Community Partnerships to Examine Local Housing Markets:
A Neighborhood Profile

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In the spring of 2012, the Macalester College Urban GIS class embarked on a community-based research project using Geographic Information Systems (GIS) to visualize the lingering effects of the housing crisis on individual neighborhoods and communities. Our methodology was informed by a report by the Folwell Center for Urban Initiatives (2011). The Folwell report created a Housing Market Index that presents a block-by-block view of housing market strength in North Minneapolis (Folwell 2011). The Macalester College Urban GIS class applied the Housing Market Index (HMI) methodology to five additional neighborhoods in the Twin Cities metropolitan area. The full case study authors are Sidney Ainkorn, Camille Cauchois, Caroline Devany, Charlotte Fagan, Lora Hlavsa, Matthew Hyde, Sarah Krumholz, Skyler Larrimore, Niko Martell, Peter Mathison, Emily Sames, Kyle Strand, Robert Strickling, David Tomporowski, and Scott Vargo (accessible as of publication of Volume 1 of this journal at http://www.macalester.edu/academics/geography/courses/ coursepages/Macalester_HMI_Report_2012_Intro.pdf). The following article is a case study of Powderhorn Park, one Minneapolis neighborhood profiled in our 2012 study

History of Powderhorn and Powderhorn Park

The Powderhorn Park Neighborhood, located in central-southern Minneapolis, is one of the most economically and racially diverse neighborhoods in Minneapolis. Powderhorn is a central neighborhood in the arts culture of Minneapolis and has supported a diverse and vibrant community for over a century. Powderhorn Park borders and contains commercial corridors along Lake St., Bloomington Ave., Cedar Ave., and Chicago Ave. (Map 1). This study focuses on understanding the characteristics of the post-recession housing market in Powderhorn Park, and analyzing how the strength of the housing market varies by block.

The Powderhorn neighborhood was originally developed around 1900 with the advent and expansion of the streetcar network in Minneapolis. The neighborhood began to sprout up around the intersections of the Chicago/Lake and the Cedar/Lake lines, which bound the neighborhood to the north, east, and west. Development then moved south and around Powderhorn Park, named after Powderhorn "Lake" in the middle of the park. The park served, and continues to serve, as one of the major amenities attracting families to the neighborhood. The neighborhood was annexed by the City of Minneapolis in 1887 and began as a mostly middle-class to lower middle-class neighborhood. Up until 1920 most of the housing stock consisted of single-family homes, but from 1920-1925 construction shifted to mostly duplexes and three-story apartment buildings. Towards the mid-1900s, single-family homes in the neighborhood began to subdivide into smaller units, but many of the homes, especially around the park, did not subdivide. We will

discuss the current characteristics of the area's housing stock after a brief overview of the demographics of Powderhorn Park residents.

Demographics

In 2010, the Powderhorn Park neighborhood was comprised of 8,655 residents, which is slightly lower than the population in 2000 (8,957) but significantly greater than the population in 1990 (7,864). Of the current residents, nearly three-quarters have lived in the neighborhood for at least one year. Data from the 2010 U.S. Census indicate that 44.2 percent of residents are White, 32.2 percent are Hispanic or Latino, 13.8 percent are Black or African American, 4.0 percent identify with two or more races, 3.1 percent are American Indian or Alaskan Native, and 2.4 percent are Asian or Pacific Islander. English is the only language spoken in 70.6 percent of households in Powderhorn Park, with 29.4 percent of households speaking a language other than English. Roughly one-quarter of the population (27.3 percent) is under the age of 18, with 68.5 percent of residents falling between the ages of 18 and 64. The median income for Powderhorn Park is $37,570 (2005-2009), which is down from $45,044 in 1999, and one-fifth of the population lives below the poverty line (Census 2010).

The Local Housing Stock

Today, the Powderhorn Park neighborhood is comprised of 3,468 housing units, 46.7 percent of which are owner-occupied, with 50.8 percent renter-occupied (Wilder Research, 2011). The remaining two percent are commercial structures. The chart below displays the diversity of land uses within the neighborhood.[1] Many of the parcels in our database did not have specific land uses identified other than 'Residential.' However, a look at this chart indicates that there is a large presence of historic Double-Bungalow structures, and a moderate presence of commercial units, cooperatives, condominiums, and apartments in Powderhorn Park. Map 2 indicates the distribution of land-use types throughout the neighborhood.

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[1] Information on the characteristics of individual parcels (Estimated Market Value, use description, square footage, etc.) was included in the Metropolitan Council's parcel-level dataset. The specificity of this dataset was immensely beneficial for the purposes of this research.
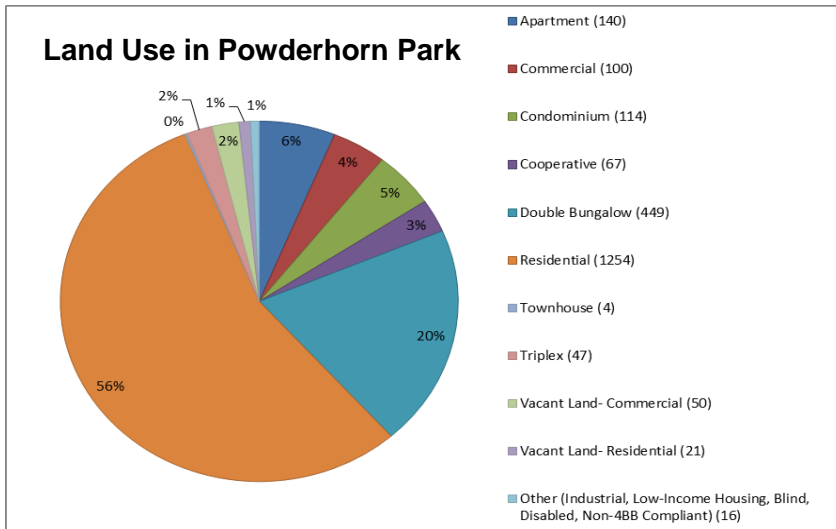
Figure 1 Land Use in Powderhorn Park

The chart below shows the land use distinctions among the owner-occupied property, the subject of this study. Most owner-occupied housing is not specified with a use other than "Residential," but we also see a large representation of Double Bungalow and Triplex housing that is owner-occupied.
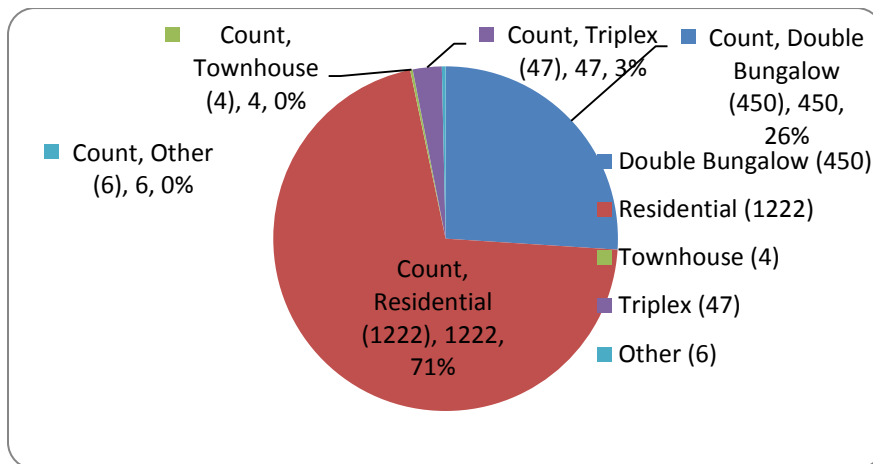

Figure 2 Owner-Occupied Housing Type

Map 3 depicts the age of residential and commercial structures in the neighborhood. From this map, we can see that the newest structures are clustered along the main commercial corridors. The oldest housing is located surrounding Powderhorn Park and on blocks to the east of this landmark. The average home in Powderhorn was built in 1914, and approximately two-thirds of the homes in Powderhorn Park were built between 1895 and 1933. The age of the housing stock in Powderhorn Park presents a challenge for residents, because most of the older homes require more intensive maintenance and upkeep. However, our neighborhood partner for this project said residents of Powderhorn Park take pride in their older homes and feel that those homes "keep their value" whereas the values of newer homes have not withstood the test of time.

Figure 3 An example of architectural style in Powderhorn Park

Methodology

The aim of this project is to produce an analysis of Powderhorn Park's housing market through the creation of a Housing Market Index. The Housing Market Index, first utilized in the Folwell report (2011), is based on a combination of four variables intended to describe much of the variation in local housing market strength. These variables include:

(1) Owner-Occupancy – derived from 2010 U.S. Census data
(2) Vacancy – determined by the United States Postal Service. A housing unit is defined as vacant when it has not received mail for 90 days.[i]
(3) Housing Condition – reported by the Hennepin County Assessor's office, which ranks buildings on a scale of 1 ("Excellent") to 7 ("Poor").
(4) Value Retention – measured by the average change in estimated market value (EMV) by block from January 2007 to October 2011, as reported by the Metropolitan Council

Selecting Residential Parcels for Analysis

For this study, we studied parcels with the following land use designations: double bungalow, residential, townhouse, and triplex. These land uses represent residential parcels that are most likely to be fully or partially owner-occupied. For example, in the case of a triplex, it is possible that the owner would occupy at least one of the units, even if the other two units are rented out. The subsequent maps in this chapter are based on parcels with one of these four land uses.[2]

Minimum Parcel Threshold

For this study, we set a minimum number of residential parcels per block and eliminated blocks that did not meet this threshold. We set the minimum number of residential units for a block at ten residential units based on neighborhood-wide statistics and consultation

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[2] We also did not include parcels that had new structures built between 2007 and 2011 because these parcels made it seem as though the value of existing structures on those blocks had greatly increased over time.

with our neighborhood partner. Overall, the number of residential units per block ranged from six units to eighty units; the average was 21.6 units per block with a standard deviation of 6.35. Given these statistics, a minimum of ten residential units removes blocks that could skew the overall findings, but represents blocks that have a significant number of owner-occupied residential units.

