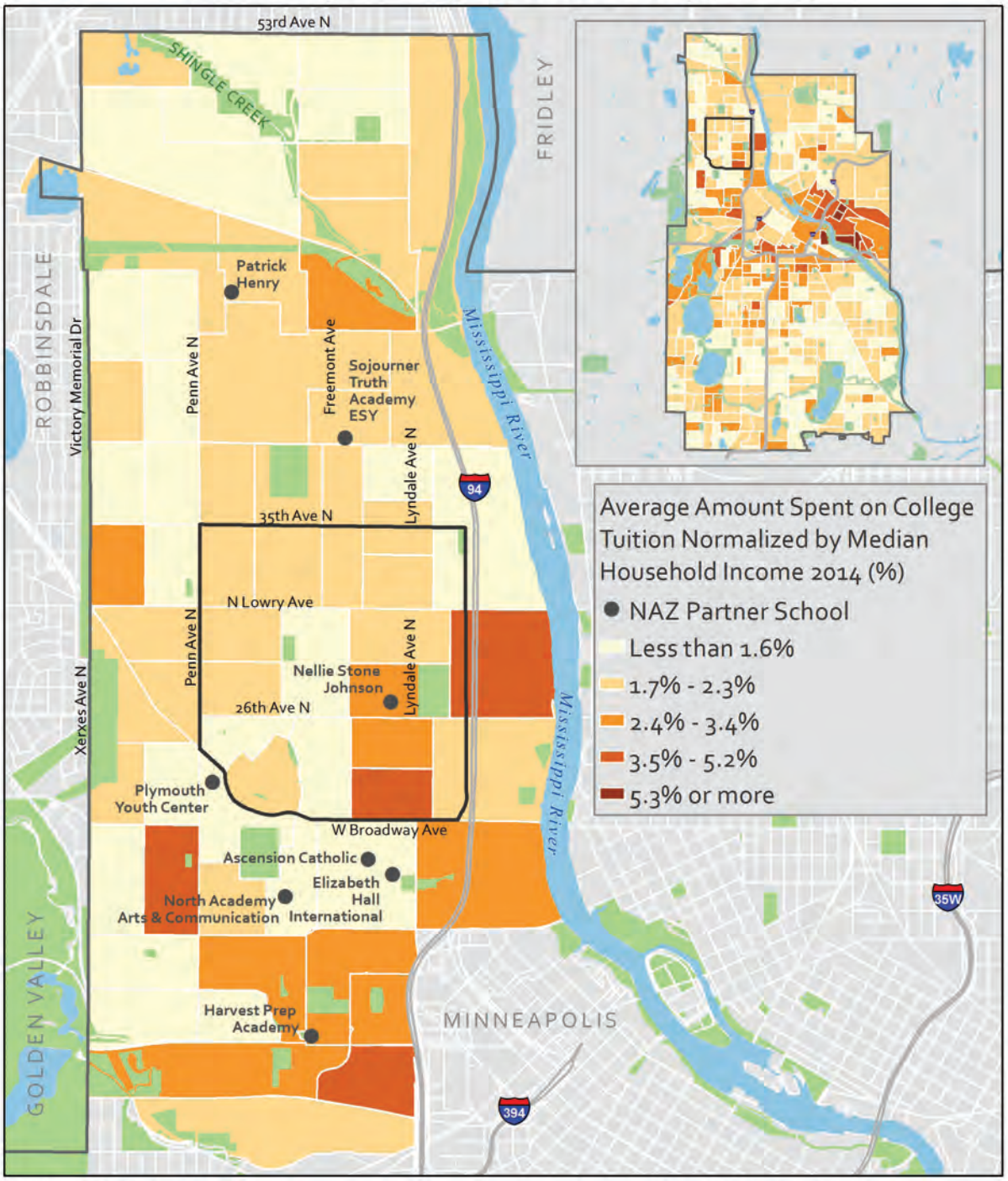

Emma Pickett, 04/11/2016
Data Sources: Open Data Mpls, Met Council, MNGeo, Esri, and U.S. Census Bureau

# Percent Income Spent on Rented Dwellings in North Minneapolis by Block Group, 2014



3.1i

# Percent Income Spent on College Tuition in North Minneapolis by Block Group, 2014




Emma Pickett, 04/11/2016
Data Sources: Open Data Mpls, Met Council, MNGeo, Esri, and U.S. Census Bureau

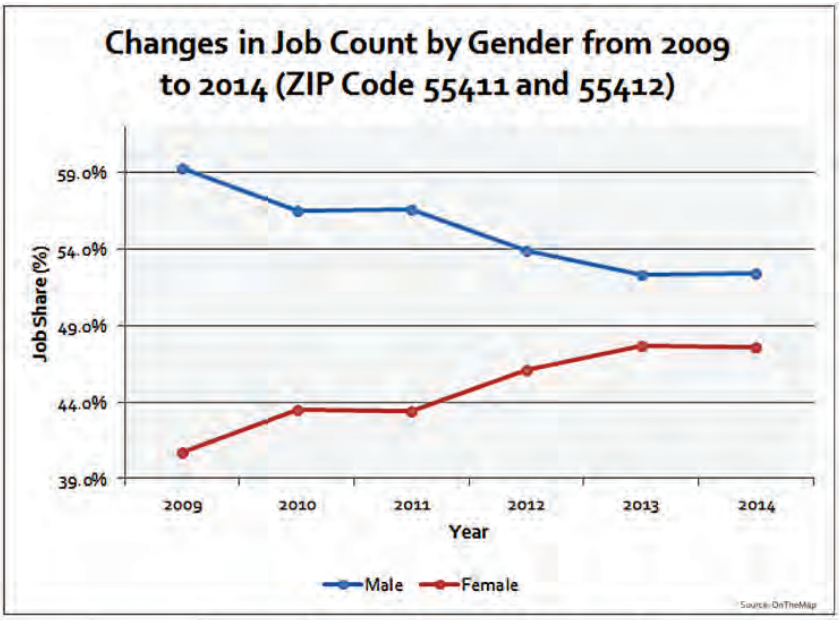
analysis, unemployed people have been defined as those who fit in that age group and reported that they have worked neither part-time nor full-time within the past 12 months of the survey. The estimate of the unemployment rate was generated by dividing these reported numbers per block group over the total number of people in that age group per block group.

We have found a significant spatial pattern in which a cluster of block groups with very high unemployment rates are located in the Northside (**Figure 2-a**). In fact, of the 65 block groups located in the Northside, only 8 fall into the lowest category of unemployment (rates below 16%). Within the Northside, there is also a visible divide in the spatial pattern of unemployment, where a majority of the block groups with greater than 50% unemployment are spread along the east border by the Mississippi River. On the other hand, the 8 block groups with the lowest unemployment rates are all located along the western border of the Northside, next to Robbinsdale. A large area of the NAZ zone is also represented by unemployment rates of between 33% and 49%. Other than the Northside, another cluster of block groups with high unemployment rates is located in the Phillips community, in which a block group was categorized to have the highest unemployment rate at 81%. Based on the ACS data that we utilized to examine employment, which includes responses of people who are 16 years old or above, the block group has a relatively low population within the age group at an estimate of only 459 people.

As mentioned in the Population chapter, **Figure 2-b** shows that there is a consistently high concentration of female householders with children in the Northside, with the highest percentage block group located in Near North by the interstate. This pattern offers a crucial insight into the spatial pattern of percentage of full-time workforce that is female (**Figure 2-d**).

**Figure 2-c** presents the changes in job count between males and females over the course of five years, from 2009 to 2014. Zip code areas 55411 and 55412 have been used as a proxy for the Northside region due to the unavailability of this data at the block group level. The data was retrieved from the OnTheMap application. It is evident that the number of jobs held by females has significantly increased from 2009 to 2014, from around 40% of the full-time workforce to just below 50%. The number of jobs held by males has decreased comparatively.

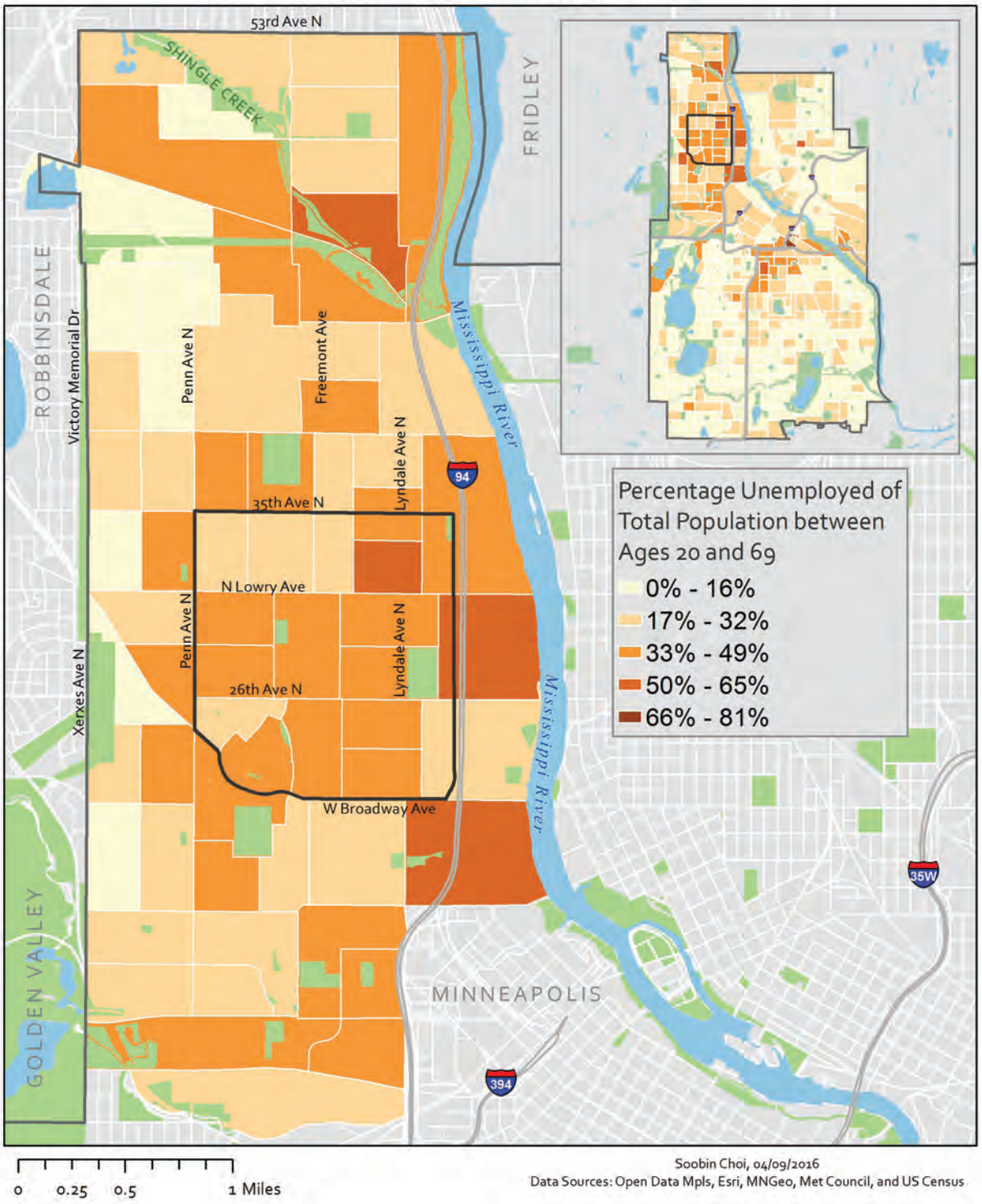
Figure 3.2-c



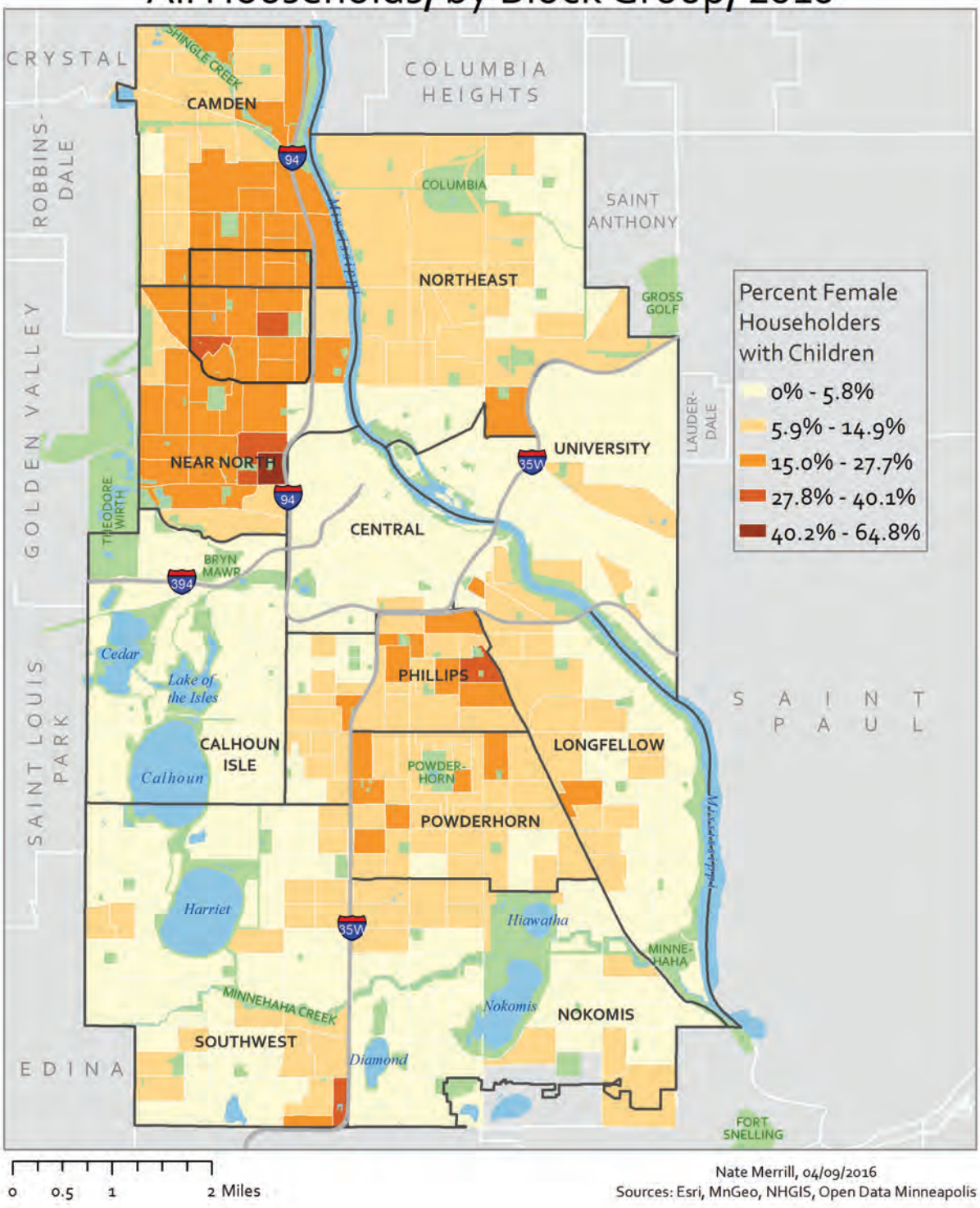

| | | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|---|---|---|---|---|---|---|---|
| Job Count (Number) | Male | 5,779 (59.3%) | 6,199 (56.5%) | 6,151 (56.6%) | 6,262 (53.9%) | 5,800 (52.3%) | 5,973 (52.4%) |
| | Female | 3,962 (40.7%) | 4,772 (43.5%) | 4,725 (43.4%) | 5,351 (46.1%) | 5,292 (47.7%) | 5,417 (47.6%) |

3.2a

# Unemployment Rate in North Minneapolis by Block Group, 2014

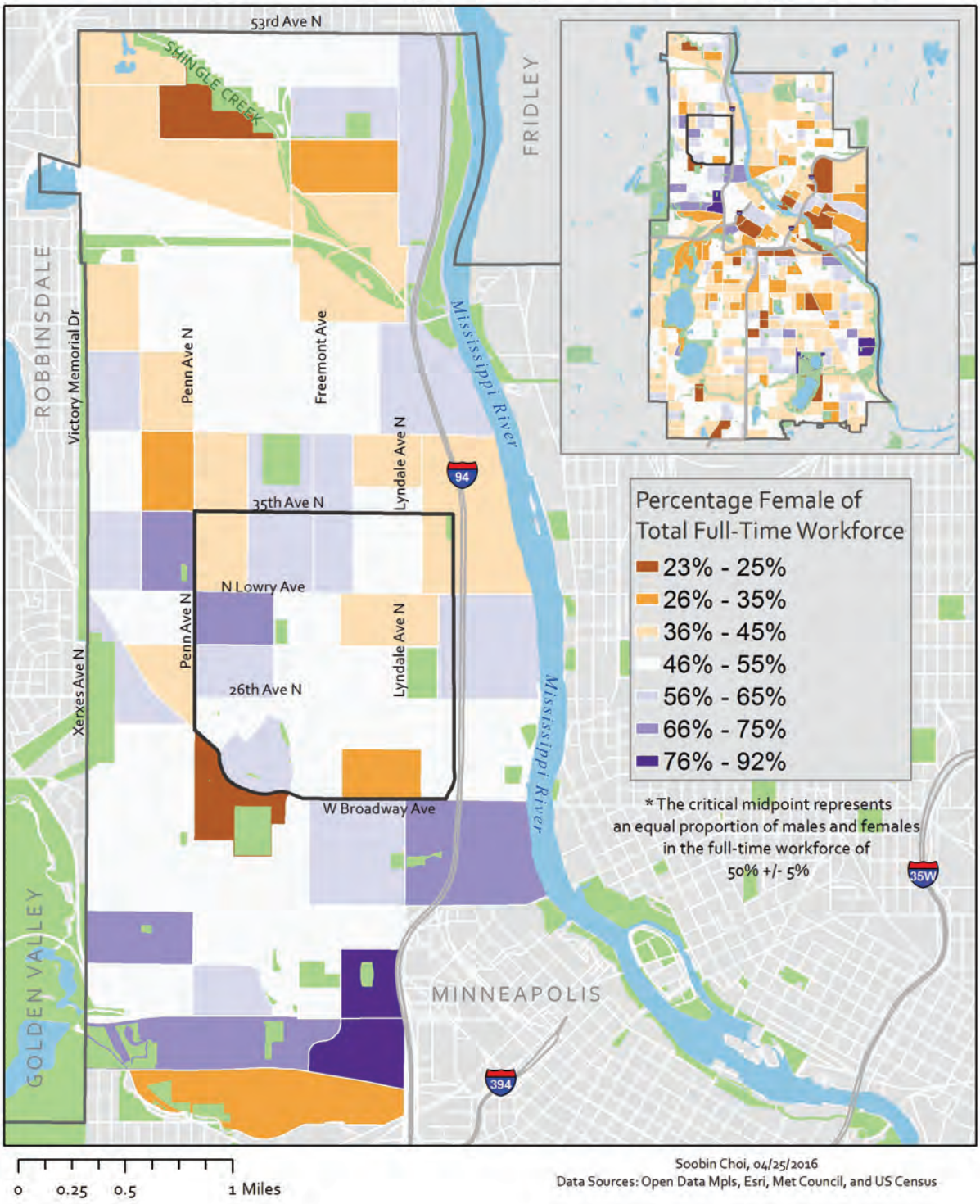


# Female Householders with Children as a Percent of All Households, by Block Group, 2010



3.2d

# Percentage Female of Total Full-Time Workforce in North Minneapolis by Block Group, 2014



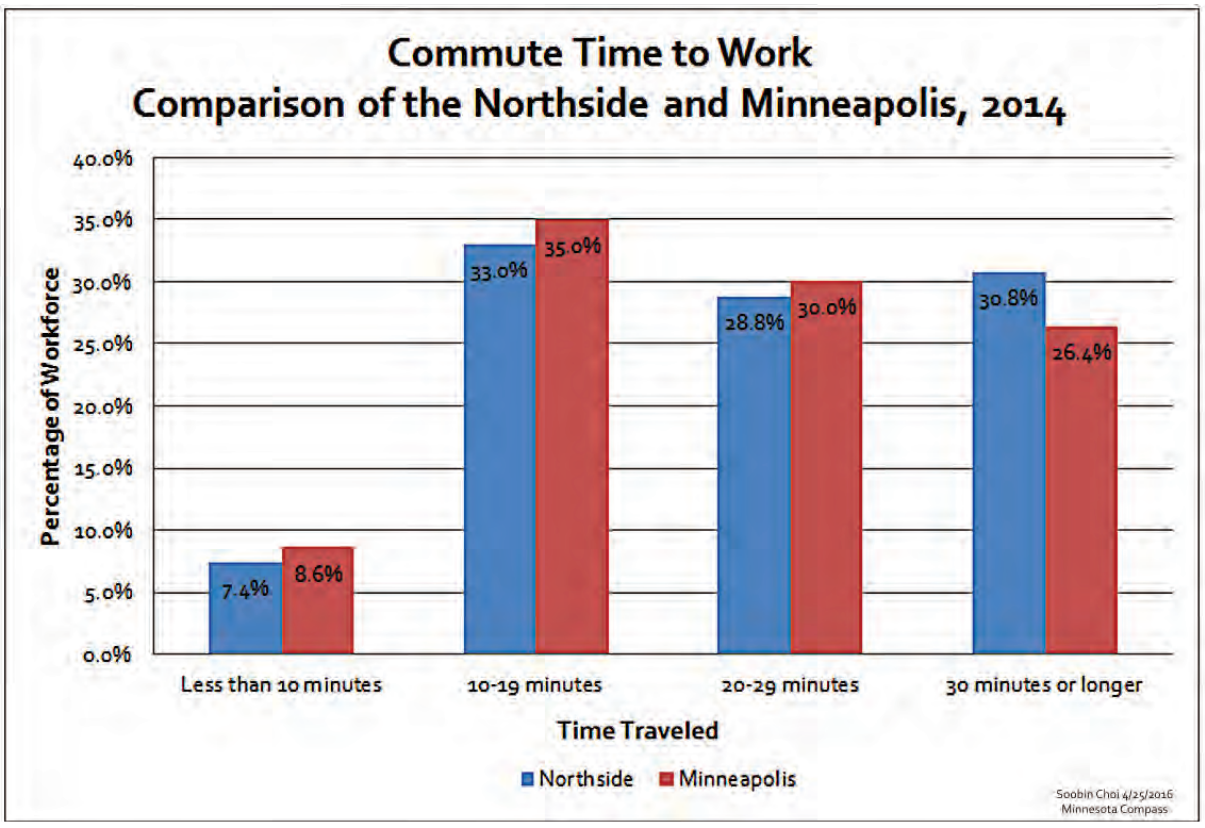
Symbolized in a diverging classification scheme, **Figure 2-d** shows the percentage of the full-time workforce that is female, by block group. The point of diversion is set at 50% (within the central category of 46% to 55%), which represents an even distribution of full-time workforce between males and females. An increase in percentage female of the total full-time workforce is symbolized by the positively diverging purple color, whereas block groups with a smaller percentage female of the total full-time workforce is symbolized by the negatively diverging brown color. The pattern of this map suggests that there is a much higher percentage of full-time female workers within the Northside. In comparison, males dominate the full-time workforce throughout the rest of Minneapolis.

As seen in **Figure 2-c**, the distribution of full-time employment between males and females has seemingly become narrower over time in the Northside. However, the overlap in **Figures 2-b** and **2-d**, which present a correlation in the Northside between a high percentage of female householders with children and a higher percentage female in the full-time workforce, suggests that many of the females are working full-time out of financial necessity.

**Figure 2-e** shows the percentage of workers by block group that utilize public transportation as their primary means of commute between residence and workplace. In the context of the Northside and greater Minneapolis, public transportation is primarily constituted by the Metro Transit system including bus transit and the Blue and Green light rail lines. It is evident that there is a greater cluster of public transit users in the Near North Community. As we extend the analysis to the rest of Minneapolis, it is evident that there is a greater cluster of public transit users in the Central and Phillips communities, whereas block groups in Calhoun-Isle, Southwest, and even areas of Camden have the lowest percentages of public transit users per block group. Such spatial distribution tends to correspond directly with the light rail routes, which do not extend beyond Target Field located just south of the Near North community.

