

MINNEAPOLIS RIVERFRONT VITALITY INDICATORS PROJECT



A collaborative project between the Macalester College Department of
Geography and the Minneapolis Riverfront Partnership
Spring 2013

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Cover photo by Renata Nelson

AUTHORS

The authors of this report were enrolled in the Urban GIS course in the Department of Geography at Macalester College during the spring semester of 2013.

Students

Zachary Avre
Alexander Bentz
Andrew Feinberg
Hannah Fong
Eric Goldfischer
Talia Groom
Carey Hert
Jesse Horwitz
Harry Kent
Agata Miszczyk
Renata Nelson
Daniel Otte
Leah Plummer
Alex Schieferdecker
Anne Sombor

Course Instructors

Laura Smith, Associate Professor of Geography
Ashley Nepp, GIS Lab Instructor

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Finally, enormous thanks to our professors Laura Smith and Ashley Nepp. We could not have done it without their good humor, cheerful encouragement, and ability to orchestrate a large project. Their pedagogical, statistical, and technological skills were instrumental to our success.

EXECUTIVE SUMMARY

Urban waterfronts have historically played a key role in the growth of cities. Today, their transformation continues to shape cities and land use activity. The reimagination of urban riverfronts is closely linked to potential opportunities for drawing in economic development, increasing employment, and enhancing the quality of life in a region.

The purpose of this report is to provide a benchmark assessment of the Mississippi Riverfront in Minneapolis, MN. Macalester College's spring 2013 Urban GIS class collaborated with the Minneapolis Riverfront Partnership and the Community Development Department of the Federal Reserve Bank of Minneapolis to realize this study.

This report provides the foundation for future research and study by producing a series of vitality indicators and portraying the data through maps. The report focuses on four major areas of riverfront vitality: employment and investment, commercial vitality, residential vitality, and riverfront access. These indicators provide a measure of current economic and social conditions along the riverfront.

In terms of employment and investment, this research finds that in general the critical study area shows a high level of investment. However, there is room for job expansion and wage growth in the Upper River. Additionally, there is significant consumer spending in the predominantly residential Lower Gorge. This indicates a potential opportunity to introduce a different set of assets in order to capitalize on proximity and create a walkable, mixed-use space.

This research also demonstrates that the Central River is an established commercial corridor. The indicators point to potential growth of commercial businesses in the Upper River, which is currently predominantly industrial; the Upper River also has the largest number of vacant commercial properties. In addition, the research points to a need to increase the size of the critical study area as many of the commercial properties – and the effects of these commercial properties – fall outside of the current study area.

In relation to residential vitality, this report indicates that the river may serve as a stabilizing force on the housing market in the Central River and Lower Gorge. The Central River shows many signs of investment in the residential market, including the highest estimated market values, new residential construction permits, and the highest value sales within the critical study area. The Upper River, on the other hand, reveals a dearth of sales, lower property values, few residential construction permits, and a higher residential vacancy rate.

As for access to the riverfront, this research finds that pedestrian access is greatest in the downtown area of the Central River and weakens significantly as one travels further north or south. Similar unevenness is observed in public transit access. Public transit connections are strongest from Northeast Minneapolis to the Central River. Bicycle infrastructure, on the other hand, is uniformly accessible throughout the critical study area.

Overall, this study suggests that there is opportunity for development and improving access in the Upper River. At the same time, the report recommends expanding the definition of the critical study area in order to assess the larger impact of waterfront development on the region. The following series of maps and concomitant analysis provide valuable information on the current social and economic vitality of the Minneapolis Riverfront.

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INTRODUCTION

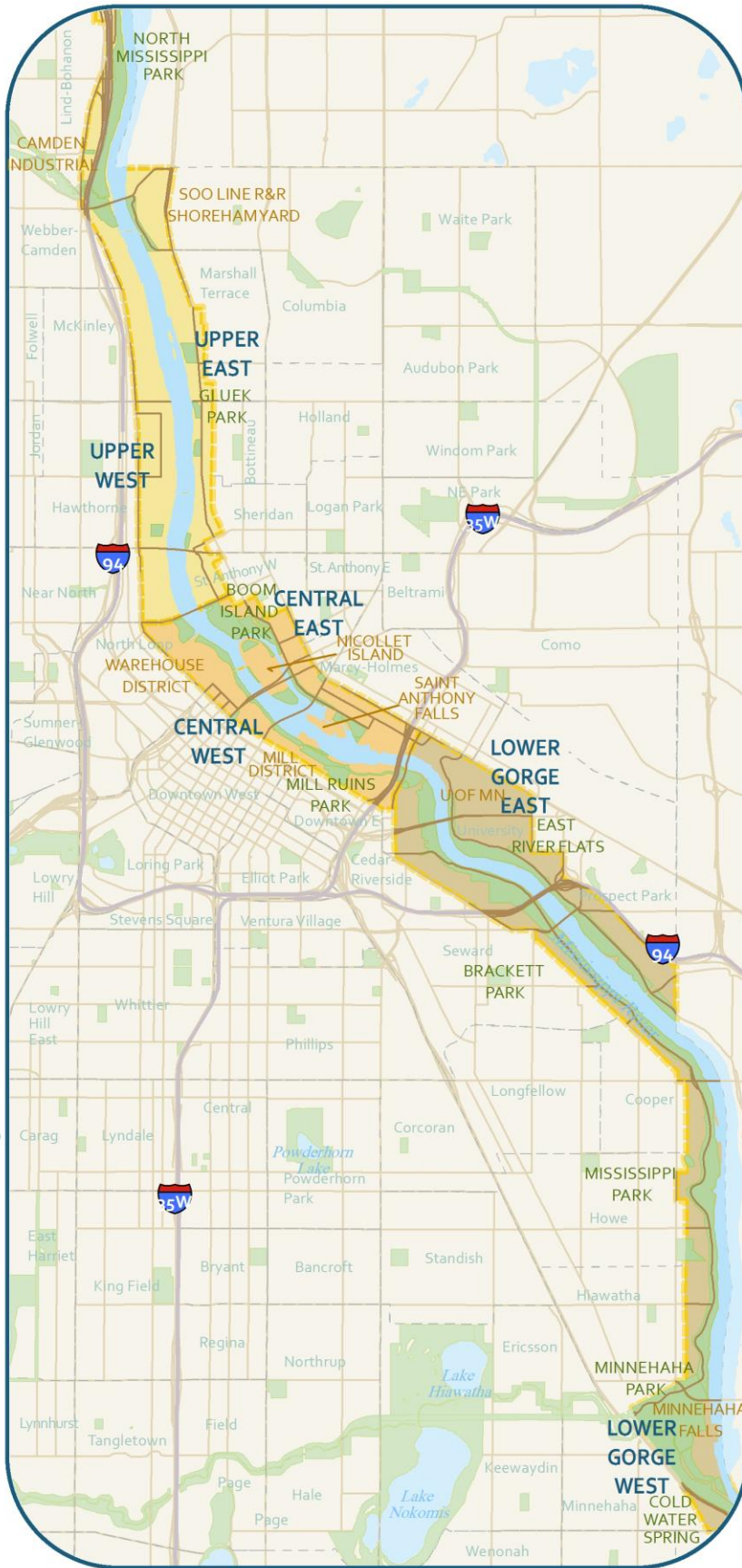
The Mississippi River, with its serpentine curves and ponderous waters, has profoundly shaped the life of its two northernmost major cities, Minneapolis and Saint Paul. The cities were founded on the back of the river; Saint Paul as the last navigable point, and Minneapolis as the site of St. Anthony Falls, a landmark of both economic and spiritual significance. Today, the riverfront remains just as vital to the life of the metropolitan area as it was to the Dakota people and the early settlers from the east. From stories of visitors from other cities floored by the beauty of the river in downtown Minneapolis to more spatial and statistical measures of the role of the riverfront in economic development, it is clear that, even with over 150 years of cultural, geographic, and economic expansion, the Mississippi River remains central to the life and livelihood of the Twin Cities.

This project sets out to understand the impact of the riverfront as measured by a number of key vitality indicators. We use these indicators to establish a baseline for observing how the riverfront is shaping the vitality of both its immediate surroundings and the region as a whole. The indicators are grouped into four primary sectors, which also constitute the chapters of this report: Employment and Investment, Commercial Vitality, Residential Vitality, and Accessibility.

Each chapter presents different research questions, with maps used to visualize data relevant to those questions. However, one main question structured these separate chapters: What variables are useful towards indicating vitality? The following chapters illustrate the variables that we chose and their individual applicability towards a baseline understanding of the vitality of the Minneapolis riverfront. Overall, the report presents a picture of the entire riverfront that both highlights successes in the different categories and also clearly portrays the need for improvement in certain places, shown primarily spatially but also statistically.

The Minneapolis Riverfront Partnership (MRP), our partner in this endeavor, provided the parameters for the critical study area displayed on the next page. This study area remains the central point of analysis in our study, particularly through its designation of the three sections of the riverfront: the Lower Gorge, the Central River, and the Upper River. As will be seen throughout, these sections have very different natural strengths and also pose unique challenges to vitality based on geography, demographics, and policy. This basemap of the riverfront and the partnership with MRP provide the framework for our investigation, beginning with an examination of employment and investment.

Minneapolis Riverfront Study Area Reference Map

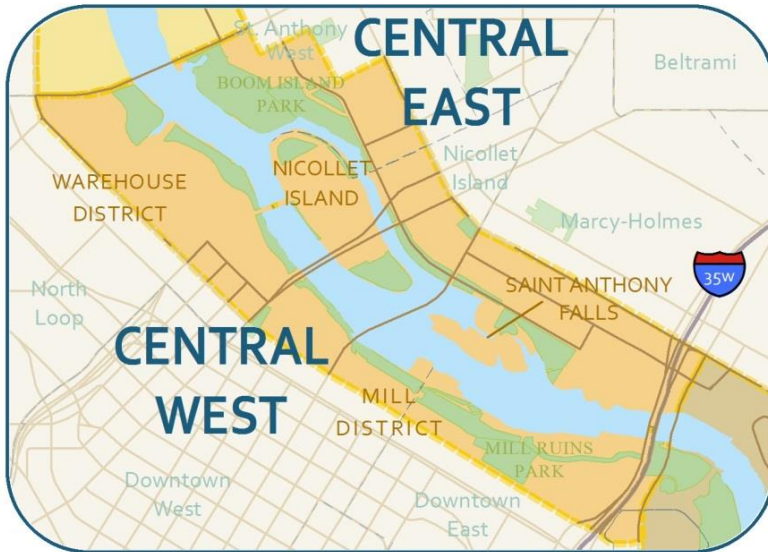
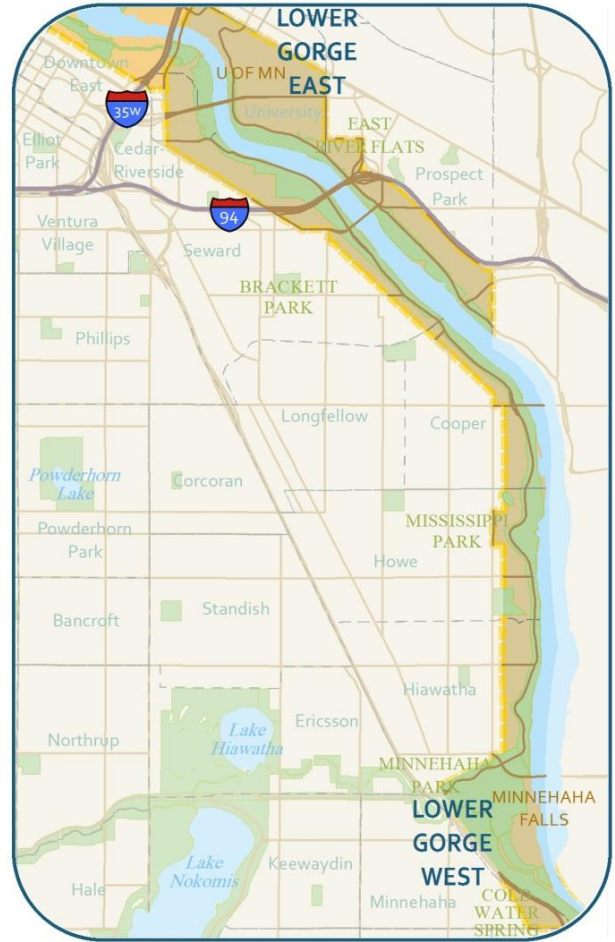
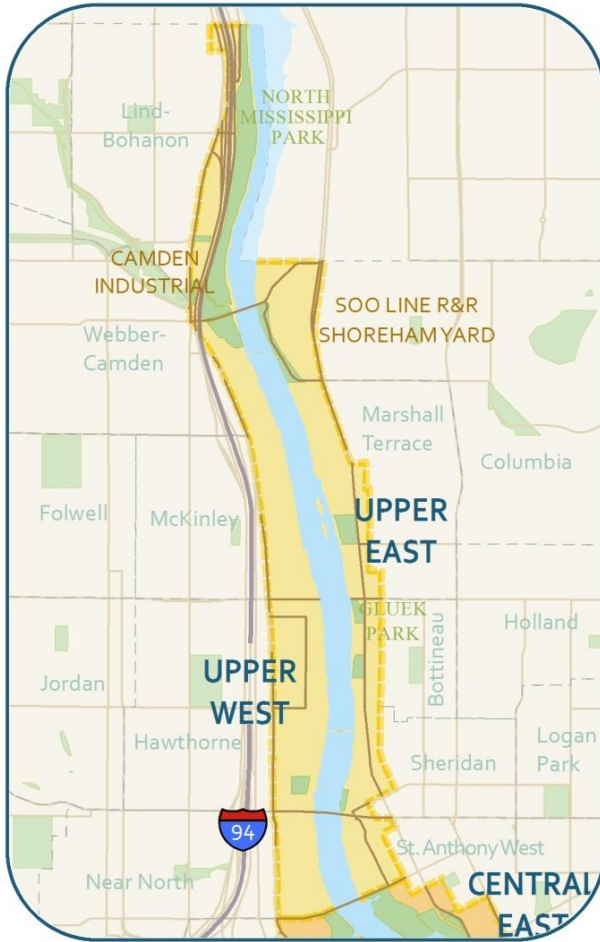


-  Study Area
-  Neighborhood
-  Interstates
-  Roads
-  Parks
-  Water

0 2.5 5 Miles

Anne Sombor
 10 April, 2013
 NAD 1983 UTM Zone 15N
 Transverse Mercator Projection
 Met Council, ESRI, MNDOT

Minneapolis Riverfront Study Area



- Study Area
- ~ Water
- ~ Park
- Neighborhood
- Interstate
- Study Area Road
- Roads

Zack Avre
 May 6, 2013 Projection: UTM Zone 15N
 Sources: MetCouncil, ESRI, MnDOT, Minneapolis Riverfront Partnership

RESIDENTIAL VITALITY

Zack Avre, Talia Groom, Dan Otte, Anne Sombor

Introduction

Several questions guided our examination of the Mississippi Riverfront's residential market vitality. We were most interested in assessing how development along the riverfront has affected the strength of the housing market. In addition we chose to look at the characteristics of the housing market along the riverfront in comparison to adjacent neighborhoods in Minneapolis. Through this analysis, we were curious to discern whether proximity to the riverfront has a stabilizing or bolstering effect on the residential market. In addition, we were interested in seeing if certain groups in particular are benefiting from development along the riverfront.

Based on these principal research questions, our vitality indicators broke down into three overarching categories: demographics, housing stability, and investment in the housing market. Within demographics, we examined diversity, median household income, average family size, population density, and owner-occupancy rate. To assess housing stability, we investigated estimated market value (EMV), change in EMV, residential vacancy rate, foreclosure density, and affordable housing along the riverfront. Lastly, to gauge investment in the housing market, we looked at new residential construction permits, vacant residential parcel ownership, and residential parcel sales within the study area.

Vitality Indicators

Demographics

Diversity Index

Evaluating the health of a residential housing market requires a basic understanding of the demographics of the residents inhabiting an area. Not only do indicators like racial and ethnic composition, average family size, and income provide important context to issues of segregation and concentrations of poverty, but they also reflect existing and future residential preferences. This study will first examine the racial and ethnic composition within the study area. Instead of mapping the distribution of every racial and ethnic group in the study area, this study will employ the Diversity Index developed by ESRI at the block group level as a proxy for diversity along the Mississippi riverfront in Minneapolis. The Diversity Index reflects ethnic and racial diversity and calculates the probability that two people chosen randomly from the same geographic area belong to differing racial or ethnic groups.¹ The index encompasses seven racial categories (White, Black, American Indian, Asian, Pacific Islander, Some Other Race, and Two or More Races) and two ethnic origins (Hispanic and non-Hispanic). The Diversity Index ranges from 0 (*no diversity*) to 100 (*complete diversity*). Therefore, areas with entirely one racial or

¹ ESRI. December 2012. "Diversity Index Statement 2012."

ethnic group have *zero diversity*, whereas areas evenly divided into two or more racial or ethnic groups achieve *complete diversity*. As a reference, the Diversity Index for Minneapolis in 2011 was 64.2, or a 64.2 percent chance that two people chosen randomly from Minneapolis belonged to different racial or ethnic groups. The Diversity Index for the United States in 2011 was 60.85.