Generation of Housing Market Index

To generate a Housing Market Index value for each block, we first standardized the four component variables (owner-occupancy, vacancy, condition, and value retention) to make them comparable. To do this, we converted the block-level values for each variable to block-level z-scores. The z-score calculation accounts for the neighborhood-wide mean and standard deviation for each variable. Specifically, the z-score represents the difference between the average value for each block and the average value for the neighborhood overall. With this statistic, we could compare, for every variable, how each block fares relative to all other blocks in the neighborhood (i.e. the number of standard deviations each block varies from the overall neighborhood mean).

In our final step, the four variable z-scores were then combined to create block-level HMI values using the following equation:

$$\text{HMI Score} = (x_1 * \text{Owner-Occupancy z-score}) - (x_2 * \text{Vacancy z-score}) - (x_3 * \text{Condition z-score}) + (x_4 * \text{EMV z-score})$$

x_1, x_2, x_3, and x_4 are variable weights (ranging from 0 to 10) determined in collaboration with our neighborhood partners. In the original Folwell Report, the authors used factor analysis to determine the variable weights, whereas in this study, our neighborhood partners determined the weights of each variable. In this way, we were able to capture local knowledge and opinions on what variables most influence the strength of a neighborhood's housing market. For example, some of our neighborhood partners saw owner-occupancy as less important for housing market strength, so they gave this variable a smaller weight in the equation. The final HMI value was presented for each neighborhood on a single map that classifies blocks in the neighborhood along a scale ranging from weak to strong.

Analysis & Discussion

Variables in the Housing Market Index

Owner-Occupancy

Map 4 depicts the percent of owner-occupied housing by block in the neighborhood. The owner-occupancy variable reflects the percent of parcels whose occupants own the properties within which they are living. These data were collected by the U.S. Census Bureau and reflect conditions for the year 2010. The variable is expressed as a percentage of owner-occupied units per block relative to the total number of parcels. There is considerable variation in the owner-occupancy rates by block within

Powderhorn Park, with the lowest owner-occupancy rate being 9.68% and the highest rate being 93.75%. The majority of blocks have an owner-occupancy rate between 41.19% and 69.23%. The owner-occupancy rate appears to be highest in the southern portion of the neighborhood and lowest in the northern portion, particularly along the eastern border of Powderhorn Park.

Vacancy

Maps 5 and 6 depict the distribution of vacant owner-occupied housing in Powderhorn Park. In 2011, 66 homes, or .038% of the owner-occupied housing stock was vacant. There were 14 vacant residential lots, most of which are likely owned and managed by the owner of the neighboring house, according to our neighborhood partner. The highest number of vacancies on one block was four, with most blocks containing no vacancies at all. As Map 5 indicates, there are a large number of vacancies along Bloomington Avenue, particularly near the intersection of Bloomington and 31st Street. Additionally, there is a relatively dense concentration of vacancies in the southeast corner of the neighborhood.

Our block-level map highlights similar trends. On Map 6, the darkest blue color indicates a vacancy rate between 11.01 and 16.67 percent. The lightest color indicates a vacancy rate under 2 percent. Blocks in the northeast and southeast corner of the neighborhood have the highest rates of vacancy. Blocks along Chicago Avenue to the west of the neighborhood show a high proportion of vacant owner-occupied housing as well; there is a nearly continuous row of blocks along this street with vacancy rates between 2 and 11.01 percent.

Housing Condition

The housing condition variable reflects the quality of housing stock on a scale of 1 ("Excellent") to 7 ("Poor"). The data for this factor were collected by the Minneapolis Assessor's Office, and are based on several exterior features, including the condition of the windows, foundation, siding, and porch. The roof is not factored into the score as the Assessor's Office assumes this feature will be replaced when it fails. The rating can be viewed in terms of the level of "deferred maintenance" on properties.

The data used for this project are from the most recent assessments for 2012. The block averages for housing condition in Powderhorn Park neighborhood are predominantly "Average," and all rating scores fall between "Average plus" (3) and "Average minus" (5). At the block level there is very little variation in the housing condition score, as depicted by Map 7. There is slightly more variation at the parcel level, with properties receiving a range of scores from "Excellent" (1) to "Poor" (7). This indicates that while there is a consistent average for the neighborhood there is some discrepancy from property to property.

Figure 4 An example of a block with "Average Plus" housing conditions

Value Retention between 2007 and 2011 by Parcel

Maps 8 and 9 represent the estimated market value of residential parcels in Powderhorn Park in 2007 and 2011. From these two maps it is clear that the neighborhood has undergone a dramatic change between 2007 and 2011. The brown colors represent lower estimated values, and the green colors represent higher estimated values. The categories for each color are the same for each year with the exception of the darkest green category. In 2007 the dark green represents houses with a value of $300,001 - $515,000, whereas in 2011 it represents homes from $300,001 - $978,000. This indicates that a few houses did increase in value between 2007 and 2011, because the category spans a greater variety of values. This contrasts with the overall trend of decreasing value in the neighborhood.

Overall between 2007 and 2011 most residential parcels lost value. We can see this trend clearly on the maps, as many parcels change color from green to brown—a decrease on the value scale—between 2007 and 2011. This trend is not entirely surprising given that 2007 was the height of the real estate boom, and in 2011 most housing markets were making a slow recovery from the economic recession. The overall picture that these maps portray is a story of widespread decrease in value throughout the Powderhorn neighborhood.

We disaggregated this EMV information for specific types of residential parcels (see table below):

Value Retention by Residential Building Type

Building Type	Mean EMV Change	Standard Deviation
Double Bungalow	-25.5%	14.1%
Residential	-11.8%	11.2%
Townhome	-10.3%	2.9%
Triplex	-16.1%	37.0%

On average, townhomes and "residential" units lost the lowest proportion of value. Unfortunately, "residential" is such a broad category that it does not give us much information. Double bungalow homes lost significantly more value on average than the other residential land uses.

Value Retention between 2007 and 2011 by Block

When we change the unit of analysis from the individual parcel to the block level, all of the blocks in the neighborhood lost value (Map 10). The darkest brown color represents the most dramatic decreases in value, and the lightest brown represents the smallest decreases in value. These percentages represent the average change in estimated market value between 2007 and 2011 for all residential parcels in that block. The average block lost around 15% of its value over this time period. The south-central part of the neighborhood fared the best over the four-year period, whereas the northeastern part of the neighborhood fared the worst in terms of value retention.

Interestingly, Powderhorn Park, one of the major amenities of the neighborhood, did not greatly influence the blocks around it, which experienced a variety of decreases in value. The residential properties on the commercial corridors of Lake St., Bloomington Ave., and Cedar Ave. did not maintain their value as well as properties along the other commercial strip of Chicago Ave. Overall, Map 10 indicates the diversity of housing markets within the neighborhood, but also shows that none of the blocks gained value on average between 2007 and 2011.

Figure 5 A block with a strong average value retention between 2007 and 2011

Housing Market Index

In consultation with our neighborhood partner, the Powderhorn Park Neighborhood Association (PPNA), we assigned the four variables included in the Housing Market Index study the following weights:
- Vacancy – 8
- Value Retention – 8

- Condition – 8
- Owner-Occupancy – 6

PPNA decided to give owner-occupancy the least weight because many blocks in Powderhorn have a high percentage of rental units but not necessarily a weak housing market.

The final map, Map 11, shows the combination of the four weighted variables into the housing market index measure. Green colors on the map indicate blocks that had a relatively high combined score; brown colors represent blocks that had a low combined score. The map shows the overall housing market index score, from strong to weak, for each block in the neighborhood and gives us a more in-depth look at the different places in the area that are struggling and those that are doing well. The south-central part of the neighborhood is faring the strongest, whereas the northeastern part of the neighborhood, especially around Bloomington Ave. and 31st St., is not doing well. Along the major roads in the neighborhood, the housing market on Chicago Ave. is the strongest, whereas the housing market on Cedar Ave. and Bloomington Ave. are the most diverse by block.

Important Themes and Findings

The owner-occupancy rate is strongest in the southern portion of Powderhorn Park. The vacancy rate is highest in the northeast and southeast portions of the neighborhood. There is very little variation in the housing condition, with a slight concentration of moderately higher-scoring blocks in the southwest portion of the neighborhood. Most of the neighborhood has an average ranking for housing condition, indicating that the quality of housing stock in Powderhorn Park is on par with that of Minneapolis at-large. Between 2007 and 2011, most parcels in the neighborhood depreciated in value, which is consistent with overall trends for the city of Minneapolis. At the block level, the entire neighborhood experienced an average decrease in estimated market value (EMV). This decrease was most pronounced in the northeast portion of the neighborhood, whereas the south-central portion of the neighborhood experienced less pronounced depreciation between 2007 and 2011.