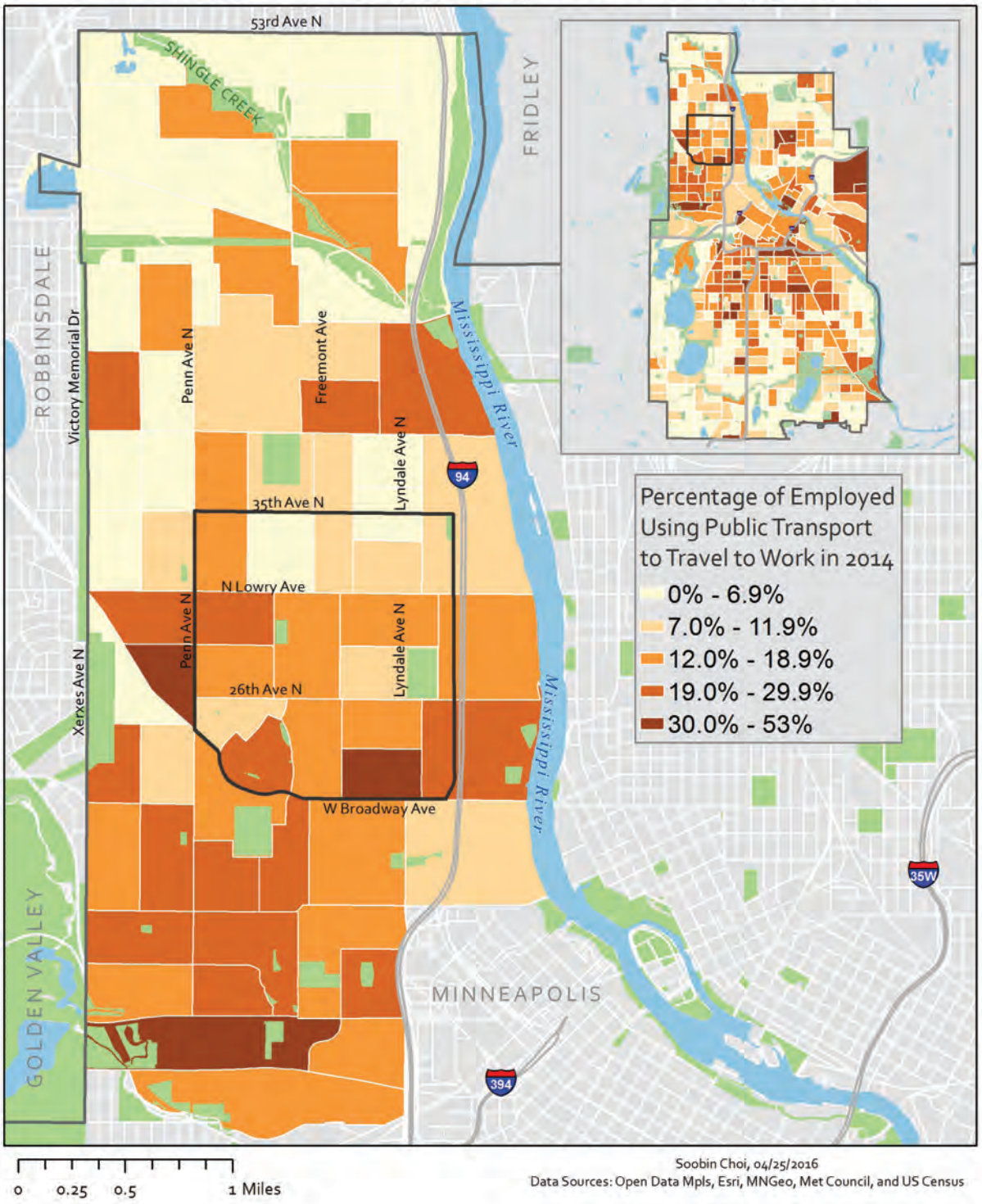
The general pattern of reported commute time from residence to workplace is displayed in **Figure 2-f.** In both the Northside and for Minneapolis overall, a relatively small proportion of workers, below 10%, works within a 10-minute proximity of their homes. However, workers living in Minneapolis overall consistently see shorter commute times than workers residing in the Northside, with greater percentages in all three of the shorter commute time intervals (<10, 10-19, and 20-29 minutes). A much higher percentage of workers residing in the Northside spend over 30

Figure 3.2-f



3.2e

# Public Transport Usage as Means of Commute to Work in North Minneapolis by Block Group, 2014



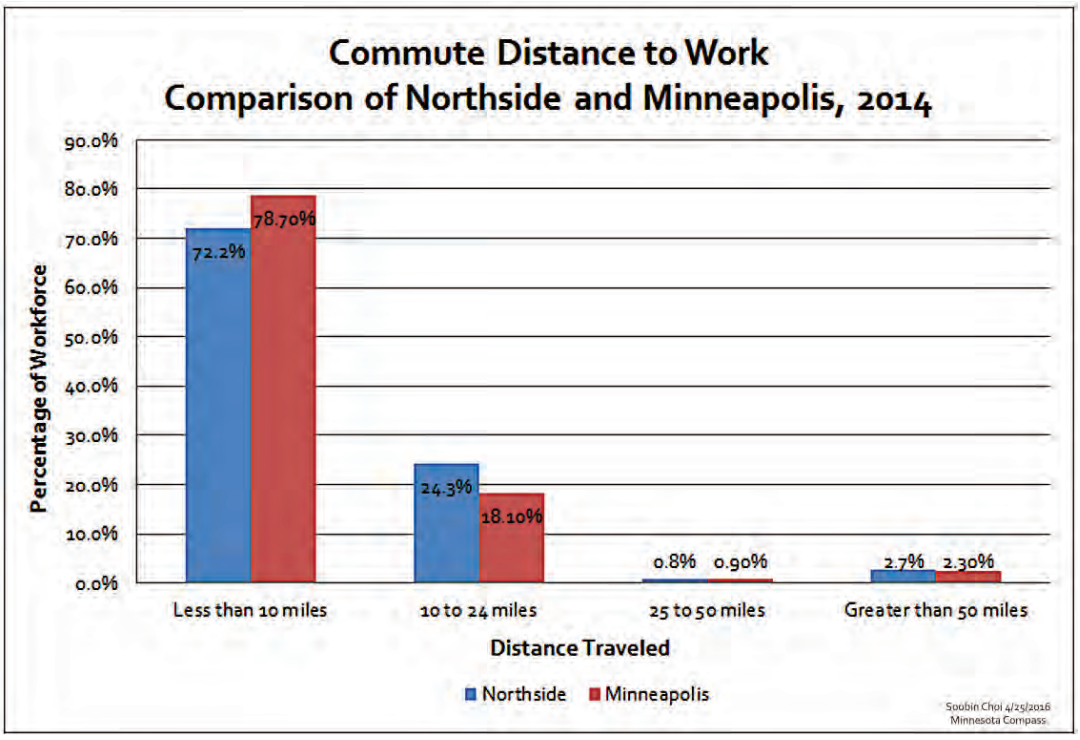
minutes to get to work, at 30.8% vs. 26.4% for workers residing in Minneapolis overall. This pattern suggests that workers residing in the Northside are disproportionately burdened in terms of the time cost of accessing their workplace.

Similarly, the general pattern of reported commute distance from residence to workplace is shown in **Figure 2-g**. For workers residing in the Northside and throughout Minneapolis, the majority commute less than 10 miles to work. It is important to note, however, that in comparison to all workers living in Minneapolis, about 6% fewer of the workers residing in the Northside live this close to their workplace, and about 6% more live between 10 and 24 miles from their workplace. Taken along with the patterns of workers who utilize public transportation as their primary means of commute to work (Figure 2.e) and the pattern of commute times shown in Figure 2.f, it is clear that workers living in the Northside are faced with multiple challenges of longer commute distances, longer commute times, and a reliance on public transportation (that can increase commute times even for shorter distances).

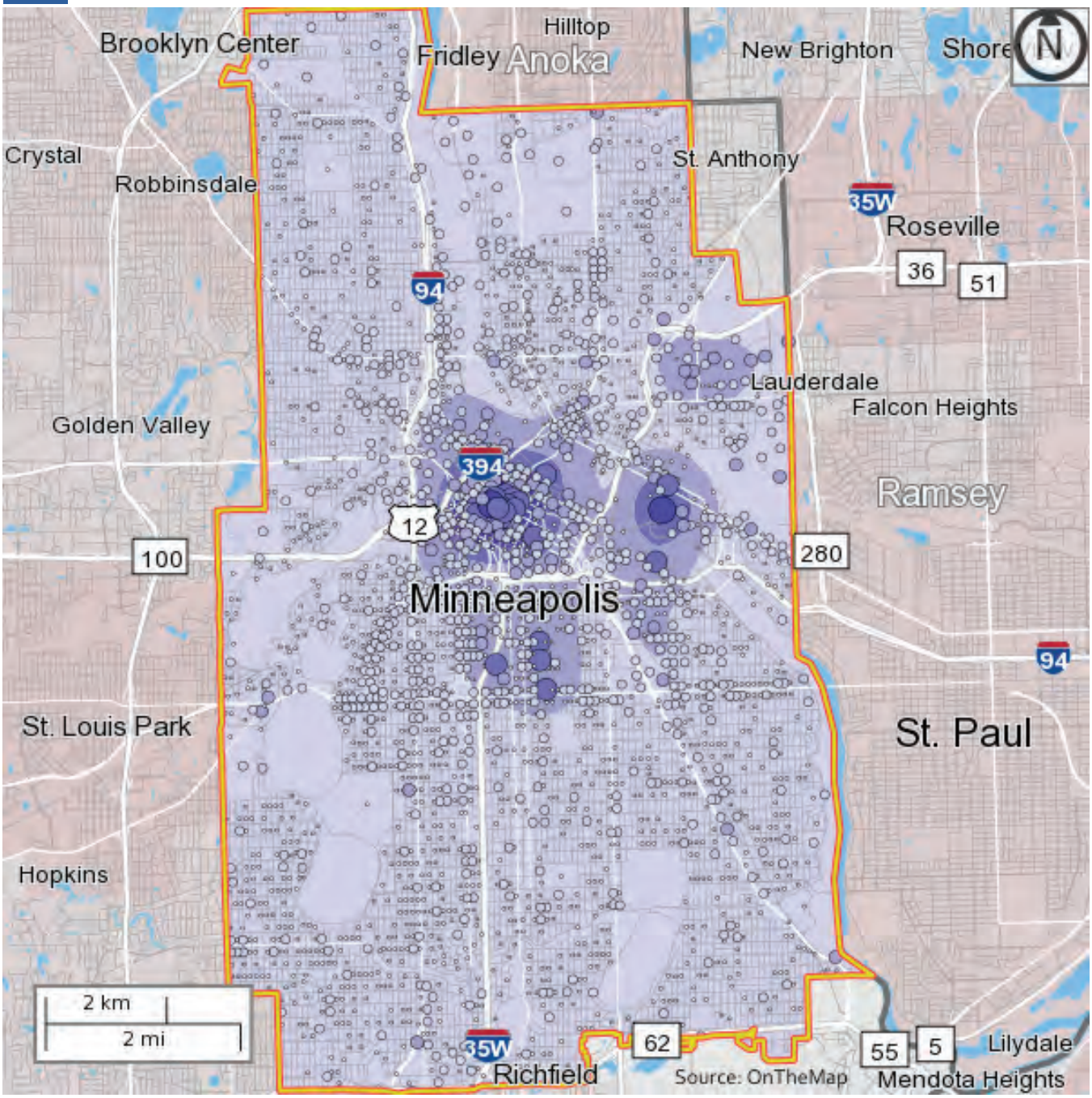
**Figure 2-h** shows the count and density of all jobs in Minneapolis in 2014. This map was generated through the OnTheMap application and uses data from the LEHD quarterly workforce employment data. It is evident that employment activity is clustered in the center of Minneapolis, where the number of jobs per census block as well as the density of jobs per square mile is greatest around the central business district of downtown Minneapolis. In the rest of Minneapolis, the job density is much lower at between 5 and 8,785 jobs per square mile. The Northside, as well as the area within the NAZ boundary, lies in the lowest density region. The small and sparse dots, indicating a job count of 1 to 33, show the lack of employment opportunities in the Northside.

For **Figure 2-i**, zip code areas 55411 and 55412 were once again used as proxies for the Northside region. The wheel diagrams illustrate the flow of workers from their residences to their workplaces. The darkest purple color symbolizes the total number of jobs located within the study region that employ people from outside the study region. The medium purple symbolizes the total number of jobs that circulate within the study region, indicating that jobs located within study region employ workers living in the study region. Lastly, the light purple symbolizes the number of jobs located outside of the study region that employ people living in the study region. Thus, 4% or 770 people live and work within the Northside, whereas 96% or nearly 21,000 people commute from their residence in the Northside to work outside the boundaries. At a greater geographical extent, we find

Figure 3.2-g



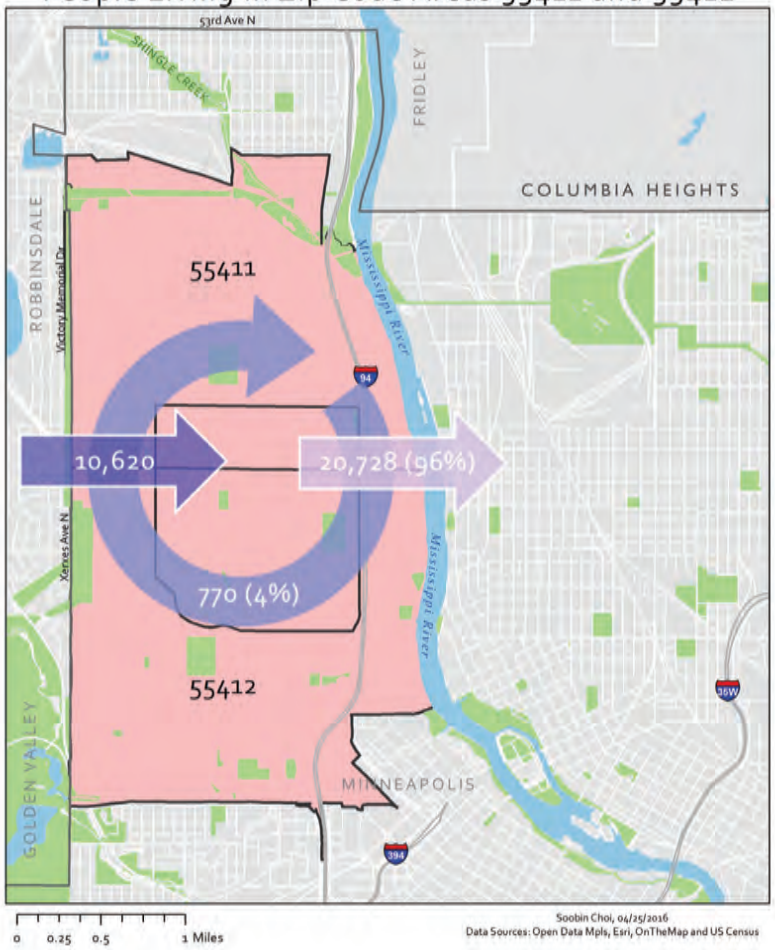
3.2h



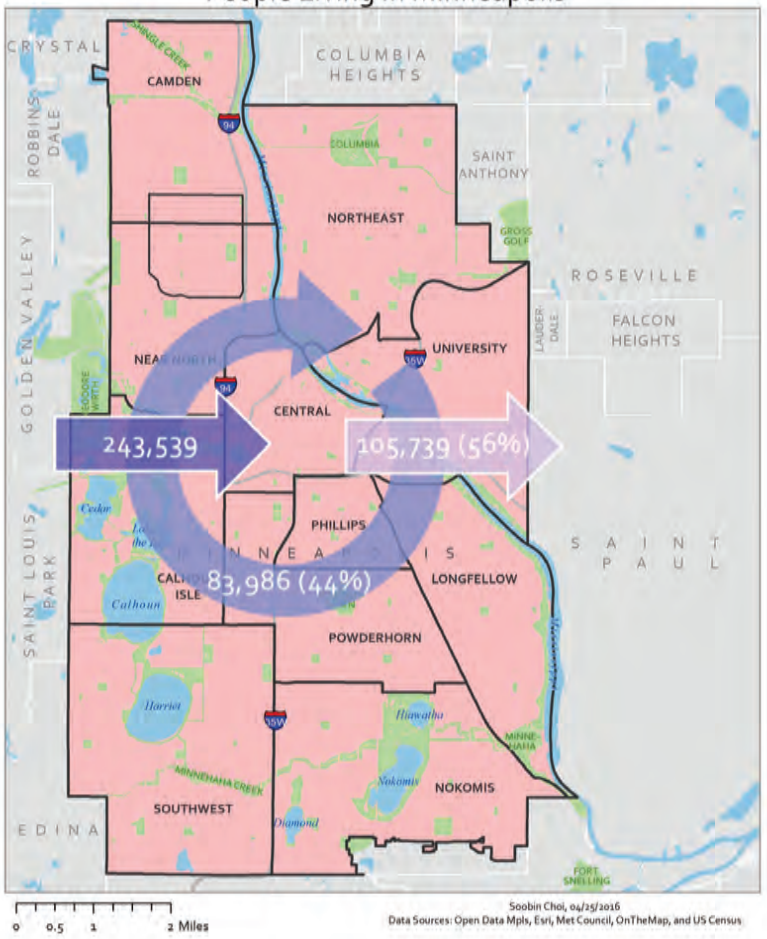

5 - 8,785 Jobs/Sq.Mile
8,786 - 35,125 Jobs/Sq.Mile
35,126 - 79,026 Jobs/Sq.Mile
79,027 - 140,486 Jobs/Sq.Mile
140,487 - 219,508 Jobs/Sq.Mile

1 - 33 Jobs
34 - 519 Jobs
520 - 2,626 Jobs
2,627 - 8,299 Jobs
8,300 - 20,261 Jobs

Movement from Residence to Workplace for
People Living In Zip Code Areas 55411 and 55412




Movement from Residence to Workplace for
People Living In Minneapolis



that among workers living in the city of Minneapolis, 44% work within the city while 56% work outside of the city. The strikingly large percentage of workers traveling outside of the Northside to work suggests that despite the presence of employment opportunities in the Northside, these jobs are not actively employing the local workforce.

## Banking and Investment Activity

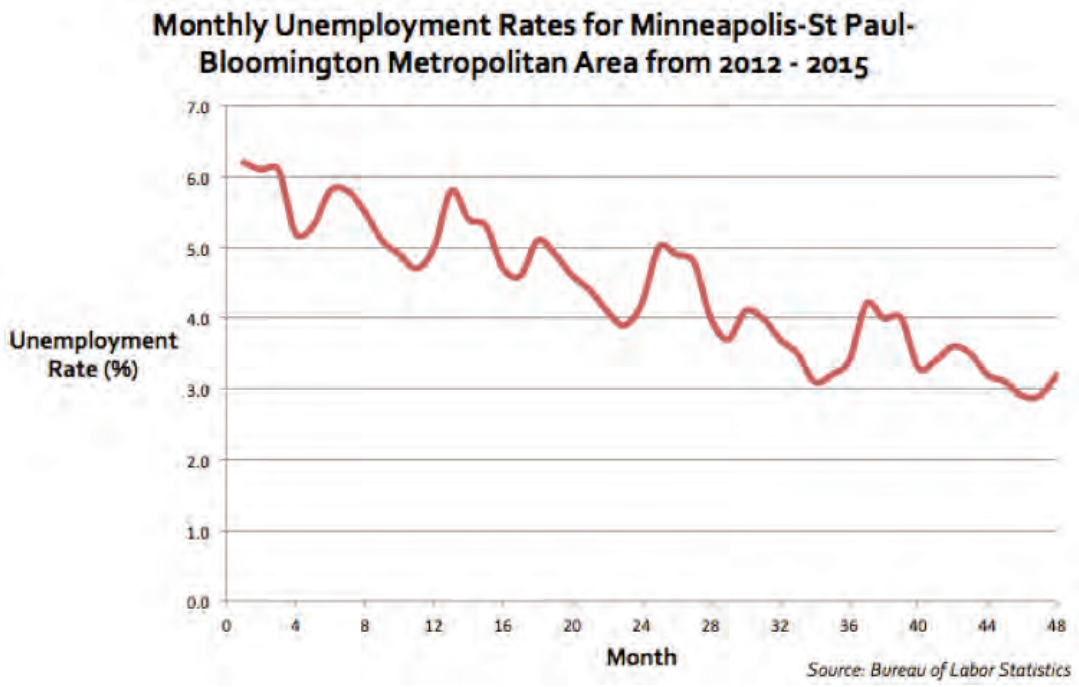
**Figure 3-a** shows a comparison of the average dollar amount in checking accounts per Minneapolis block group for the years 2013 and 2014. Over the course of this one year, we see large increases in checking account balances for all Minneapolis communities including the Northside communities of Camden and Near North. This is consistent with the unemployment trends for the Twin Cities shown in **Figures 3-b** and **3-c.** There is a steady and steep decline in the unemployment rate coming out of the 2012 recession, which could help to explain the increased average amounts in checking accounts. Despite these improvements, however, North Minneapolis still has much lower values in comparison to South and Central Minneapolis. Many block groups within and surrounding the NAZ Zone are part of the lowest category of less than $5,000.

Figure 3.3-b

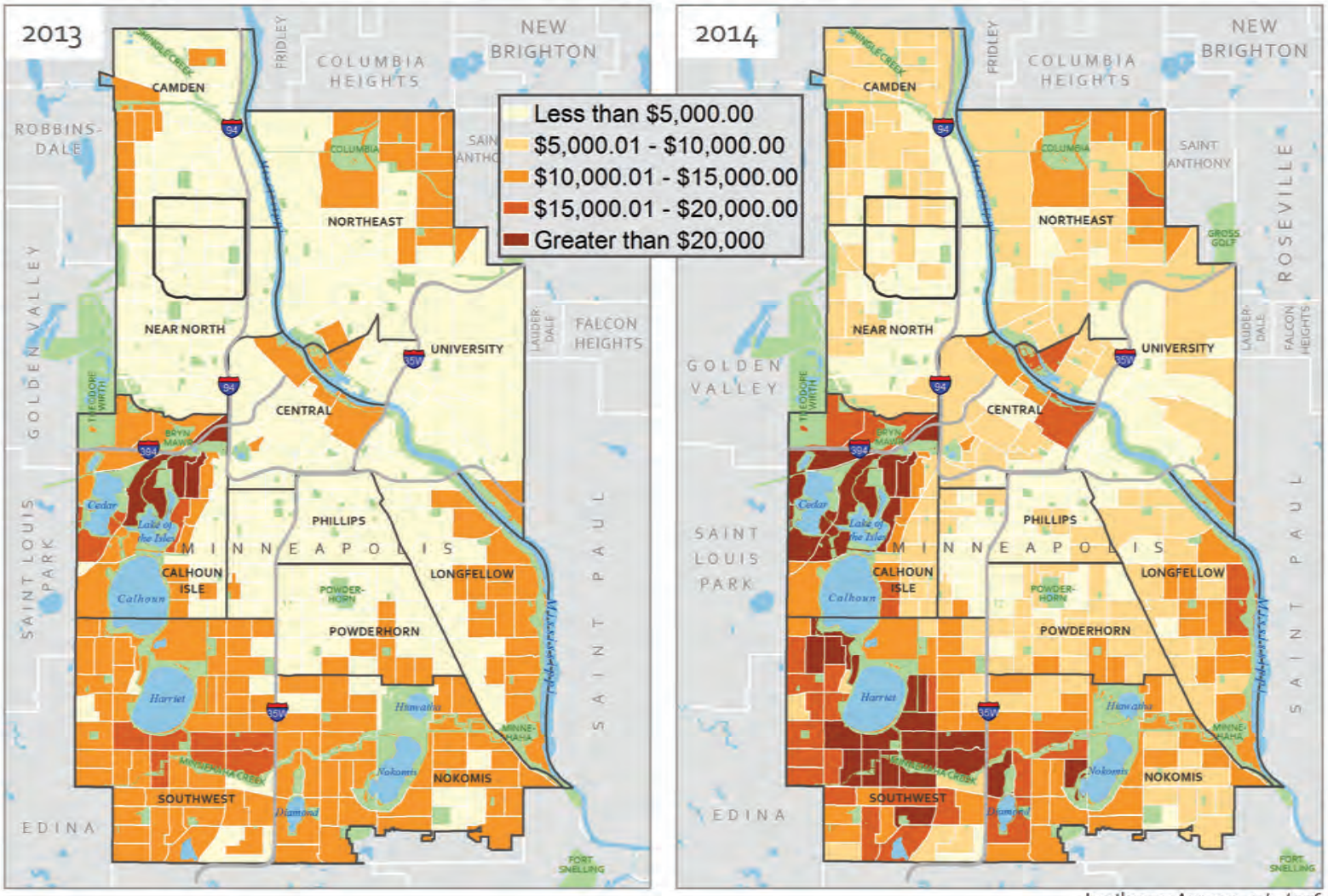
| Annual Unemployment Rates for Minneapolis- St Paul- Bloomington Metropolitan Area | |
|---|---|
| 2012 | 5.5 |
| 2013 | 4.7 |
| 2014 | 3.9 |
| 2015 | 3.4 |

**Figure 3-d** shows the average market value of savings accounts per Minneapolis block group in 2014. According to the financial outlet Business Insider, individuals should save at least 10% of their annual income to be considered financially stable. Given this savings rate, and a median annual income of $50,767 for Minneapolis households, the recommended savings amount per household is $5,076.70 per year. Many North Minneapolis block groups, especially in the Near North community, have average savings amounts below the recommended amount and below other communities in Minneapolis, with the exception of the University community, which has a large student population.

Figure 3.3-c



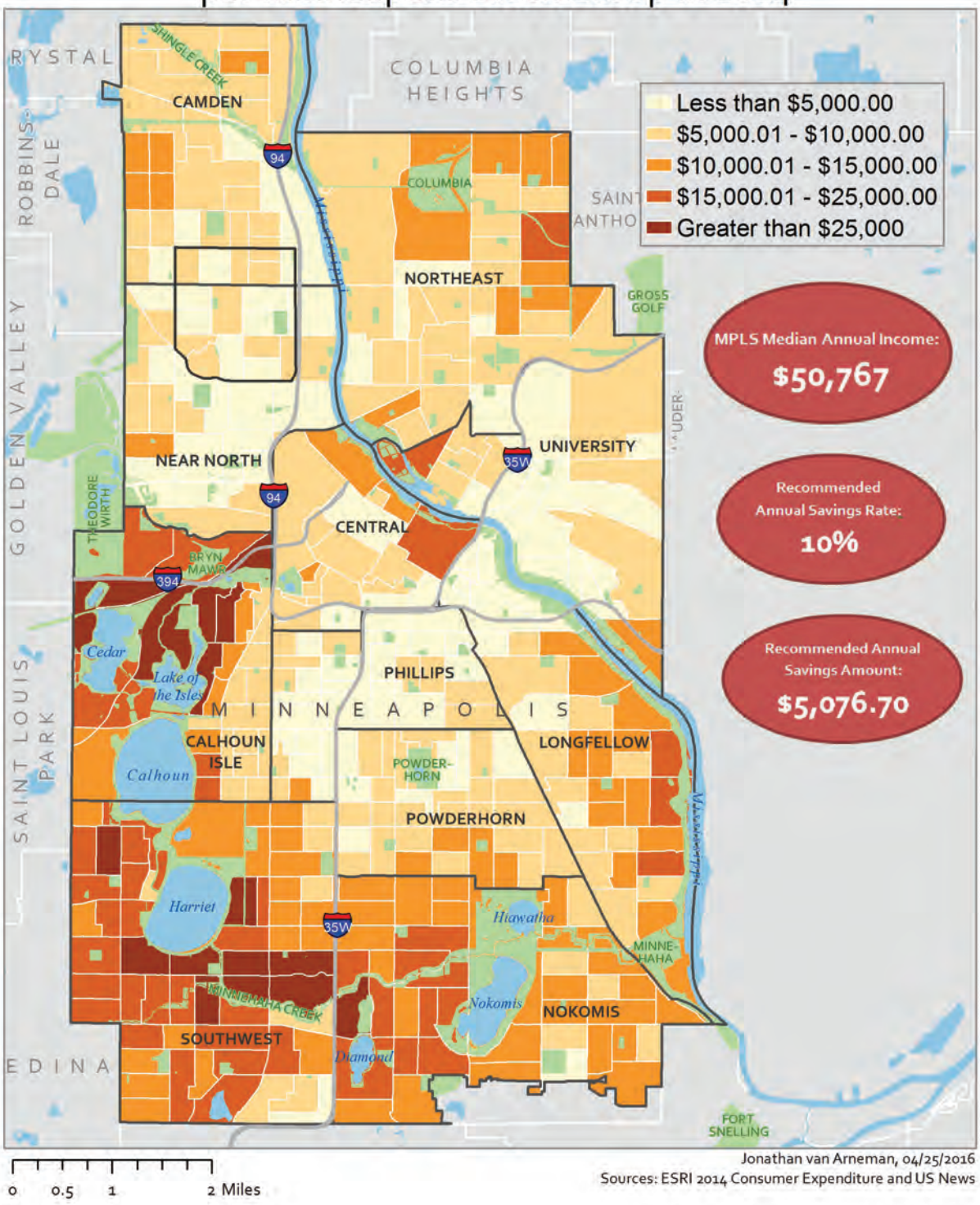
# Average Dollar Amount in Checking Account per Minneapolis Block Group




Jonathan van Arneman, 04/25/2016
Sources: ESRI 2014 Consumer Expenditure

3.3d

# Average Market Value of Savings Accounts per Minneapolis Block Group in 2014




Jonathan van Arneman, 04/25/2016
Sources: ESRI 2014 Consumer Expenditure and US News

**Figure 3-e** shows the average market value of savings accounts per Minneapolis block group overlaid with the proportion of minority population per block. For this map, the minority population is defined as all individuals who identify with racial categories outside of 'White Alone.' By looking at the distribution of minority populations in conjunction with savings account values, the map shows that places of higher minority populations also have lower savings account values and places with lower or no minority populations have higher savings account values.