Median Household Income

Median household income, similar to the diversity index, is a critical demographic for analyzing who lives along the Riverfront in comparison to adjacent neighborhoods. Galster et al. (2005) point out in that median household income is an important sign of a neighborhood's quality of life. By incorporating demographics in our study, we hope to illustrate who is benefiting from the development of the riverfront. We are curious whether there already exists, or if there is a potential for, mixed development by income, average family size, race, etc. The data for median household income were obtained from ESRI's 2011/2016 Demographic Updates and Projections database at the block group level. As a reference, the median household income for Minneapolis in 2011 was \$41,056.

Average Family Size

Average family size provides demographic insight into the types of households residing in an area. Examining the average family size, especially change over time, will shed light on the types of residents living within the study area and locations where demand for certain services or types of housing is high. For instance, larger average family sizes suggest areas with more families with children, whereas smaller average family sizes imply higher concentrations of singles and couples without children. This demographic detail is crucial to future development along the riverfront as well as to gauge the current representation of residents in the study area. The data for average family size were obtained from ESRI's 2011/2016 Demographic Updates and Projections database at the block group level. As a reference, the average family size for Minneapolis in 2011 was 3.13 people per family.

Population Density

Population density is in general a necessary baseline statistic in informing one's understanding of any inhabited area. As an indicator of vitality, there is no single target population density. Place-dependent arguments can be made in favor of a variety of different density levels. However, the vibrant residential neighborhoods typically desired within the urban core frequently have high population densities. This can be seen anecdotally in the centers of first order cities, such as Manhattan, Boston, and Chicago, as well as analytically in the work of Jane Jacobs and the New Urbanist school (Cleaveland 2006). High residential density ensures opportunity for investment and civic interactions by providing a stable populated presence, avoiding the phenomenon of the disinvested downtown that plagues the mid-tier American city, which fills with workers from nine to five but is utterly deserted during the evenings and weekends. In short, high residential density is what makes the city a city.

Owner-Occupancy Rate

The owner-occupancy rate looks at the percent of homes that are owner versus renter occupied. This indicator provides insight into affordability and permanence of residents within the residential market. Owning homes implies a long term commitment to a geographical location. It also represents a significant capital investment. Although rent can be very expensive and families can stay in one rented location for many years, overall rental units indicates that an area's residences are accessible to a variety of incomes and family types.

Housing Stability

Estimated Market Value (Total and Change)

Similar to construction permits, estimated market value (EMV) is an important indicator of the stability of the housing market. EMV captures property improvements, new construction, and adjacent sales. According to the Folwell Center for Urban Initiatives (2011) report, "North Minneapolis Housing Market Index," change in estimated market value is a useful indicator for measuring the value retention of a property. Analyzing both of these variables will suggest the resiliency of the housing market along the riverfront and the direction the housing market is trending. Estimated market values for the city of Minneapolis were provided at the parcel level through the MetroGIS parcel database.

Residential properties were selected based on the following building descriptions: "Apartment", "Residential", "Residential – Zero Lot Line – DB", "Residential – Miscellaneous", "Condominium", "Condominium – Garage/Miscellaneous", "Double Bungalow", "Housing – Low Income < 4 Units", "Housing – Low Income > 3 units", "Townhouse", "Triplex", "Vacant – Apartment", and "Vacant – Residential". For the change in estimated market value, we compared Total EMV from 2008 with Total EMV from 2011. We chose these two years because a larger time frame potentially masks changes that take place in a shorter period of time. We used a diverging color scheme to demonstrate parcels that have experienced a positive change in EMV and those that have experienced a negative change. We also highlighted parcels that were vacant in either 2008 or 2011.

Residential Vacancy Rate

The residential vacancy rate measures the percent of vacant residential units as a proportion of total residential units. The vacancy rate helps illuminate what areas are both affordable and desirable. If the market is functioning logically and the vacancy rate is extremely low, this means that supply of houses is likely lower than demand and the prices may be high. If the vacancy rate drops significantly, it may indicate that a narrower and narrower demographic can afford to live in the area, forcing out lower-income residents.

Foreclosure Density

In its August 2011 report, "Healthy Housing Indicators Analysis," the City of Minneapolis Department of Community Planning and Economic Development includes residential foreclosures as an indicator of housing distress. Residential foreclosures provide important insights into the strength, resilience, and overall health of an area's housing market. Single foreclosures in stable neighborhoods marginally impact nearby homes. High-density concentrations of foreclosures, on the other hand, can inflict widespread damage to surrounding

areas and correspond with plummeting home values and increased vacancy rates, threatening neighborhood stability and survival. Therefore, examining the density of foreclosures along the riverfront and comparing these values to surrounding neighborhoods in Minneapolis will suggest the strength, resilience, and overall health of the housing market along the river and determine whether or not the river acts as a stabilizing factor for this housing market. For this study, foreclosure density was calculated for the years 2007 to 2012 using data provided by the Hennepin County Sheriff's Office. The density data are calculated as foreclosures per 600-meter radius, or roughly one-third square mile.

Affordable Housing

Affordable housing is an important indicator of the vitality of the housing market because it indicates to what extent the river is accessible to all income levels that reside within Minneapolis. Housing Link defines affordable housing as that which costs “no more than thirty percent of a household’s annual income.”² This is distinct from low-income housing which more specifically encompasses “housing targeted for those below 50% of Area Median Income”.³ Our study looks at residences that have received funding intended to expand affordability to the lowest income bracket.

Investment in Housing Market

Residential Construction Permits

According to the Minneapolis “Healthy Housing Indicators Analysis” report, permit activity is a sign of investment in the housing stock. The City of Minneapolis collects data on new construction permits (BINB), which highlights large property improvements in addition to capturing new construction. The number of new construction permits indicates financial investment in the housing market, which is an important measure of stability and community vitality.

Identifying the number of residential permits and when they were issued can demonstrate how investment in the housing stock has changed over time as well as spatial patterns related to new construction. In order to select the residential construction permits, the 2011 MetroGIS parcel data were joined to the new construction (BINB) shapefile. Construction permits were then selected that are described as “residential” in the land use category of the parcel database. The following variables constituted a residential parcel: “Residential”, “Apartment”, “Condominium”, “Double Bungalow”, “Townhouse”, and “Triplex.” In addition to highlighting the residential construction permits, we chose to select and isolate low-income housing with more than three units and vacant parcels that are allocated for residential use. These parcels may be of particular interest for groups that believe low vacancy and affordable housing are primary indicators of a healthy and equitable residential market.

² Housing Link. “Housing Terms.” 2005. <http://www.housinglink.org/Files/Housing%20Terms.pdf>

³ Ibid.

Vacant Residential Parcels, by Ownership Type

The intention of this category is to recognize the power of institutions and large landholders in shaping land use change. This map displays the incidence of vacant parcels zoned as residential, according to the most recently available city parcel data (October 2011). There is an important distinction between the types of vacancies displayed here and the types of vacancies displayed in the ‘Residential Vacancy Rate’ maps, as those vacancies are based on Postal Service data, which accounts for habitable structures which are not being lived in. The ‘Vacant Residential Parcel’ classification describes land that is zoned as residential but is not inhabitable, e.g. an empty lot or a derelict structure. These parcels, then, are particularly suitable for residential development. Establishing the spatial location of these parcels and the corresponding owner type allows for identifying areas suitable for development efforts. Furthermore, identifying by owner type informs of the potential stakeholders in development efforts.

The categories of parcel owner are individual, developer/private business, city, other, the state, and the University of Minnesota. These categories were chosen because government-held land may offer strong opportunities for public partnership in development, while privately-held vacant parcels may indicate a particularly weak residential market. The ‘other’ classification includes land that is currently held by a party presumably not interested in residential development, such as a utility.

Residential Parcel Sales

This indicator displays housing sales within the critical study area from 2009 until 2012. The spatial location of sales can be informative in two principal ways: areas with higher numbers of sales show a particularly strong market, though a lack of sales may simply show a strong local commitment of homeowners (not necessarily a weak market). Only “valid sales” are included in the accompanying map. “Valid sales” are considered to be open market transactions; bank and government sales resulting from bankruptcy or foreclosure are not included here, nor are familial transactions. Therefore a general sense of the value of the housing market is displayed as well, although due to the generalization of a number of years and different property sizes for display here, EMV is probably a better measure.

Discussion and Analysis

Demographics

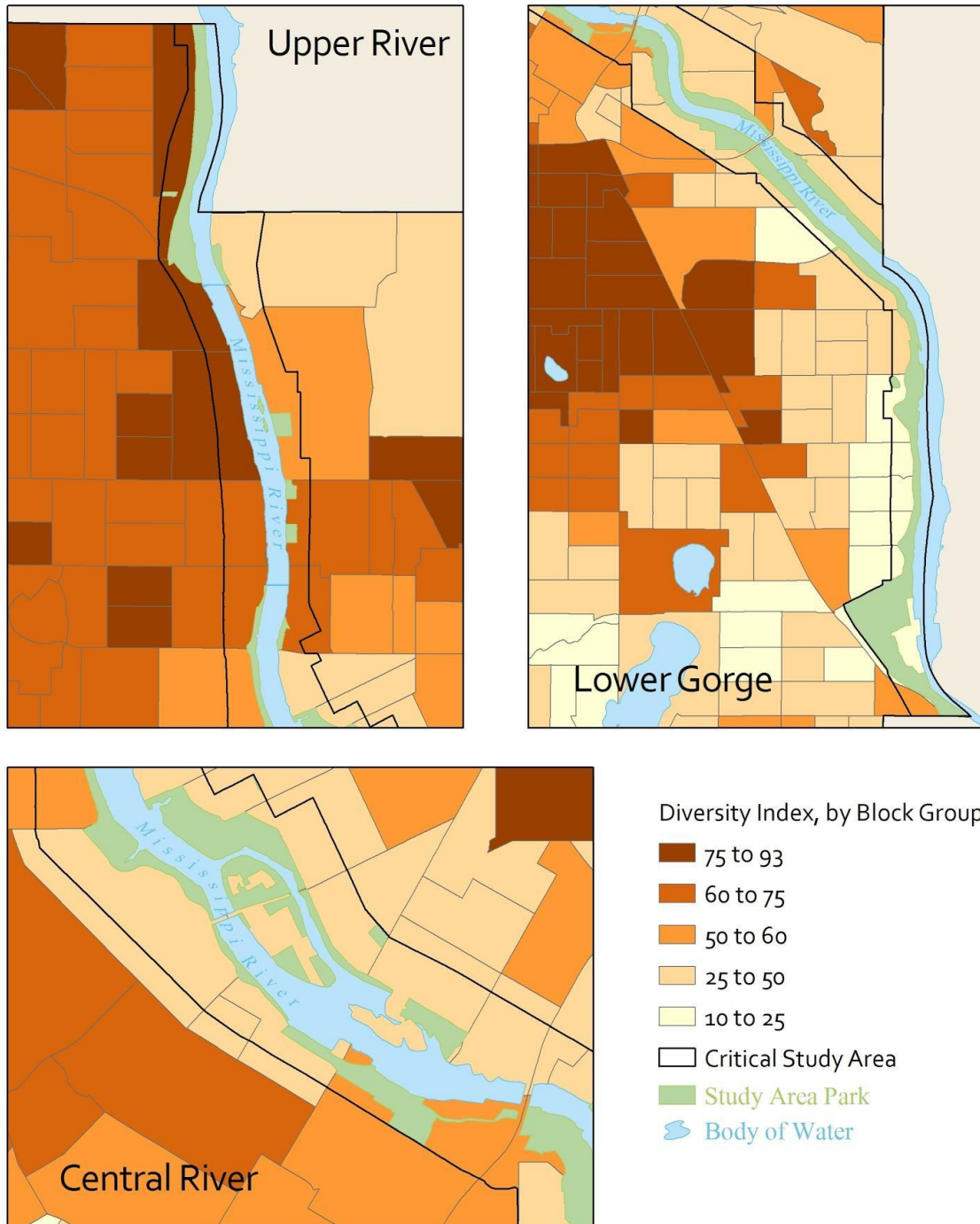
Diversity Index

Along the Minneapolis riverfront, the level of diversity remains varied among the three sections of the riverfront. As shown in Figure 3.1, most block groups in the Upper River, which includes neighborhoods in North and Northeast Minneapolis, exhibited a relatively high Diversity Index in 2011. In fact, the majority of block groups in the Upper River have Diversity Indices above the city and national levels of 64.2 and 60.85, respectively. Moving down the river, however, diversity decreases. While block groups in the Central River have a mix of Diversity Indices, most block groups in this region have diversity levels below 50 percent. This trend is reflected in

much of the Lower Gorge as well. Though pockets of diversity exist in Cedar-Riverside and around the University of Minnesota campus, Lower Gorge neighborhoods are predominantly homogenous and even have diversity levels below 25. More striking, however, neighborhoods in both the Central River and Lower Gorge have lower diversity levels than the surrounding communities. Unlike in the Upper River, diversity drops near the river in these two segments.

Looking ahead to 2016, however, these relatively less diverse communities in the Central River and Lower Gorge are projected to become more diverse. Using future projections calculated by ESRI, Figure 3.2 illustrates that between 2011 and 2016 Diversity Indices for the overwhelming majority of block groups along the Minneapolis riverfront will increase, indicating greater diversity along the riverfront. In fact, much of the Lower Gorge will witness growth in diversity by 5 to 20 percent. Likewise, the Central River is projected to become increasingly diverse, as well. The only block groups expected to see diminished levels of diversity (two in North Minneapolis and one in Cedar-Riverside) already have relatively high Diversity Indices. Overall, these two maps suggest that while diversity levels along significant portions of the Minneapolis riverfront are relatively low the riverfront is expected to become more diverse over the next few years.

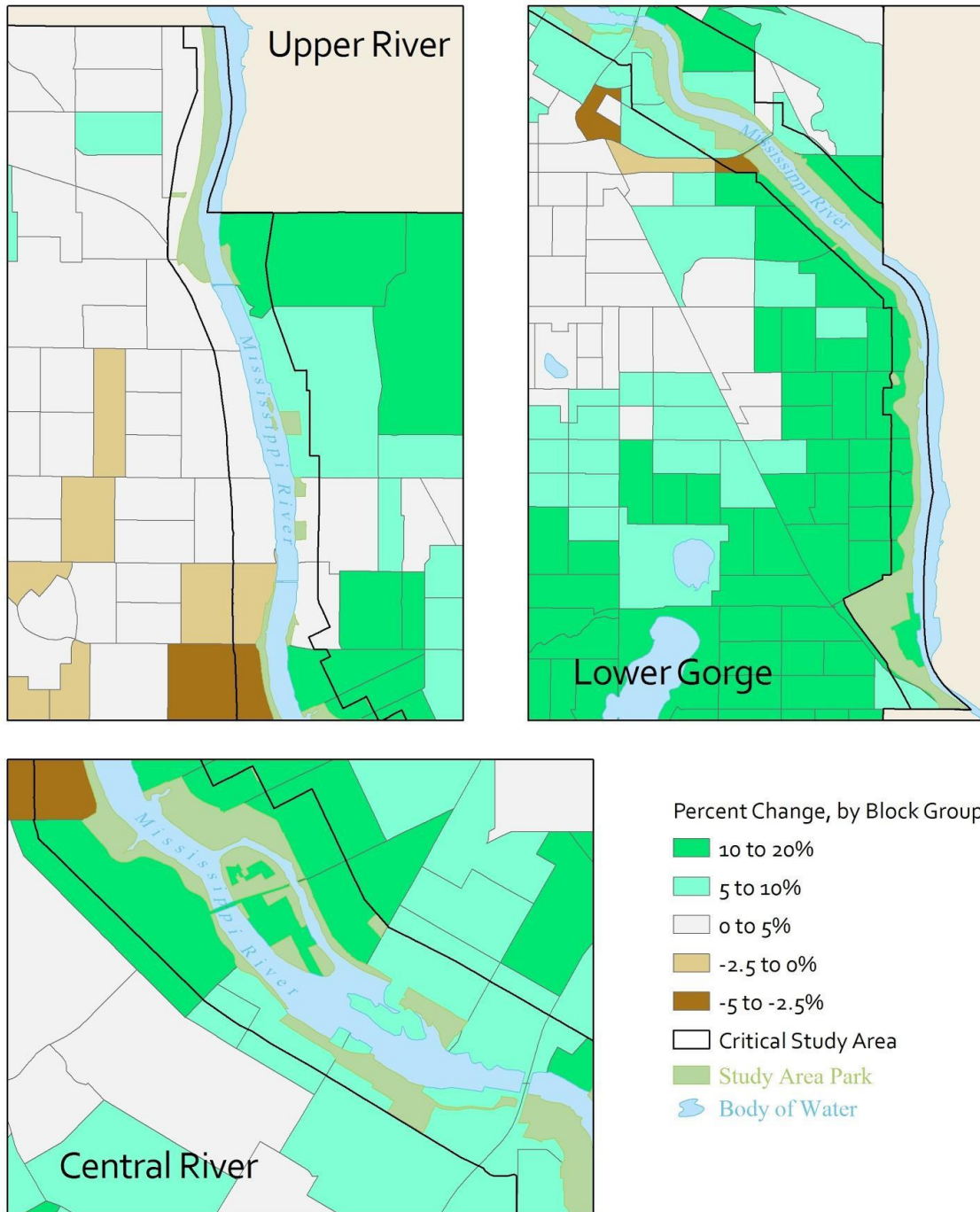
Diversity Index along Riverfront, 2011



Cartographer: Zack Avre
 May 6, 2013 Projection: UTM Zone 15N Sources: ESRI, Met Council, Minneapolis Riverfront Partnership