When these variables are compiled, the resulting Housing Market Index (HMI) indicates that the south-central portion of the neighborhood has the strongest market whereas the northeastern portion has weaker market trends. The results of the HMI generally reflect the patterns exhibited by the independent variables. In conclusion, the housing market in the southern portion of the neighborhood has greater stability and strength on average than the rest of Powderhorn Park, and the northeastern portion of the neighborhood is in most need of stabilization resources or support.

Conclusions & Recommendations

Application of Findings

These findings can be applied to increase the diversity and vitality of the local housing market of Powderhorn Park into the future. An awareness of which sections of the

neighborhood are struggling the most since the recession can enable our neighborhood partner to target its future housing programs accordingly. The results of this study might be useful in planning community outreach initiatives to connect residents with foreclosure prevention or housing rehabilitation resources. Alternatively, our neighborhood partner might use this information to initiate strategic partnerships with private and nonprofit organizations to improve the strength of the local housing market. Our maps might suggest, for example, that foreclosure relief and housing construction, renovation, or repairs be targeted in the northeast corner of Powderhorn Park, particularly along Bloomington Ave.

Further Extensions of our Housing Market Analysis

Statistical Methods

We completed correlation and regression analyses to determine the influence of particular variables on housing market strength in Powderhorn Park. First, we ran a multiple-regression analysis to understand the influence of vacancy, owner-occupancy, and housing condition on the 2007 to 2011 average EMV change per block. This analysis showed that these three variables together explain 19.45 percent of the variation in the average change in EMV by block.[3] The owner-occupancy rate of a block has the *smallest* influence on the average estimated market value change.[4] A single-variable regression analysis shows that owner-occupancy rate predicts only 3.7 percent of the variation in average EMV change per block, and this is not a statistically significant result. Thus, housing condition and vacancy information are better predictors of the strength of a block-level housing market than tenancy characteristics.

Owner-occupancy also does not have an influence on the percentage of vacant property per block. Only .22 percent of the variation in vacancy can be explained by a block's owner-occupancy rate, and this is not statistically significant. Percent owner-occupancy does have an influence on average housing condition ratings per block. The moderate-level correlation between these variables indicates that as owner-occupancy rate increases, average condition rating per block improves. The owner-occupancy rate per block predicts 11.2 percent of the variation in average condition rating.[5] This being said, the range of average condition ratings was very small, with most houses receiving between a 3 ("Average plus") and 5 ("Average minus"), so any real improvement in housing condition according to the tenancy characteristics of a block is small.

Our analysis also shows that there is a relationship between average EMV change and average condition rating. There was a moderate positive correlation between EMV change and condition, indicating that as the average condition rating improves, average EMV change per block increases.[3] Indeed, 9.87 percent of the variation in average EMV change can be predicted by the average condition of housing on the block.

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[3] Significance: p <.05
[4] P-values for each variable: Owner-occupancy (.290), Condition (.020), Vacancy (.006). Significance: p < .05.
[5] Significance: p <.05

There is a moderate negative correlation between average EMV change and vacancy rate, indicating that as EMV increases the rate of vacancies decreases.[3] Further regression analyses indicate that 8.73 percent of the variation in vacancies per block can be explained by the average change in EMV on that block.[6] This relationship might be interpreted the other way, too; if we reverse the independent and dependent variables, 8.73 percent of the variation in average change in EMV can be explained by the percentage of vacancies per block.

In summary, the results of these additional statistical tests confirm, not surprisingly, that those blocks that lost the most value during the economic recession now have a higher rate of vacancy in Powderhorn Park. Owner-occupancy rate on a given block does not predict its ability to retain value over time, but it does have a hand in determining the average condition rating for a block. Just as our maps can help our neighborhood partner organization target their outreach and resources, these additional data help us better understand the variables that influence the strength of a local housing market.

Developing the HMI

Our Housing Market Index has focused solely on owner-occupied properties. However, we acknowledge that rental properties also play a significant role in the strength of the local housing market, particularly in mixed-use neighborhoods like Powderhorn Park. Further extensions of the HMI methodology should focus on analyzing the strength of the local rental market, as well as how characteristics of rental properties influence the overall and block-level HMI. Some potential indicators of rental market strength might include: net absorption (increase or decrease in occupied rental space), rental housing vacancies, condition information, or value retention for rental property. Because much of these data are not publicly available, further extensions of the HMI analysis may wish to pursue a survey of area landlords on this information (i.e. their rental price, unit vacancy information, etc.).

Future HMI studies should focus more intently on local housing affordability and foreclosure trends. According to the City of Minneapolis' records, the foreclosure total in Powderhorn Park reached a high of 92 in 2008, and has since been on the decline. The Powderhorn Park neighborhood had 52 houses in foreclosure in 2011, the lowest foreclosure total since 2006 (City of Minneapolis, 2012). Data on the number of foreclosures on a given block over time might provide an additional lens through which to examine the influence of the recent recession on both owners and renters in Powderhorn Park.

This study has also left the issue of housing affordability unaddressed. A booming housing market for owner-occupied property might be both beneficial and negative for different sets of residents. If there is turnaround in EMV over the next few years, this may mean higher property taxes for many Powderhorn homeowners. A strong local HMI might be helpful for homeowners that can capitalize on the value of their home, but this might also mean an increase in rental prices in the neighborhood as well. Future

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[6] Significance: $p < .05$

iterations of the HMI should take a critical look at what a "strengthening" or "worsening" HMI means for the lives of different residents within the neighborhood.

On a final note, continuing to track changes in owner-occupancy, vacancy, housing condition, and value retention overtime in Powderhorn Park will provide additional insights into the housing market for the neighborhood. A regular HMI assessment could facilitate long-term efficiency in the allocation of resources to those portions of the neighborhood that are least stable, while maintaining stronger areas of the local housing market for years to come.