**Figure 3-f** shows the average amount contributed to retirement plans per Minneapolis block group in 2014. Similar to **Figure 3-d**, many of the block groups in North Minneapolis constitute the lowest category (of less than $850 per annum in retirement plan contributions). There are also large concentrations of block groups in the lowest category in the Phillips, Northeast, and University communities. In Minneapolis, the average retirement savings plans have rates of at least 5% per annum, far above the national average of 3.2%. Using the median household income for Minneapolis, the average retirement savings per annum should be $2,538. As shown in the map, no block groups in the Northside meet this standard.

**Figure 3-g** shows the average market value of stocks, bonds, or mutual funds per Minneapolis block group in 2014. This map attempts to visualize investment activity and participation in the stock market for Minneapolis residents. The pie chart shows that on a national level, lower-income categories do not invest their money and thus forego the benefits of improvements to the stock market. Those in the top 1 percentile of income earners own over 50% of stocks, bonds, or mutual funds while those in the bottom 50 percentile own less than 5%. Minneapolis also follows this trend with higher-income block groups primarily located in South Minneapolis (as shown in **Figure 1-a**) showing higher investment activity than lower-income block groups primarily located in North and Central Minneapolis.

## Business Development and Business Ownership

**Figure 4-a** shows the percentage of all businesses owned by a minority individual (the total count of minority-owned businesses divided by the count of total businesses) in each block group in North Minneapolis. The inset map does the same, but on the citywide scale. The Northside contains two block groups where over 12% of businesses are owned by minorities, including one within the NAZ boundary. These block groups have the highest minority business ownership rates in the entire city. However, we can still see a disparity between minority population percentage and the area's small business ownership percentage.

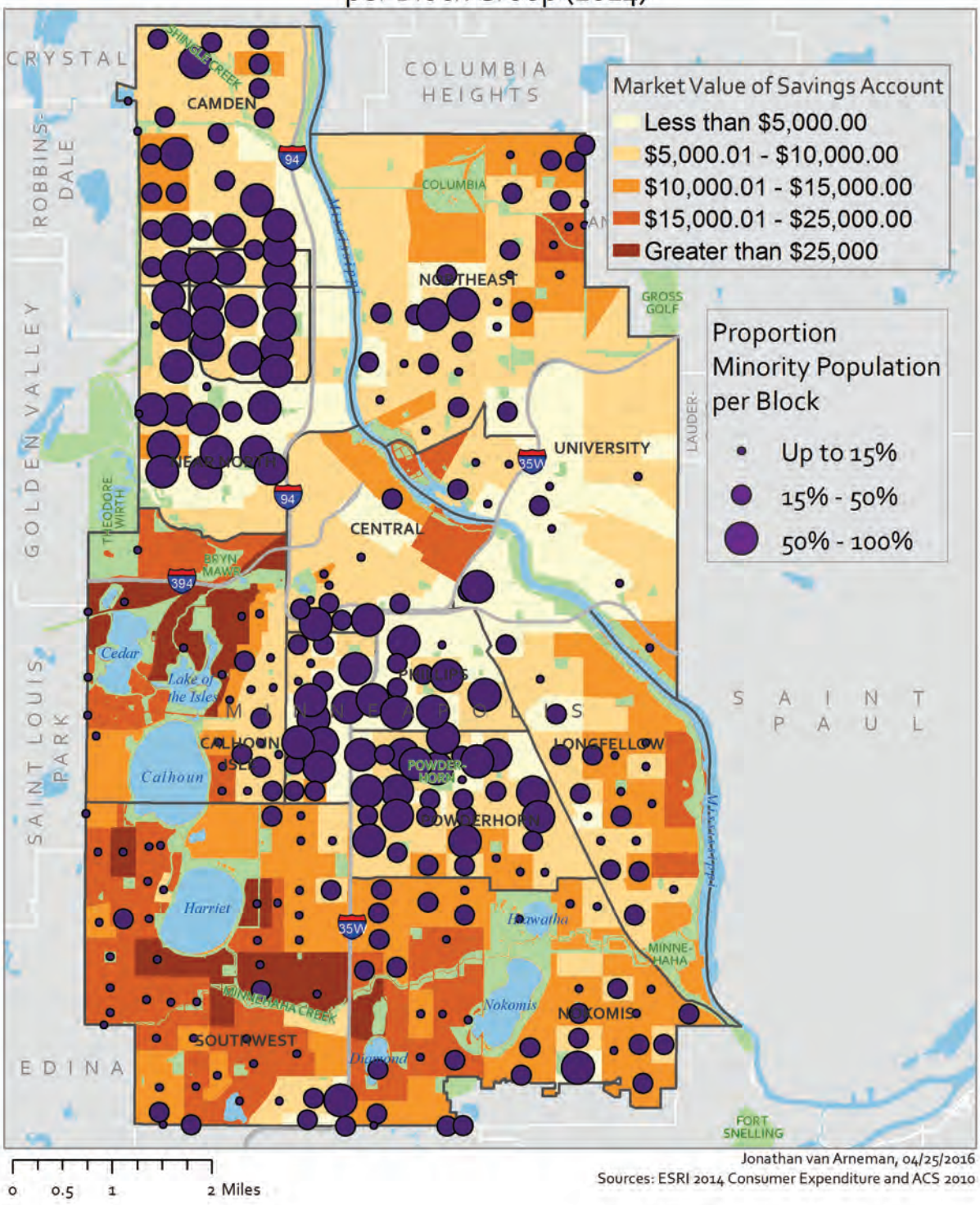
**Figure 4-b** shows the percentage of all businesses owned by a woman (the total count of women-owned businesses divided by the count of total businesses) in each block group in North Minneapolis. The inset map does the same, but on the citywide scale. Here, the rates appear higher than the map of minority ownership, as women across the city own a higher percentage of businesses than minorities. The Northside has several block groups where over 18.5% of all businesses are owned by women, including one in the northwest corner of the NAZ zone, although several block groups along commercial West Broadway have rates below 4.6%. Citywide, a cluster of high rates appears in southeast Minneapolis, along Highway 55.

**Figure 4-c** shows specific locations of minority-owned businesses, with opening dates classified into three strategic time periods. The period from 1998 to 2002 reflects an environment absent of the Northside Achievement Zone program or any precursor to it. The period 2003 to 2007 sees the founding of the PEACE Foundation, and 2008-2012 sees the creation of the current Northside Achievement Zone. This map shows no discernable spatial pattern, though the numbers of businesses per time period provide some insight (see **Figure 4-g**). The median centers for each time period are also displayed. This point represents the point with the shortest possible distance from all other points. We see the median center of minority-owned businesses migrate southwest from 1998-2002 to 2003-2007, reflecting more business openings in the far southwest corner of the Northside.

**Figure 4-d** shows specific locations of women-owned businesses, with opening dates again classified into the three strategic time periods. This map shows no discernable spatial pattern either, though the numbers of businesses per time period provide some insight (see **Figure 4-h**). Like in **Figure 4-c**, the median centers for all women-owned businesses within the three time periods are displayed. In this map we see the median center of women-owned businesses migrates north as time goes on, reflecting a larger number of businesses owned by women opening between 2003-2007 and 2008-2012 further north in the area.

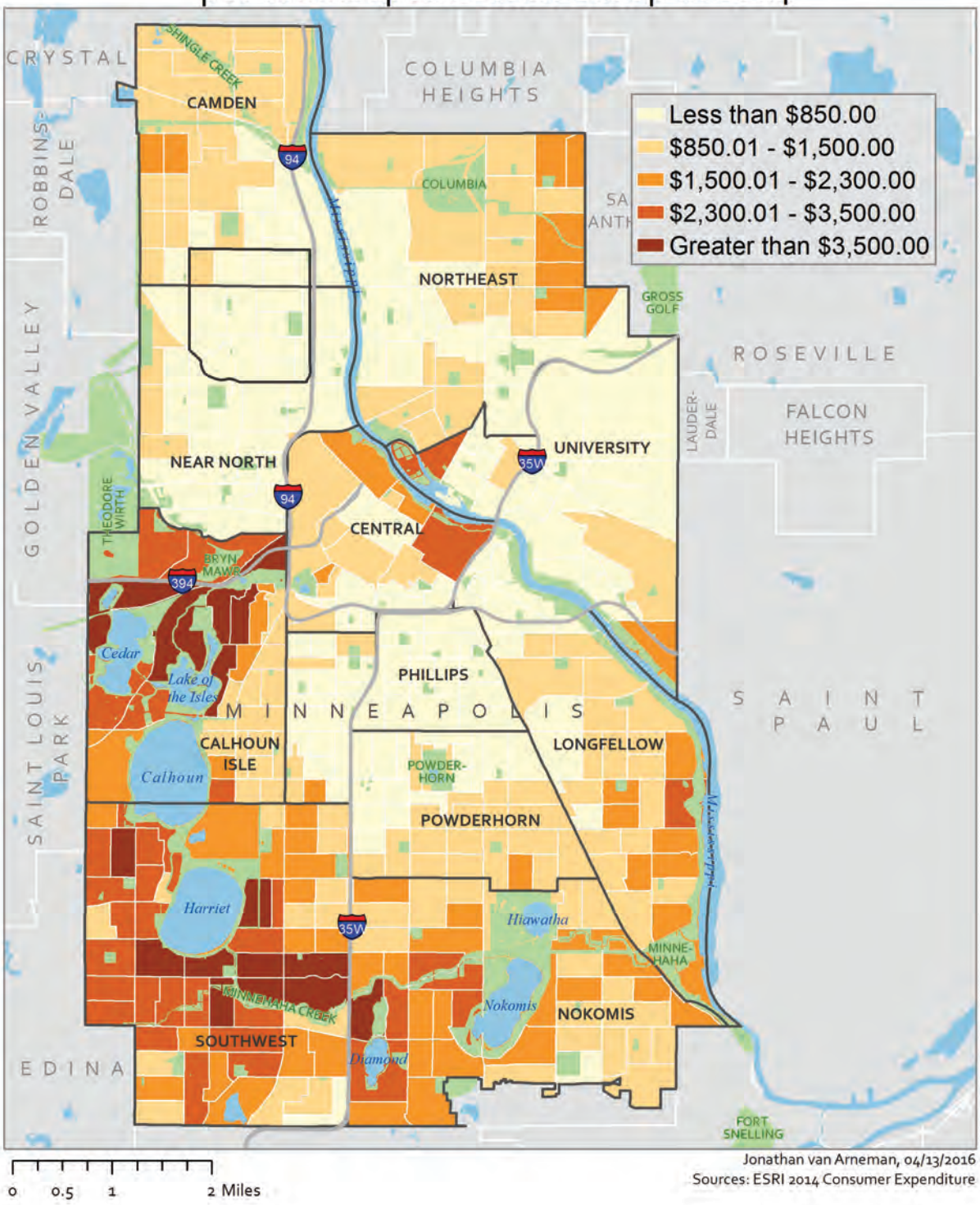
3.3e

# A Comparison of the Proportion of Minority Population per Block (2010) to Average Market Value of Savings Accounts per Block Group (2014)




Jonathan van Arneman, 04/25/2016
Sources: ESRI 2014 Consumer Expenditure and ACS 2010

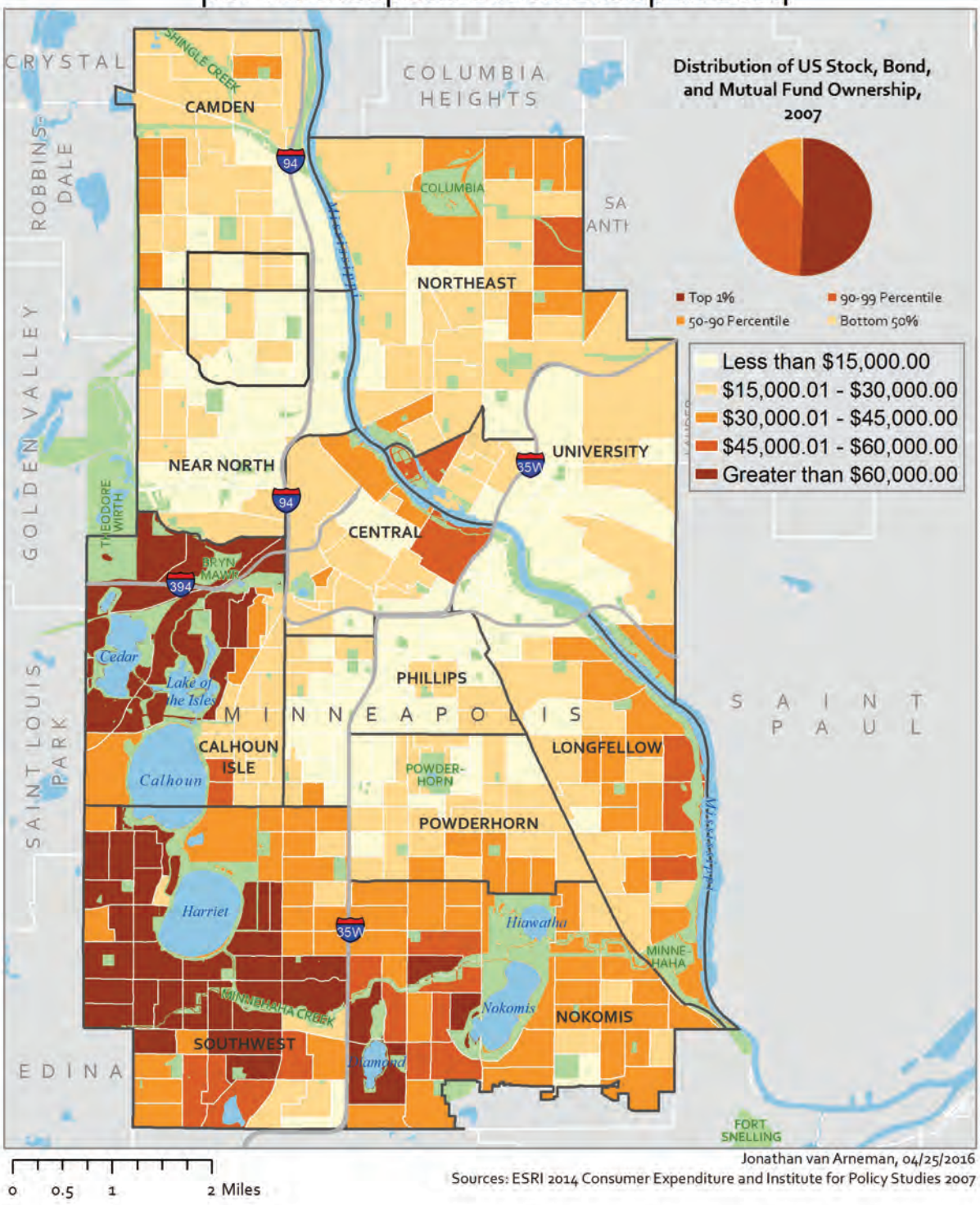
# Average Amount Contributed to Retirement Plans per Minneapolis Block Group in 2014




Jonathan van Arneman, 04/13/2016
Sources: ESRI 2014 Consumer Expenditure

3.3g

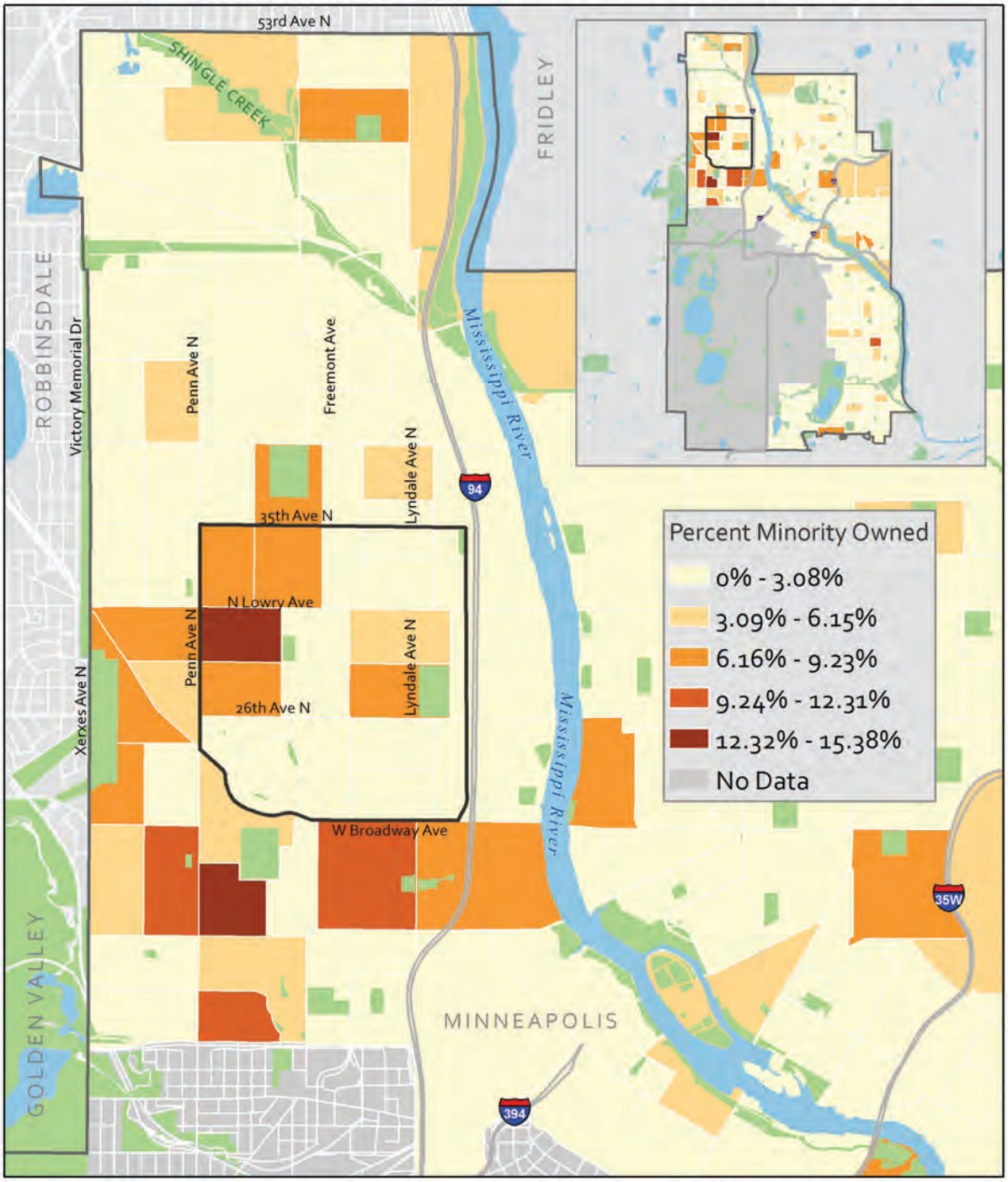
# Average Market Value of Stocks, Bonds, or Mutual Funds per Minneapolis Block Group in 2014




Jonathan van Arneman, 04/25/2016

Sources: ESRI 2014 Consumer Expenditure and Institute for Policy Studies 2007

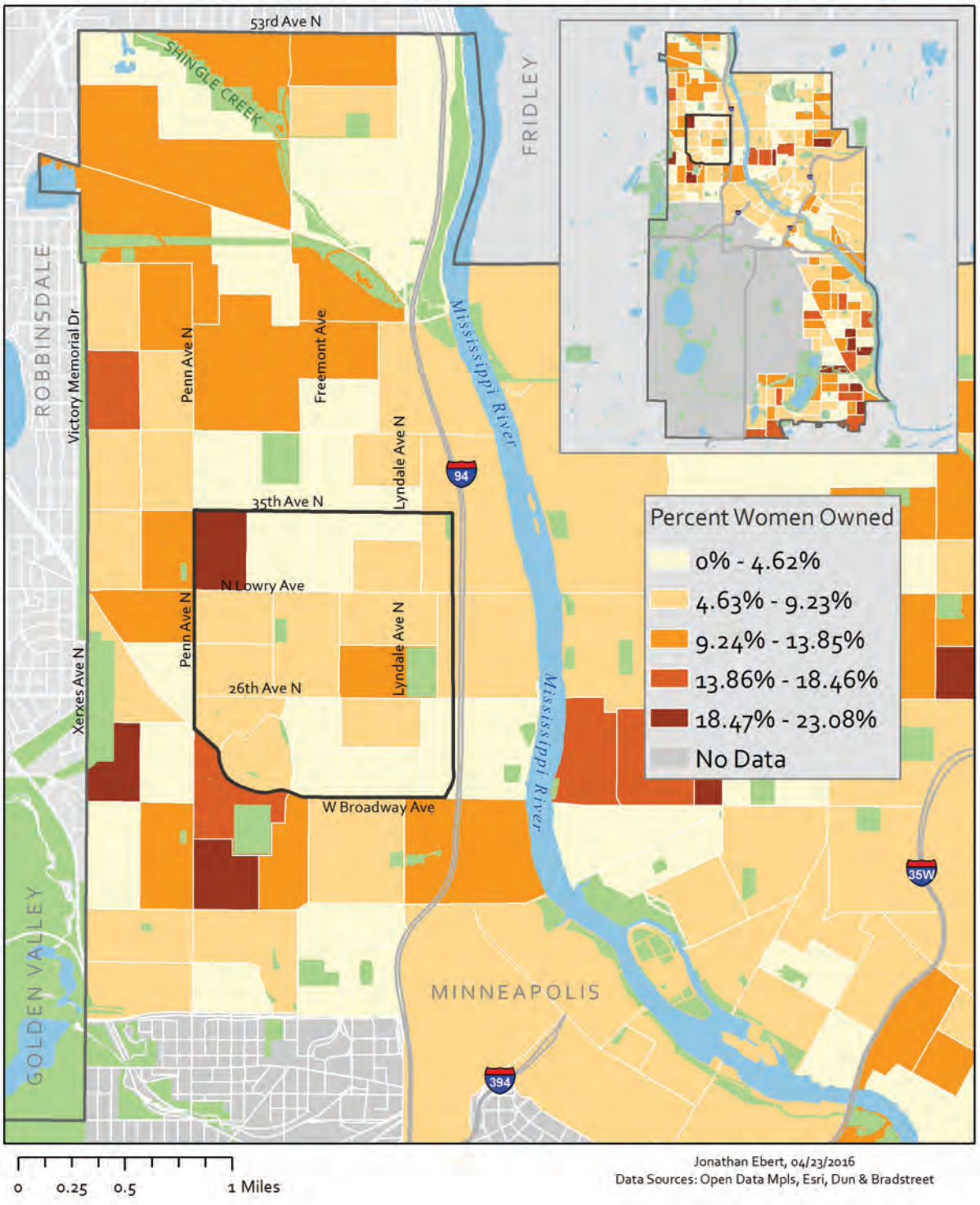
# Percent of Businesses Owned by Minorities by Block Group in North Minneapolis, 2013