Figure 3.1. Diversity Index, 2011

Change in Diversity Index along Riverfront, 2011 to 2016



Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: ESRI, Met Council, Minneapolis Riverfront Partnership

Figure 3.2. Change in Diversity Index, 2011 to 2016

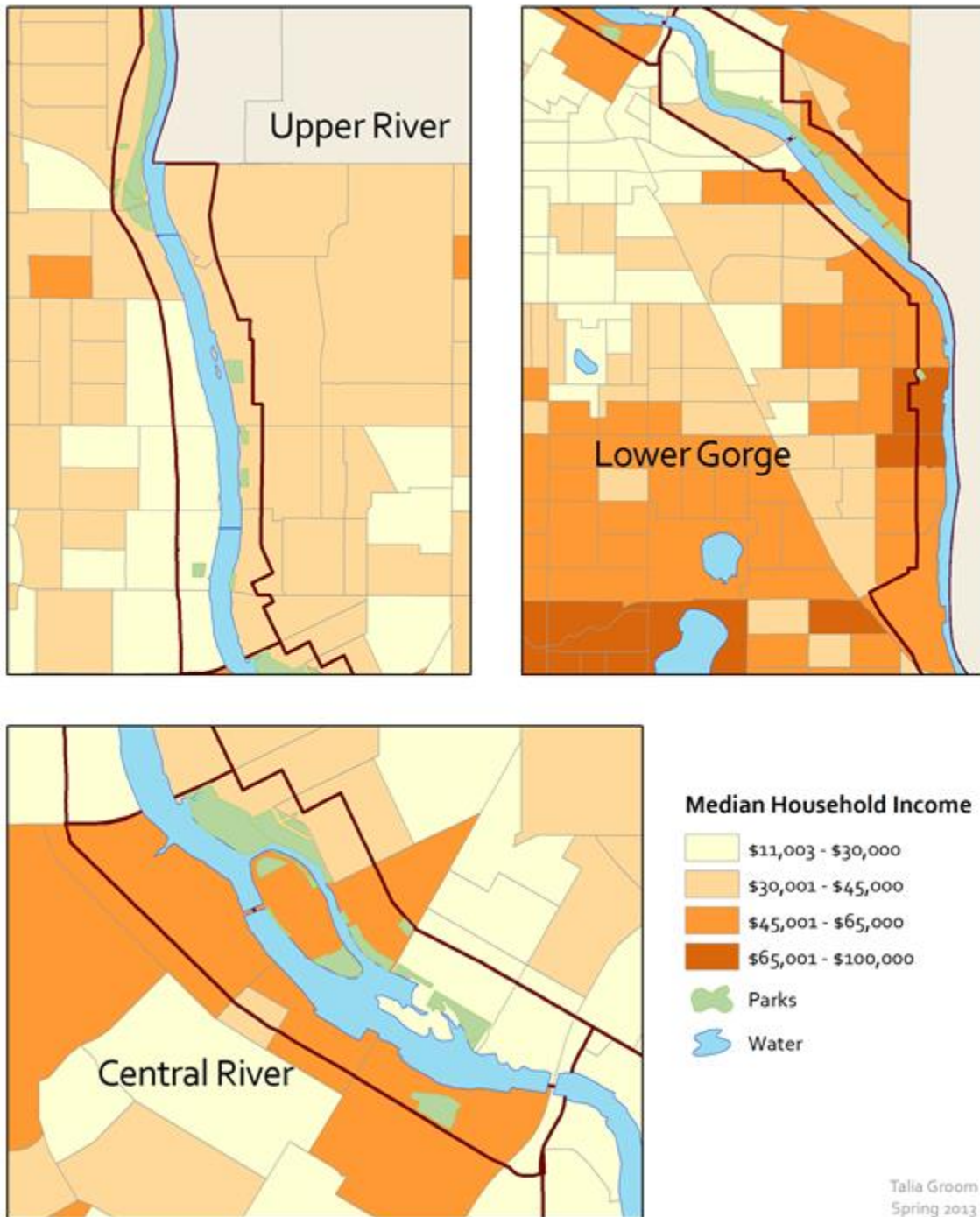
Median Household Income

In relation to our findings for median household income in the study area (see Figure 3.3), we found that there was great variability along the riverfront. As of 2011, the median household income along the study area ranges from approximately \$11,000 to \$100,000 per block group. While there is an overall variation in median household income throughout the study area, we also noticed that there were spatial patterns within the three sections of the riverfront. In the Upper River, the majority of block groups had a median household income between \$31,000 and \$47,000. There are also several block groups in the Upper River that have median household incomes between \$11,000 and \$31,000. This makes sense because the Upper River has a greater concentration of industrial activity and lower property values in comparison to the Lower Gorge and Central River areas.

In the Central River we see more variation in median household income. The block groups in this area have a median household income that ranges from approximately \$11,000 to \$65,500. The Lower Gorge has block groups with the highest median household income. In the northern section that is adjacent to the Central River, in the University and Cedar-Riverside neighborhoods, there are lower median household incomes. Similar to our analysis of the average family size, we believe that the greater variability in household income in the Lower Gorge and Central River can be explained partially by a higher density.

In addition to recognizing the greater variation in median household income in the Central River and Lower Gorge, we noticed that the median household income of block groups in these two sections is higher than the income of adjacent block groups. This was an interesting finding and suggests that proximity to the riverfront has a bolstering effect on the housing market. We believe that this trend is not apparent in the Upper River because of the large presence of industrial activity on the riverfront.

Median Household Income by Block Group, 2011



Talia Groom
Spring 2013
UTM Zone 15N
Sources: ESRI, MetCouncil

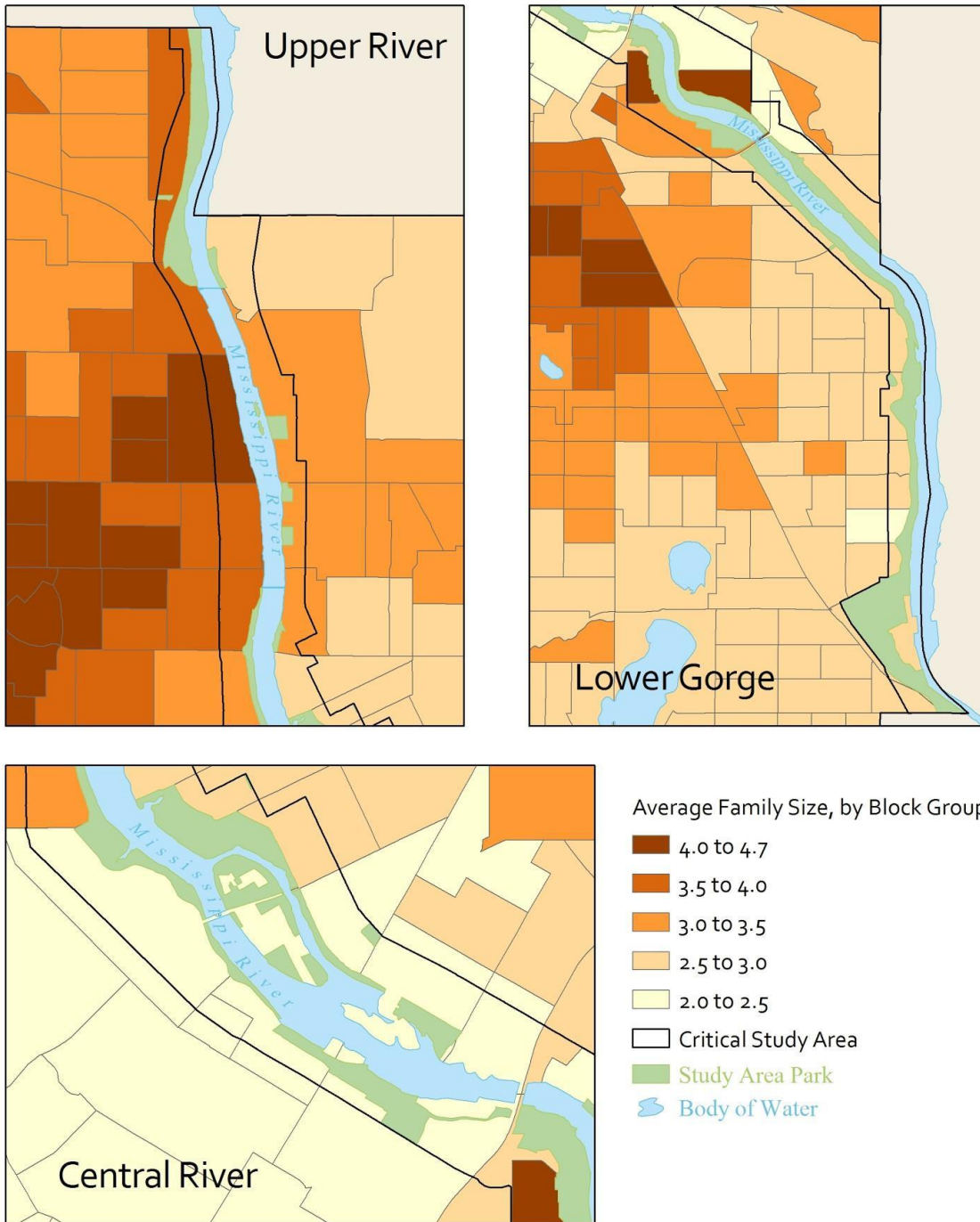
Figure 3.3. Median Household Income, 2011

Average Family Size

As of 2011, average family size varied greatly along the Minneapolis riverfront. In the Upper River, most block groups had an average family size above 3.0, as shown by Figure 3.4. The darker shading along much of the Upper River suggests that these neighborhoods contain more families with children than their counterparts down the riverfront. Within the Central River, most block groups fall in the lowest category of 2.0 to 2.5, with the exception of the University and Cedar-Riverside neighborhoods. The Lower Gorge falls within these two extremes; with the majority of its block groups falling into the category of 2.5 to 3.0 people per family, the Lower Gorge has a mid-ranged average family size indicative of smaller families. Overall, in 2011, the Upper River was the only area with average family sizes above the city average of 3.13 people per family, while the Lower Gorge and Central River were well below city levels and had the smallest average family sizes in the study area.

Looking at projections for 2016, average family sizes in the study area look to expand within the Central River. As depicted in Figure 3.5, most block groups in the study area are expected to have decreases in average family size between 2011 and 2016, especially in the Lower Gorge and portions of the Upper River. However, a few sections of the Central River are expected to see growth in average family size up to 5 percent, and greater than 5 percent near the University of Minnesota. While this projection by ESRI implies that more families with children will move into downtown and near the University of Minnesota campus within the study area, the map as a whole suggests that family sizes in the study area will see minimal growth or even contraction. This general shrinkage could signal changing demographic patterns and lifestyle preferences within the study area.

Average Family Size along Riverfront, 2011

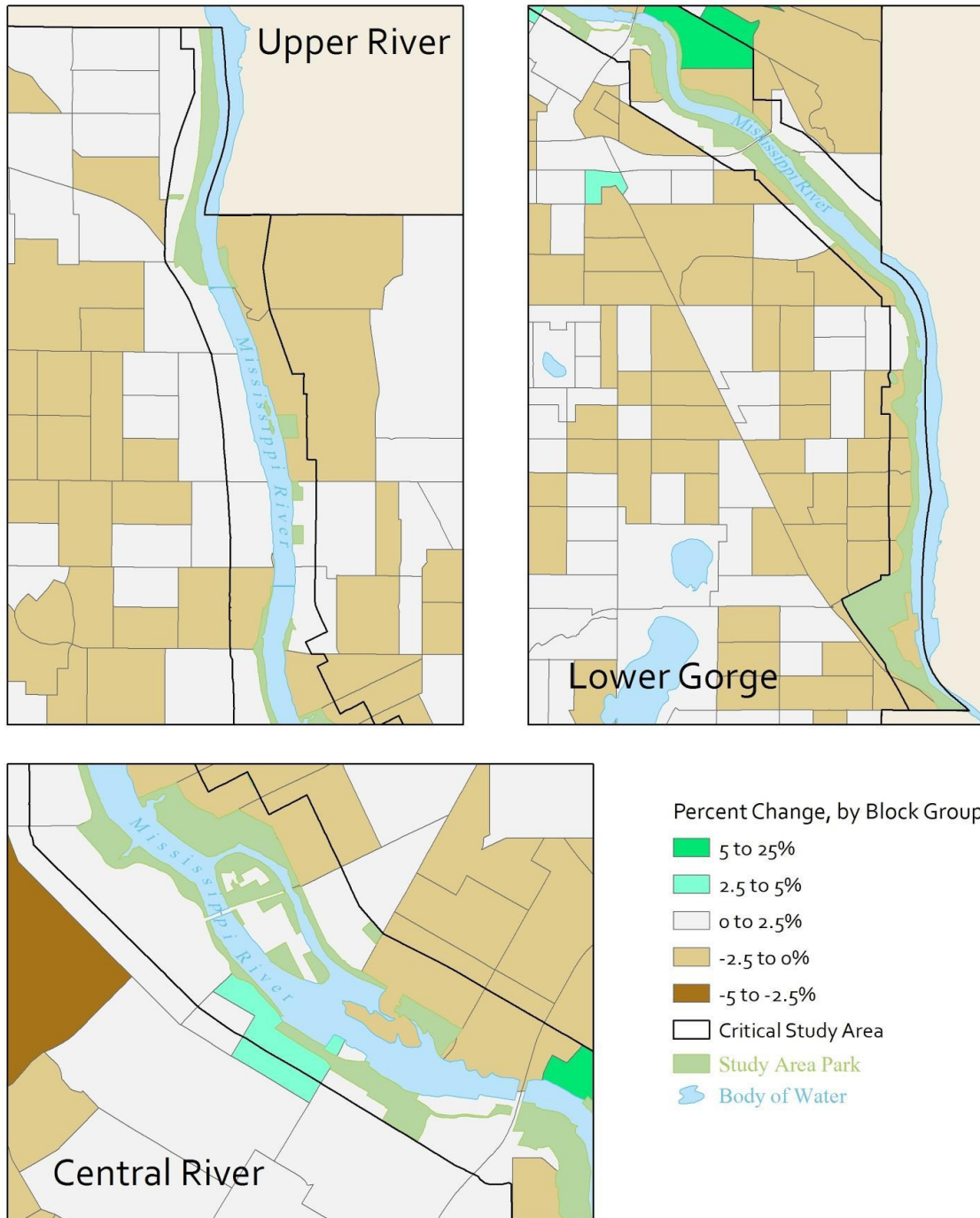


Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: ESRI, Met Council, Minneapolis Riverfront Partnership

Figure 3.4. Average Family Size, 2011

Change in Average Family Size, 2011 to 2016



Cartographer: Zack Avre
 May 6, 2013 Projection: UTM Zone 15N Sources: ESRI, Met Council, Minneapolis Riverfront Partnership

Figure 3.5. Change in Average Family Size, 2011 to 2016

Population Density

In the Upper River, a clear distinction can be seen between the sparsely populated western side of the river--in which many of the blocks lack a single resident--and the eastern side of the river, which has a much greater mix. This northeastern subsection of the critical study area features nine blocks with densities between 5,000 and 10,000 persons per square mile, as well as one block with approximately 20,000 persons per square mile. These blocks, however, are frequently immediately adjacent to blocks with densities of less than 5,000 persons per square mile.

There are two potential implications of these results. The first and more obvious is that from a residential standpoint, the northwestern subsection is not particularly vital. The second is that the northeastern subsection is potentially ripe for development, as this would fill in the gaps between pre-existing areas of residential concentration and lead to a broader geographical area of significant residential density.