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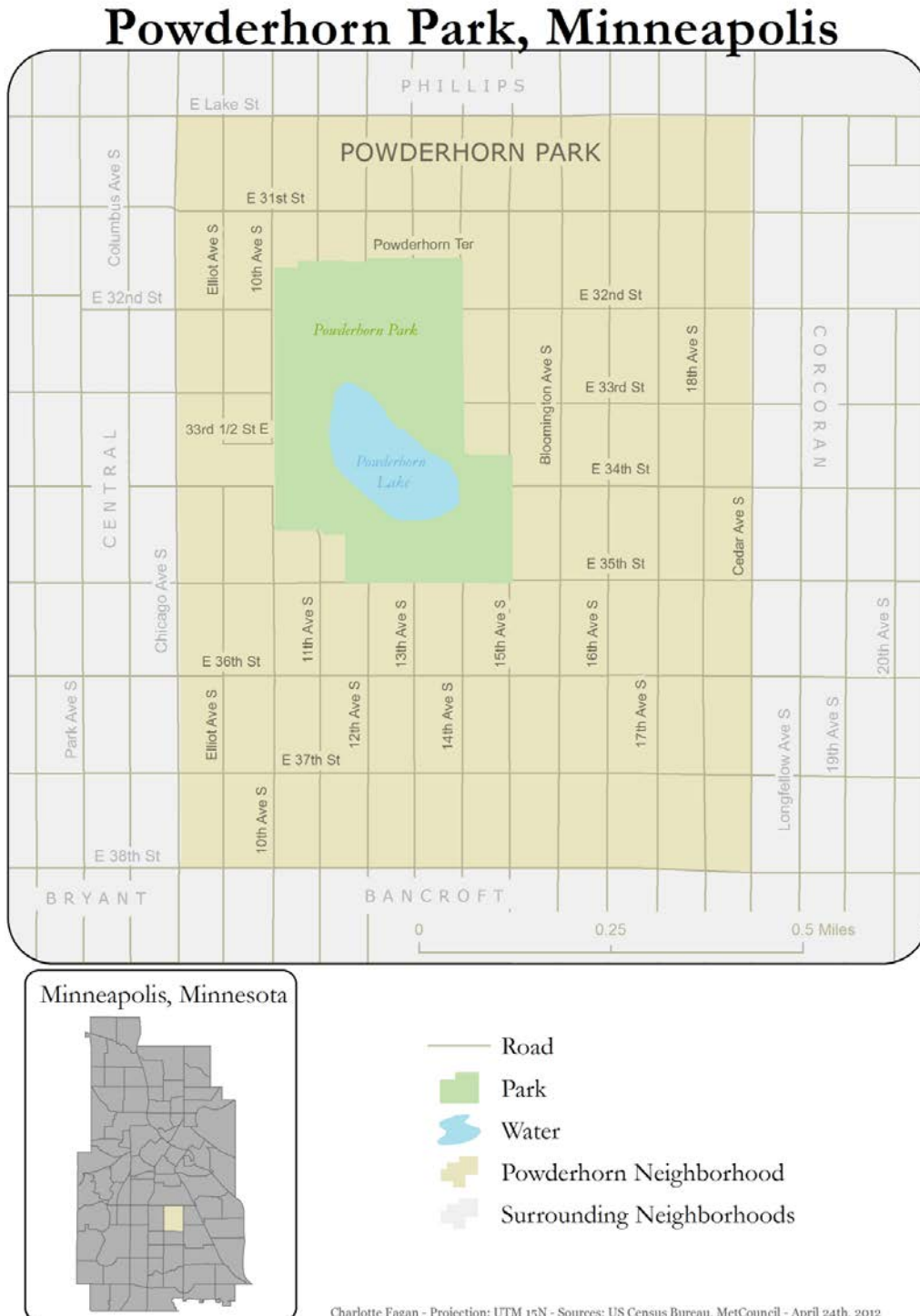
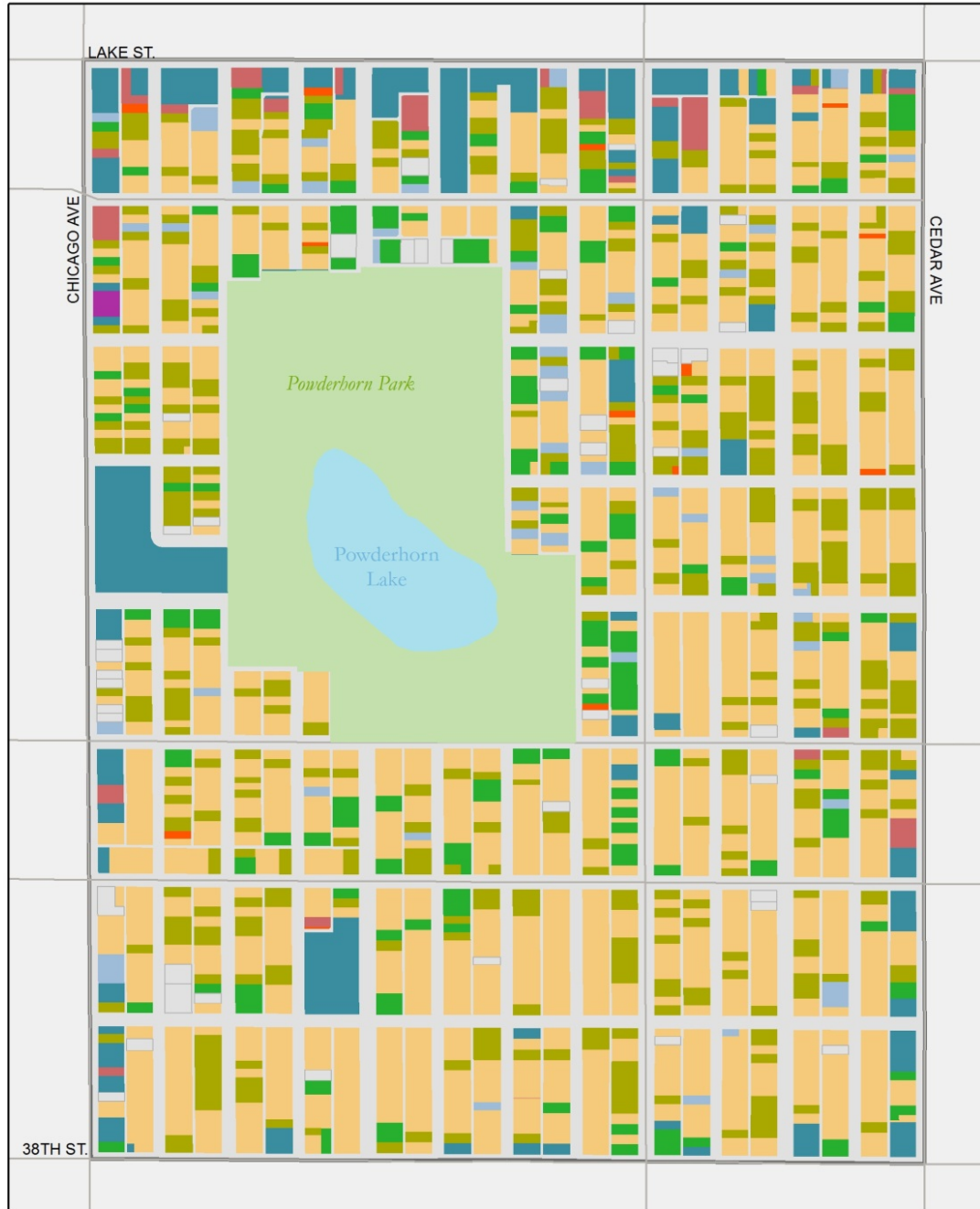**Map 1: Reference Map**

Figure 6 Map 1 Reference Map

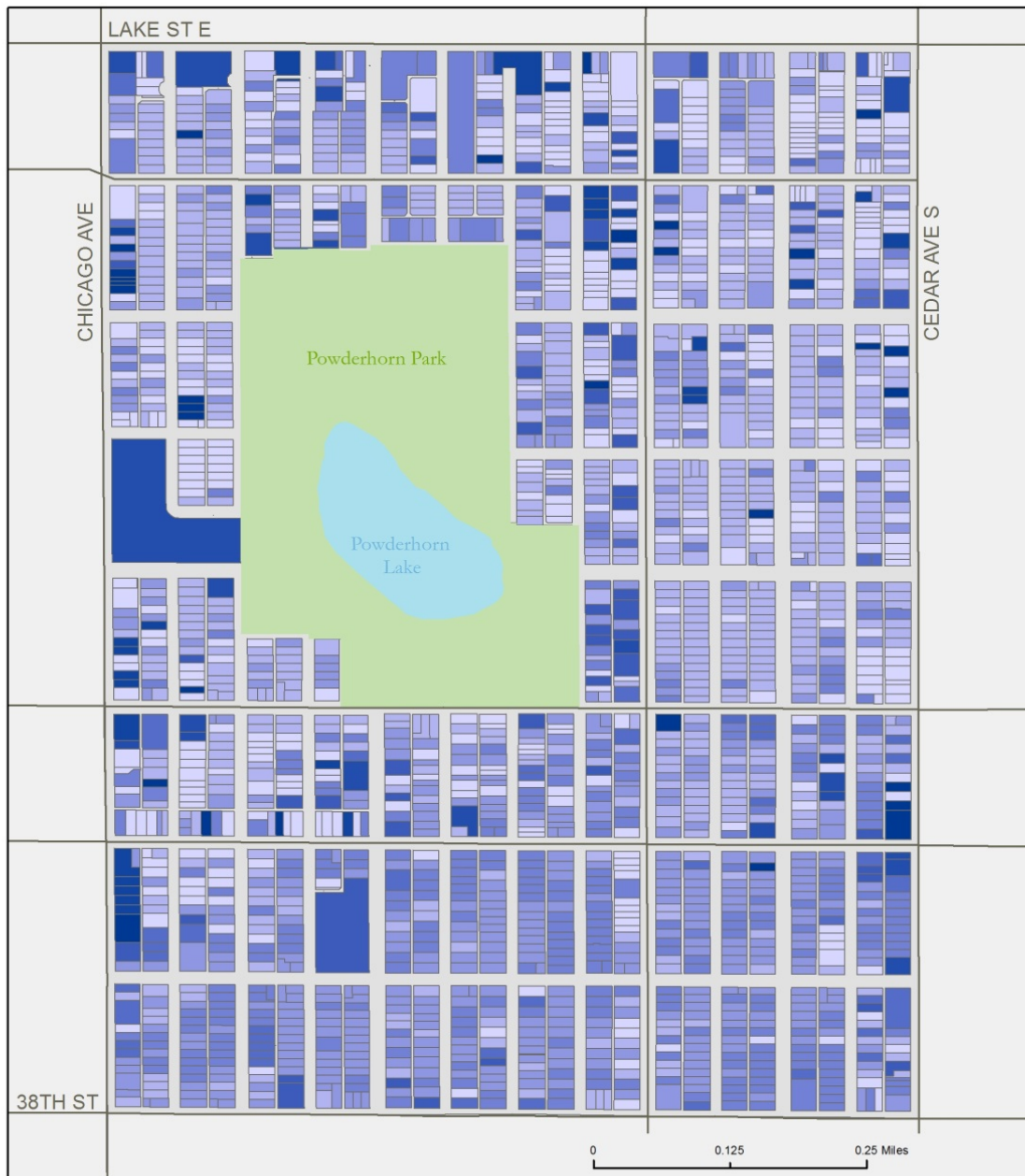**Map 2: Land Use, 2012**

Land Use in Powderhorn Park, 2012
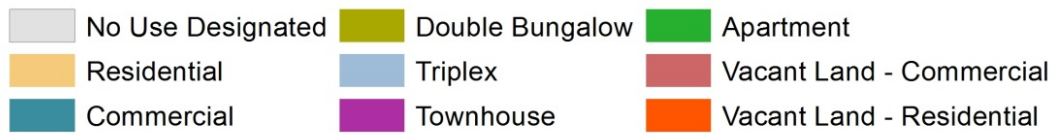
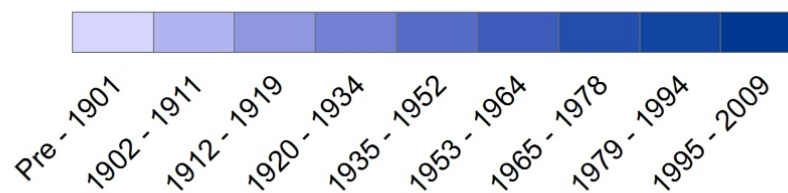Skyler Larrimore, April 24th, 2012, Projection: UTM, 15N, Sources: MetCouncil, ESRI