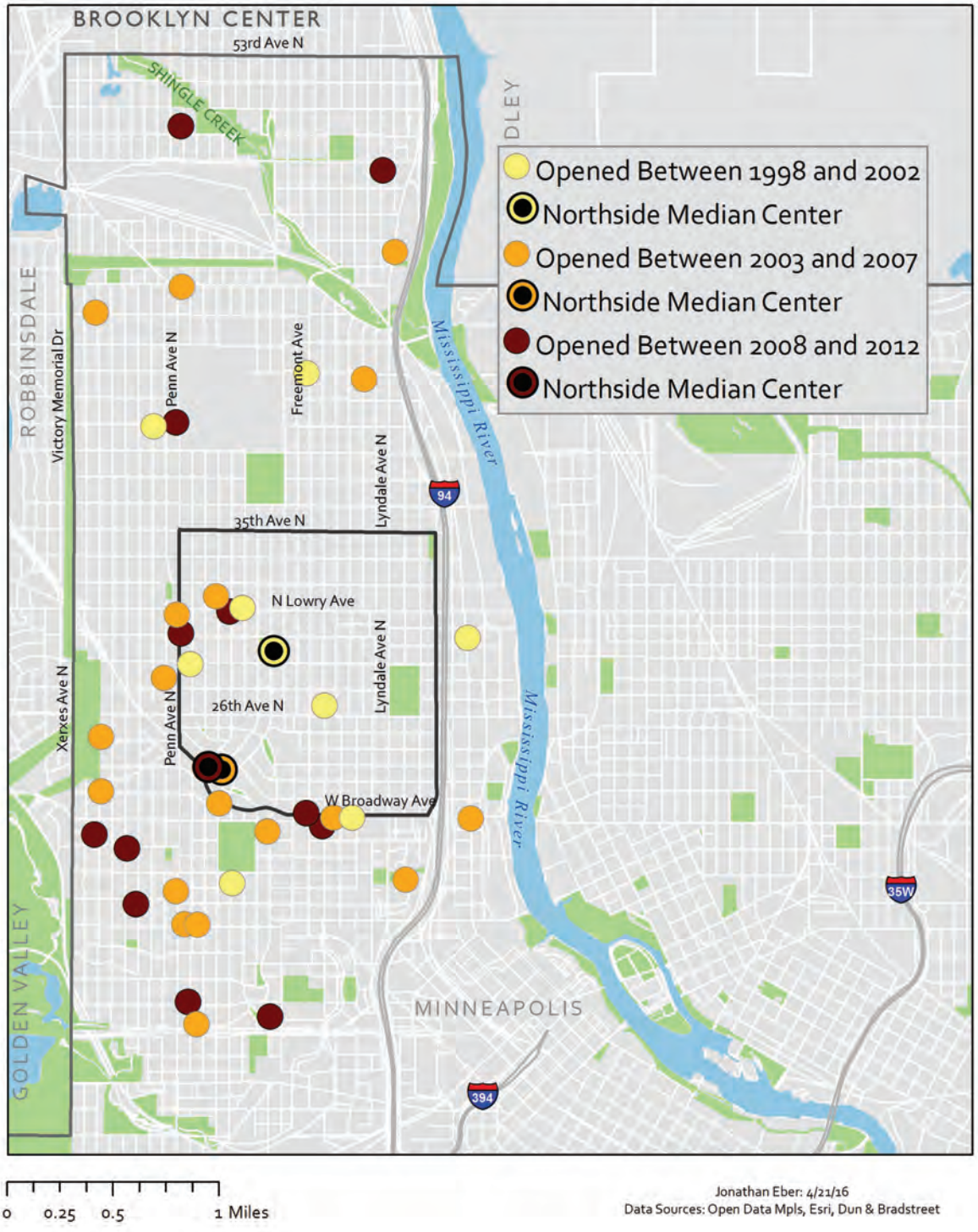

Jonathan Ebert, 04/23/2016
Data Sources: Open Data Mpls, Esri, Dun & Bradstreet

3.4b

# Percent of Businesses Owned by Women by Block Group in North Minneapolis, 2013

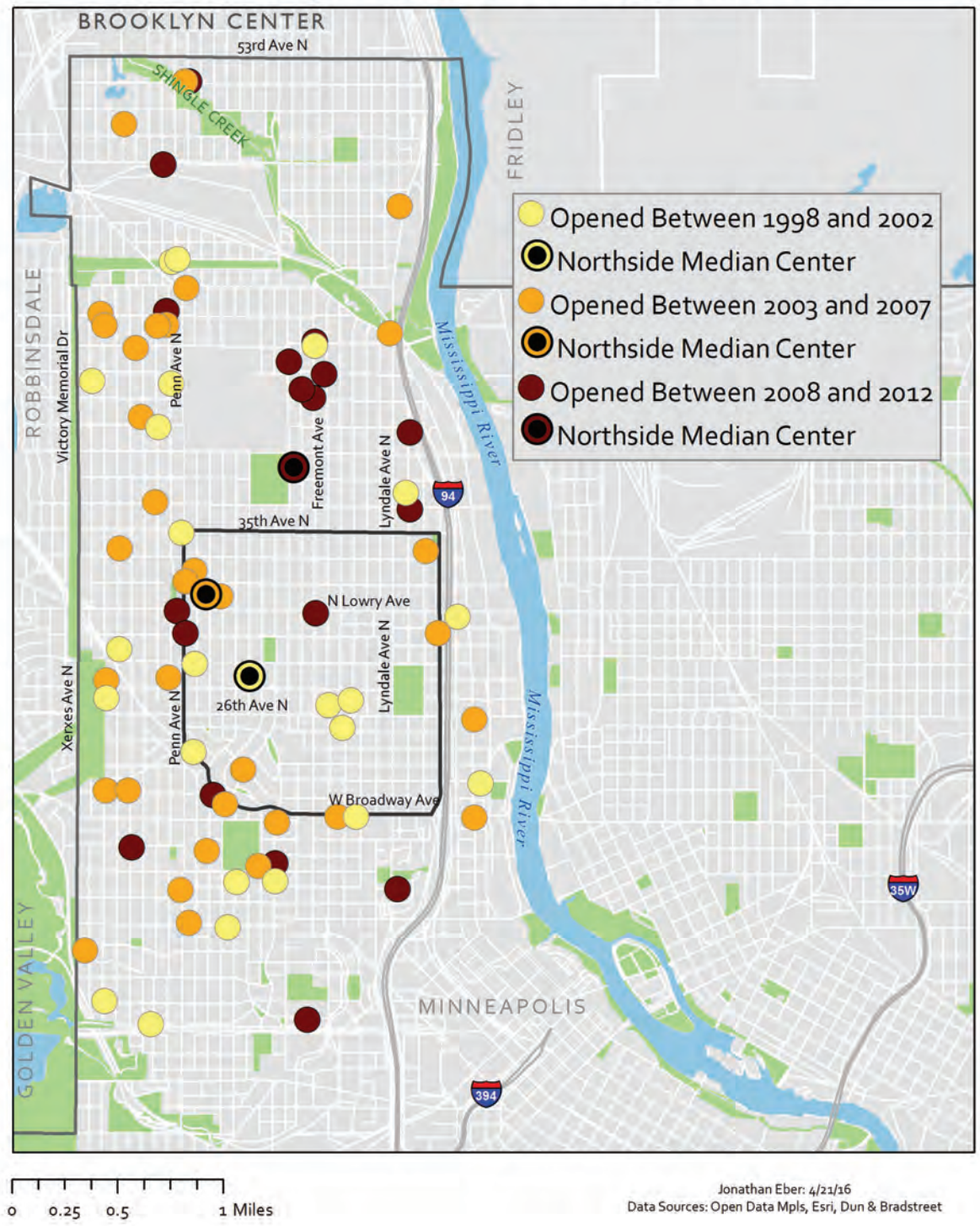


# North Minneapolis Businesses Owned by Minorities Opened Between 1998 and 2012

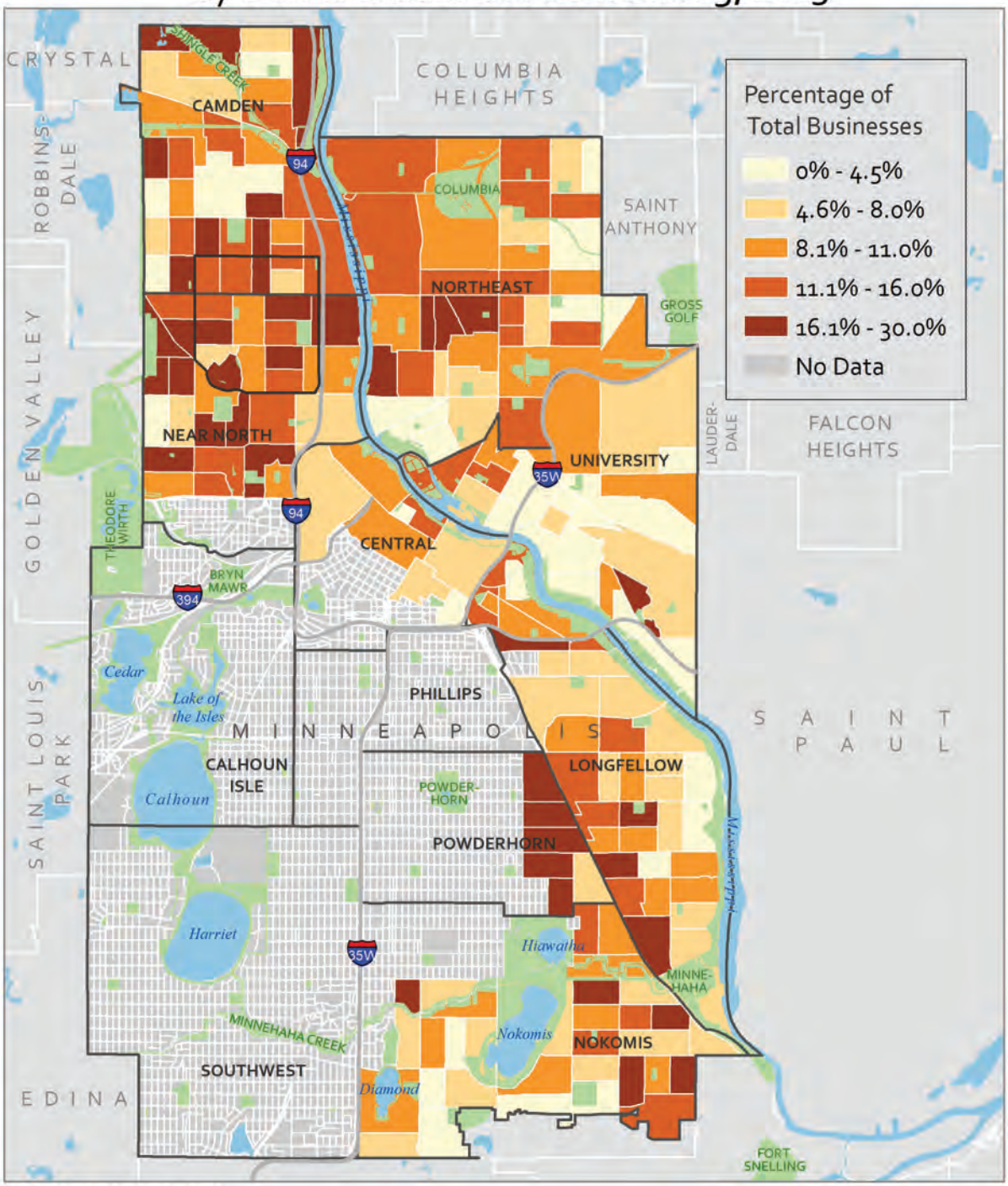


3.4d

# North Minneapolis Businesses Owned by Women Opened Between 1998 and 2012



# Block Group Rates of Businesses Categorized as 'High Risk' by Dun & Bradstreet's Screening, 2013



3.4f

# Clusters of Block Groups with Significantly High or Low Rates of Businesses Categorized as 'High Risk' by Dun and Bradstreet's Screening, 2013

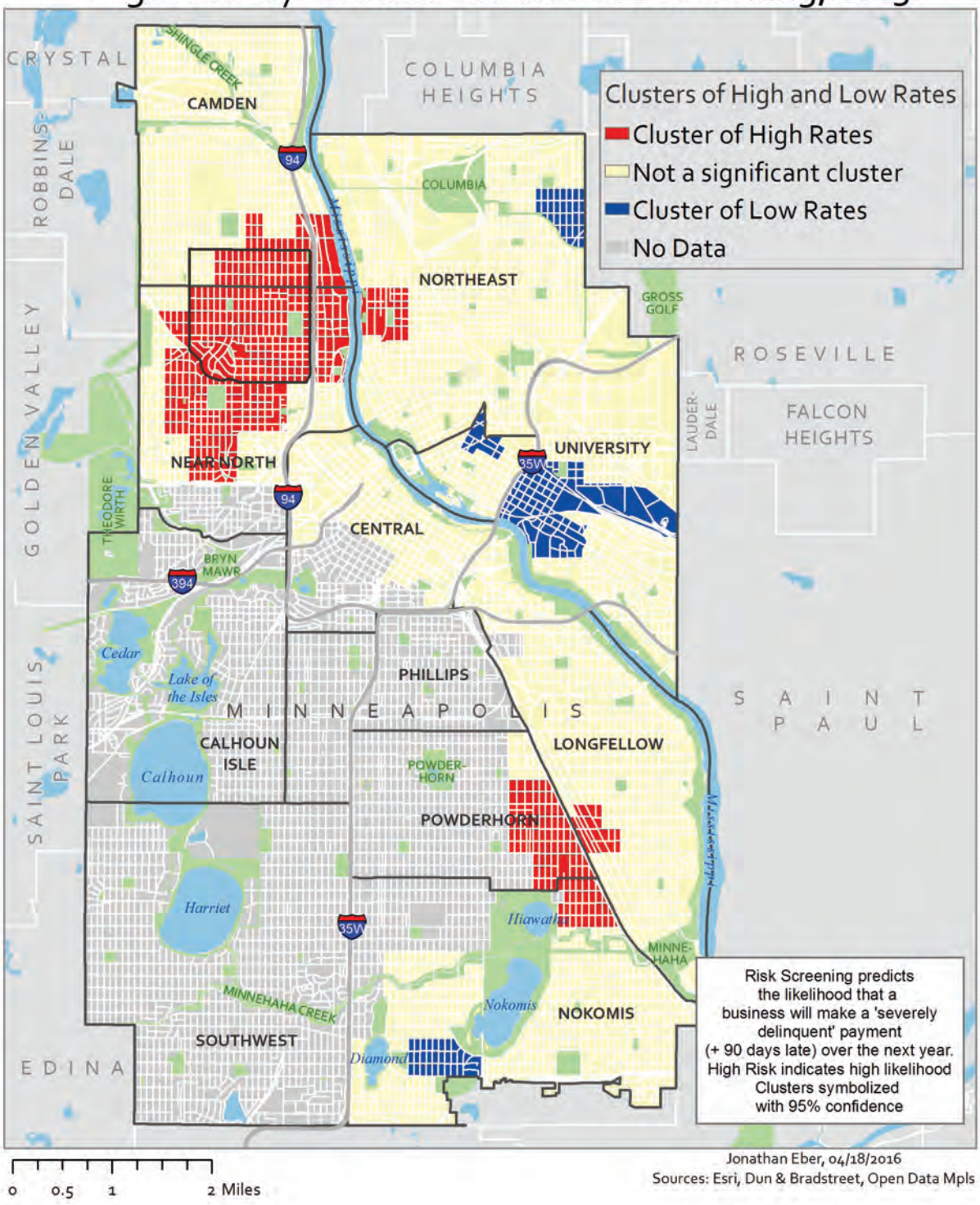


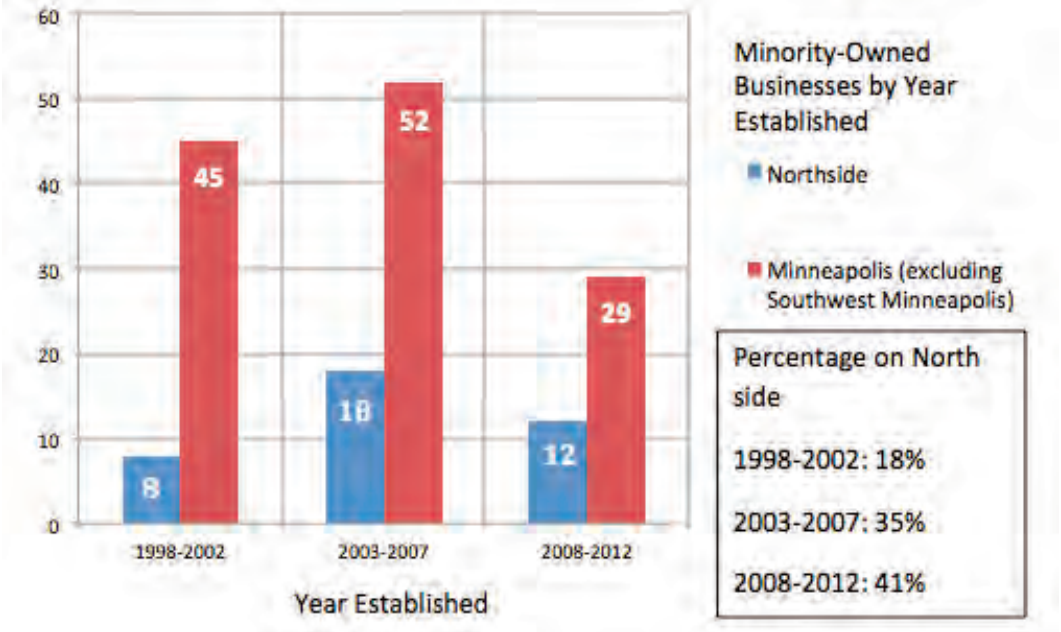
**Figure 4-e** shows the number of 'high risk' businesses as a percentage of total businesses in each block group. The Dun & Bradstreet information services firm uses statistical models based on a business' history to predict the likelihood that a business will make a loan or rent payment more than 90 days late. High risk is therefore a proxy for businesses that are 'very likely' to make this kind of payment. We see generally low rates near the University of Minnesota, and higher rates in both North Minneapolis and along Highway 55 in the Powderhorn, Nokomis, and Longfellow communities.

**Figure 4-f** uses the same data presented in **Figure 4-e** and maps the clusters of high and low rates (block groups with above-average or below-average rates of high-risk businesses located next to each other). This map shows that much of North Minneapolis contains block groups with above-average rates of 'high risk' businesses, the largest such cluster in the city. Another cluster exists in the aforementioned region of Longfellow, Nokomis, and Powderhorn. The region near the University of Minnesota has a cluster of block groups with below-average rates of 'high risk' businesses.

**Figure 4-g** presents in chart form the data on number of minority-owned businesses in North Minneapolis that was presented spatially in **Figure 4-c**. The chart compares these counts with the total numbers of new minority-owned businesses established in Minneapolis (excluding the areas of southwest Minneapolis missing from our dataset) to try to account for changes in economic trends and environments in the city. The figure also shows the percentage of newly- opened minority-owned businesses in the time period that are located in the Northside, from which we can see that the Northside accounts for an increasingly large percentage of the total as time goes by.

**Figure 4-h** presents in chart form the data on number of women-owned businesses in North Minneapolis that was presented spatially in **Figure 4-d**. The chart compares these counts with the total numbers of new women-owned businesses established in Minneapolis (excluding southwest Minneapolis) to try to account for changes in economic trends and environments in the city. The figure also shows the percentage of newly-opened women-owned businesses in the time period that are located in the Northside, and like the trend for minority-owned businesses, the

Figure 3.4-g



Northside accounts for an increasing percentage of the total as time goes by.

**Figure 4-i** presents the total number of Standard Industrial Classification (SIC) codes represented within various categories of business ownership. SIC codes can be used as a proxy for different major industrial and business sectors. On the assumption that women and minorities have fewer options in the types of businesses they can open, this figure attempts to investigate the presence of this phenomenon in North Minneapolis. The figure reveals that of the 68 different business types represented on the Northside (compared to 72 in the city of Minneapolis, and a total of 83 defined by SIC), women own only 36 different types, and minorities only 27. White-owned businesses cover every one of the 68 sectors, as do male-owned businesses. Businesses owned by an individual who identifies as both a minority and a woman cover only 15 sectors.

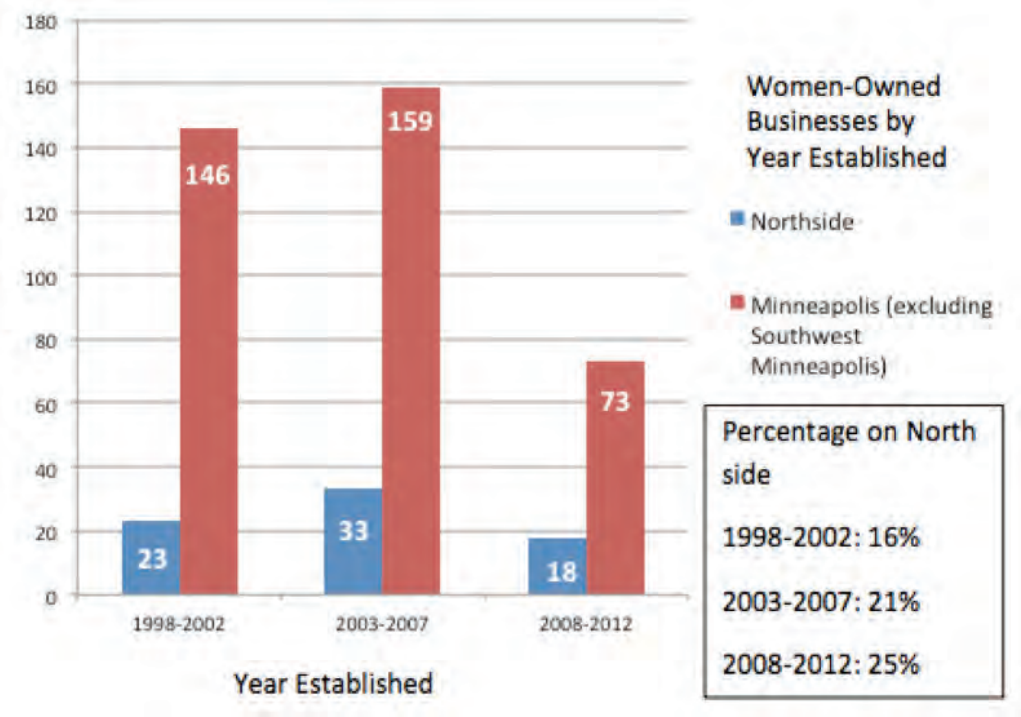
## Discussion

In regard to median household income, **Figures 1-a** to **1-f** highlight the Northside as an area with some of the highest concentrations of poverty in comparison to the rest of the city.

When analyzing **Figure 1-b**, which visualizes median household income of Black or African American alone householders in North Minneapolis for 1999, we found that many of the block groups were below the Minneapolis median. However, a small cluster of block groups in the northern part of the study area and a few scattered block groups fell above the city median. This 1999 visualization proves quite different from **Figure 1-e**, featuring median household income of Black or African American alone householders in North Minneapolis for the years 2009 to 2014. In **Figure 1-e**, nearly all of the block groups in the Northside exhibit household incomes for Black or African American householders to be less than the Minneapolis median, with only three block groups falling above the city's median. A similar trend occurs for the rest of Minneapolis, signifying that, over time, the financial vitality and stability of Black or African American households has worsened.

When analyzing the 1999 (**Figure 1-c**) and 2009 to 2014 (**Figure 1-f**) maps for White alone householders in North Minneapolis, we see an increase in disparity between the lowest and highest median household incomes. In the 2009 to 2014 map, we notice that there are more block groups in the southern and northeastern parts of Minneapolis that are visualized in purple than in the 1999 map, and that many of those that were previously only slightly above the overall median in the 1999 map are now much greater

Figure 3.4-h



than the overall median. Furthermore, it appears that, even though some data were missing in the 1999 map, a good portion of the block groups that were near Minneapolis' overall median (the middle category), were categorized as less than the city median by 2014 in Central and North Minneapolis.

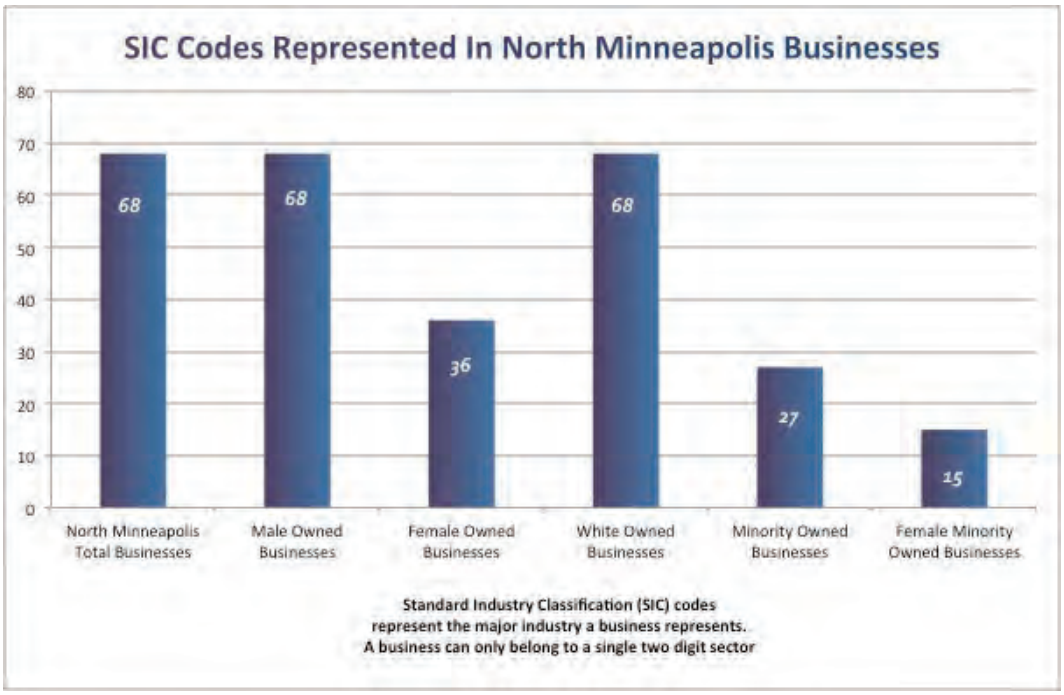
Consumer spending exhibits patterns much like those portrayed in the maps of median household income. In regard to percentage of income spent on owned dwellings (**Figure 1-g**), our map for the Northside shows higher percentages occurring mostly in the Camden neighborhood. For the rest of the city, the higher percentages spent on owned dwellings appear mainly along the outer edges of Minneapolis. Conversely, our map featuring percentage of income spent on rented dwellings (**Figure 1-h**) for the Northside displays the highest percentages clustered among several block groups in the southeastern corner. Looking at Minneapolis, the highest percentages spent on rented dwellings occur in the central and northern parts of the city with nearly the entire southern half of the city falling in the lowest category (less than 10%).

According to these maps, it appears that wealthier populations live in the southern half of Minneapolis, a finding that aligns with our median household income maps. It is possible that because these populations have higher incomes, they spend smaller percentages of their income on rent. These maps could also indicate that fewer people in this area rent, but rather own their dwellings.

As for our map indicating percentage of income spent on college tuition (**Figure 1-i**), a few block groups located in the southeast corner of the Northside display the highest percentages spent on college tuition. For Minneapolis, the central and eastern parts of the city contain clusters of block groups featuring relatively high percentages of income spent on college tuition.

The spatial patterns regarding median household income in the Northside greatly correlate with patterns of employment. Employment landscape and conditions were examined through various lenses such as employment status based on age or gender, percentage distribution of full-time workforce between males and females, and factors of accessibility to workplace from worker residences (e.g. distance and means of transportation). The spatial patterns manifested through the comparison of the Northside and greater Minneapolis for each of the factors that contribute to the region's employment landscape reinforce conditions of socio-economic disparities that have very much been recognized throughout this report.

Figure 3.4-i



In the unemployment map (**Figure 2-a**), for example, there is undisputedly a greater percentage of unemployed people in the Northside compared to the rest of Minneapolis. In contrast to the significantly high unemployment rate in the Northside, we can see in employment data with gender implications (**Figures 2-b** through **2-d**) that the employment landscape has improved in terms of distribution of jobs between genders, especially for females. It is evident that among those who are employed full-time, the percentage of full-time female workers steadily increased in the Northside, and the gender gap has become narrower now than in 2009. The results regarding full-time employment status between genders, however, may also suggest that many females are working full-time out of financial necessity rather than by choice (**Figure 2-d**).