In the Central River there is a similar mix of population densities. This is somewhat misleading, however, as the blocks with low population density are most likely offices and commercial property paying high rent and therefore there is not the same potential for development of underutilized land. In the portions of the Lower Gorge including Cedar-Riverside, Seward, and the East Bank of the University of Minnesota, density is similar to that seen in the Central River. For the southern portions, density is fairly uniformly distributed between the 0 to 5,000 and 5,000 to 15,000 categories. However, within these two categories most individual blocks range between 4,000 and 7,000. This is consistent with what one would expect of a largely residential area with relatively small but single-family plots. Should further residential development be sought in the Upper River neighborhoods, the Lower Gorge is potentially a good baseline for later comparison, as by all appearances it is a vital neighborhood. However, it should be noted that it is not particularly dense, but rather is consistent with the 2010 population density of Minneapolis of 7,088.3 persons per square mile.⁴ A future vital Upper River may have a substantially greater density. In contrast, the population density of Hong Kong is just under 70,000 persons per square mile,⁵ so at a broader level these are still not highly dense neighborhoods.

⁴ US Census *Quickfacts*, Minneapolis, MN <http://quickfacts.census.gov/qfd/states/27/2743000.html>

⁵ Demographia World Urban Areas: 9th Annual Edition (2013.03), p.62 <http://www.demographia.com/db-worldua.pdf>

Population Density by Block, 2010

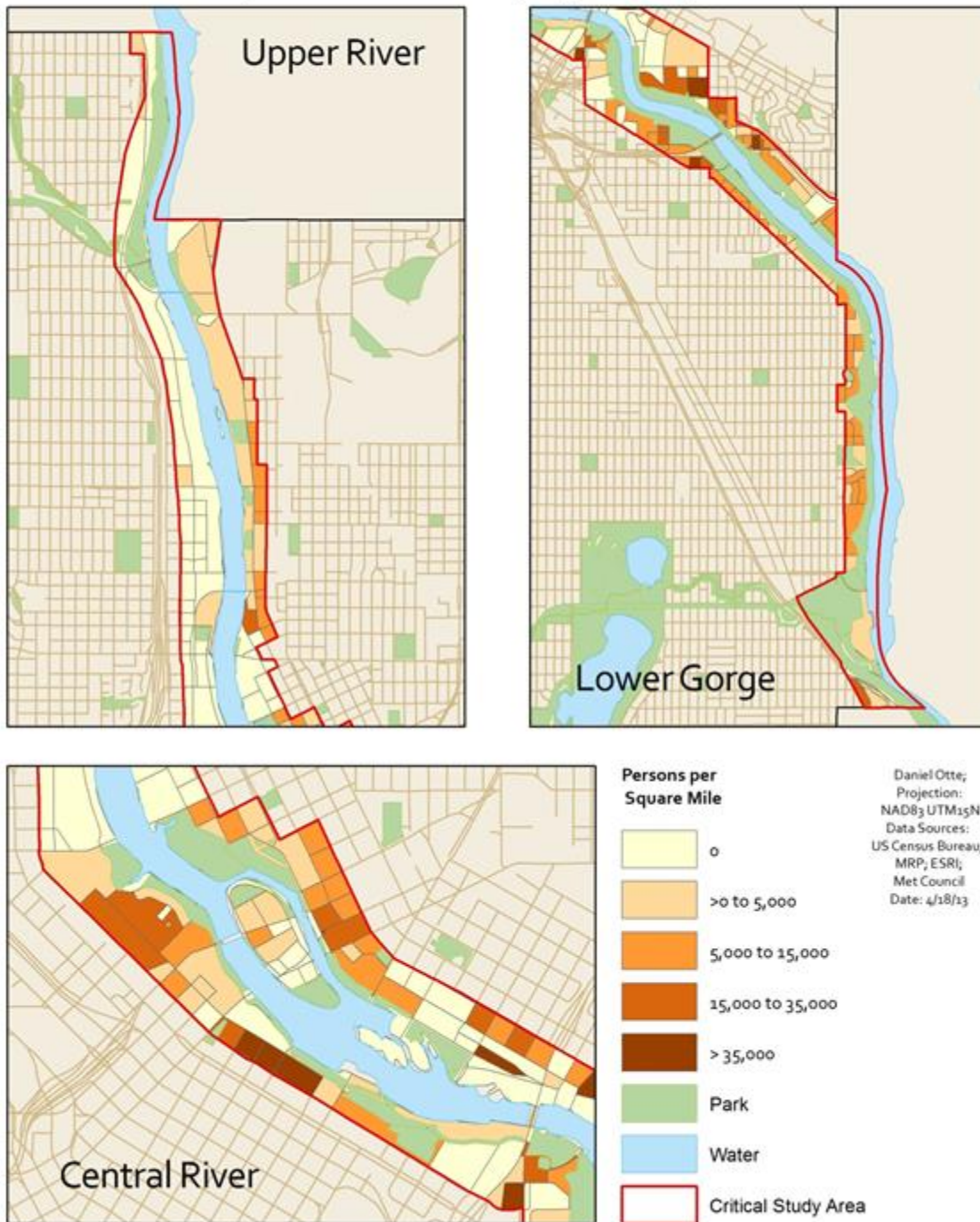


Figure 3.6. Population Density, 2010

Owner-Occupancy Rate

Owner-occupancy rate data come from the 2010 United States Census and show block-level owner-occupancy rates (see Figure 3.7). There are several “no data” blocks in the downtown commercial district and in the Upper West riverfront. This is expected as these blocks might not have any residential properties. The Lower River south of I-94 has a much higher owner-occupancy rate overall than the Upper River. Lower owner-occupancy rates are found in the Cedar-Riverside and University neighborhoods in the northern part of the Lower Gorge and also in the northern part of Upper East. The Central River between Downtown and the Upper River also has some high owner-occupancy rates. This high rate may indicate both that the residential demographic is stable, but also that housing in the area is only accessible to a certain demographic, i.e. one that can make the significant capital investment in a permanent home.

Owner Occupancy Rate

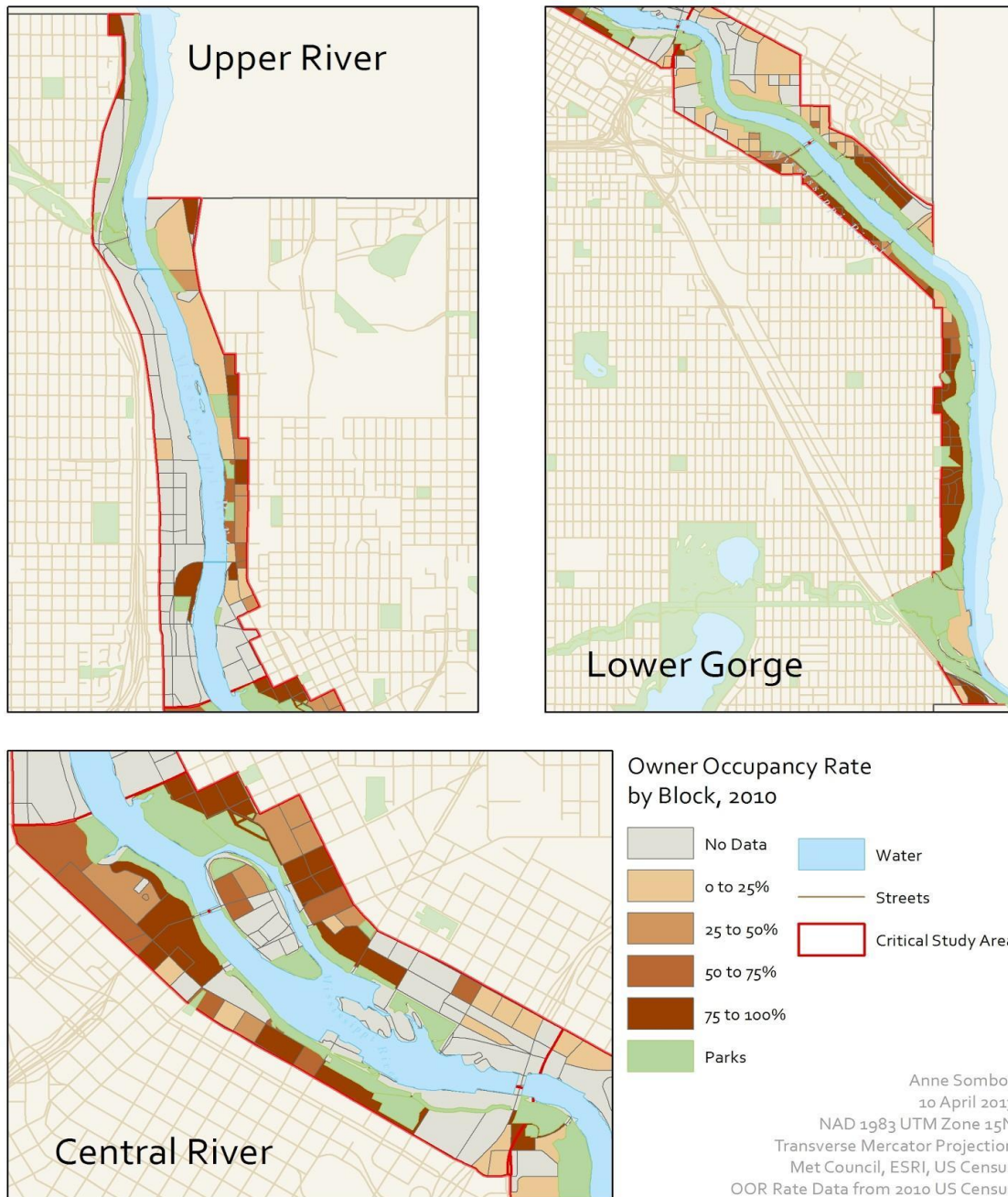


Figure 3.7. Owner-Occupancy Rate, 2010

Housing Stability

Estimated Market Value

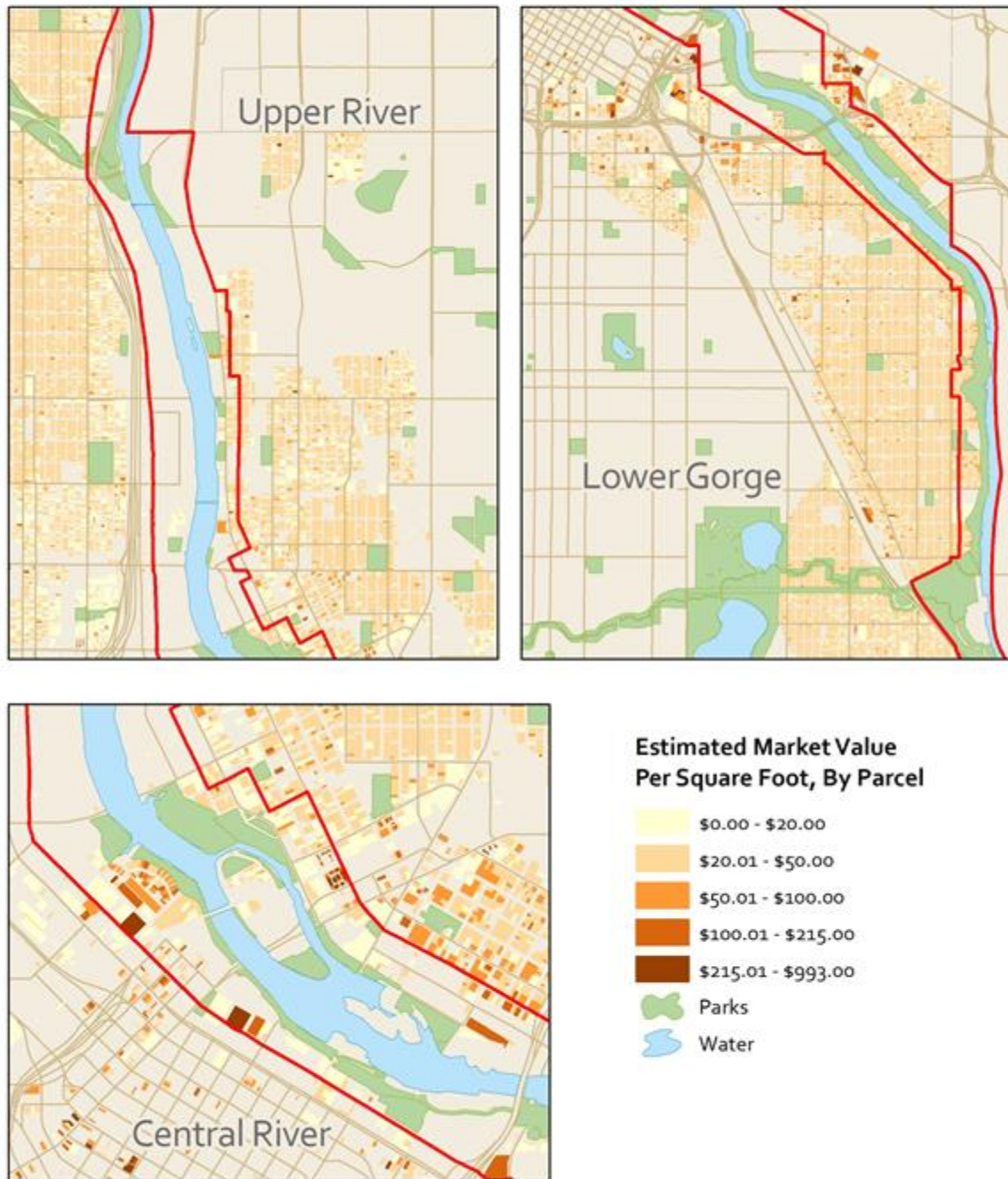
We standardized the estimated market value of residential properties by square footage. This gave us a better measure for analyzing trends and comparing the market values within the critical area to adjacent sectors. We found that the Upper River has lower market values in comparison to the Central River and Lower Gorge (see Figure 3.8). Similar to our discussion of median household income, this difference between the subsections can be partially explained through the large presence of industrial activity in the Upper River. Overall, we do not see much of a difference in the estimated market values of residential properties within the critical area and in adjacent areas. The higher market values are concentrated in the Downtown area of the Central River as well as around the University of Minnesota in the northern part of the Lower Gorge in the Prospect Park neighborhood.

Change in Estimated Market Value

For the change in estimated market value, we joined the parcel data from 2008 to the 2011 parcel data. We then calculated the change over time by taking the difference between the total EMVs from both years. While doing this calculation, we realized that many came up as having either a -100% change or could not be calculated at all; this was because there was either a vacancy in 2008 or in 2011.

We found that there is an overall trend of negative change in the estimated market values of residential properties from 2008 to 2011 (see Figure 3.9). This can be explained in part by the housing market crash of 2007 and the general economic downturn in the U.S. during this time period. We see that the greatest decreases in estimated market value are concentrated in the Upper River. In contrast, there are positive changes in the Central River and in the northern part of the Lower Gorge. Excluding the Upper River, the cluster of properties that have increased in market value despite the economic collapse demonstrates that the riverfront may have a stabilizing effect on the residential market.