Figure 7 Map 2: Land Use, 2012

Map 3: Age of Commercial and Residential Structures

Age of Commercial and Residential Structures in Powderhorn Park

Year Built

Pre - 1901 · 1902 - 1911 · 1912 - 1919 · 1920 - 1934 · 1935 - 1952 · 1953 - 1964 · 1965 - 1978 · 1979 - 1994 · 1995 - 2009

Skyler Larrimore April 24th, 2012 Projection: UTM 15N Sources: MetCouncil, ESRI

Figure 9 Map 3: Age of Commercial and Residential Structures

Owner Occupancy By Block, 2010

Figure 10 Map 4: Owner-Occupancy by Block, 2010

Vacant Parcels in Powderhorn Park, 2012
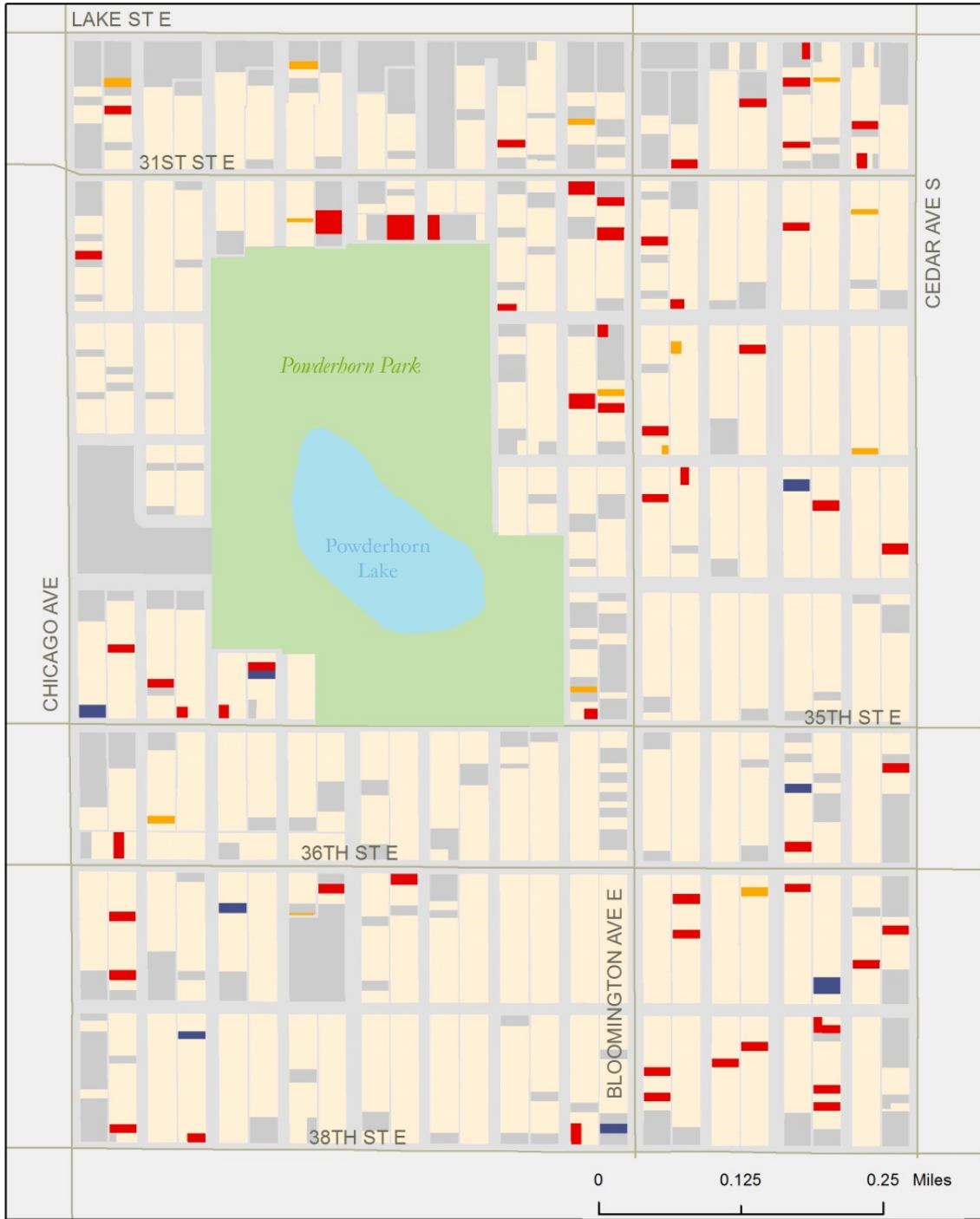
Vacant Residential Parcels and Lots, January 2012

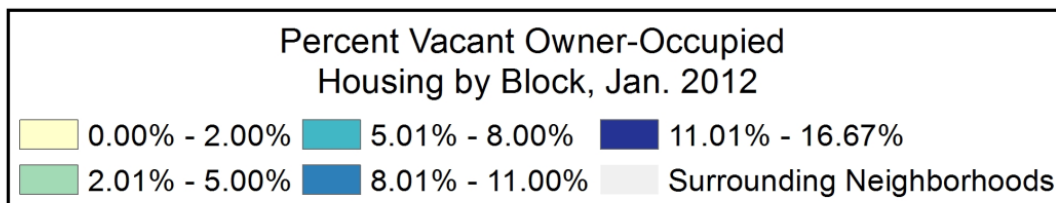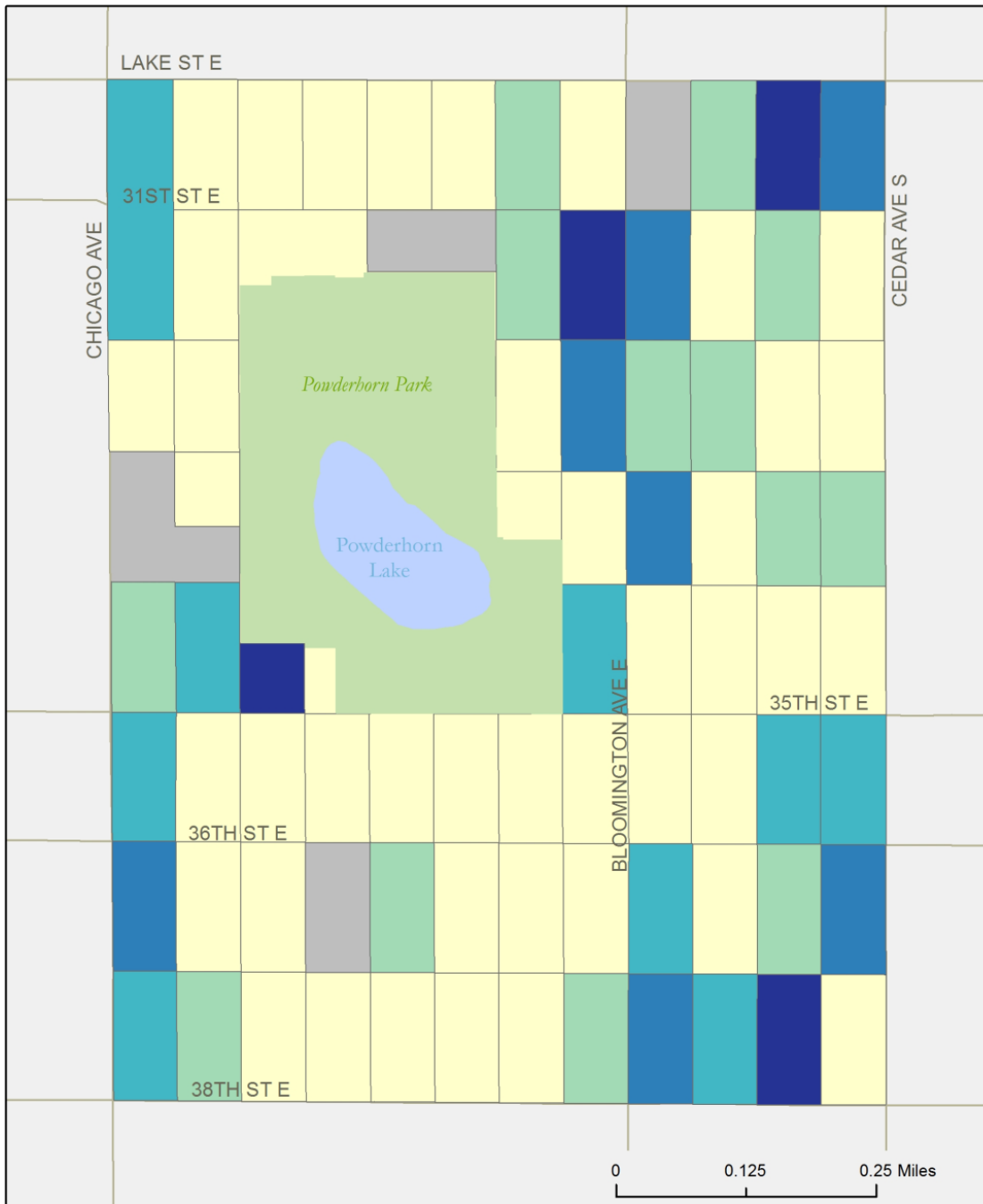|		
🟥 Vacant	🟦 No Data	⬜ Non-residential or Renter-Occupied
🟧 Vacant Lots	⬜ Occupied	⬜ Surrounding Neighborhoods

*No Data: These addresses were not valid in our USPS Database.