It is perhaps unsurprising to note, in maps that show the availability of employment opportunities, locations of workplaces, and the circulation of employers and employees in a given location (**Figures 2-e** through **2-i**), that there is a dramatically greater density of jobs in downtown Minneapolis and an especially prominent lack of employment opportunities in the Northside (**Figure 2-h**). Such a pattern, in conjunction with the workflow diagram (**Figure 2-i**), suggests that residents of the Northside are not only restricted in terms of exposure to various employment opportunities, but also that employers located within the Northside are not actively implementing and integrating local labor.

For banking and investment activities, all of our maps follow similar distributions with disparities between North Minneapolis and South and Southeast Minneapolis. Not surprisingly, the maps for checking accounts (**Figure 3-a**) and savings accounts (**Figure 3-d**) closely mirror the median household income map (**Figure 1-a**). If we use household income, checking accounts, and savings accounts as proxies for job quality and standard of living, from **Figure 3-e** we can deduce that there is a lack of quality jobs for North Minneapolis residents, especially minority residents, and there is a lower standard of living in the Northside than in the rest of Minneapolis. Low wages and an overall lack of jobs perpetuate low retirement contributions (**Figure 3-f**) and low investment activity (**Figure 3-g**) which in turn disadvantages North Minneapolis residents not only in the present but in the future. Stocks, bonds, mutual funds, and savings accounts can be used as measures of wealth to some extent. One of the major ways that wealth is accumulated is through inheritance and so foregoing investments in the present not only causes present wealth gaps but generational wealth gaps as well.

In terms of business development, there is not a striking deficit of inclusive business development in the Northside as compared to the rest of the city. The Northside contains two block groups with the highest percentage of minority-owned businesses anywhere in the city (**Figure 4-a**). However this figure stands at just over 12%, and these block groups are majority-minority resident population, reflecting a disparity between the racial makeup of the community and the diversity profile of business ownership. Additionally, several block groups along West Broadway Avenue have minority-owned business rates below the city's average of 3.2%.

There does not appear to be any significant clustering of block groups with high percentages of women-owned businesses across the city, including in the Northside (**Figure 4-b**). Generally, women-owned business rates are higher than minority-owned business rates across the city.

In the two time periods in which NAZ or a NAZ precursor was present in the community, a larger percentage of newly-opened women- or minority-owned businesses were located in North Minneapolis as compared to the earlier time period (**Figures 4-g** and **4-h**). This may reflect a more inclusive business environment, although women and minority business owners in the city are involved in a much more limited number of industrial sectors than are present overall (**Figure 4-i**).

High-risk businesses exist across the city, but North Minneapolis has a large cluster of block groups with above-average rates, whereas Dinkytown and Marcy-Holmes have a cluster of lower rates. We conducted a regression analysis on these rates to further explore the correlation of minority population presence and the rate of high-risk businesses. Using percentage minority population by block group as the independent variable and percentage high-risk businesses as the dependent variable, the analysis found with statistical significance that 15.1% of total variation in high-risk business rates is influenced by the percentage minority population per block group. The regression coefficient is positive, meaning there is a positive correlation between rates of high-risk businesses and rates of minority population.

## Conclusions

Through the maps of median household income, we confirm that the Northside is an area with high concentrations of poverty amongst all races, but most prominently among Black or African American householders. These maps, although maybe not surprising in their results, may prove useful to NAZ by portraying the spatial distribution of the range of incomes present in the Northside. The maps highlight specific block groups most in need of NAZ's services, allowing NAZ to more efficiently target aid to the Northside community and thus, come closer to reaching its goal of closing the achievement gap.

There is a general lack of job opportunities that actively integrate the local workforce in the Northside. Even though over 11,000 jobs are located within the Northside, the job market is predominantly employing outside labor as only 770 of those jobs are filled by residents of the Northside (Figure 2-i). This may reflect a mismatch of skills and/or the inability of residents to pursue job training or education because of financial and time constraints. The high unemployment rate in the Northside and the spatial mismatch of job density across Minneapolis necessitates the continuation of NAZ's efforts in helping families in the Northside achieve financial stability in long term. It particularly highlights the need for programs that can help disadvantaged populations enter the labor force. In addition, NAZ can further assist both unemployed and low-paid workers by connecting with programs that aim to upgrade existing skills and talents. Such efforts would not only involve increasing program accessibility to marginalized populations, but also reaching out to local businesses to identify specific skills and training desired among job applicants. By directly communicating the demands that are present in the local labor market, NAZ can assist its families to become active participants of the local economy and to achieve greater economic stability.

The relatively greater percentage of the full-time workforce that is female in the Northside reasserts the financial necessity of full-time employment for women as primary household earners. We conclude that the overlap in the spatial concentration of female householders with children in the Northside and the higher percentage of full-time workforce that is female is a pattern not to be overlooked. By taking on full-time employment, females with children are compromising time – a crucial resource as a parent – to provide financial support for their families. This supports NAZ's multigenerational approach in reaching families in need of assistance, further supporting the continuation of programs such as parent classes through the NAZ Family Academy and the mentor match program. Programs with added focus on assisting single mothers through various challenges are necessary in helping them to achieve long-term financial and household stability.


Photo credit: NAZ

The racial concentration of poverty present in the Northside continues to worsen over time. Savings activity and responsible personal financing should be encouraged and supported, especially amongst minority residents. Extra attention should continue to be devoted to the connection between racial and economic disparities present in the Northside.

Along the lines of business development, qualitative research into the effects of the 2008 financial crisis on the Northside may be telling. Fewer businesses were established in both the Northside and the greater city of Minneapolis from 2008-2012 than from 2003-2008 or 1998-2002, yet a larger proportion of newly-opened minority- and women-owned businesses from 2008-2012 were located on the Northside than ever before. A qualitative narrative may help to explain these changes.

Although the Northside has exhibited increasing business inclusivity over time, delinquent loan and rent payments remain an issue. Longevity in businesses and business life cycles should be monitored in the Northside, with specific attention being paid to minority-owned businesses. Additionally, this study affirms the perception that because of "male dominated" sectors, women and minorities have fewer options when it comes to establishing businesses. Further research into the implications of this problem, and attempts to mitigate it may prove useful.

Lastly, in the city of Minneapolis and in the Northside, the rate of minority population at the block group level affects the rate of high-risk businesses. Therefore, special attention should be given to businesses located within high minority population areas, as these businesses may provide an economic anchor for a disadvantaged community while at the same time being vulnerable to the adverse effects of structural racism.

# Section 4: Health

Gabrielle Anderson—Emma FitzGerald—Joshua Koh—Jacob Ramthun

## Introduction

This chapter is focused on health in a broad sense, looking at social indicators of health in the Northside. The indicators we chose to analyze attempt to provide a wide-reaching and well-rounded approach to community health. The subject of community health can be problematically broad and nebulous, and thus our approach was to conceptualize the issue as one of long-term socioeconomic resilience, a definition that permits a more grounded and focused lens. Because the Northside Achievement Zone is invested in the success of families, our analysis places priority on issues that are of concern to families, particularly young people.

We tackle this mission by focusing on four areas that we believe are central to establishing an environment for healthy growth and development at a neighborhood scale:

- How accessible is public transit?
- How accessible is healthcare in the Northside?
- What are the spatial patterns of crime and safety?
- What type of food access is there in the Northside?

In the following sections, we answer these questions and explain their individual contributions to making the Northside a healthier community.

## Transportation

Access to public transit provides an affordable and consistent form of mobility for residents who don't own a car, and reduces the necessity of owning one. Additionally, the presence of diversified modes of transportation has been shown to increase the economic resilience of individuals and communities by reducing living costs. The data used in mapping public transit in Minneapolis came from OpenData-Minneapolis and the Metropolitan Council, both reliable data sources for the Minnesota geospatial community.

**Figure 1** is a map of transit centers in Minneapolis. The Metropolitan Council Transportation Policy plan defines a transit center as: "A transit stop or station at the meeting point of several routes or lines or of different modes of transportation. It is located on or off the street and is designed to handle the movement of transit units (vehicles or trains) and the boarding, alighting, and transferring of passengers between routes or lines (in which case it is also known as a transfer center) or different modes (also known as a modal interchange center, intermodal transfer facility or an hub)." These points are nodes for commuters, crucial for travel to all parts of the city. **Figure 1** shows no transit centers in Near North or Camden, which leaves the Northside without a well-placed transportation node for business owners and employees, as well as residents who travel to all parts of the city.

Vehicle access rates provide an understanding of the physical mobility of Northside residents in comparison to residents across the rest of the city. Mobility can generally be defined as the ability to move a person or thing from one place to another. While high mobility may seem necessary for a person or community this is only fully true as it relates to accessibility, accessibility being defined in a general sense as ease of access or interaction (Handy, 2002). So if a community has low mobility this may not be a problem if necessities and amenities such as schools, parks, grocery stores, and hospitals are easily accessible (e.g., within walking distance). In American cities, accessibility by foot has generally been the exception rather than the rule as communities are built to be car-dependent (Handy, 2002). Thus, vehicle access, in tandem with public transportation, indicates both the physical mobility of the community and the accessibility of goods and services. This issue is reinforced by the analysis of food deserts later in the chapter.

Vehicle ownership data is collected by the U.S. Census through the American Community Survey (ACS) on an annual basis. The ACS surveys a small percentage of the American public at random every year. The data on vehicle ownership is aggregated from the years 2010 to 2014 but still comprises a rather high margin of error thanks to the small sample size of the collected data. The ACS asks respondents the question "How many automobiles, vans, and trucks

of one-ton capacity or less are kept at home for use by members of this household?" and instructs them to answer by telling them to "Include company cars, vans or SUVs (including police cars and taxicabs) and company trucks of one-ton (2,000 pounds) capacity or less that are regularly kept at home and used by household members for nonbusiness purposes. DO NOT count cars or trucks permanently out of working order, or motorcycles or other recreational vehicles." **Figure 2** maps the percentage of people who have indicated access to at least one of the ACS-listed vehicles.

**Figure 2** shows a pattern of vehicle access in which the Northside ranks considerably lower than the rest of the city, especially as compared to the Southwest, Nokomis, and Calhoun-Isle neighborhoods where access to a vehicle reaches nearly 100%. Only downtown Minneapolis has rates similar to the Northside, and this is almost assuredly due to availability of public transportation (as can be seen in **Figure 4**) and higher accessibility of goods and services in the center of the city. Across the Northside, vehicle access is uneven as parts of the Camden community with larger white populations have higher rates of access, reaching as high as 80% to 90% in the far northwestern portion. Conversely, the highly African American/Black areas of Near North have the lowest rates of access, reaching as low as only 20% to 35% in some areas.

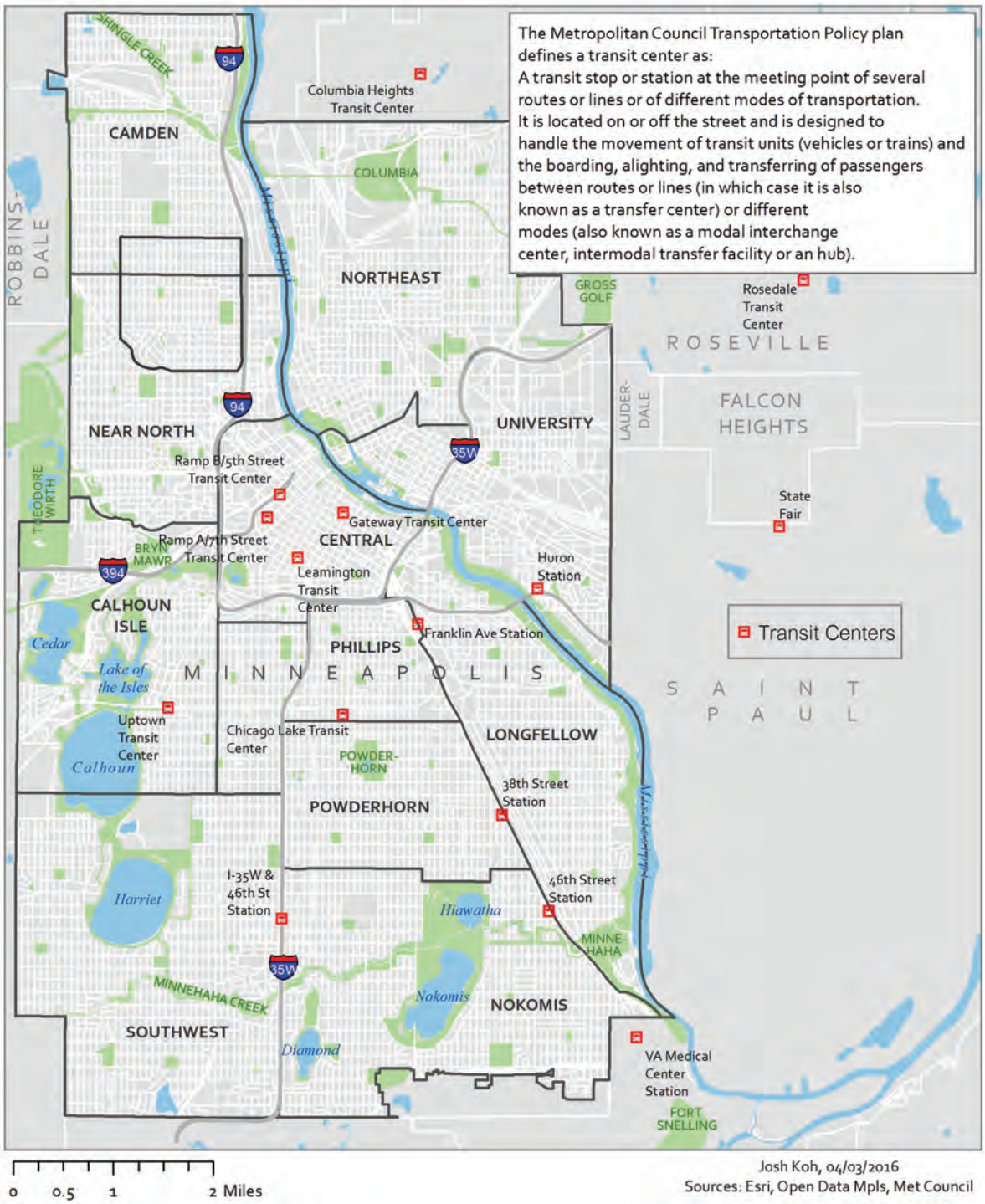
When considered in tandem with the issue of access to public transportation, this issue of lower vehicle availability creates a picture of low mobility on the Northside. This is especially problematic when considering the uneven distribution of goods and services across the city – as this often leaves the Northside under-served (e.g. the high prevalence of food deserts in the area). While an immediate solution may involve increasing car ownership or car-sharing, fixing this problem of low mobility and poor accessibility on the Northside may require long-term action around the structural inequalities in infrastructure and basic needs that are pervasive on the Northside (Handy, 2002).

**Figure 3** shows the percentage of workers by block group that utilize public transportation as their primary means of commute between residence and workplace. It is evident that there is a greater cluster of public transit users in the Near North, Central, and Phillips communities, whereas block groups in the communities of Calhoun-Isle, Southwest, and even parts of Camden have the lowest rates of public transit users per block group. Such a spatial distribution corresponds directly with light rail routes, which do not extend beyond Target Field (located just south of the Near North community).

Besides downtown Minneapolis, it is clear that public transit is the primary means of travel to work

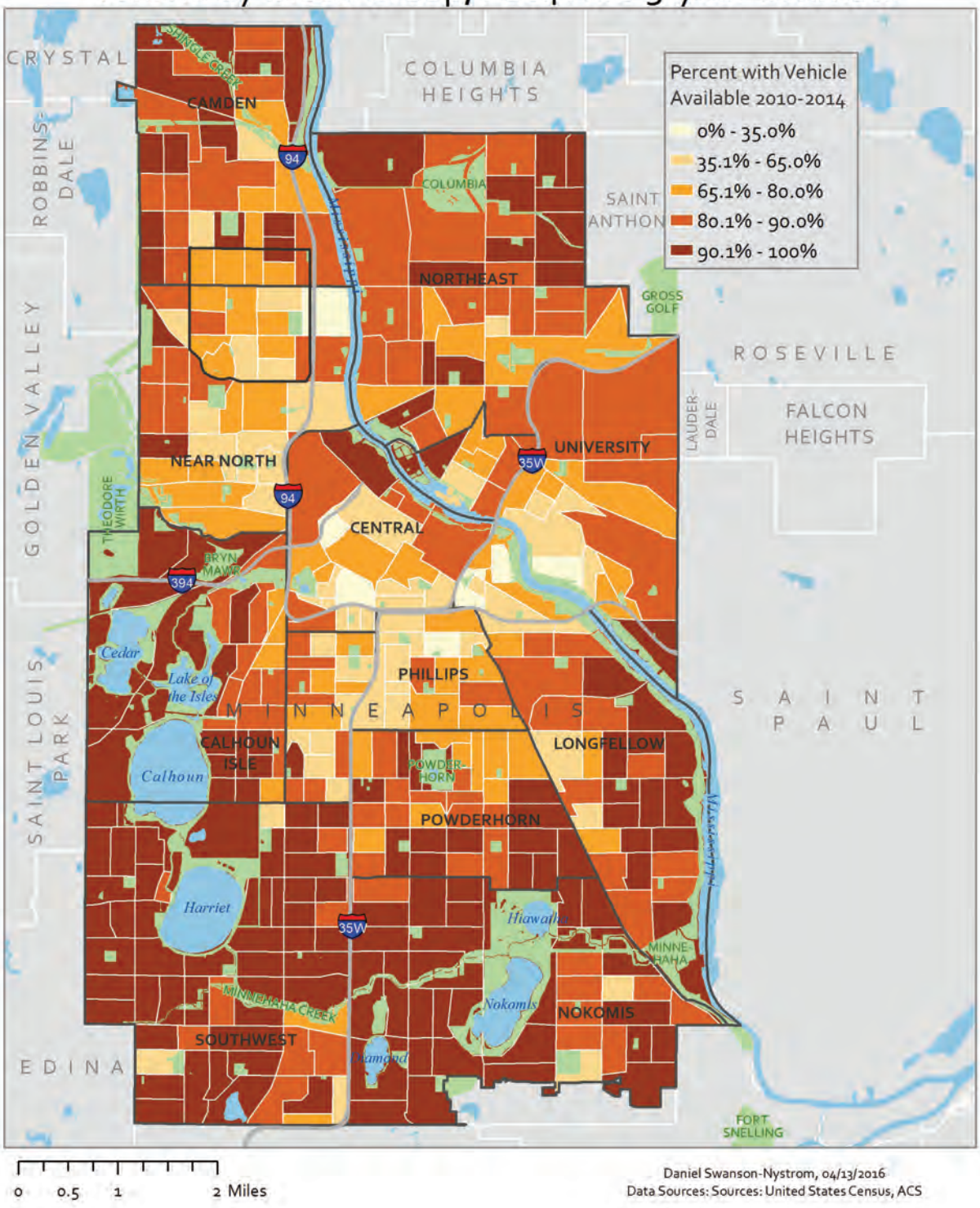

**Photo credit: Laura Kigin**

# Transit Centers, 2012

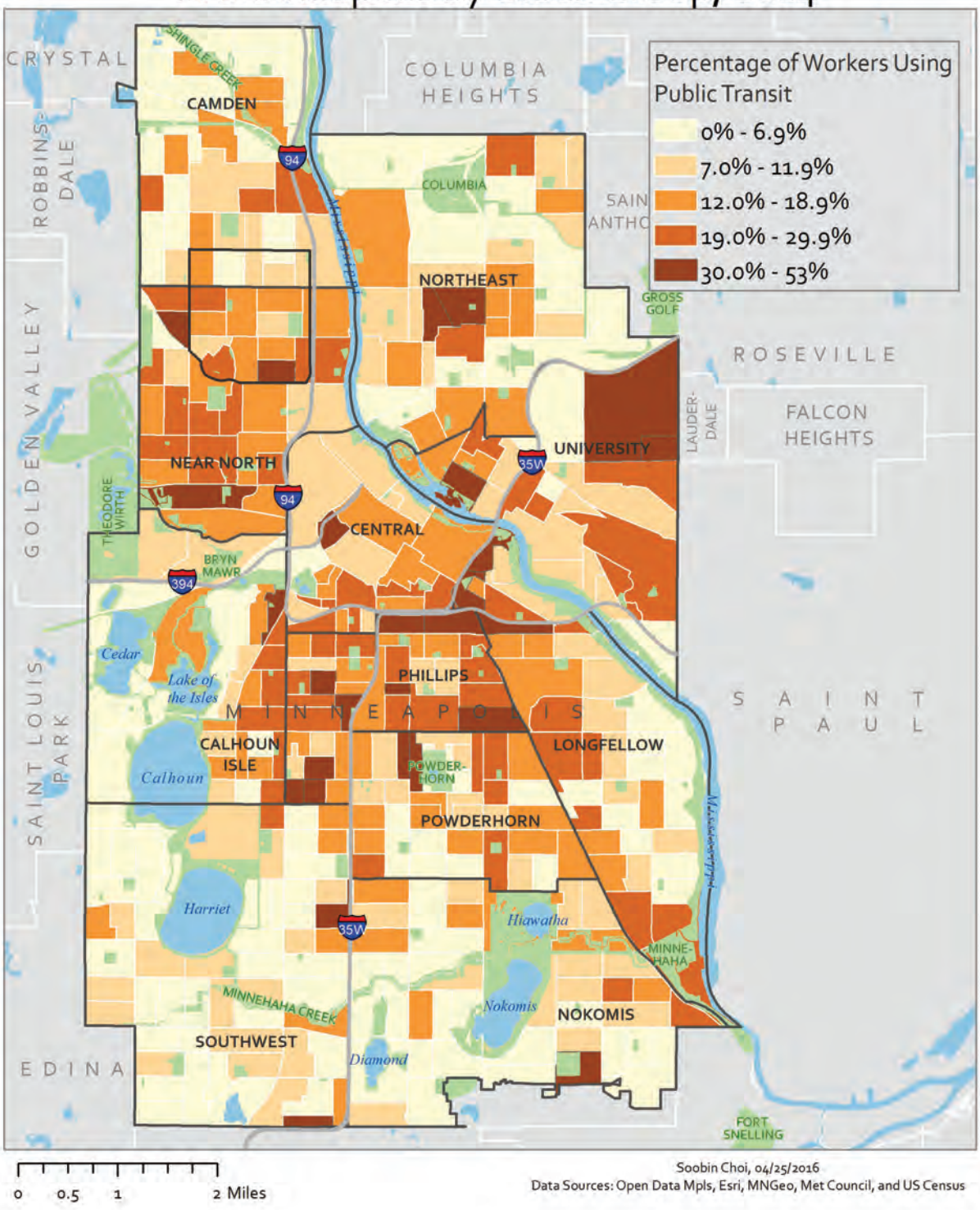


4.2

# Percent of Population with at Least One Available Vehicle by Block Group, 2014 ACS 5-year Estimate



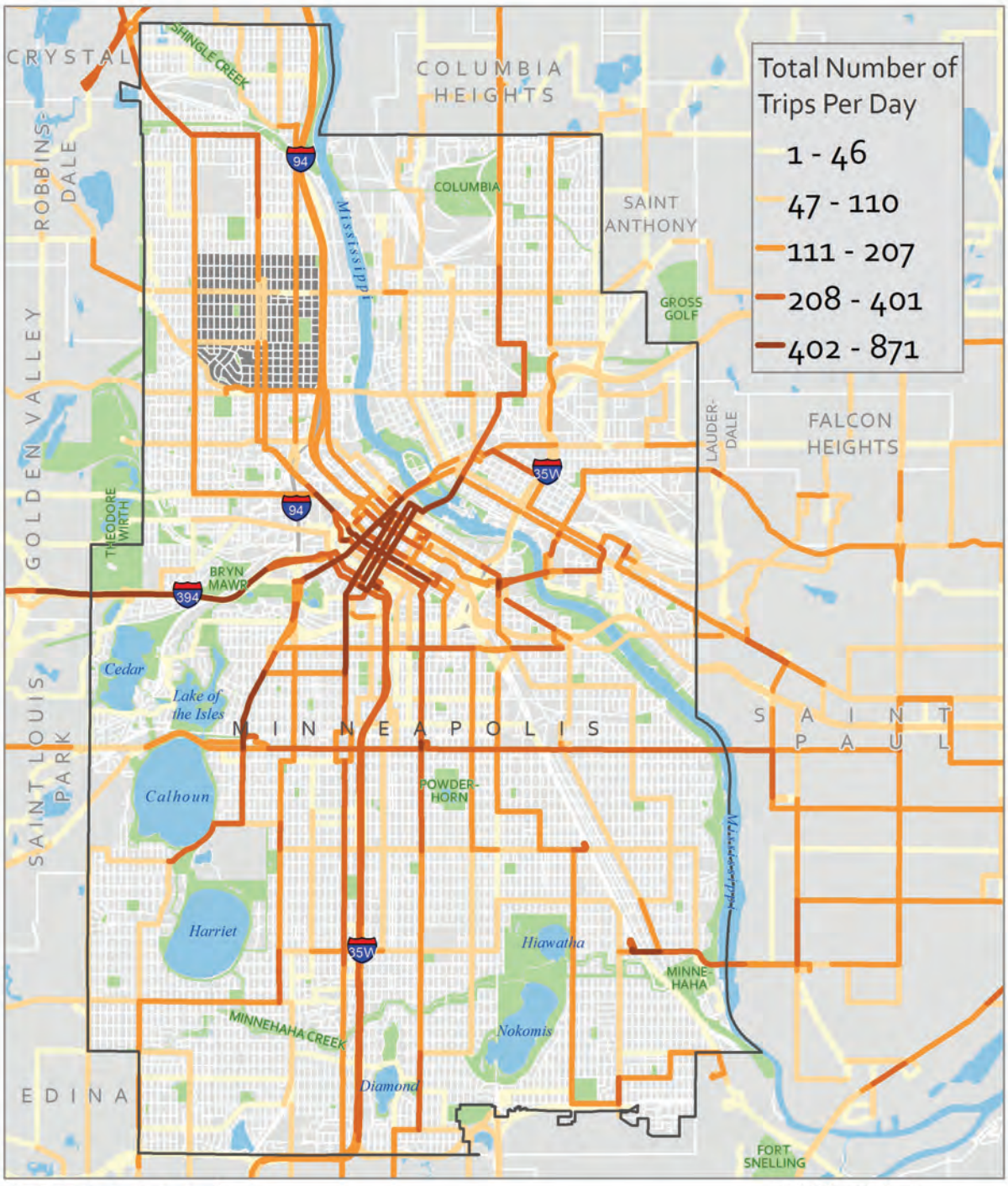
# Public Transportation as Means of Commute to Work in Minneapolis by Block Group, 2014




Soobin Choi, 04/25/2016
Data Sources: Open Data Mpls, Esri, MNGeo, Met Council, and US Census

4.4

# Transit Frequency in Minneapolis by Road Segment, 2014



for many workers residing in Near North and in the Northside Achievement Zone – the vast majority of whom work outside of the Northside community. The fact that the frequency of public transit in the Northside is much lower than it is downtown reasserts the physical barriers that Northside residents face when accessing workplaces.