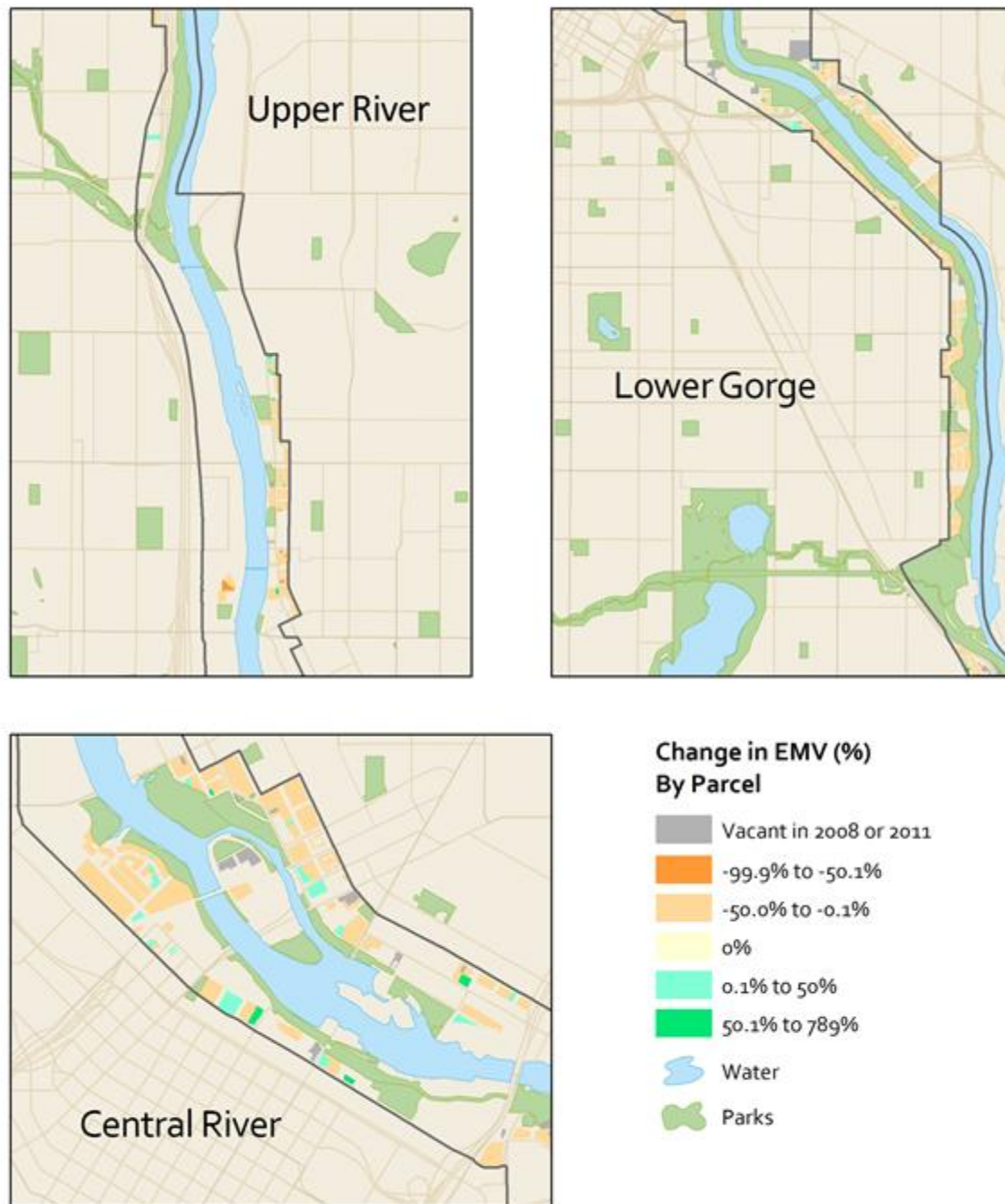
Estimated Market Value of Residential Properties, 2011



Talia Groom
Fall 2013
UTM Zone 15N
Sources: MetroGIS, MetCouncil, ESRI

Figure 3.8. Estimated Market Value of Residential Properties, 2011

Change in Residential Estimated Market Value, 2008-2011



Talia Groom
 Spring 2013
 UTM Zone 15N
 Sources: MetroGIS, MetCouncil, ESRI

Figure 3.9. Change in Estimated Market Value, 2007 to 2011

Residential Vacancy Rate

We gathered vacancy data from the U.S. Postal Service database of vacant homes. We matched this information to parcels with the following designations from the MetroGIS parcel database: “residential zero lot lines”, “residential misc”, “residential”, “residential vacant”, “apartments”, “apartments vacant”, “condos”, “double bungalow”, “housing low income”, “townhouse”, “blind/disabled”, and “triplex”. This gave us parcel level data about vacancies which we aggregated to find block group level vacancy rates.

The final map (Figure 3.10) shows vacant residential units as a percent of the total number of residential units in each block group. While block groups in the Lower Gorge have rates mostly below five percent, the two block groups with the highest residential vacancy rates are also in the Lower Gorge in the Seward and University neighborhoods. Block groups in the Upper River tend to have higher residential vacancies than the Lower Gorge or Central River, with most block groups in the 6 to 10 or 11 to 25 percent categories.

Residential Vacancy Rate

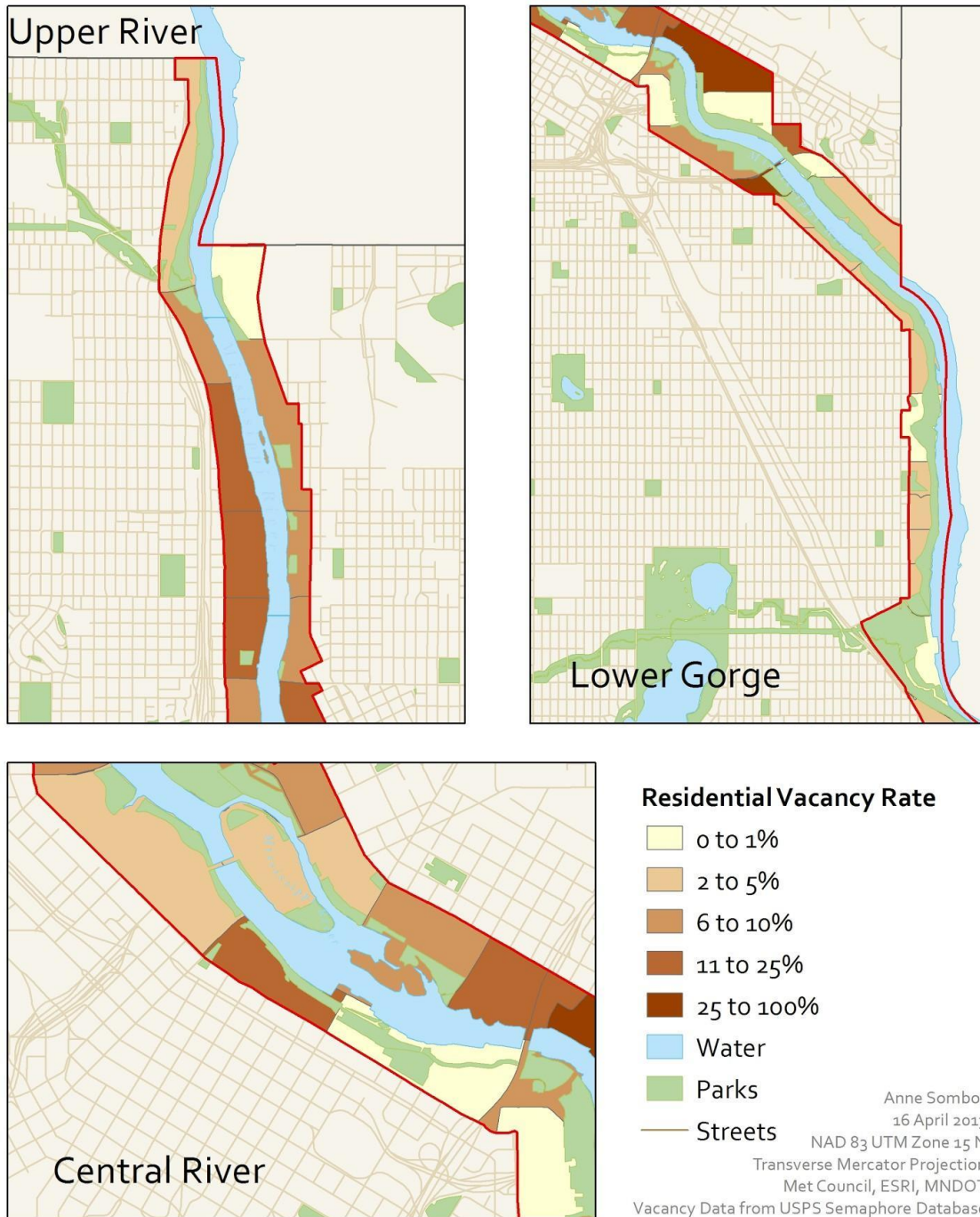


Figure 3.10. Residential Vacancy Rate

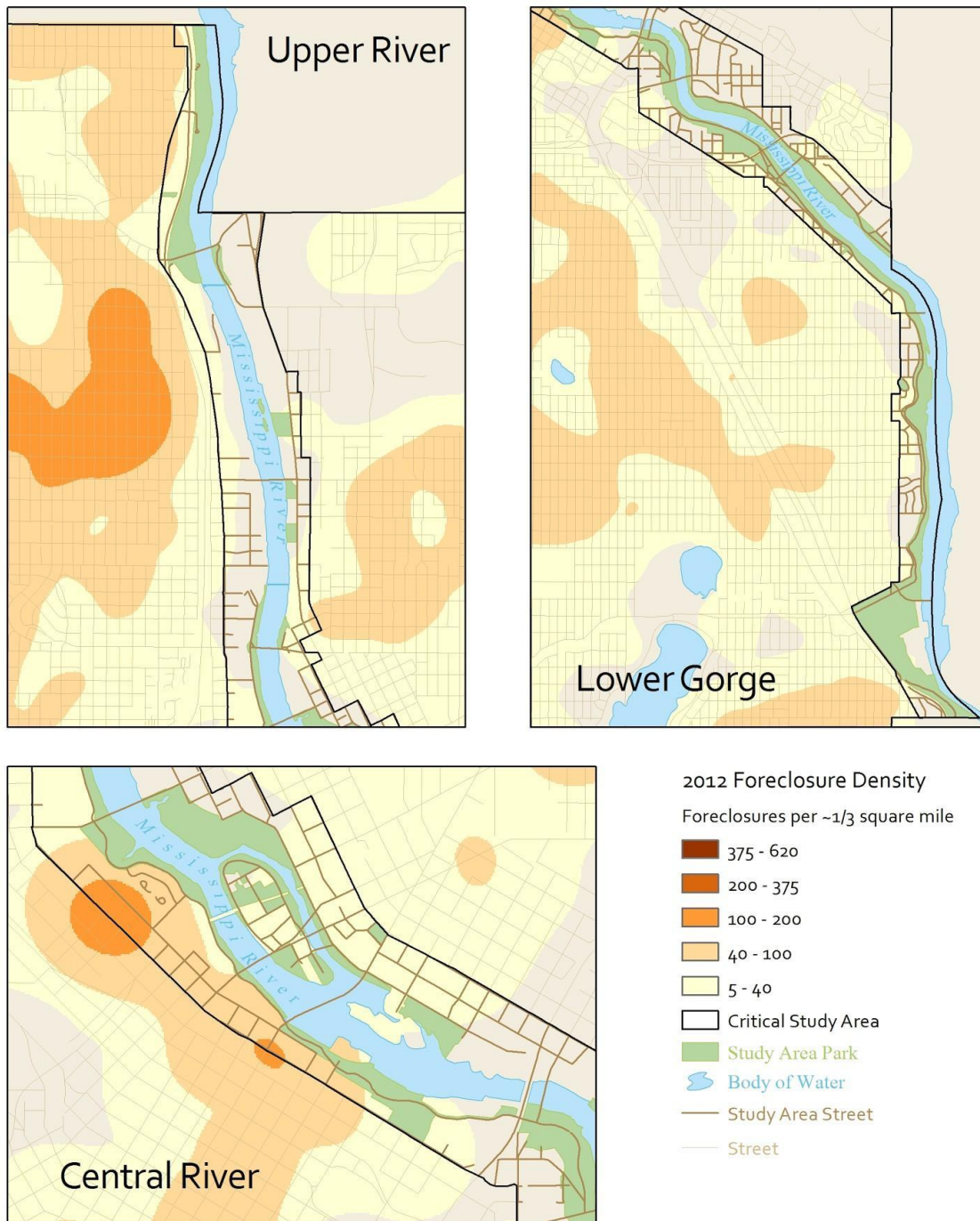
Foreclosure Density

Overall, the study area has fared relatively well compared to other portions of the city in terms of foreclosure. In 2012, segments within the study area experienced foreclosure densities of 5 to 40 foreclosures per one-third square mile, the lightest category distinguished in Figure 3.11. The highest concentrations of foreclosures were in the Central River, in downtown and the North Loop, which saw densities reaching the 100 to 200 foreclosures per one-third square mile level. However, despite these pockets in the Central River region, the study area as a whole had fewer concentrations of foreclosures than other parts of Minneapolis. In fact, the study area saw a foreclosure rate just above 1 percent, below both the citywide rate of 2.2 percent and the 5.5 percent rate in neighboring North Minneapolis.⁶

More importantly, foreclosure densities in the study area have declined since 2007, and the study area appears to have survived the foreclosure crisis in better shape than other segments of Minneapolis. The beginning of the recession, 2007 and 2008, proved to be difficult years for Minneapolis with high-density concentrations of foreclosures afflicting many neighborhoods across the city, as depicted in Figures 3.16 and 3.15. Homeowners in the study area felt this impact, and neighborhoods along the riverfront in the Upper River and Central River reflected the overall trends of the surrounding communities. This trend continued into 2009 and 2010 (Figures 3.14 and 3.13), as greater concentrations of foreclosures hit parts of the Central River. Over the past two years, the density of foreclosures in the study area appears to have subsided, with residual concentrations in downtown and the North Loop. Nevertheless, while the study area has not been completely shielded from the foreclosure crisis between 2007 and 2012, it has seen relatively lower densities of foreclosures than other neighborhoods across Minneapolis. Excluding the pockets of light orange in the Central River near the Federal Reserve building seen in the series of maps, most portions of the study area have no foreclosure epicenters of their own and instead appear to feel only the residual effects of foreclosures in surrounding areas.

⁶ RealtyTrac, Inc. 2012; Hennepin County Sheriff's Foreclosures

Foreclosure Density in Minneapolis, 2012

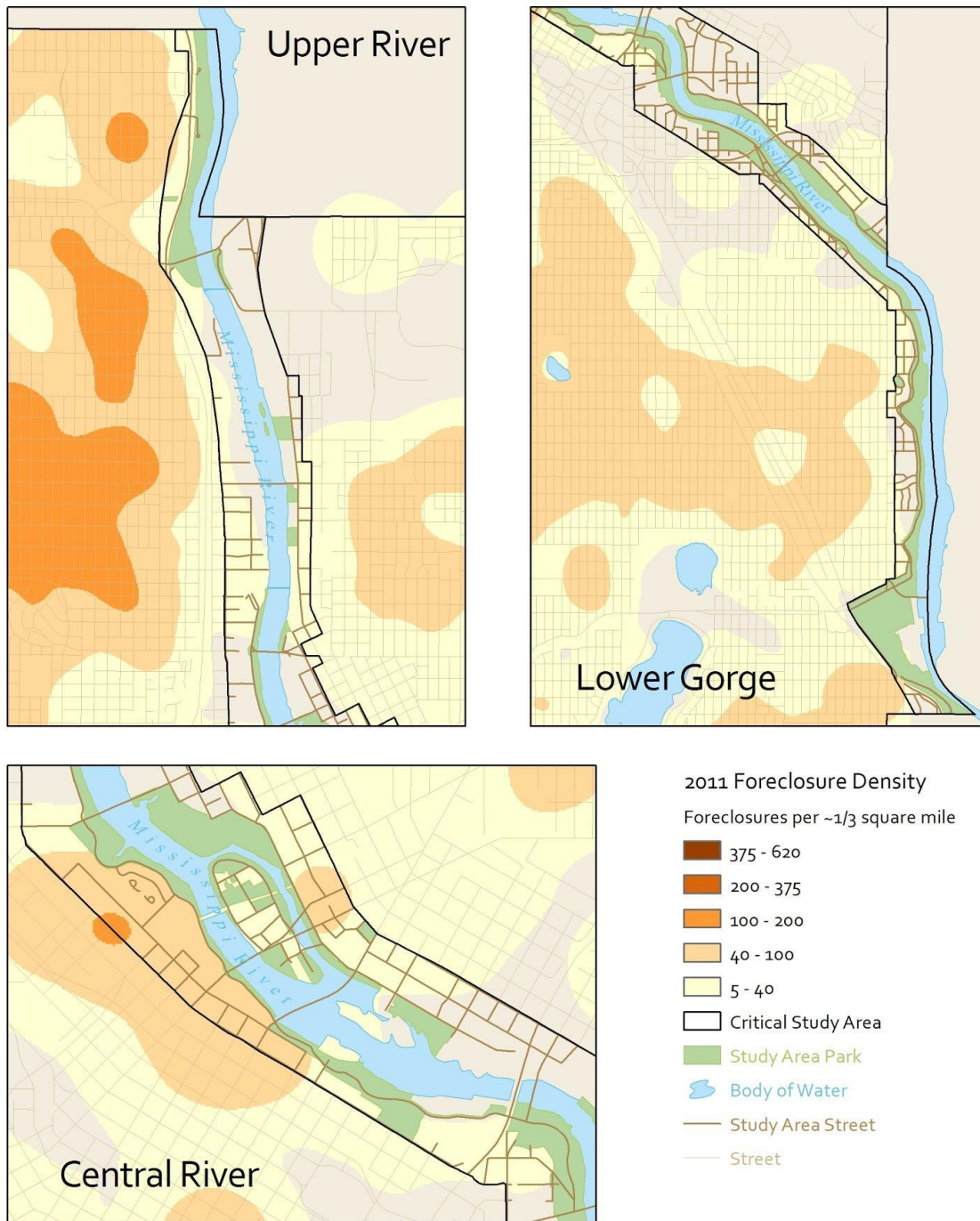


Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: Hennepin County, MetCouncil, Minneapolis Riverfront Partnership