Skyler Larrimore, April 24th, 2012, Projection: UTM, 15N, Sources: MetCouncil, U.S. Postal Service, ESRI

Figure 11 Map 5: Vacant Parcels, 2012
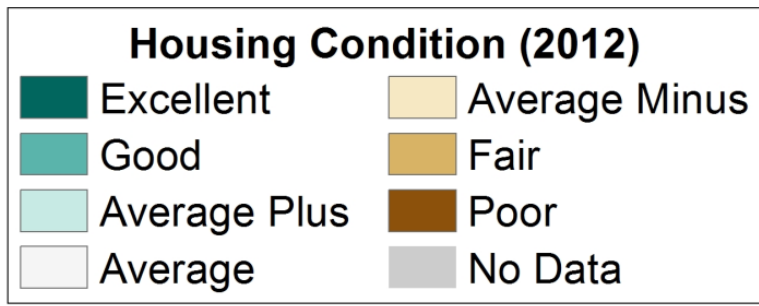
Vacancy by Block in Powderhorn Park, 2012

Figure 12 Map 6: Vacancy by Block, 2012

Map 7: Housing Condition by Block, 2012

Housing Condition By Block, 2012

Housing Condition (2012)

- Excellent
- Good
- Average Plus
- Average
- Average Minus
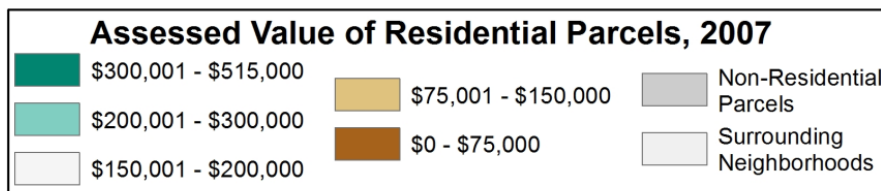- Fair
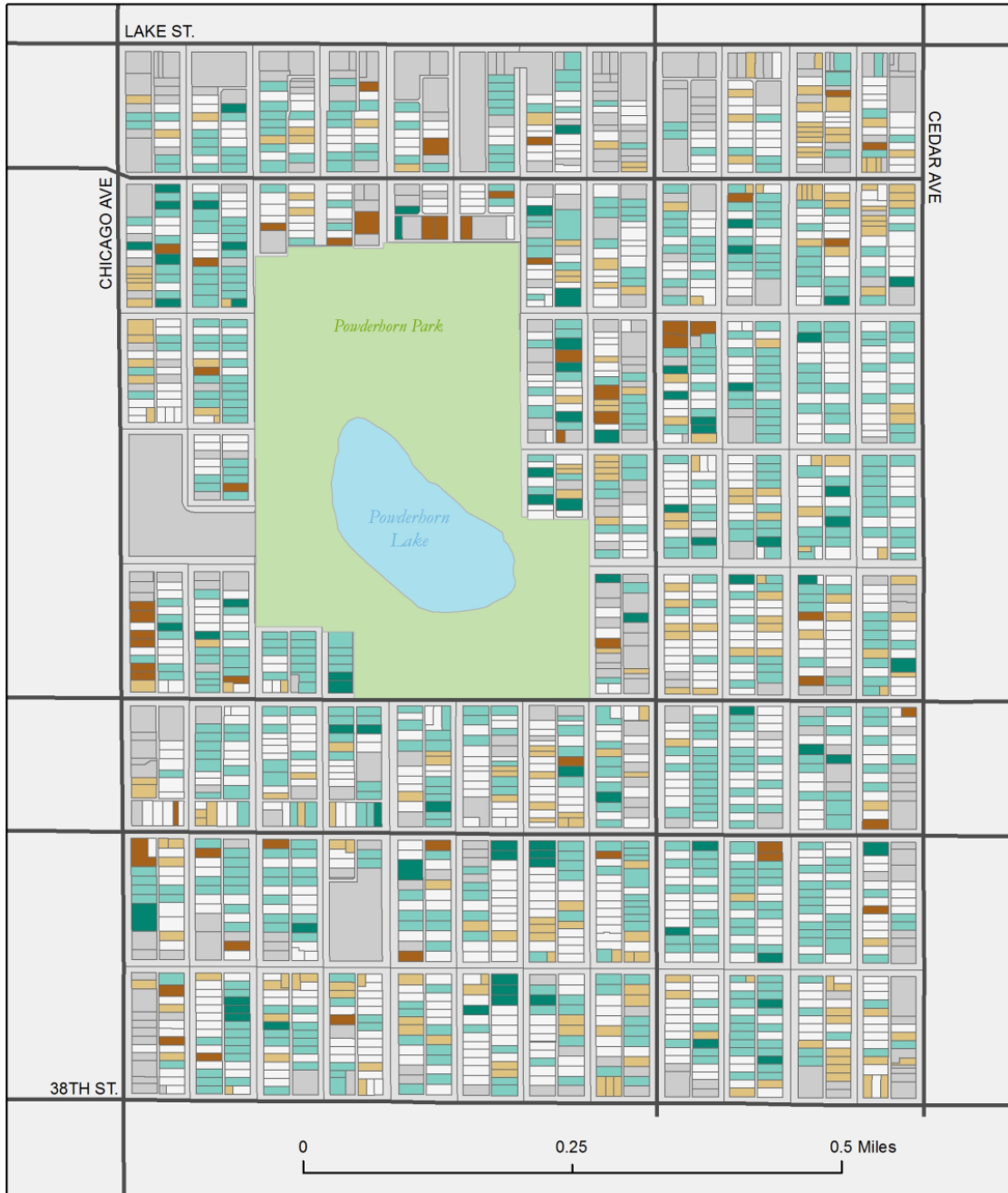- Poor
- No Data

Niko Walkowiak   April 17, 2012   Source: U.S. Census Bureau, City of Minneapolis   Projection: UTM Zone 15N

Figure 13 Map 7: Housing Condition by Block, 2012

Map 8: Value of Residential Parcels, 2007

Value of Residential Parcels in Powderhorn Park, 2007

Assessed Value of Residential Parcels, 2007

- $300,001 - $515,000
- $200,001 - $300,000
- $150,001 - $200,000
- $75,001 - $150,000
- $0 - $75,000
- Non-Residential Parcels
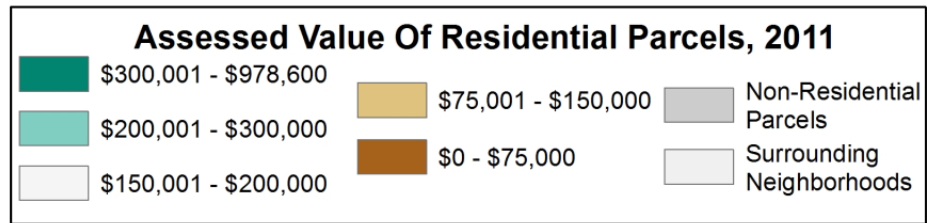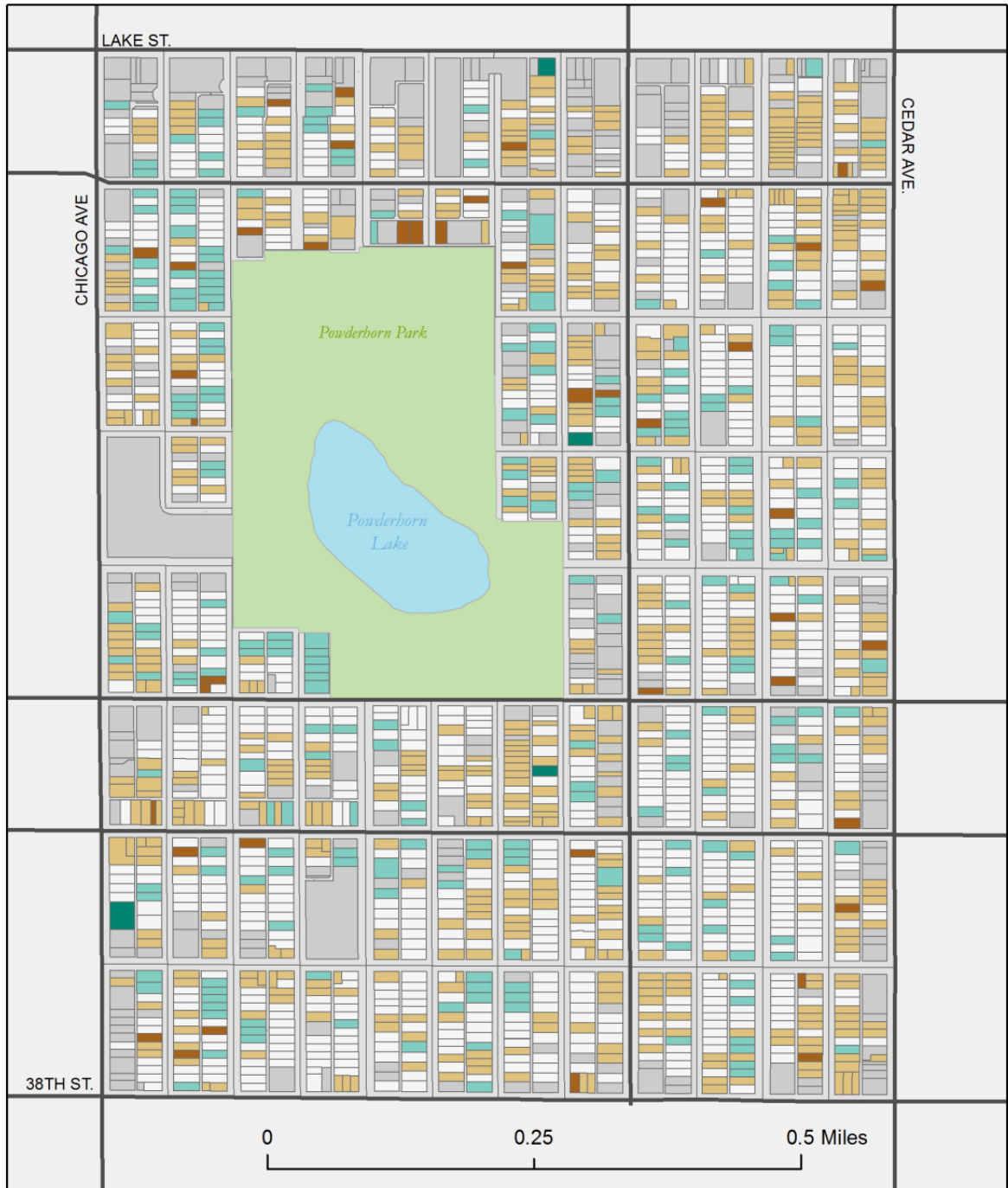- Surrounding Neighborhoods