Transit route and trip data was used to create **Figure 4**, which demonstrates the lack of accessible transit in the Northside. As can be seen from the map, there are not as many transit routes serving the Northside as other parts of the city, and those routes that do serve the Northside run less frequently than other routes in the city. It is also important to note that there is no Light Rail service to the Northside. Along with the high percentage of public transit users in the area and the low rates of vehicle access, these variables illustrate a troubling disadvantage for Northside commuters.

## Food Access

Regular access to nutritious food is an important consideration for the work of the Northside Achievement Zone program because it is crucial to early childhood development. Hunger has a proven influence on school performance, and unhealthy eating habits in early childhood can have longitudinal detriments to health later in life. Healthy eating in adulthood leads to lower risk for diet-related illnesses (e.g. diabetes, heart disease), fewer sick days, and better quality of life. For these reasons, food access is included in this report as a crucial element in creating a healthy community.

### Data Sources and Definitions

All data for the food desert maps come from the 2013 U.S. Department of Agriculture (USDA) Food Access Research Atlas. This atlas provides a nationwide overview of food access indicators at the census tract level, and makes the data available for free online. According to this source, there are many ways to define a food desert, but these were narrowed down to two for this project. One definition considers distance, defining a food desert as "A low-income tract with at least 500 people or 33 percent of the population living more than 1 mile...from the nearest supermarket, supercenter, or large grocery store," (p. 6) while the other definition takes vehicle availability into account: "A low-income tract in which...at least 100 households are located more than ½ mile from the nearest supermarket and have no vehicle access..." (p. 7).

Both of these descriptions specify that the tract must be low income in order to be considered a food desert. The definition of low income used in the USDA atlas comes from the U.S. Department of Treasury's New Markets Tax Credit Program, and states that:

- the tract's poverty rate is greater than 20 percent; or
- the tract's median family income is less than or equal to 80 percent of the statewide median family income; or
- the tract is in a metropolitan area and has a median family income less than or equal to 80 percent of the metropolitan area's median family income (USDA, 2013, p. 1).

These two definitions were chosen because they are most appropriate for our study. The distance-focused definition is used by the USDA and Economic Research Service (ERS) to inform economic and policy decisions. However, the vehicle-focused definition is arguably more realistic. Carrying groceries more than a half-mile, especially in the winter, is burdensome for anyone and impossible for some, and paying to take public transportation short distances may not be worth it. Paired together, the two definitions provide a realistic view of the food desert situation in Minneapolis.

Some primary data collection was necessary for the maps of Northside food vendors. The goal was to find "healthy food choices," which are described by the City of Minneapolis as "a full service grocery store, enhanced corner store,...farmers market, or community garden" (City of Minneapolis, 2013). Food shelves participating in a city-wide effort to increase healthy foods were added to the group.

In order to find grocery stores, data was taken from the City of Minneapolis "Mapping of 2011 Food System Data" report. These grocers are triple-licensed, meaning they are licensed to contain a meat market, full grocery, and deli/food manufacturer under one roof. These are large supermarkets that carry a variety of products, like Cub Foods. After observing that not all of the Northside grocery stores that carry fresh foods were included in the City report, two more grocers were added (Aldi and So Low).

Enhanced corner store locations were found through the Minneapolis Health Department Healthy Corner Store program website. This program came out of

recognition that Minneapolis residents are not consuming enough fruits and vegetables on a daily basis, and that this is disproportionately true for communities of color. Because corner stores are often more plentiful and accessible than a grocery store or farmers market, the city focused on these retailers that carry other every-day staples. The program sought out corner stores in low-income areas and helped them increase and display healthy foods. The corner stores featured in this chapter joined the initiative in 2011, 2012, and 2013.

Farmer's market locations were found on the Homegrown Minneapolis section of the City of Minneapolis website. They are the farmers markets that were active over the summer of 2015.

The community garden locations were found on the Gardening Matters website, which is an organization that supports community gardening in the Twin Cities. There are over 275 community gardens in Minneapolis, and the addresses are not formatted within a digital spreadsheet. Given time limitations, only the 33 community gardens within the Northside are included in this study. It is also important to consider that these are only the gardens that Gardening Matters is aware of, and further, these represent only the gardens that allow the organization to share their address online. There may be more gardens on the Northside that are not shown in the following maps.

The food shelves included in this project are all participants in a program similar to the Healthy Corner Stores program, called the Minneapolis Healthy Food Shelf Network. This network also operates under the Minneapolis Health Department. It is a collection of food shelves and hunger relief organizations that are working to:

1) Access high-quality, fresh produce and healthy items from farmers markets, community gardens, and retail food stores;

2) Educate clients about healthy food options; and

3) Develop messaging to encourage everyone to donate healthier food items (Minneapolis Healthy Food Shelf Network).

The locations of these food shelves were found on the Healthy Food Shelf Network website.

All of these food vendors work together to show a picture of the healthy food choices across Minneapolis and the Northside. The accuracy of this data depends on the accuracy of the addresses collected by the various entities referenced above.

## Maps and Analysis

The food desert definition used by the ERS Healthy Food Financing Initiative (HFFI) Working Group designates 11 Minneapolis census tracts as food deserts (see inset map, **Figure 5**). Six of these tracts are within the Near North and Camden communities, meaning 54.5 percent of Minneapolis food deserts are within an area that takes up only 17.4 percent of the city's land area. Even using this definition, which is less constrictive than the second definition used in this report, the majority of food deserts are in the Northside.

Zooming in to the Northside alone, about 6 percent of NAZ participant families are living in a food desert by this definition (**Figure 5**). There are no food deserts in the zone by this definition.

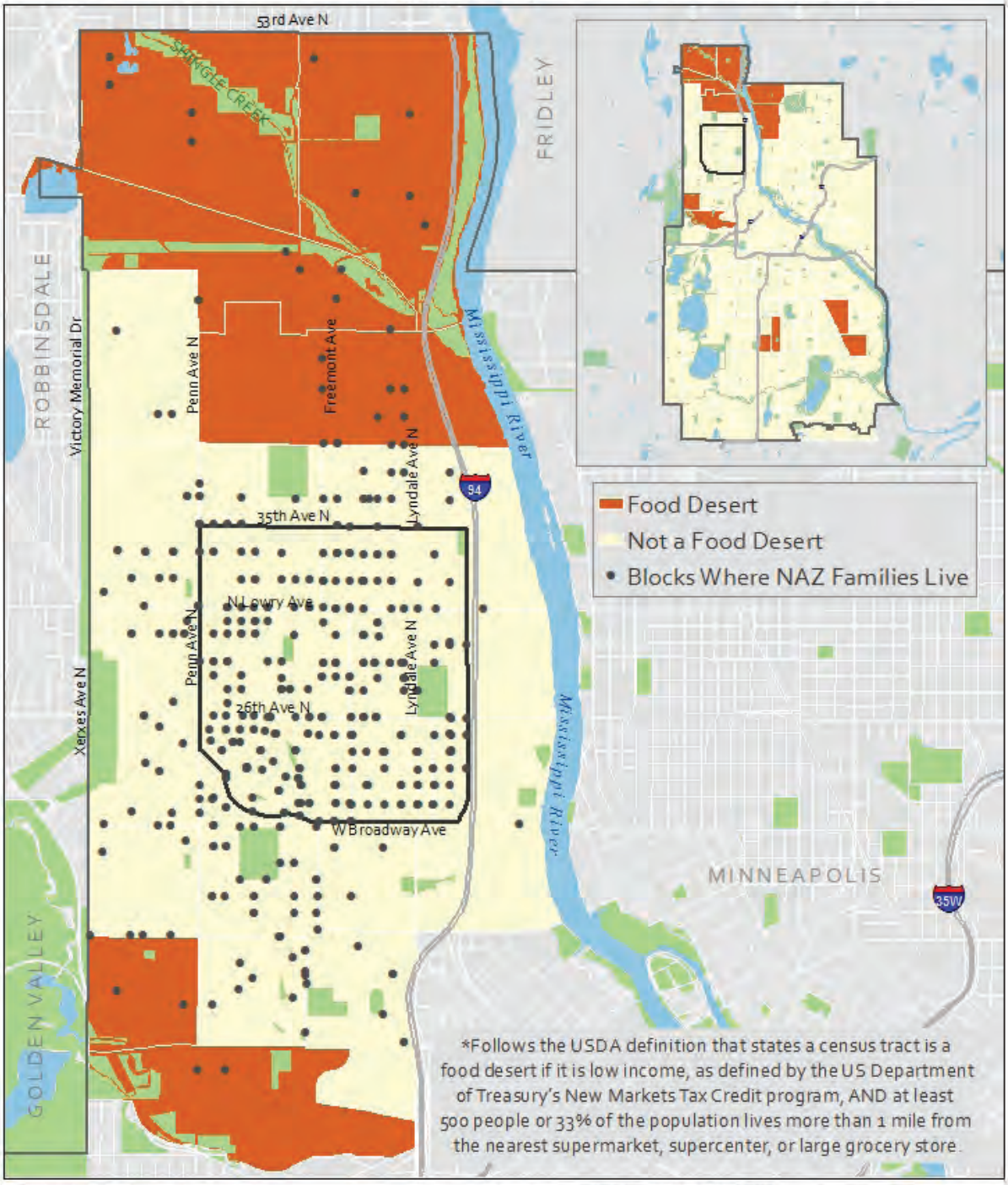
When we take vehicle availability into account and shorten the distance factor, the number of food deserts increases greatly and the North Minneapolis cluster remains (**Figure 6**). In fact, 12 out of 29, or 41.4 percent, of Minneapolis food deserts defined by vehicle availability are within the Near North and Camden communities, which again make up only 17.4 percent of Minneapolis land area.

Looking at the Northside, most of the tracts are considered food deserts by this definition. This means that about half (49.4%) of NAZ participant families live within food deserts (**Figure 6**). When we consider only the participant families residing within the NAZ boundary, 36 percent of the participant families live in food deserts.

These figures are a testament to the need for transportation accessibility for Northside residents. We have already seen a lack of vehicle and public transportation access in the Northside, and Figure 6 shows one result of those deficiencies. This map is not meant to convey that car ownership is the only solution to food access issues, but it does illustrate the significant tie between transportation accessibility and food accessibility.

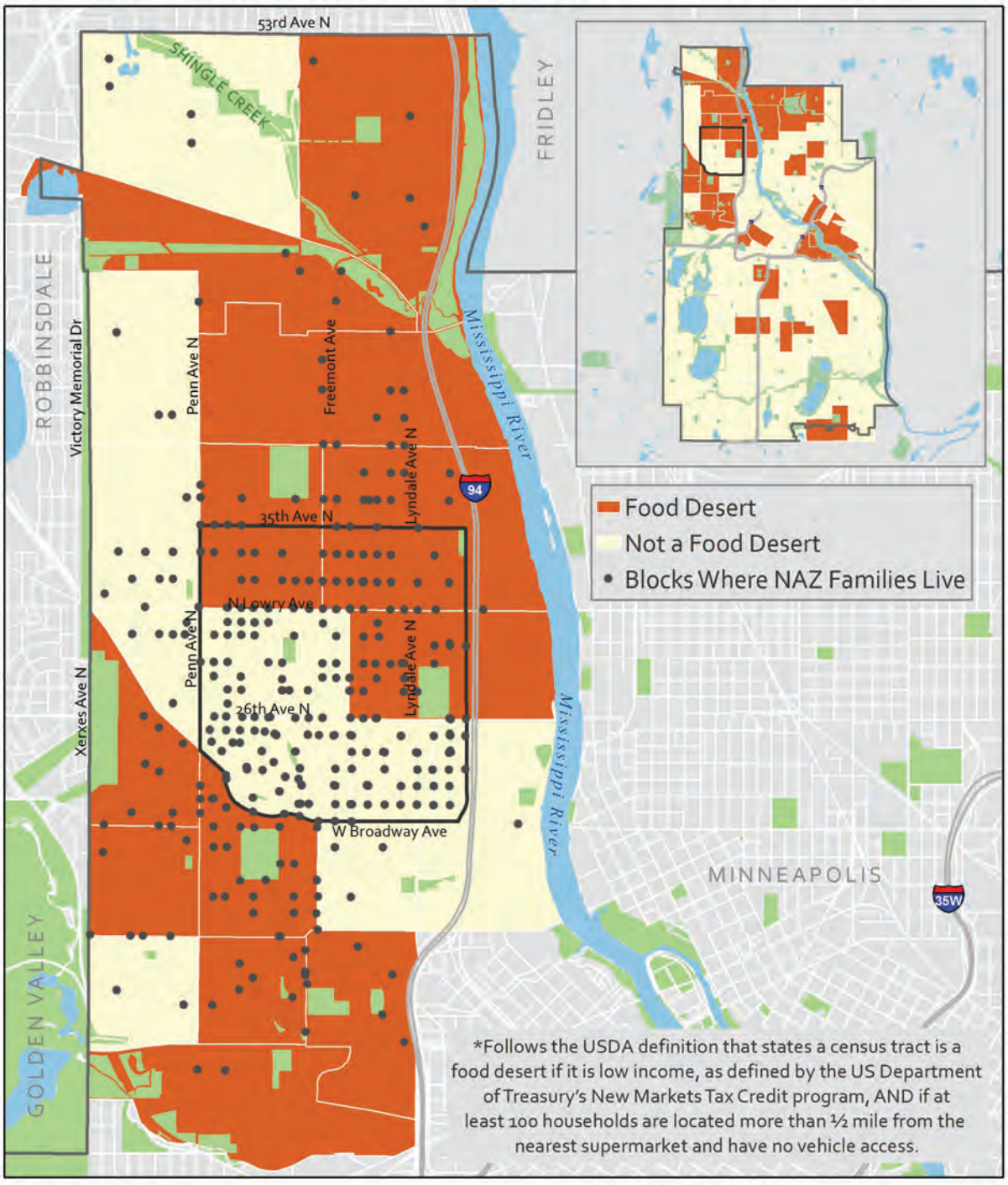
Paired together, the two food desert maps show the food desert outlook that is used to inform economic and policy issues and the outlook that might be more fitting for the Minneapolis context. While it might be concerning that the first definition does not adequately represent the severity of the situation, many

# Food Deserts Measured at 1 Mile* in North Minneapolis by Census Tract, 2010



4.6

# Food Deserts by Vehicle Availability* in North Minneapolis by Census Tract, 2010



of the tracts in the Northside are considered food deserts by both definitions. The result is an indication of which areas are most in need.

The two maps make the state of food accessibility in the Northside look bleak, but the USDA measures only take supermarkets into account. The following maps, showing a variety of healthy food choices, can shed some light on alternative means to accessing food that are available to Northside residents.

In **Figure 7** we see all healthy food choices in the Northside. There is fairly even distribution in Near North, but there are significant gaps in Camden's food access. The pattern matches the food desert maps, with the farthest north region of North Minneapolis suffering the greatest access issues.

The only complete and reliable vendor shown on this map is the full service grocery store. These stores are guaranteed to have all elements of a healthy diet year-round, but there are only four in the entire Northside, with none north of Lowry Avenue. Three of them are clustered on the same street within eleven blocks of each other. Other vendors are limited in options or seasonal. Enhanced corner stores and healthy food shelves might not have a variety of healthy foods, and community gardens and farmers markets do not operate in the winter and spring.

**Figure 8** makes it clear that food access decreases greatly in the winter, though Near North is still in better shape than Camden. For some, especially those without access to reliable transportation, this seasonal factor makes eating healthfully difficult or impossible. While the Northside has worked hard to improve food access with seasonal urban agriculture, there is still work to be done on filling the gap with reliable and consistent food vendors.

**Figures 9** and **10** situate access to healthy foods in the Northside compared to the rest of Minneapolis. They show that there are other areas in the city where healthy food choices are limited, like in the communities of Southwest, Nokomis, and Longfellow. However, these areas generally have more full service grocery stores and better access to transportation, which explain why the majority of food deserts remain clustered in North Minneapolis.

**Figures 11, 12, 13, 14,** and **15** break down healthy food choices by type, to present a clearer picture of their distribution across the city of Minneapolis:

- There are four grocery stores in North Minneapolis; 42 in the city as a whole.
- There are 15 enhanced corner stores in North Minneapolis; 35 in the city as a whole.
- There are three farmers markets in North Minneapolis; 36 in the city as a whole.
- There are 33 community gardens in North Minneapolis; about 275 in the city as a whole.
- There are five healthy food shelves in North Minneapolis; 19 in the city as a whole.

Overall, it is clear that two aspects are lacking in food access in the Northside, one geographic and the other thematic. First, Camden is lacking in access on all fronts, even when taking alternative healthy food options into consideration. This points to an area where partnering with food-related organizations might be most beneficial. Second, a consistent variety of healthy foods is not available to many residents of the Northside. This doesn't necessarily mean building more full service grocery stores only; year-round urban agriculture and expansion of the farmers market system could also help alleviate this problem. Either way, ensuring access to a healthy diet year-round is an important element in preparing Northside families for success. The previous maps make it clear which areas need the most attention when focusing on better food access in the Northside.

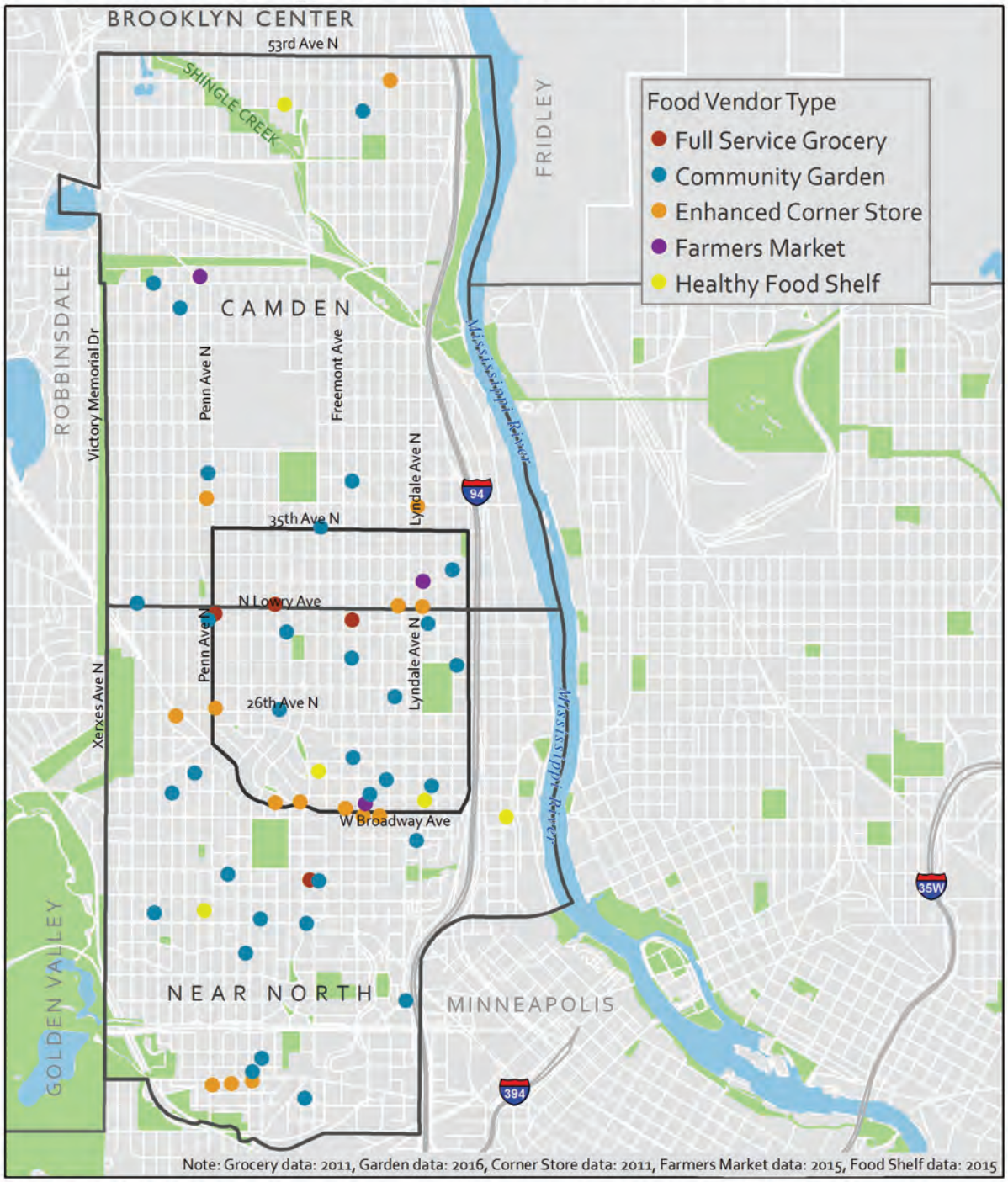
## Healthcare

When discussing the health of a community, the number and distribution of health clinics are vital. Having clinics physically accessible is a baseline for the overall accessibility of healthcare in an area. In addition to physical accessibility, financial accessibility is important for assessing access to healthcare. In this analysis, traditional health care clinics are distinguished from free and sliding scale clinics. Free and sliding scale clinics means the services provided by the clinics are either free or charge based on a factor that varies from person to person, such as income. This means what the clinic charges is proportional to what the customer is able to pay. These types of clinics are essential for providing healthcare to communities that are systematically denied means to access traditional health care.

When analyzing the distribution of traditional health clinics, it is important to distinguish between different types of clinics. This allows a more nuanced

4.7

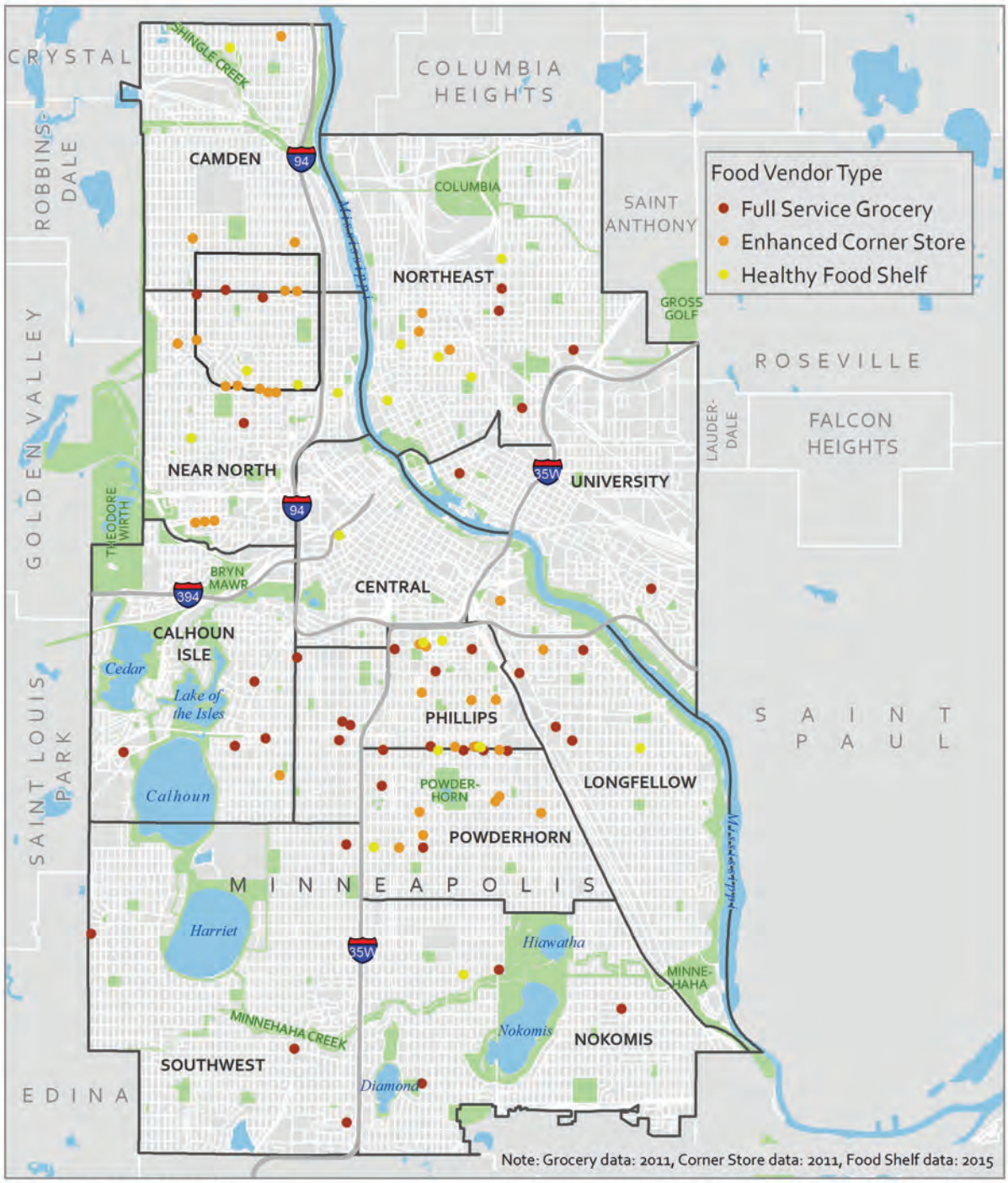
# Healthy Food Vendors in North Minneapolis, Including Seasonal Vendors, 2011-2016