Figure 3.11. Foreclosure Density, 2012

Foreclosure Density in Minneapolis, 2011

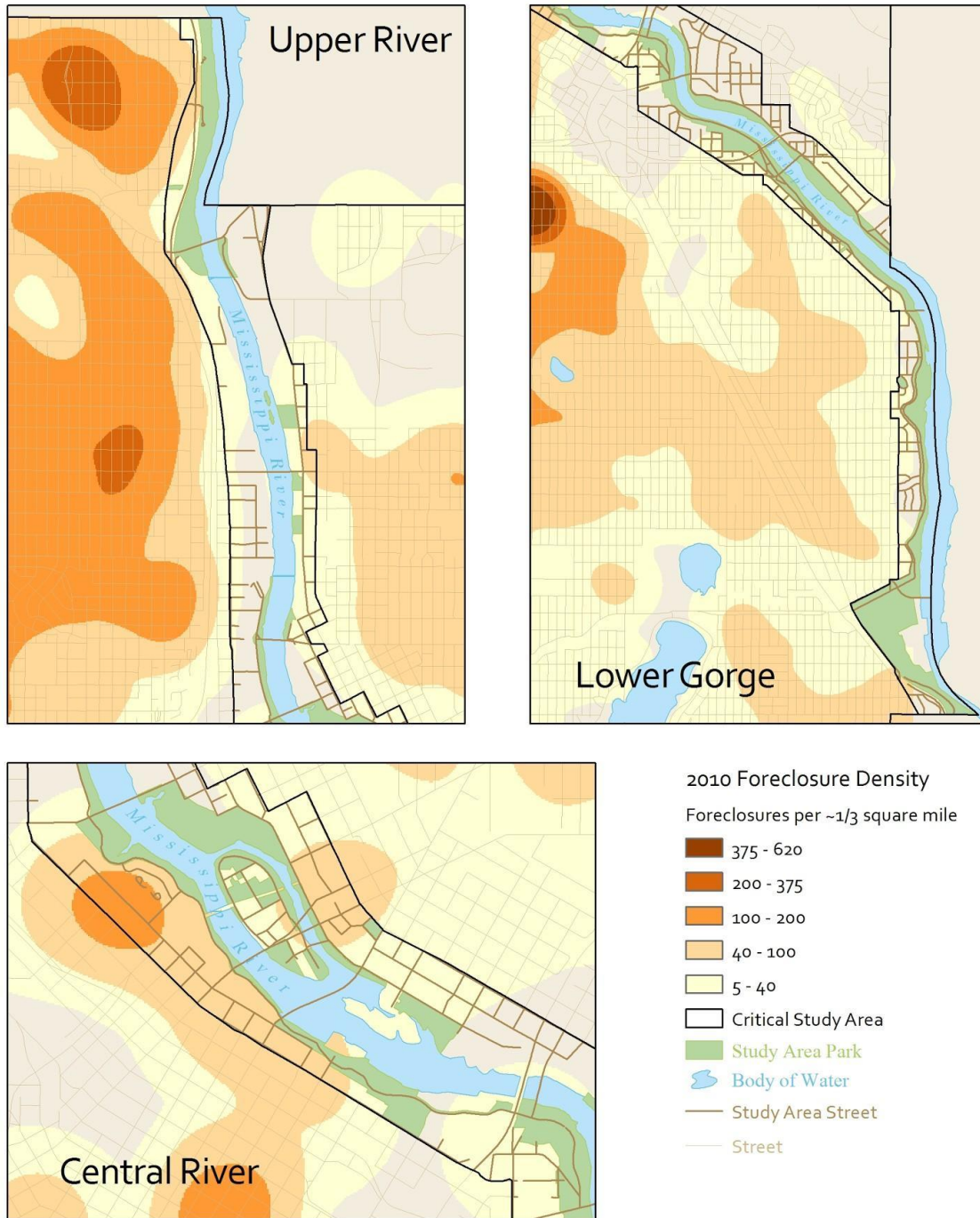


Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: Hennepin County, MetCouncil, Minneapolis Riverfront Partnership

Figure 3.12. Foreclosure Density, 2011

Foreclosure Density in Minneapolis, 2010

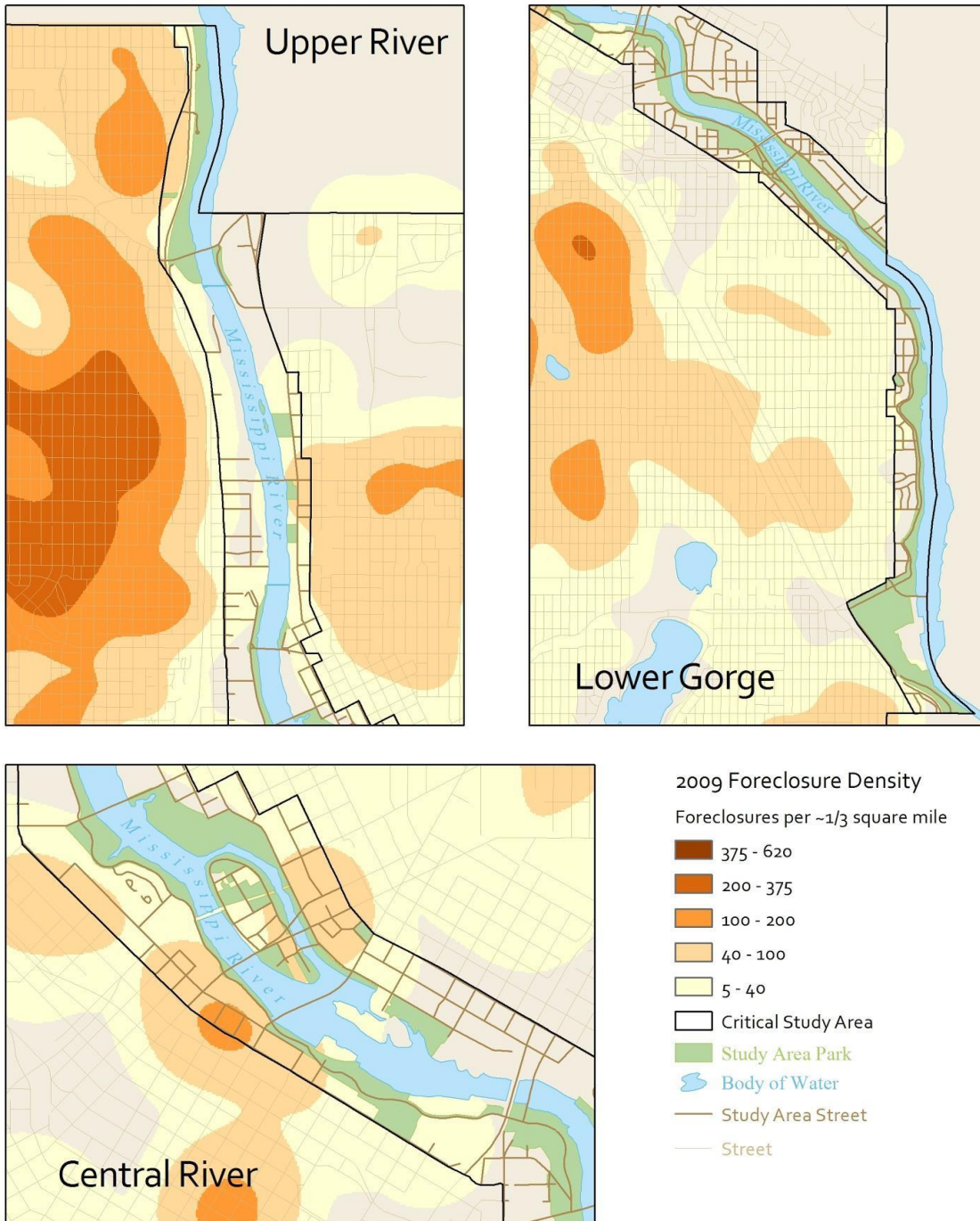


Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: Hennepin County, MetCouncil, Minneapolis Riverfront Partnership

Figure 3.13. Foreclosure Density, 2010

Foreclosure Density in Minneapolis, 2009

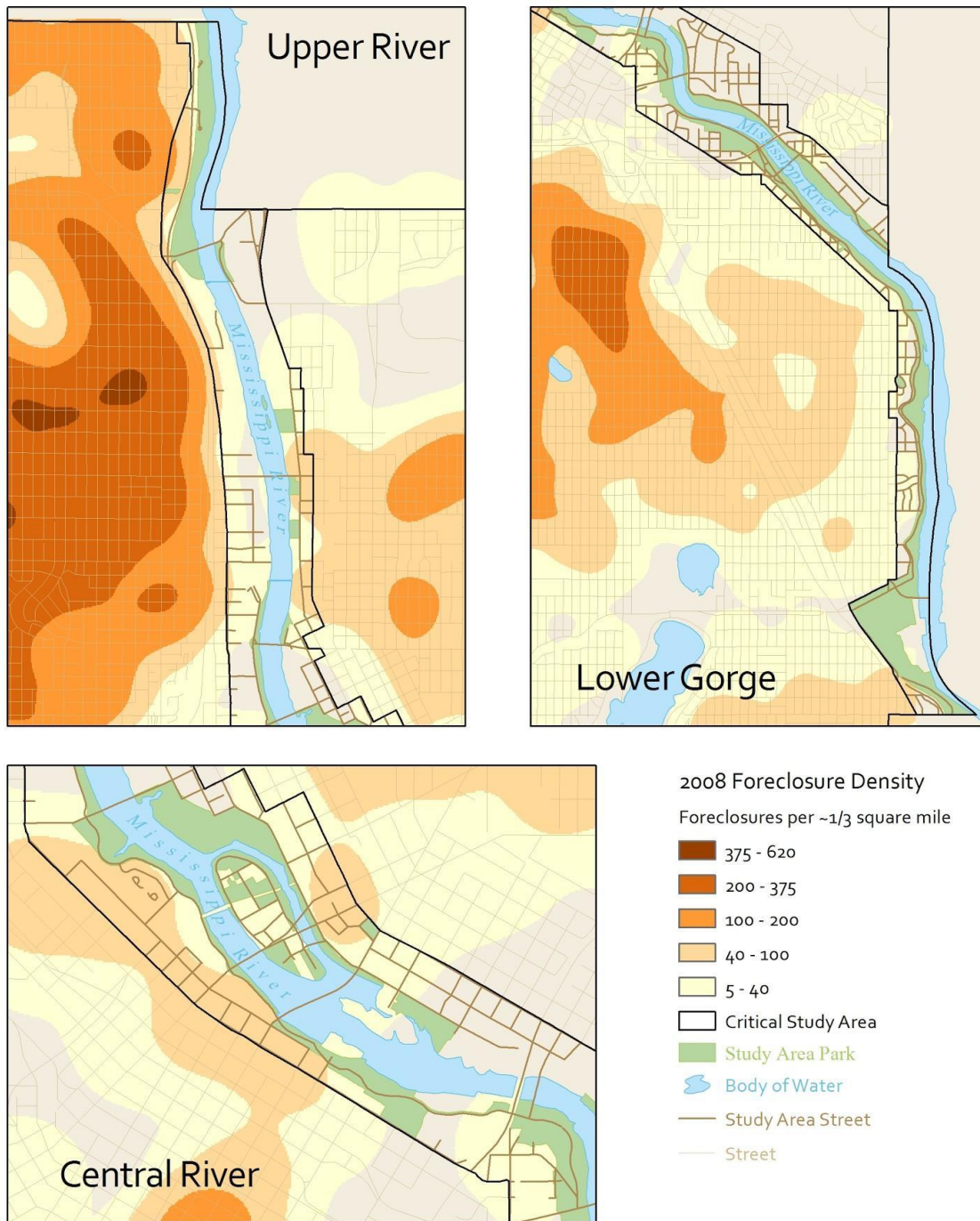


Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: Hennepin County, MetCouncil, Minneapolis Riverfront Partnership

Figure 3.14. Foreclosure Density, 2009

Foreclosure Density in Minneapolis, 2008

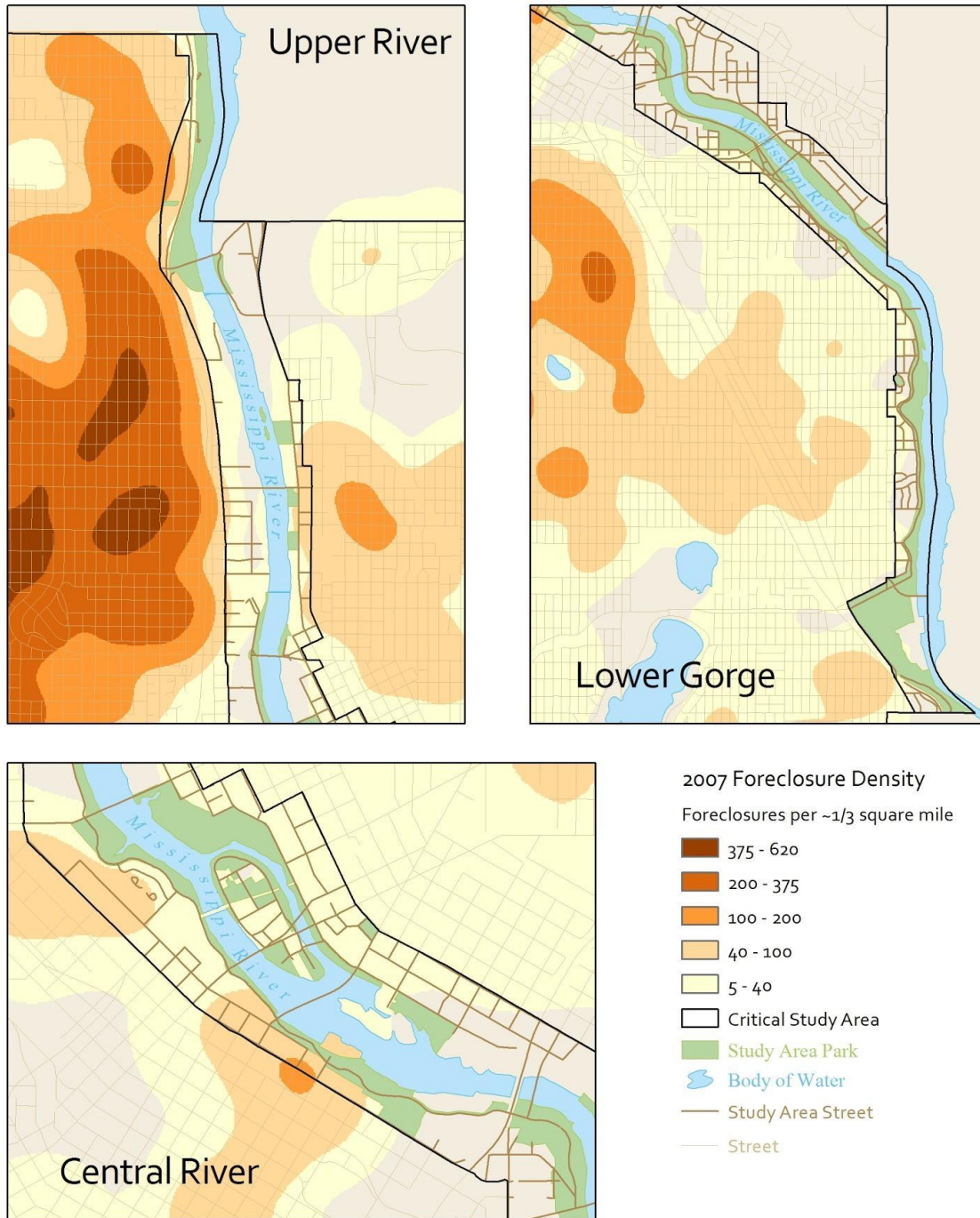


Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: Hennepin County, MetCouncil, Minneapolis Riverfront Partnership

Figure 3.15. Foreclosure Density, 2008

Foreclosure Density in Minneapolis, 2007



Cartographer: Zack Avre

May 6, 2013 Projection: UTM Zone 15N Sources: Hennepin County, MetCouncil, Minneapolis Riverfront Partnership

Figure 3.16. Foreclosure Density, 2007

Affordable Housing

For affordable housing, we mapped individual housing developments that exist within the study area from data available through housinglink.org/streams. We included federal, state, local, and private funding sources. In addition to location, we also examined the maximum capacity of each building to get a better sense of the population served.

Several units appeared to lie just on the border of the study area, so we included all affordable housing units within 50 feet of the study area boundary. This ideally will capture more people who live close enough to access the river on foot.

Figure 3.17 shows that access to affordable housing is limited to certain parts of the study area. Only two sites are present in the Upper River, along the very edges of the study area. There is limited affordable housing in Central East but not Central West. Most of the affordable housing in the study area is clustered on the northern part of Lower Gorge West, in the Seward and Cedar-Riverside neighborhoods where there exist several low-income affordable high rises. Access to affordable housing throughout the rest of the study area is minimal. A further study should include a map that contains both affordable housing locations and water access points to discern if residents can actually access the river from those affordable housing units that do exist.