Charlotte Fagan April 24th, 2012 Projection: UTM 15N Sources: MetroGIS

Figure 14 Map 8: Value of Residential Parcels, 2007

Map 9: Value of Residential Parcels, 2011

Value of Residential Parcels in Powderhorn Park, 2011

Assessed Value Of Residential Parcels, 2011

- $300,001 - $978,600
- $200,001 - $300,000
- $150,001 - $200,000
- $75,001 - $150,000
- $0 - $75,000
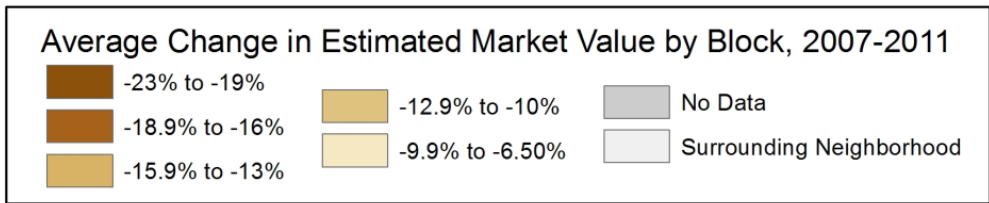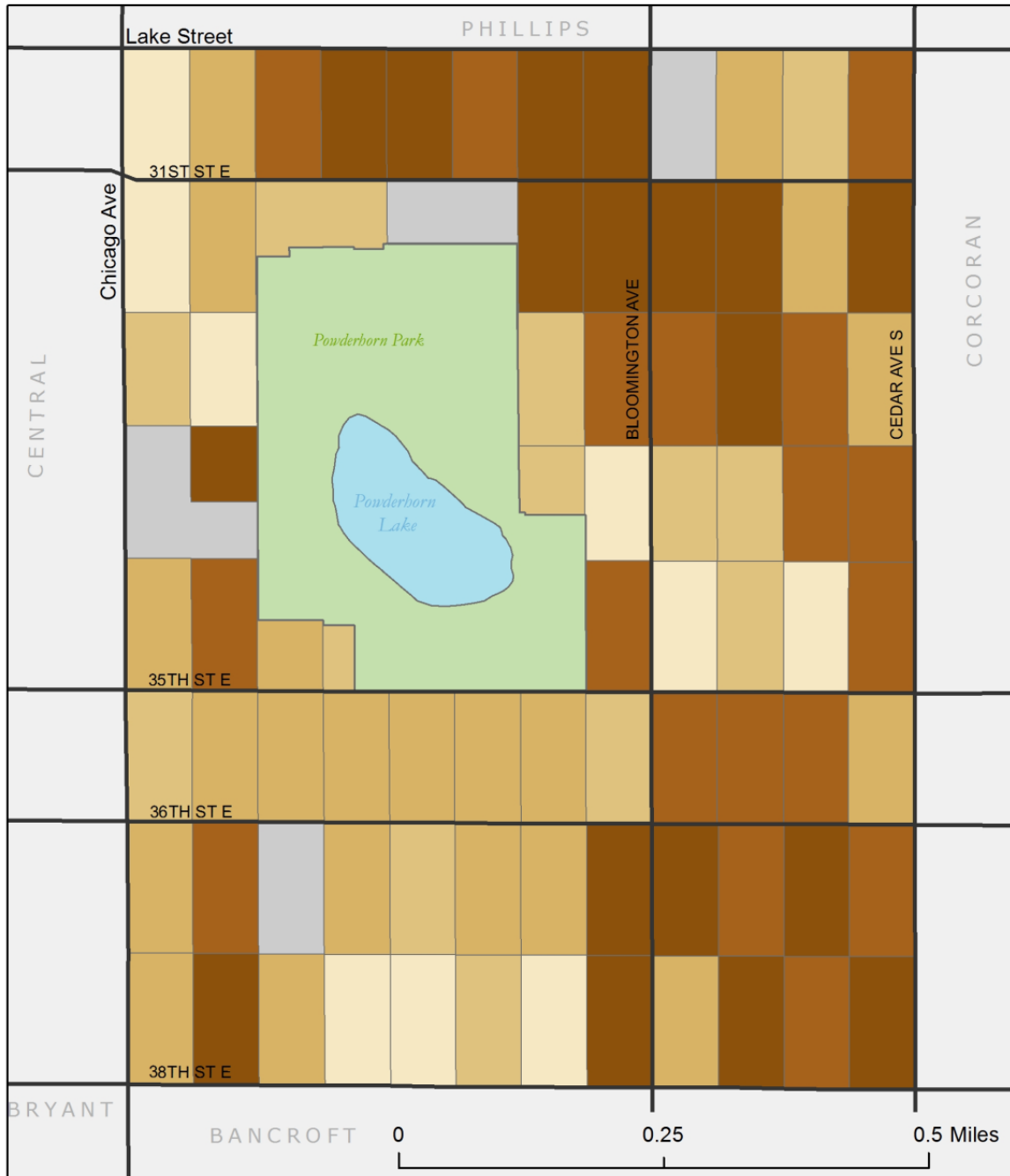- Non-Residential Parcels
- Surrounding Neighborhoods