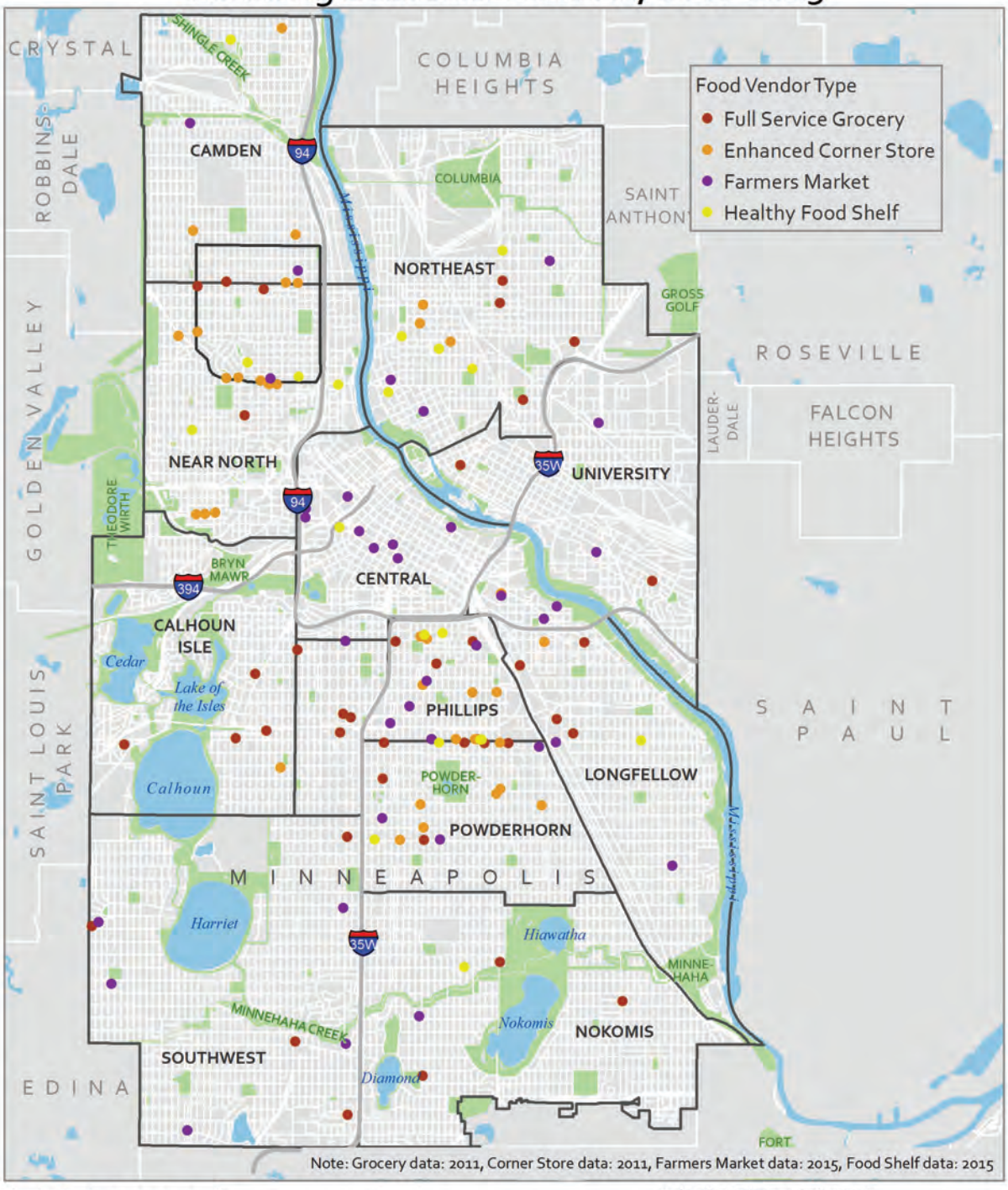
# Healthy Food Vendors in North Minneapolis, 2011-2015

4.9

# Healthy Food Vendors in Minneapolis, 2011-2015

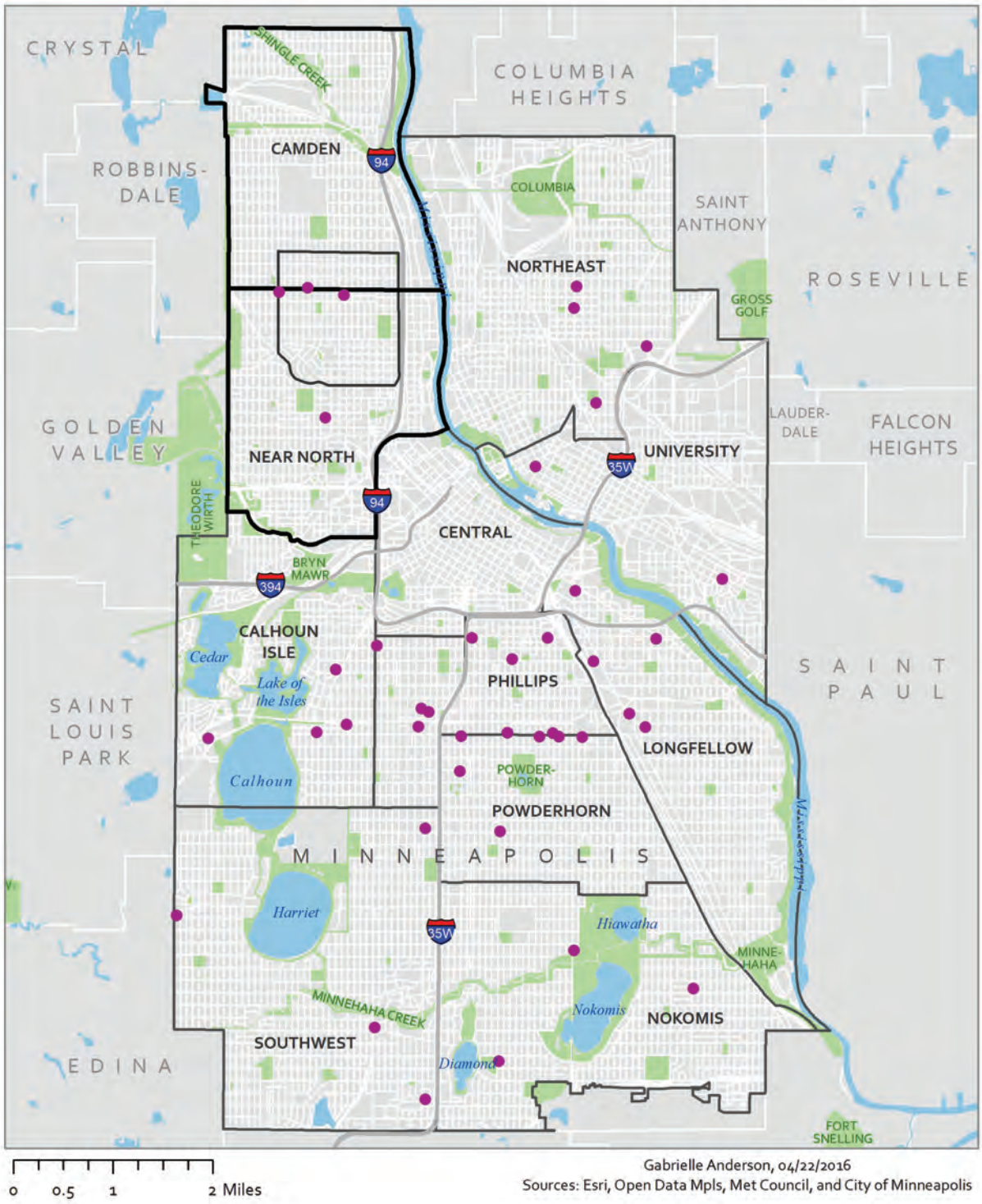


# Healthy Food Vendors in Minneapolis, Including Seasonal Vendors, 2011-2015



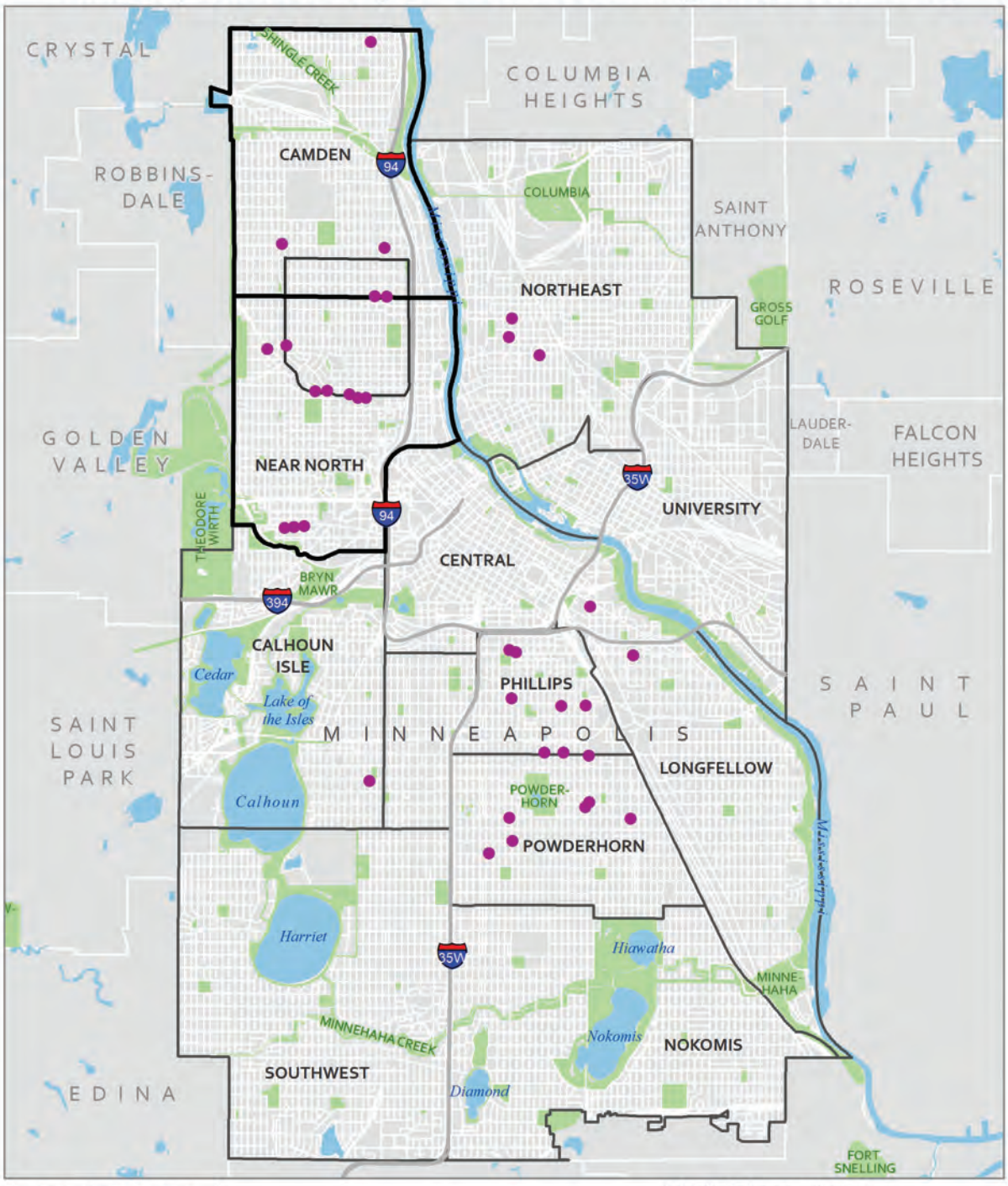
4.11

# Full Service Grocery Stores in Minneapolis, 2011




Gabrielle Anderson, 04/22/2016
Sources: Esri, Open Data Mpls, Met Council, and City of Minneapolis

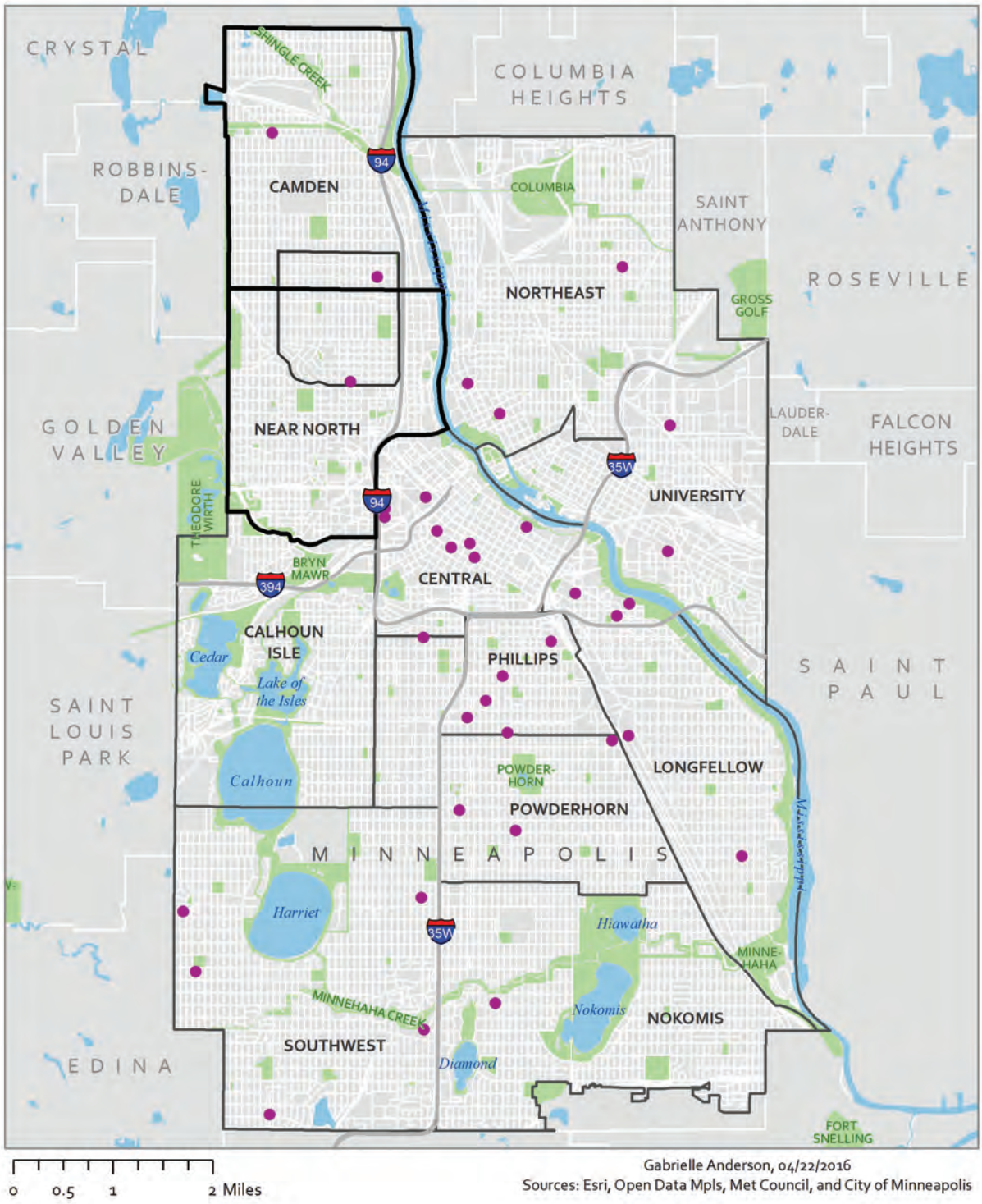
# Participating Locations in Minneapolis Healthy Corner Store Program, 2011-2013




Gabrielle Anderson, 04/22/2016
Sources: Esri, Open Data Mpls, Met Council, and City of Minneapolis

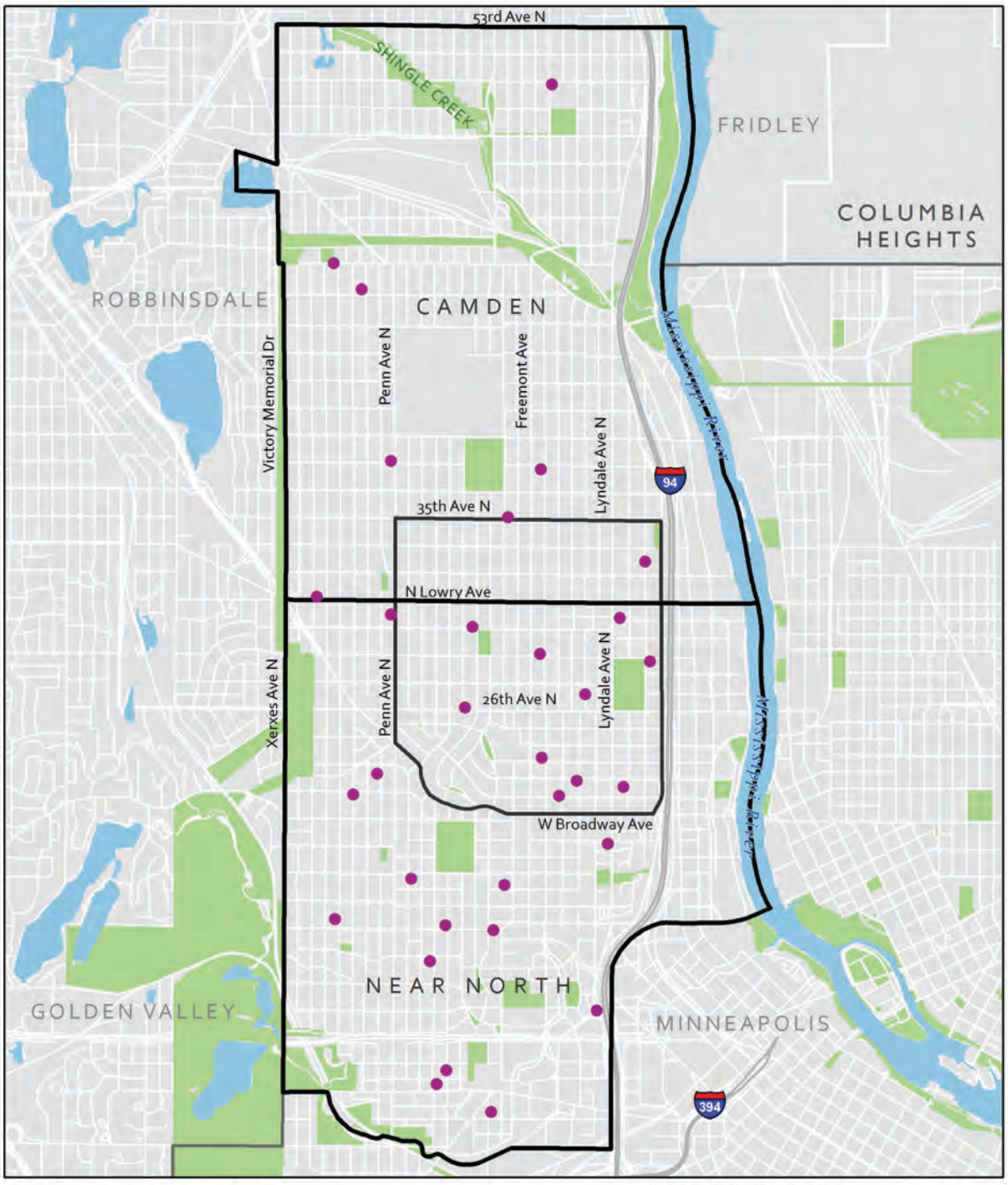
4.13

# Farmers Markets in Minneapolis, 2015




Gabrielle Anderson, 04/22/2016
Sources: Esri, Open Data Mpls, Met Council, and City of Minneapolis

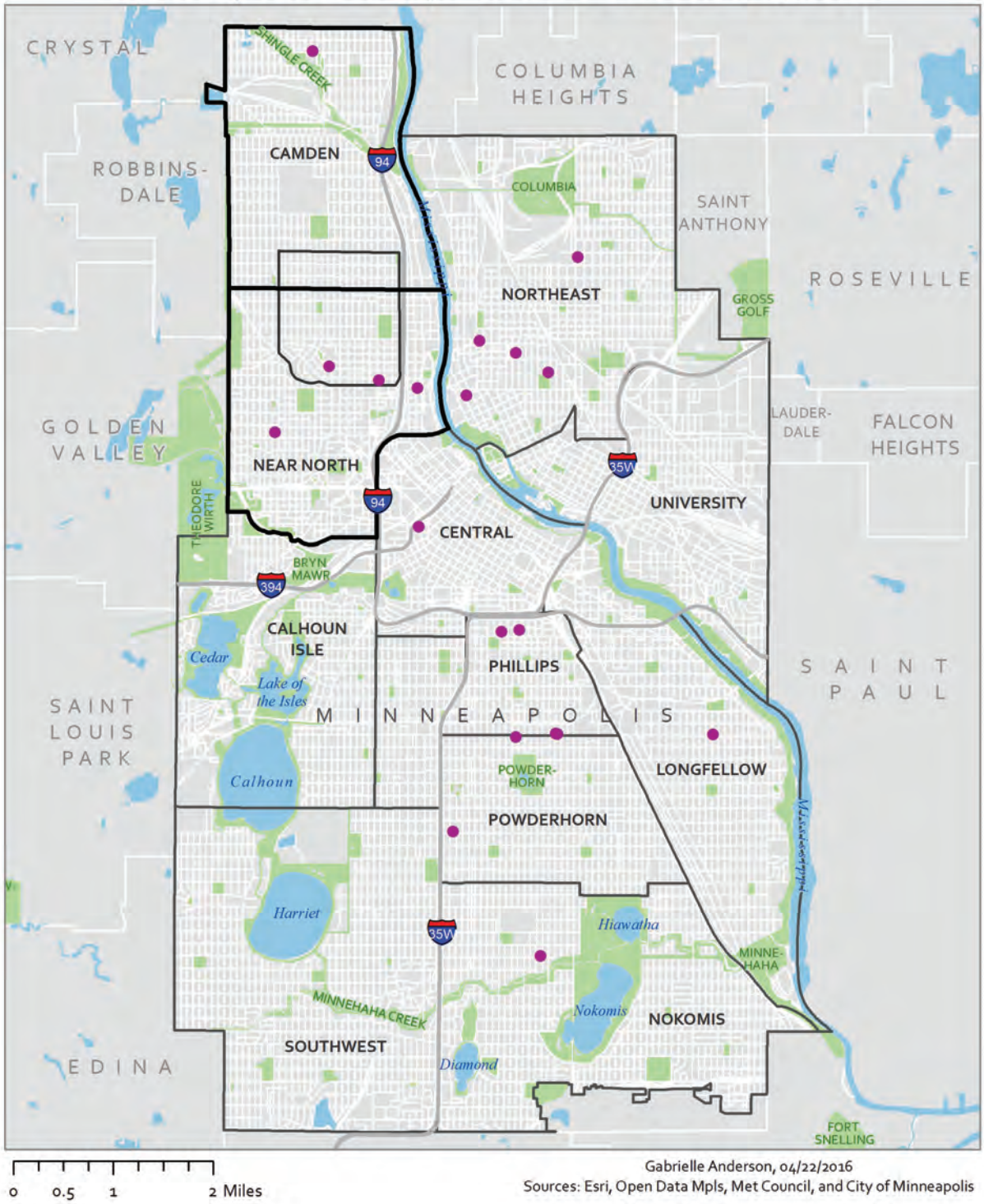
# Community Gardens in North Minneapolis, 2015




Gabrielle Anderson, 04/22/2016
Data Sources: Open Data Mpls, Esri, Met Council, US Census, and Gardening Matters

4.15

# Participating Locations in Minneapolis Healthy Food Shelf Network, 2015




Gabrielle Anderson, 04/22/2016
Sources: Esri, Open Data Mpls, Met Council, and City of Minneapolis

analysis of accessibility of healthcare. The categories included in this analysis are general family clinics, chiropractic clinics, psychiatrists, reproductive health clinics, dentists, optometrists, and clinics that provide more than one of these services.

When specifically looking at the Northside of Minneapolis, it becomes valuable to also bring youth population into the analysis of healthcare accessibility. The Northside has a large proportion of their population who are under the age of 18, thus health care becomes an even more important element to consider as children increase the burden of cost of healthcare, as well as increasing the overall need for healthcare in a community.

### Data Sources

All clinic data is primary data, and was collected through Google maps and the websites of specific clinics. This was the most efficient way to collect this data, though it does lead to possible gaps depending on the reliability of health clinic locations in Google maps. Newer clinics may not be listed, and clinics that are no longer in service may still be listed. The websites of some clinics were included in their listing, confirming that they were serving the Northside, while other clinics only listed a phone number.

Youth population data comes from the National Historical Geographic Information System (NHGIS), and is represented as the population under 18 as a percent of the total population for each census block group.

### Map Analysis

**Figure 16** displays the number and distribution of health clinics in North Minneapolis. The most prevalent type of clinic is psychiatric, with 12 clinics distributed across the Northside. There is a distinct lack of reproductive clinics, with only two identified in the area, none of which are located within the NAZ boundary, where many of the block groups with the highest percentages of children are located. Dentist clinics (of which there are none) and general clinics are also lacking, given the high percentage of children residing in the Northside. Overall, health clinics in the Northside are fairly well distributed but vary greatly based on type of care.

Free and sliding scale clinics are less numerous than traditional health clinics. There are six spread across the Northside, with three south of the NAZ boundary, one inside, and two to the north. Most of the block groups with the highest percentages of children are inside the NAZ boundary, which makes the three free and sliding scale health clinics in or nearby the zone very pertinent.