Affordable Housing in the Study Area

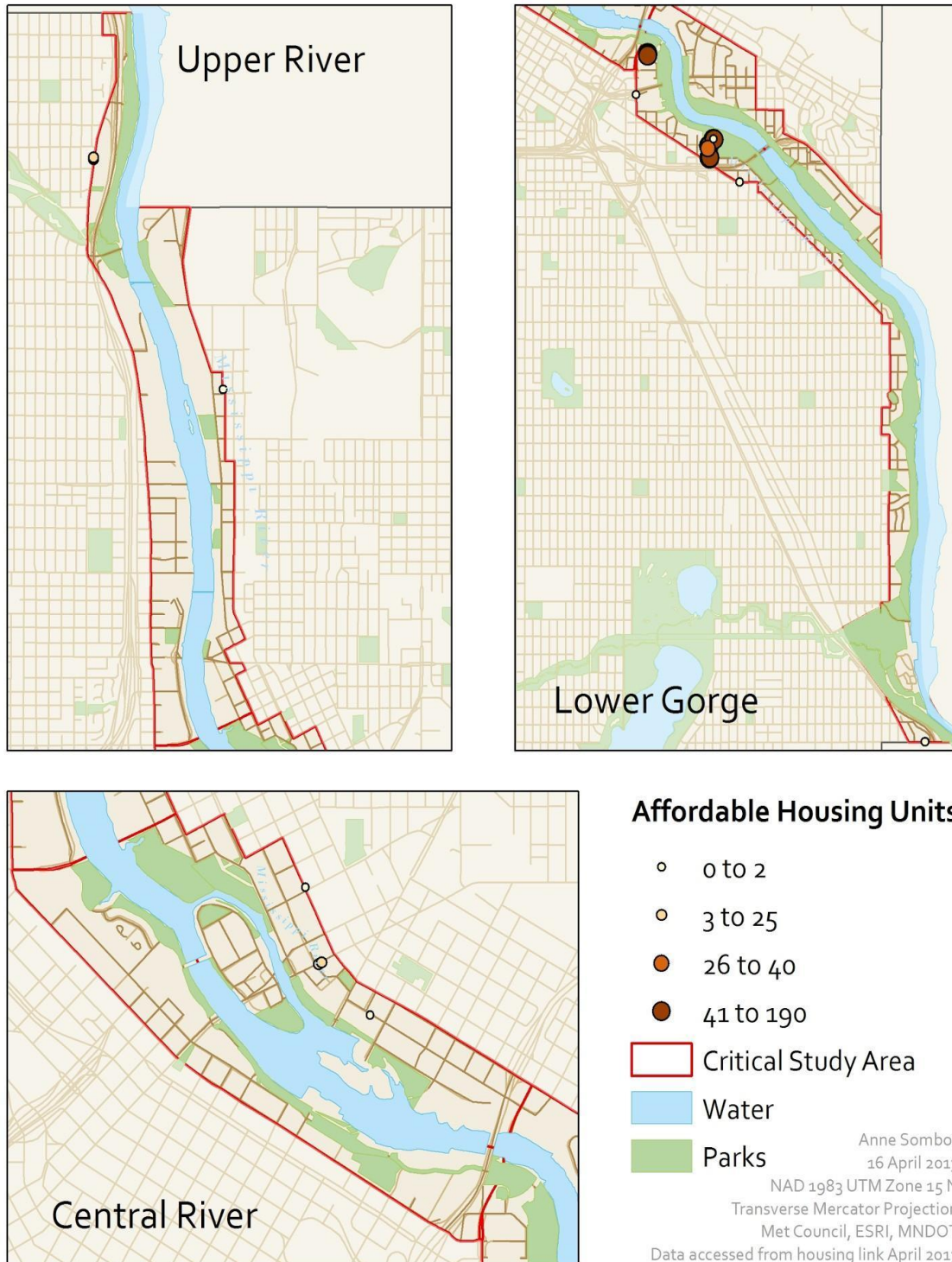


Figure 3.17. Affordable Housing

Investment in Housing Market

Residential Construction Permits

For the residential construction permits, we selected all the residential construction permits in Hennepin County and then created a buffer around the study area so that we can look more closely at new construction in close proximity to this area (Figure 3.18). We found the greatest density and quantity of new building permits in the greater Upper River region. In addition, we found that the Upper River has the greatest number of construction permits that are currently vacant and set aside for residential use. The Lower Gorge area has a similar density of residential construction permits. While the majority of the construction permits in the Upper River area are at the periphery of the critical area, we found that the Lower Gorge had many new building permits that are located in the critical area. The Central River area has the lowest number of new building permits, but these permits also have the greatest value in comparison to the Lower Gorge and Upper River areas. Most of the construction permits for the Central River area were also apartments and condominiums. We also realized that there is a dearth of new building permits set aside for low-income housing (Figure 3.19). There was one permit in the critical area that was reserved for low-income housing.

In addition to looking at where the residential construction permits are located and identifying different forms of residential land use, we also examined the years that the building permits were issued. We found that the majority of the construction permits were issued before 2002 (see Figure 3.20). The total number of residential construction permits from 2000 to 2002 was 68. Since then, the number of new building permits has dwindled, which makes sense given the housing market collapse and general economic instability. There was a small increase in 2010, but overall, the number of new building permits is lower than what it was before 2006.

New Residential Construction Permits Issued, 2000-2012

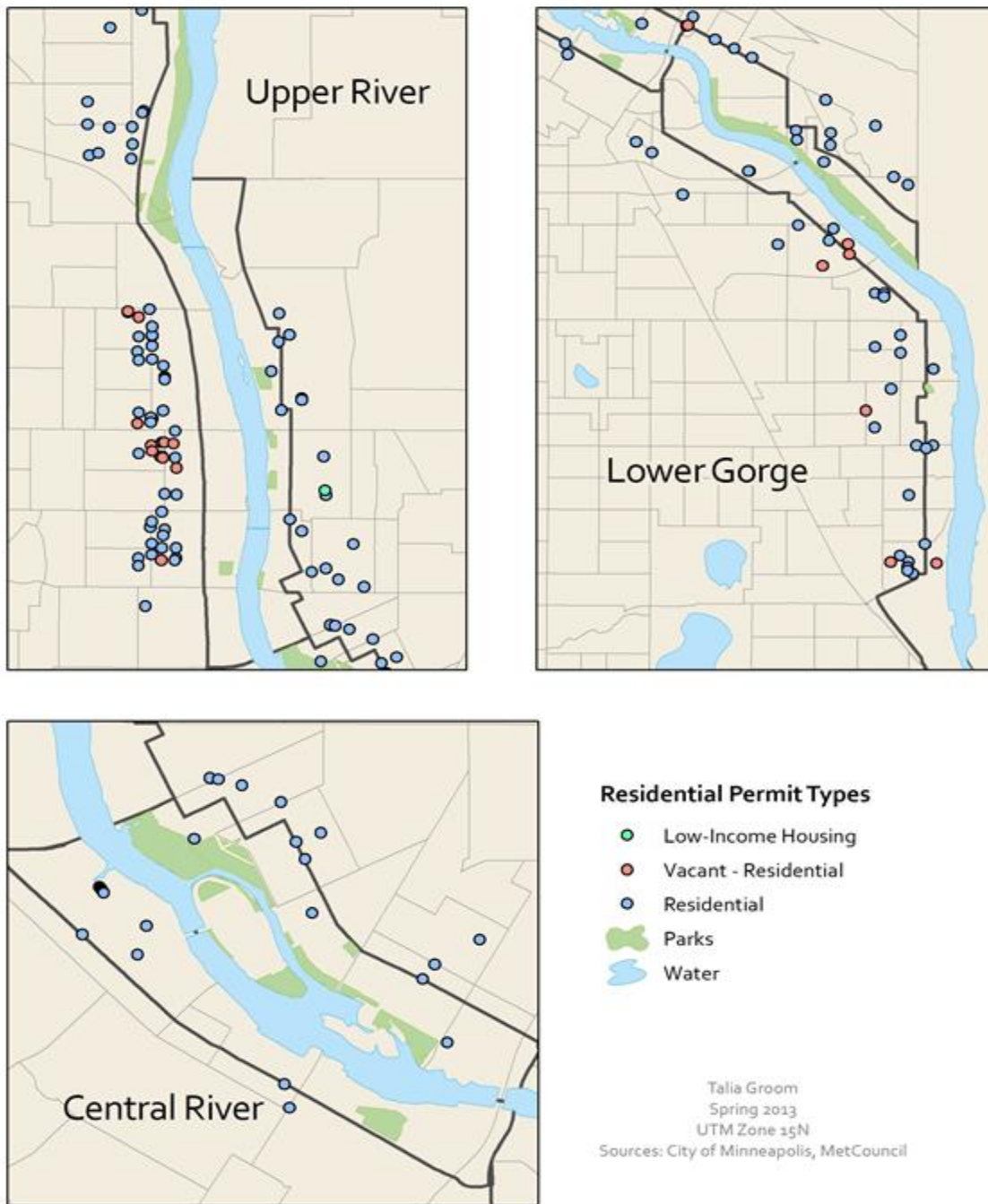


Figure 3.18. Residential Construction Permits, 2000 to 2012

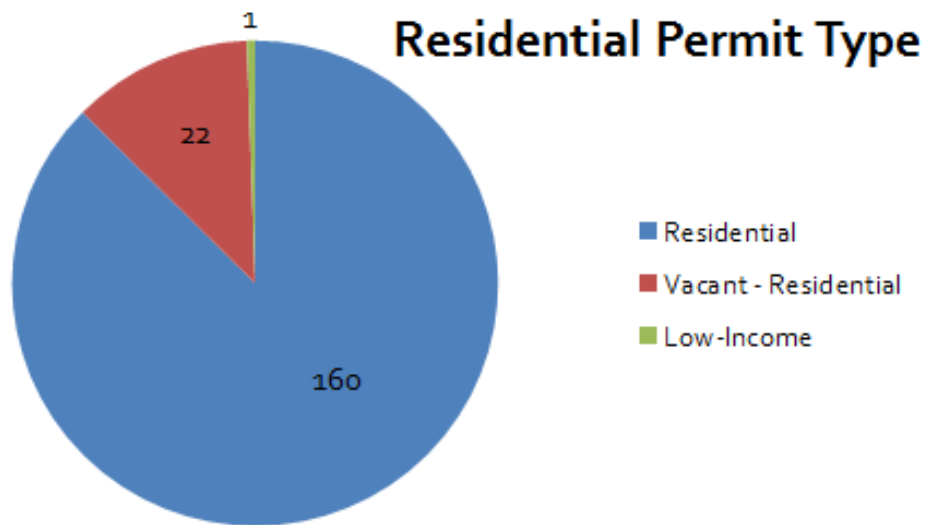


Figure 3.19. Residential Permits in Study Area, by Type

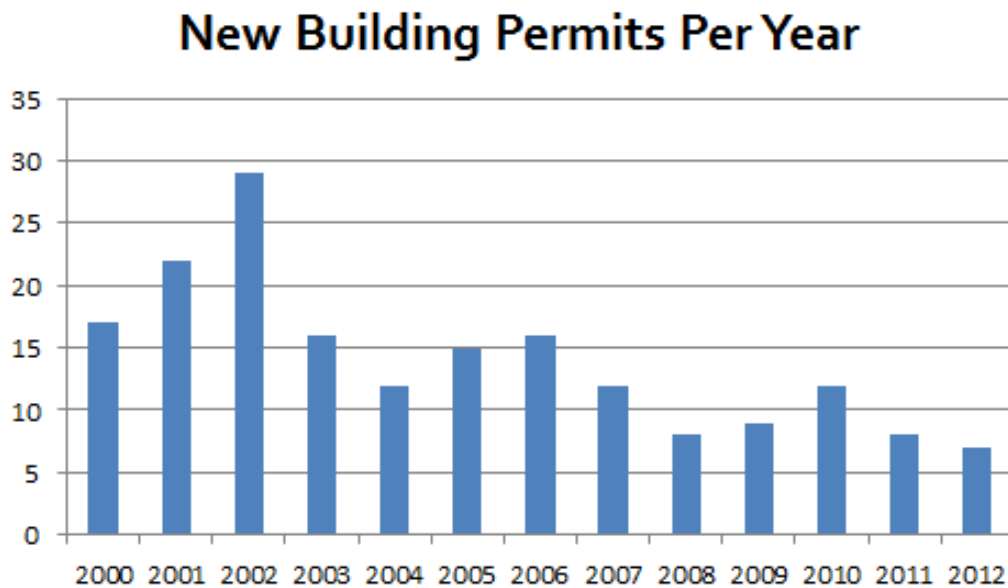


Figure 3.20. New Permits in Study Area, by Year

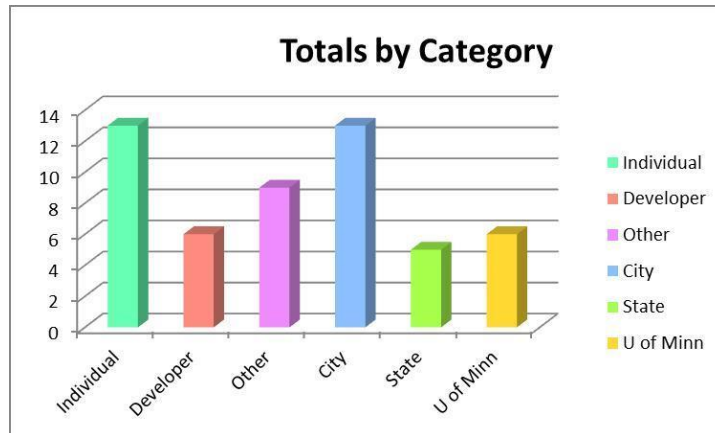
Owner Type, Residential Vacancies

As shown in Figure 3.21, the majority of vacant parcels in the Upper River fall into the ‘other’ ownership category (a miscellaneous category that includes land owned by utilities as well as Hennepin County tax forfeitures). This is consistent with the area’s industrial history, but also signifies that the vacant parcels will likely need to change hands for any sort of development to occur. All of the vacant residential parcels north of the Lowry Avenue Bridge carry this designation. Closer to the Broadway Avenue Bridge, there is a cluster of individual, developer/private business, and other parcels on the eastern side of the river, as well as a significant block of developer/private business on the western side (Figure 3.22).

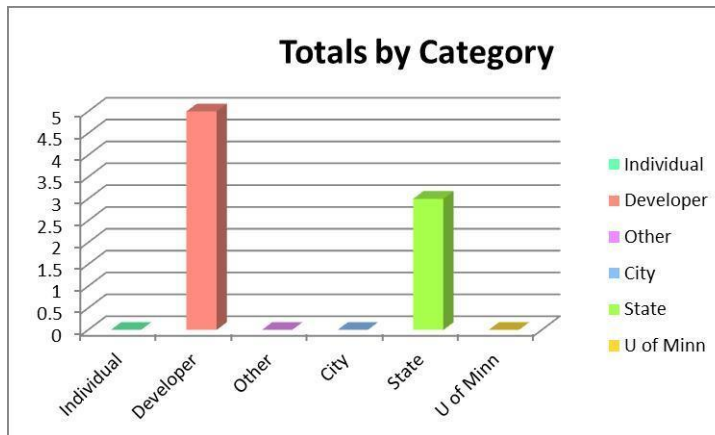
In the Central River there are few vacant parcels close to downtown, but numerous vacant parcels starting around the I-35W Bridge and continuing south into Cedar-Riverside. There is no predominant landholder category, however.

In the Lower Gorge, the string of vacancies that was seen in the Central River map continues on across the river, up to the boundary with Saint Paul. The remainder of the Lower Gorge has very few vacant parcels, however, showing another instance of its residential vitality. There is a cluster at the southern extreme of the critical study area, but these are immediately adjacent to parkland and largely owned by the City and State and are therefore not particularly likely to be developed.