Charlotte Fagan April 24th, 2012 Projection: UTM 15N Sources: MetroGIS

Figure 15 Map 9: Value of Residential Parcels, 2011

Value Retention by Block from 2007-2011

Average Change in Estimated Market Value by Block, 2007-2011

- -23% to -19%
- -18.9% to -16%
- -15.9% to -13%
- -12.9% to -10%
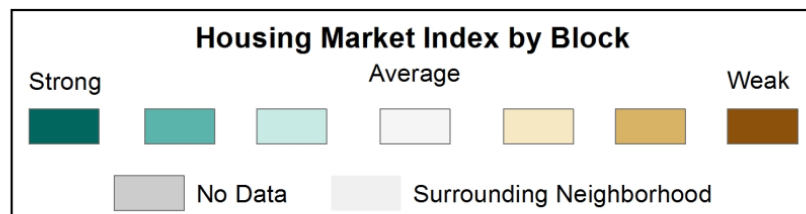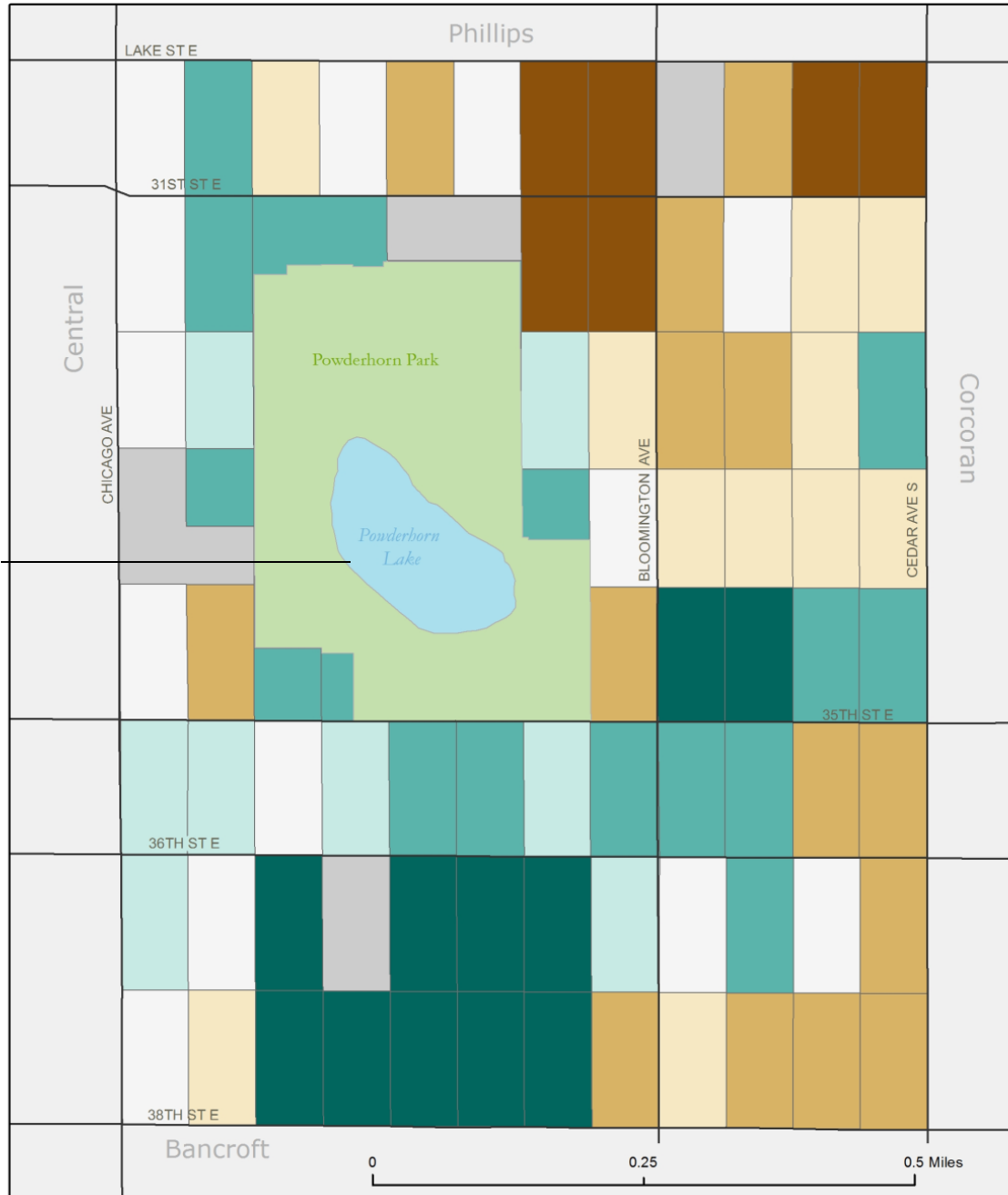- -9.9% to -6.50%
- No Data
- Surrounding Neighborhood

Charlotte Fagan April 24th, 2012 Projection: UTM 15N Sources: MetroGIS

Figure 17 Map 10 Value Retention by Block, 2007-2011

Map 11: Housing Market Index by Block

Figure 18 Map 11 Housing Market Index by Block

Community Partnerships to Examine Local Housing Markets: A Reflection

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Macalester College

In 2012, six years after the start of the economic recession, neighborhoods in the Twin Cities metropolitan area are still struggling to bounce back. Vacant and bank-owned housing remain commonplace in many neighborhoods and every week more individuals and families enter the foreclosure process. Despite these realities, few academic studies have focused on understanding the effects of the housing crisis on individual neighborhoods. Not many projects have collaborated with city residents or organizations to gather local knowledge on existing housing market strengths and weaknesses. Community-based housing studies with a block-by-block focus are vital for politicians, academics, community organizations, and other nonprofits that seek to revitalize struggling housing markets.

Last spring, the Macalester College Urban GIS class embarked on a research project using Geographic Information Systems (GIS) to visualize the lingering effects of the housing crisis on individual neighborhoods in the Twin Cities metropolitan area. Our methodology was informed by the Folwell Center for Urban Initiatives report "North Minneapolis Housing Market Index" (2011), which presents a block-by-block view of the housing market in North Minneapolis. The Macalester College Urban GIS class adapted the Housing Market Index (HMI) methodology for five additional Twin Cities metropolitan area neighborhoods: Powderhorn Park (Minneapolis), Longfellow (Minneapolis), Dayton's Bluff (St. Paul), Frogtown (St. Paul), and the City of Richfield.

Our study examined the following variables for each neighborhood: Vacancy, Owner-Occupancy, Condition, and Estimated Market Value Change Overtime. Combining these measures, we produced and mapped a Housing Market Index (HMI) for the neighborhoods to highlight areas of relative strength and weakness in each housing market. Partner organizations provided tours and vital information on housing trends, such as verifying the long-term vacancy status of particular houses. Combining our partners' knowledge with GIS expertise, this research collaboration illuminated the continued impact of the housing crisis on unique urban communities. The article submitted for this journal is a case study of the research completed for our partner organization in Powderhorn Park.

Reflections on this Community Based Research Project

This project taught me a number of lessons about the challenges and opportunities within community-based research. Three of the main challenges include: 1) designing a mutually-beneficial project for all partners given time and resource constraints, 2) incorporating local knowledge and community input, and 3) predicting the applications of this research for the neighborhood or community partner.

For this research, our class had to design a useful project for our neighborhood partners in the face of two significant constraints: a strict methodology to follow and a time limit of one semester. Our Urban GIS class was replicating a well-developed methodology from the Folwell 2011 HMI study and our partners were involved out of an interest in acquiring their own local HMI analysis. Indeed, our class extended the original HMI methodology in some meaningful ways; unlike the Folwell study, this was a "community-based research project" in that our

partners weighed the importance of each individual HMI variable for their local housing market. For instance, in Powderhorn Park, our partner saw Vacancy as a better indicator of housing strength/weakness than Owner-Occupancy, and weighed these variables accordingly. Some organizations also directed each student group to classify visual data differently or create additional maps to fit their interests. For instance, the Powderhorn Park group created supplemental maps on the age and types of housing in the area. Despite these positive adjustments to the HMI methodology, time was a significant constraint on more substantive research extensions. Our semester-long class was limited in our ability to focus the research on other needs of our community partners, such as mapping foreclosures or sheriff sales.

This project also highlights the challenge of incorporating local knowledge and community input into the research process. It made logistical sense to work with neighborhood associations and other civic organizations to acquire local input on the housing market. The HMI methodology was useful for our chosen partners because they focus on neighborhood-scale development and residents' quality of life. However, while they are undoubtedly invested in the development of the communities in which they work, the participating organizations may not fully represent the interests of all neighborhood residents. Indeed, long-time homeowners, business-people, renters, landlords, and others have very different ideas of what factors influence the strength of an area's housing market. Given more time, our research could benefit from more in-depth engagement with the residents and their perspectives on the need for housing investment and support.

In one final frustration, this project generated uncertainties about the ultimate application of community-based research. We found that it is nearly impossible to identify how community partners will make use of finished research. Although our community partner in Powderhorn Park has had programs to support housing and homeowners in the past, financial resources, staff time, and volunteers remain scarce. Our report may be helpful for our partner's future grant applications and requests for housing programs and nonprofit partnerships. With our maps, our neighborhood partner might be able to show how outside investment—such as grants or loans to homeowners or investment in new affordable housing—could make a huge difference when focused on a single block or zone. However, at this time, it is unclear if the HMI data will actually inform the work of their organization, given their current workload and organizational foci.

In order to address some of these frustrations and to produce a more beneficial community-based housing study, some methodological changes should be made. Future research must allow community partners to *determine* (not just weigh) the variables that signal relative strength and weakness in their local housing market. In such a collaborative process, our discussion might start with the question, "what does a strong housing market look like?" or "what are some signs of weakness?" This version of the project may involve preliminary deliberation on what housing trends would be useful to map and what specific data we can feasibly gather and produce. Such an open-ended research process would also have drawbacks. Shifting away from an index with a fixed set of variables would limit the researcher's ability to compare neighborhood housing markets with one another. In this way, our project reveals the tension of designing a project that is neighborhood-specific and beneficial for practitioners while also generalizable and replicable for future studies.

Despite its challenges, this project also reveals the immense possibilities that exist in the field of community-based applications of GIS technology. This project was a step towards making housing market research more inclusive and relevant for the purposes of community

actors and institutions. Because of our affiliation with an academic institution our class had access to up-to-date GIS technology and datasets not readily available to small, lower-budget, neighborhood-based organizations. This project also afforded Macalester students a chance to learn advanced tools of GIS and to apply their knowledge to look at housing problems facing local residents and community organizations.

Through this project, I learned more about the work of neighborhood associations and local governments, as well as local initiatives addressing foreclosure and housing affordability. I gained practice in synthesizing and presenting information in a way that is accessible for non-academic audiences and those less familiar with GIS. Most importantly for me, the structure of this project encouraged the question, "How can I apply my knowledge and skills to address local housing problems and concerns in a meaningful way?" Now that I have graduated from Macalester College, this question—and by extension, this experience of community-based research—will guide the commitments I make in my personal and professional life for years to come.

I'd like to express my deepest gratitude to Professor Laura Smith of the Macalester College Geography department. Her challenging coursework and unending encouragement during my time at Macalester has inspired a lifelong commitment to learning. I'd also like to thank my peers in Macalester's Urban GIS course and our various neighborhood partner organizations that made the final report possible.

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