## Crime & Safety

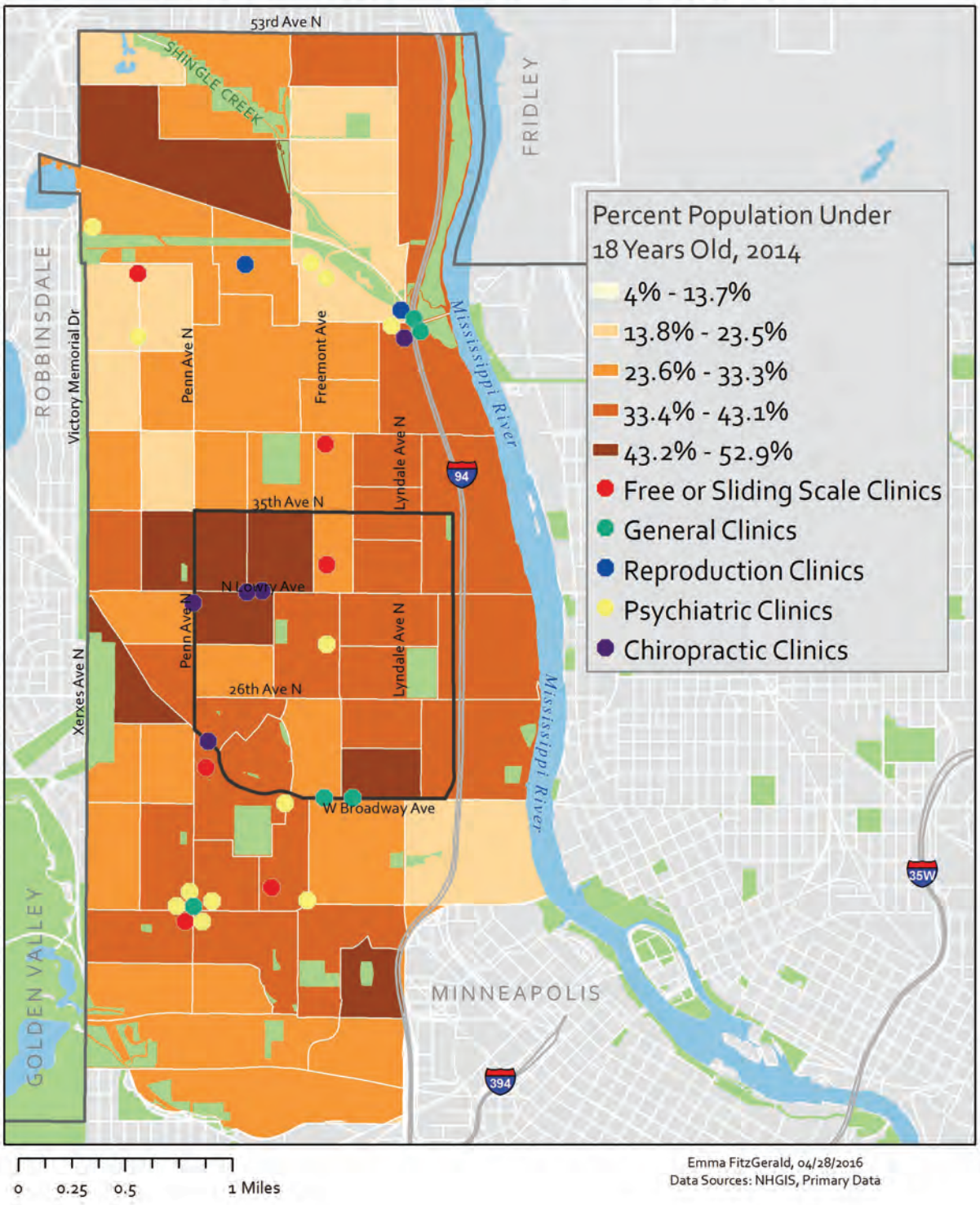
### Data Sources

Data for the motor vehicle injury map, as well as some definitions used in the design of the violent crime map, were accessed via the Healthy Communities Transformation Initiative (HCTI). These sources include the National Highway Traffic Safety Administration (NHTSA) Fatality Analysis Reporting System (FARS), and the City of Minneapolis for the motor vehicle collision analysis. Also accessed via the HCTI, the definition for 'violent crime' used in this analysis was adopted from the National Incident-Based Reporting System (NIBRS), as including "criminal homicide, forcible rape (or attempt), armed robbery, aggravated assault, assault with intent to commit murder". Additional point data for the maps of violent crime, home fires, and airborne toluene were accessed from the OpenDataMinneapolis portal. For violent crime, police incident reports (filed to specific addresses) between the beginning of 2010 and the end of 2015 were classified by their provided descriptions to identify those that fit the NBIRS' definition of violent crime. A similar process was followed for the fire data; confirmed 911 responses that occurred between 2010 and 2015 and were tagged to specific addresses were classified by their descriptions to include all reported fires (of all degrees of severity) that occurred indoors (outdoor fires were excluded so as to minimize the environmental effects that would not reflect socioeconomic conditions.) In both of the above cases, data points were then counted within each census block group to form an aggregate.

In the case of the toluene map, data points from a 2013-2014 air quality survey were gathered from OpenDataMinneapolis and sorted to include only toluene readings. Toluene was chosen as a proxy for airborne asthma triggers for a variety of reasons. First, it is one of the compounds with the most scientific evidence tying it to prevalence of household asthma (ATSDR 2015; Nurmatov et al 2015). Second, it was one of the most consistently measured compounds in the air quality survey, making it a more reliable indicator of airborne asthma triggers than other, similar compounds that were not tested at as many locations. The readings for toluene were gathered every three months during the time span, and the readings for all four testing dates were aggregated together by location. Toluene levels for surrounding

4.16

# Health Clinics in North Minneapolis, 2016



areas were interpolated based on these data points to yield a heat map with values indicating the predicted level of toluene.

## Maps and Analysis

While there are countless indicator variables for perceptions of crime and safety in an urban area, this analysis seeks to provide a representative sample of those hazards that are more directly intertwined with one's socioeconomic environment. Additionally, as the work of the Northside Achievement Zone focuses on childhood education and development, this analysis prioritizes common hazards that are especially pertinent to families and young people.

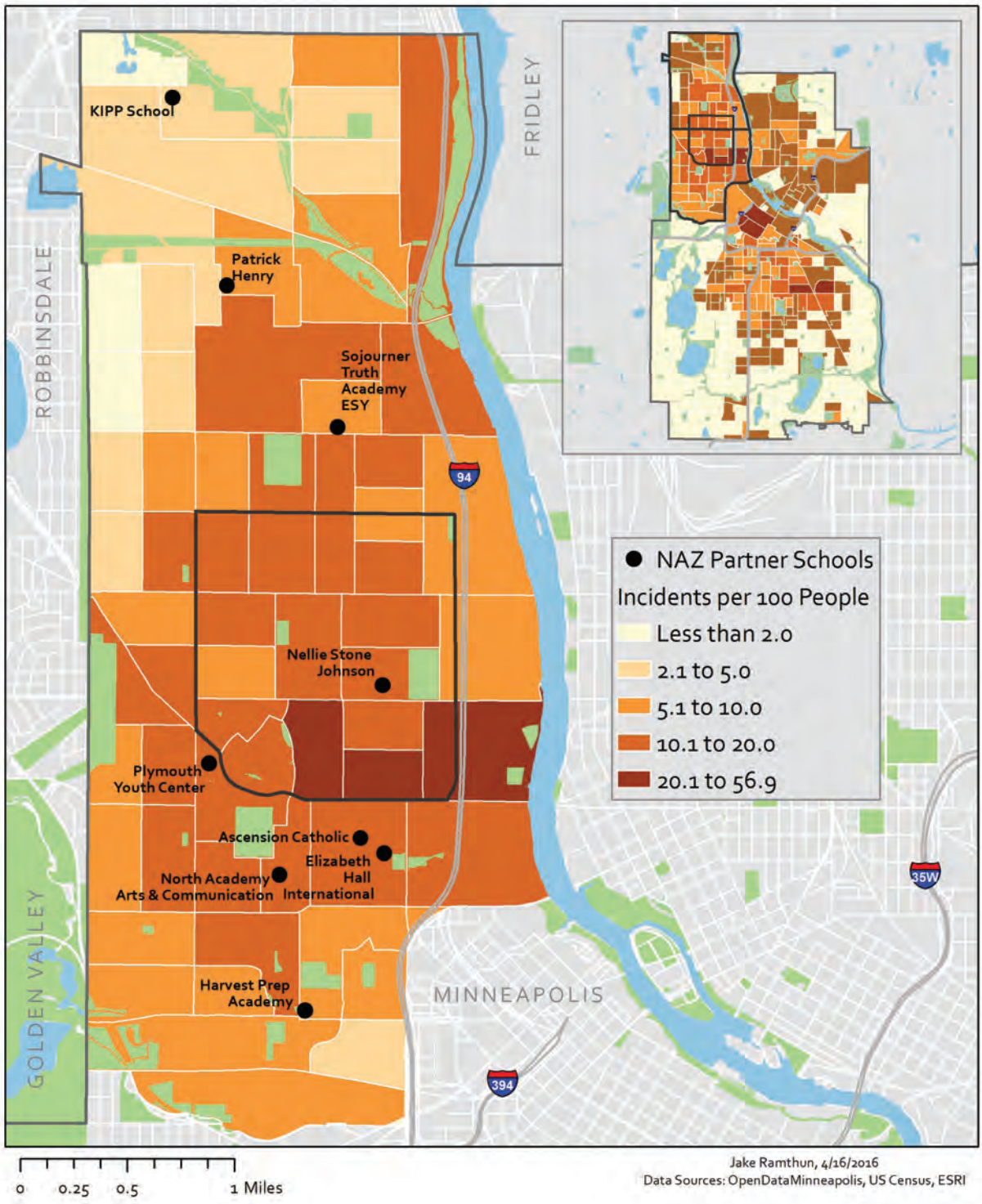
**Figure 17** shows the spatial distribution of violent crime across Minneapolis and the Northside. Here, instances of violent crime are weighted by the total population of each block group. Three distinct clusters of elevated crime are apparent at the city-wide scale; one in Downtown, one in the Phillips community, and one in the Northside, with moderate levels connecting these. The Northside cluster has its center on the southern edge of the Zone, along West Broadway Avenue. While it is not an uncommon pattern for crime to localize around commercial areas, it is worth emphasizing that many of the NAZ partner schools are also located in this vicinity, as are both Farview and North Commons Parks. With such a large portion of the population under the age of 18, spaces for Northside young people overlap with areas of prevalent crime. The implications of this pattern are greater than the potential endangerment of young people; the pattern also creates complications because even when they are not endangered, Northside youth may either avoid these spaces or feel unsafe when present in them. This perceived lack of safety may stifle healthy education and development, as schools and parks are important spaces to learn, play, exercise, and socialize, valuable to the physical and mental health of young people. Additionally, these are high-visibility areas, and thus crime here may create negative perceptions and stigma that create additional barriers to the area's progress.

Socioeconomic pressures can influence safety hazards beyond crime as well. **Figure 18** depicts the locations of injuries resulting from motor vehicle collisions, by block group. The data represents the locations of the collisions, not the addresses of those injured, and in order to account for areas of unequal traffic levels, this map displays raw numbers that are not weighted to the populations of the block groups. While this pattern seems at first glance to be congruent with many patterns of social inequity, it should be noted that this map does not reflect the density of traffic and population. However, regardless of its degree of disparity with the rest of Minneapolis, it is still clear that motor vehicle collisions are a significant, preventable injury in the Northside.

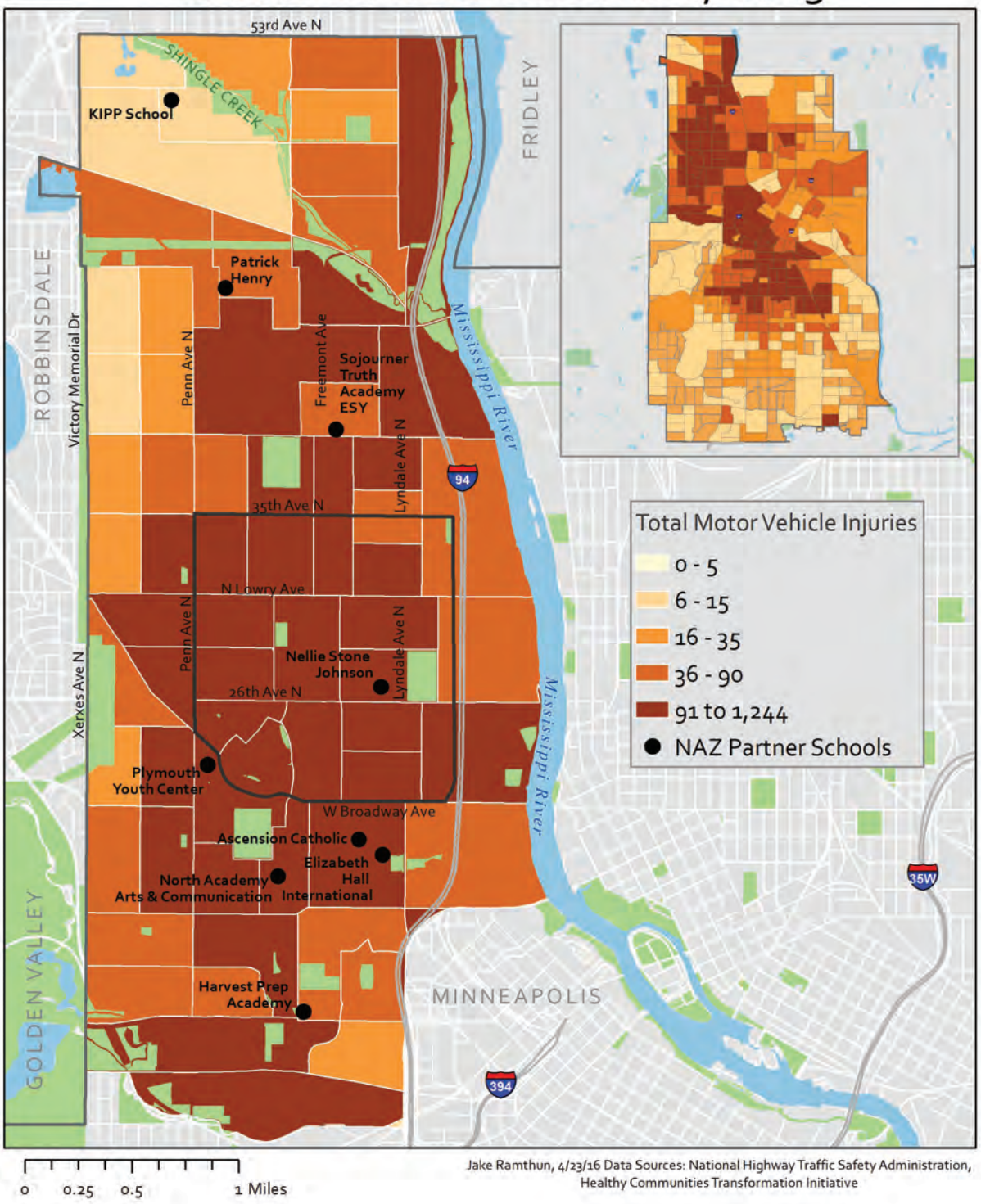

Photo credit: NAZ

4.17

# Violent Crime by Block Group, 2010 - 2015



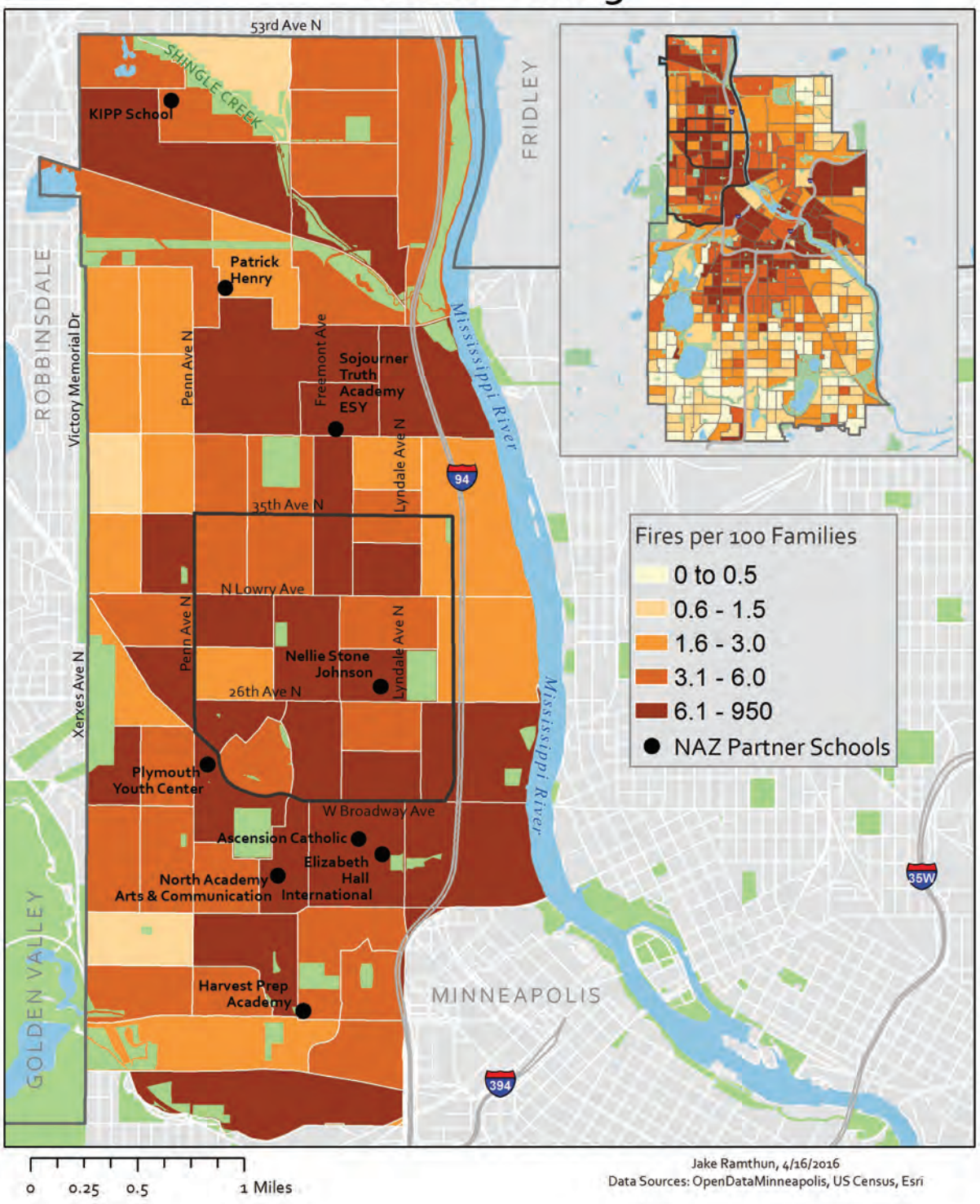
# Total Injuries from Motor Vehicle Collisions, 2013



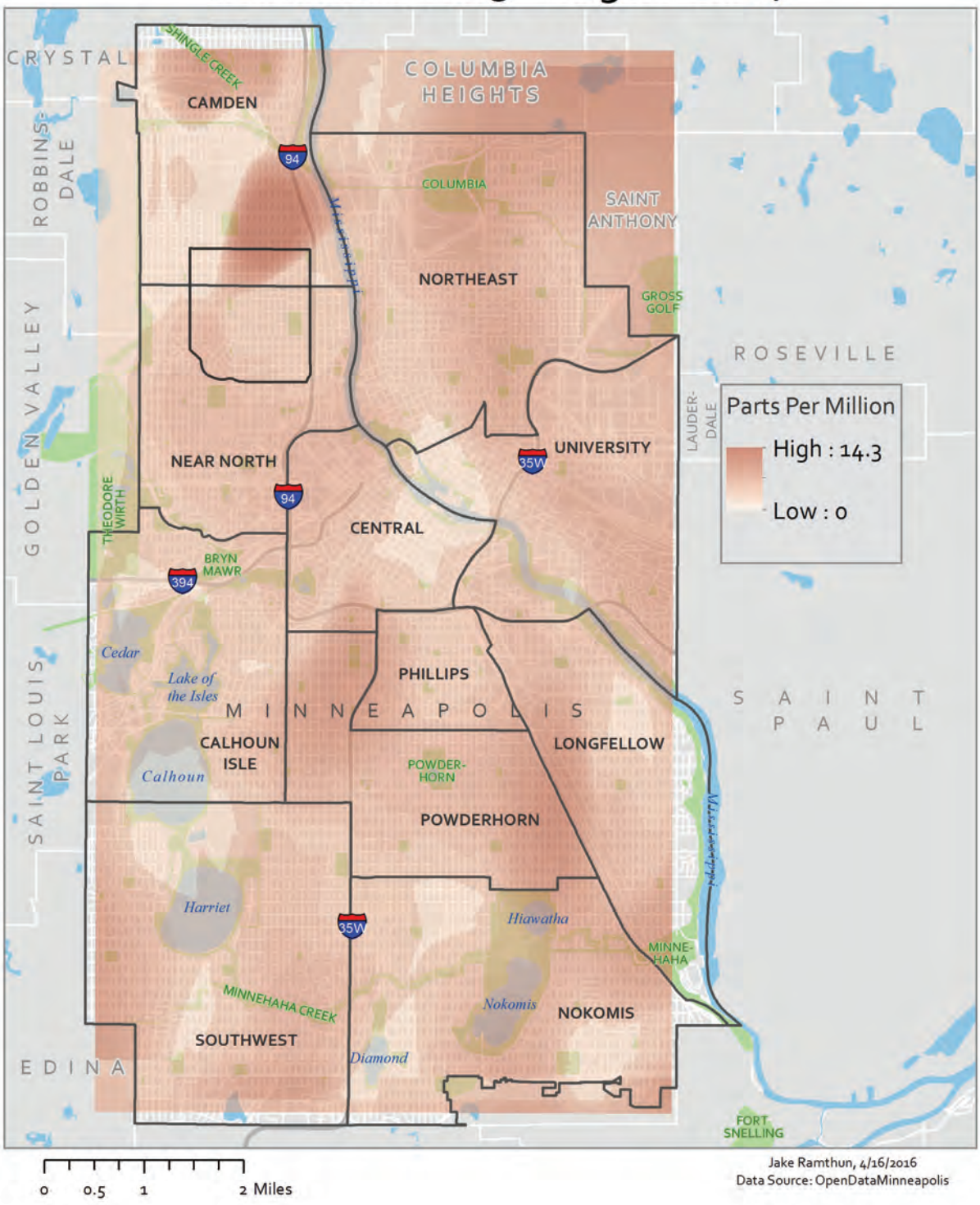

Jake Ramthun, 4/23/16 Data Sources: National Highway Traffic Safety Administration, Healthy Communities Transformation Initiative

4.19

# Reported Fires per 100 Families, 2010 - 2015



# Average Airborne Toluene, November 2013 - August 2014



Perhaps more closely connected to families' socioeconomic conditions are those health concerns that pose threats in and around the home. **Figures 19** and **20** show two very different health/safety risks to families that are both connected to the quality of housing: rates of fires, and the presence of volatile organic compounds (VOCs) that may serve as asthma triggers. As for home fires, **Figure 19** shows, once again, a high clustering of home fire rates spanning from the Northside down through Central and into Phillips, albeit in a weaker, more patchy pattern than that seen with crime. This data is weighted by the number of families in each block group to account for outlying values. The overlap of higher fire occurrences with other socioeconomic indicators suggests that these are interconnected issues. High turnover rates of occupancy, poor maintenance as a result of absentee landlords, and the scarcity of disposable income to fund repairs may put homes in this area at a higher risk of fire.

Similarly, the presence of airborne toluene (**Figure 20**) is largely shaped by the conditions of the home, namely the proper storage of chemicals and efficient ventilation. Toluene is a volatile organic compound (VOC) found in many household chemicals, such as paints and adhesives, which significant scientific evidence suggests may be tied to the development of childhood asthma (ATSDR 2015; Nurmatov et al 2015). According to a 2016 study by the Minnesota Pollution Control Agency, parts of the Northside along Interstate 94 have some of the highest rates of childhood asthma in the state (MPCA 2016). Many VOCs exist, but toluene was chosen here because it is one of the mostly widely tested for in the source data (thereby providing greater reliability through more data points), and it is also one of the most scientifically well-supported as having a relationship to asthma. While data on toluene levels within households, where most children would be exposed to it, is unavailable, air quality surveys conducted between 2013 and 2014 found a higher average toluene level in open air across parts of North Minneapolis. Some have pointed to industrial sites in the area, such as Northern Metals (MPCA 2016), as being responsible for this higher density of air pollution. This data is not sufficient to determine the cause of heightened air VOCs, but it does suggest that concentrations might be significantly higher for the Northside. In order to better assess this, future studies would need be done on other compounds to see if the trend persists.

## Conclusion

The health of the community relies upon a variety of interplaying social forces, and it bears emphasis that this study works within the limitations of an outsider's perspective. NAZ works to improve the future well-being of the Northside through their direct partnerships with individual families and school programs, as well as organizations focused on youth health. These variables highlight the inequities that exist not only between the Northside and other neighborhoods of Minneapolis, but also inequities that persist within the community.

It is our hope that by assisting NAZ in identifying spatial patterns of health considerations and the ways they align with other socioeconomic indicators, future initiatives and research can be refined to the needs of communities at these smaller scales. A more direct strategy can make way for projects that improve health, safety, and accessibility for all residents of the Northside.

# Conclusion

The goals of this study were to produce a contemporary profile of the Northside community and to evaluate the comprehensive impact of the Northside Achievement Zone program in this area. Incorporating variables from the four overarching themes of population, housing, economics, and health, visualizations were designed to create a comprehensive view of the current status of the Northside. Our primary goal was to support and enhance a compelling narrative about the need for a place-based initiative in the Northside.

The research conducted and the variables examined in this study led to several conclusions. Serious and significant disparities exist between the Northside and the city of Minneapolis in all four of our identified themes. Many of the variables are strongly correlated with each other and also with the spatial pattern of the African American population in Minneapolis, suggesting a racial concentration of poverty in the Northside that has only worsened over time. Even within the Northside, disparities exist between the largest area of concentration of NAZ participant families and the rest of the community.

Regarding population, the makeup of the Northside community is mostly Black/African American, and predominantly young. The proportion of female householders with children is especially high and also strongly correlated with the spatial pattern of the African American population. Variables related to the housing theme highlight the striking inequities that exist between the Northside and the rest of the city of Minneapolis. The Northside possesses trends of poor-quality living conditions including below-average physical condition of housing, low market values, high rates of vacancies, and low rates of homeownership.

The spatial patterns of economic and health concerns are also largely congruent with the other socioeconomic indicators investigated. Incomes are generally lower in the Northside than the rest of Minneapolis, particularly for African American residents, continuing the trend of overall spatial and racial disparities we found. There is a general lack of employment opportunities in the Northside for Northside residents. This problem is aggravated considering that the Northside has little access to public transportation compared with the rest of Minneapolis, but has a high concentration of block groups in which workers rely on the public transit system as their primary means of commute. This is especially alarming when taken along with the fact that almost fifty percent of NAZ participant families are living in areas that are deemed food deserts and that have limited presence of appropriate healthcare services.

The strong correlation between variables of all themes, and the clear disparities between the Northside and the rest of Minneapolis, provide substantial support for the holistic, wraparound approach of the Northside Achievement Zone program. Our findings suggest that the achievement gap cannot be solved through schools alone and that combatting generational poverty requires examination of multiple variables. The condition of the physical and social environment greatly affects not only early childhood achievement, but also many life outcomes including health, wealth accumulation, and educational attainment. Going forward, multi-variable research can help to identify additional issues, connections, and potential partners for the NAZ program. Even if this report fails to offer concrete recommendations for NAZ, we hope that it can support the work of those committed to closing the achievement gap and advocating for the Northside.

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