Lower Gorge:



Central River:



Upper River:

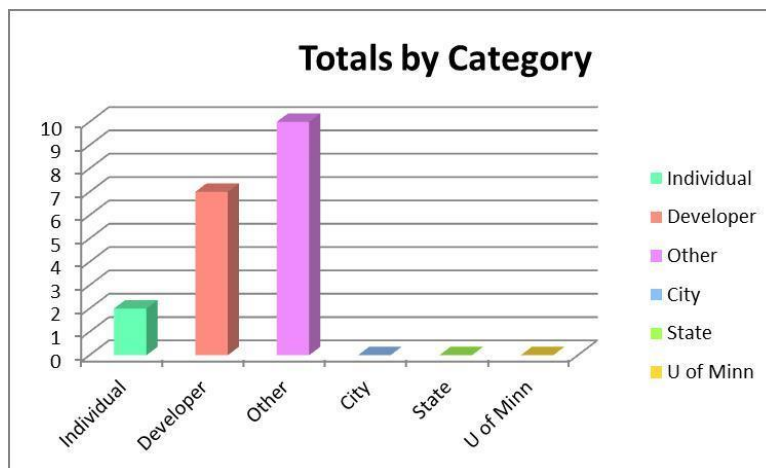


Figure 3.21. Residential Vacancies, by Owner Type

Type of Owner for Vacant Residential Parcels, 2011

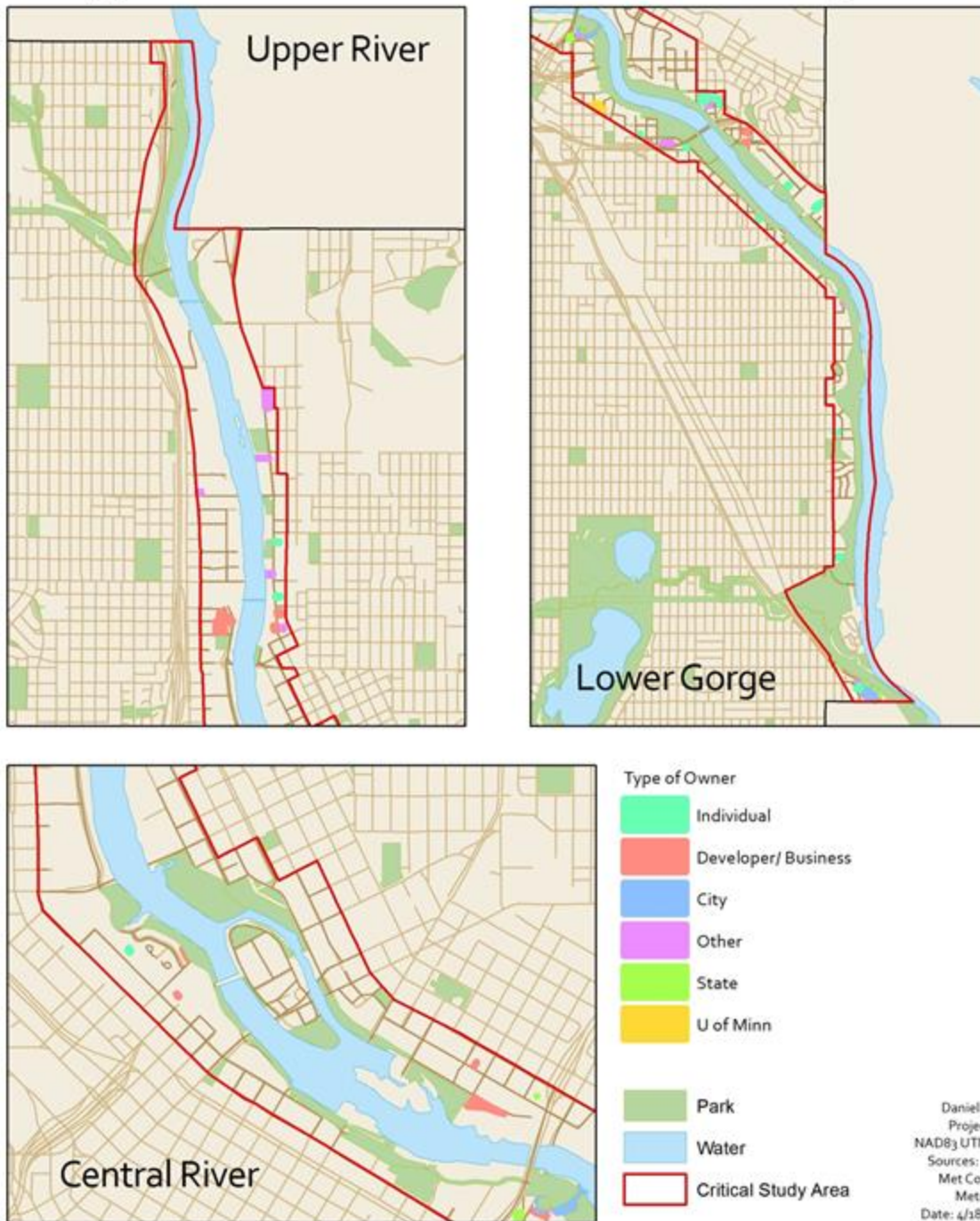


Figure 3.22. Vacant Residential Parcels, by Owner Type

Residential Parcel Sales

Figure 3.23 shows the location and value of housing sales in the critical study area over the years 2009 to 2012. Each instance of a sale is represented by a symbol proportional to the sale price, and is overlaid on top of a display of all the residential parcels in the study area.

Each of the three subsections is quite distinct. The Lower Gorge has by far the greatest number of sales, consistent with its largely residential character. By comparison, the Central River has fewer sales over the time period, but the ones that have occurred are typically of a much greater value, most likely indicative of the strong real-estate market downturn. The most immediate contrast, however, is the dearth of sales in the Upper River. There appear to be only two sales made over the entire four-year period. This is somewhat explainable on the west side of the river, as we have previously established its non-residential character. On the east side of the river this is more curious, however, as there is a more significant residential population. This may indicate, then, a local population especially committed to its neighborhood.

Residential Parcel Sale Values, 2009-2012

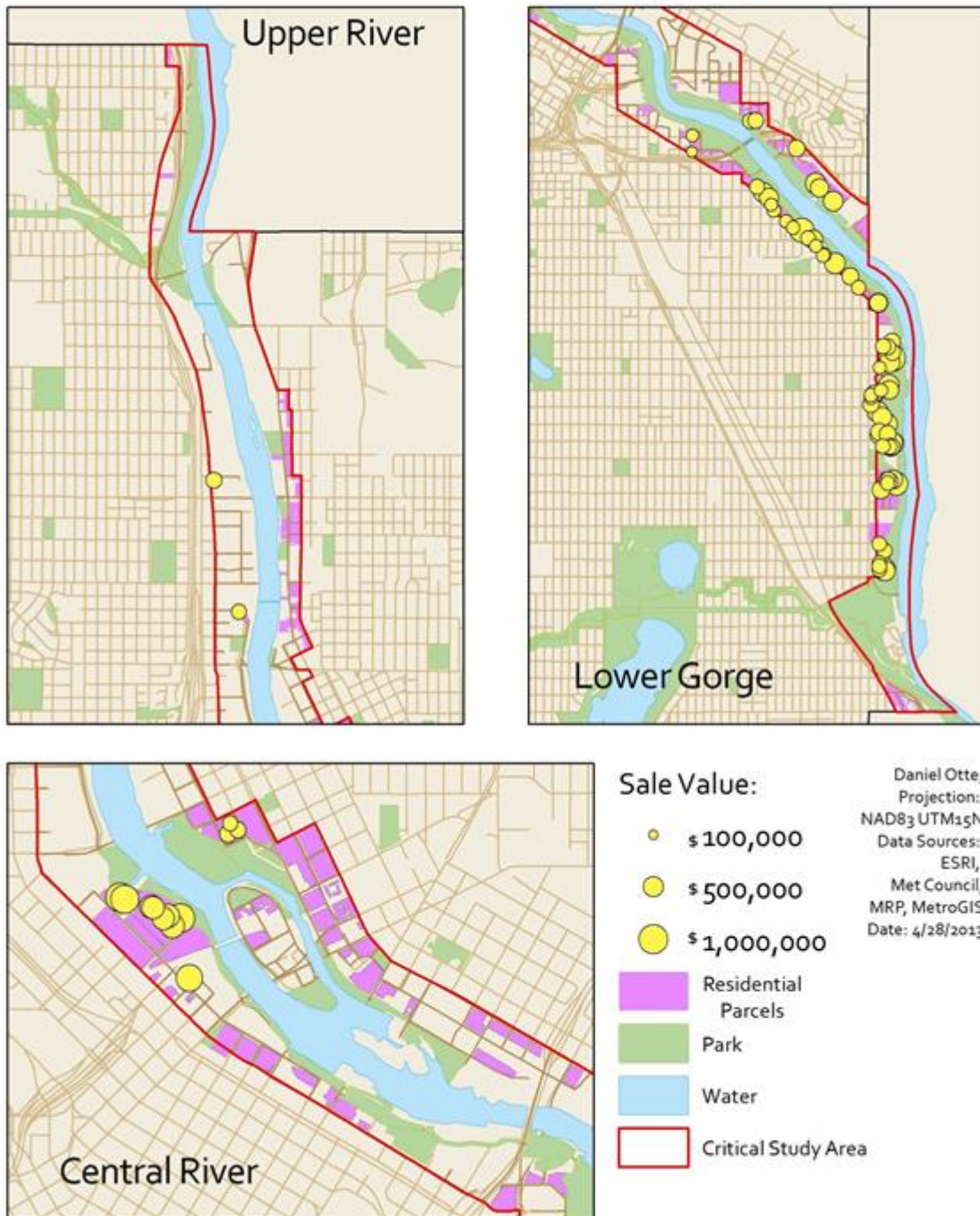


Figure 3.23. Residential Parcel Sales, 2009 to 2012

Conclusion

Based on the aforementioned indicators, we have established several conclusions regarding the residential vitality of each of the study area subsections. In the Upper River, the Mississippi River is not acting as a stabilizing force for the housing market. Compared to the surrounding neighborhoods outside of the critical study area, the Upper River subsection has a lower EMV, a dearth of sales, few residential construction permits, and a higher residential vacancy rate. This most likely owes to the largely industrial character of the area (which is due, in part, to the river's presence) and the lack of infrastructure that would allow the river to function as an amenity as opposed to being largely cut off by I-94. The Upper River is also notable for the higher levels of diversity in comparison to the Central River and Lower Gorge, as well as comparatively lower median household income and lower owner-occupancy rates. In spite of the more socioeconomically disadvantaged population, however, there is a lack of affordable housing units.

In the Central River, our vitality indicators point toward greater investment in the housing market. The number of construction permits, sales, and increase in estimated market value demonstrate that there is great interest in developing the housing market in this subsection. We also recognize that the region's proximity to downtown has influenced this conclusion. The highest estimated market values and highest value sales are concentrated in the downtown area. While there is investment in the residential market, we believe that there is more variation in signs of housing stability in the Central River. For instance, the vacancy rate is more variable in comparison to the rate in the Upper River and Lower Gorge. In addition, there are a few, small affordable housing sites on the east bank, but none on the west bank. Furthermore, there is a more varied level of diversity in the Central River in comparison to the other subsections.

The Lower Gorge has the highest owner-occupancy rates and a large concentration of housing sales compared to the rest of the study area. Residential vacancies are mostly below 5%. Out of the three subsections along the riverfront, the residential vitality indicators demonstrate that the Lower Gorge is the most prototypical residential area and has a vital housing market. Yet, this distinction reflects a certain idea of vitality. This traditional understanding of vitality does not include high economic or racial diversity. Instead, the market in this area is vital and accessible for a largely white, higher-income demographic. Overall, with the exception of the more affordable and dynamic areas surrounding the University of Minnesota and the Cedar-Riverside and Seward neighborhoods, the Lower Gorge embodies a stable residential market.

While the residential vitality indicators chosen for this report reflect traditional perceptions of strong housing markets, the appropriateness of and weight assigned to each indicator should be reevaluated moving forward, specifically in regards to social equity. Although traditional indicators such as owner-occupancy rate, estimated market value, and vacancy rate provide intuitive measures of housing vitality, they can unintentionally privilege certain types of residents and residential development over others. Concentrations of high owner-occupancy rates and single-family homes make the Lower Gorge vital, for instance, yet this model of residential development will not necessarily work for other portions of the riverfront. Not only does this suggest that indicators like owner-occupancy rate do not adequately account for changing housing preferences, but it also affirms the potential vitality of highly diverse, low-income neighborhoods that enjoy greater access to affordable housing. Moving forward, the City of

Minneapolis, developers, community partners, and other stakeholders should consider who currently has access to housing along the riverfront and the implications of future development on social equity within and around the study area. Ultimately, a vital residential housing market along the Minneapolis riverfront should mean accessible and affordable housing for all types of residents.

CONCLUSION

The goal of this study was to establish a set of indicators that may be used to assess the current and future vitality of the land around the Mississippi River. The indicators offer a comprehensive view of the current status of economic and social vitality within the critical study area. The indicators are mainly intended as a baseline measurement of the current state of the riverfront; however, there are several policy recommendations that may be extrapolated from them as well.

The vitality indicators examined in this study lead us to draw several conclusions. The three subsections of the riverfront currently contain very different land uses. The study area and its subsections are based upon the boundaries of the Mississippi River National Park. Of the three subsections under consideration, the Upper River would seem to score the lowest in any “vitality” metric, as it is characterized by industrial land uses, which have not distinguished themselves in many of our chosen indicators. The Central River contains a wide mix of land uses, and is the most “in demand” part of the river. This is where access to the river is most complete and the surrounding area is most active. Meanwhile, the Lower Gorge is highly residential, and access to the river is difficult due to the depth of the gorge. Because the indicators are subjective and the uses are so different, it is difficult and not particularly meaningful to make a claim as to which of the two southern subsections is ‘more’ vital. It will suffice to say that both are vital areas with room for improvement.

The primary takeaway from this report is that there is substantial room for development and expansion of access in the Upper River. Given the potential of the river as an urban amenity and the overall proximity to downtown in the Upper River area, even the most vital industrial area is not the highest and best use. In Minneapolis, it comes with the opportunity cost of missed chances for residential and commercial vitality as well as limiting of access for local residents to benefit from the natural bounty of the river. The Lower Gorge and Central River offer two distinct examples of vitality that the Upper River is far from achieving.

All this said, there are many ways in which an area can be considered ‘vital,’ as these indicators have shown. It is important for any forthcoming plan to consider how it will affect the current stakeholders in the area, be they residents, businesses, or park-goers. The ideal plan would satisfy the populations already invested in the area while still allowing for greater access and investment by those not currently engaged.

One major methodological recommendation we have for subsequent vitality studies is that the critical study area be expanded to more fully account for the spatial area in which the riverfront amenity is likely to be an influence. As was previously mentioned, the critical study area is based on the boundaries of the Mississippi River National Park. We believe that the river has a direct effect on a much more substantial area. As a comparison, light rail studies tend towards one-half mile as appropriate spacing of stations to ensure pedestrian coverage of the interstitial areas. If pedestrians are willing to walk half a mile for transit, they will surely walk just as far for an amenity like the river. Bicycles push the distance for access even further. Additionally, the subsection boundaries do not cover uniform areas but in many cases stretch across areas of

differing character. For example, the Lower Gorge ranges from the fairly dense and diverse neighborhoods around the University of Minnesota to quieter, single-family residential plots at its southernmost extreme. The study area subsections as currently defined do not constitute uniform riverfront neighborhoods.

Around the world, cities are recognizing the potential of their long-neglected waterfront areas and attempting to revive them with commercial, residential, and recreational activities. To compete with these cities and simply on the merits of revitalization alone, Minneapolis must thoughtfully consider the potential of its riverfront. Our study is only one of the initial steps in what we hope will be a long and fruitful process that engages all stakeholders in our cities and in the end produces a riverfront that attracts people from around the world and compliments our beautiful Mississippi River.

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Lifeblood of Our City: Reflections on Community Partnerships and Minneapolis Riverfront Vitality

Zack Avre
Macalester College

After years of decline and disinvestment, the Minneapolis Riverfront has seen a renaissance over the past few decades. Once the heart of industrial and commercial activity in Minneapolis, the riverfront suffered as the city endured post-war deindustrialization. As automobiles succeeded railways and mills were closed and razed for parking lots, the downtown riverfront became a bastion of squalor, crime, and vice. Since the 1980s, however, concentrated efforts by public and private interests to reclaim and restore this once storied area have begun to revitalize the riverfront. Thanks to the advent of amenities and the preservation of historic landmarks, the riverfront now acts as a cultural hub and symbol of the city. Various public, non-profit, and private stakeholders have taken leadership in this revival through collaborative plans, such as the “Above the Falls: A Master Plan for the Upper River in Minneapolis” (1999), offering far-reaching visions for the riverfront and its role in moving Minneapolis forward.

Last spring, the Macalester College Urban GIS class collaborated with the Minneapolis Riverfront Partnership (MRP) and the Community Development Department of the Federal Reserve Bank of Minneapolis on a community-based geographic information systems (GIS) project to study the state of the Minneapolis Riverfront. MRP, a Twin Cities non-profit, advocates for a vibrant Mississippi River and focuses on four revitalization goals for the riverfront: a healthy ecosystem, exceptional riverfront parks, world-class history and culture, and a vital, livable community. The semester-long Riverfront Vitality Indicators Project established a baseline for examining the ways in which the riverfront shapes the surrounding neighborhoods and the region as a whole. For our part, our class paid particular attention to the economic and social development indicators that shape a designated study area along the riverfront.

Our study examined riverfront vitality indicators within four broad categories: employment and investment, commercial, residential, and accessibility. Each group was tasked with devising research questions and selecting the most appropriate variables as indicators of riverfront vitality. As part of the group studying residential indicators, we were most concerned with the following questions:

What are the characteristics of the housing market along the riverfront and how do they compare to trends in adjacent neighborhoods in Minneapolis?

How has development along the riverfront affected the strength of the residential market?

Does proximity to the riverfront have a stabilizing effect on the housing market?

What can be discerned about social equity along the riverfront? Are certain groups benefitting more than others from redevelopment projects?

To answer these questions, we focused on three facets of residential vitality: demographics, housing stability, and investment in the housing market. For our specific indicators, we selected diversity, median household income, owner-occupancy rate, estimated market value (EMV), change in EMV, residential vacancy rate, foreclosure density, access to affordable housing, new residential construction permits, vacant residential parcels, and sales. To supplement more traditional definitions of residential vitality, e.g. owner-occupancy rate or

EMV, our group included several social justice-oriented variables like diversity and access to affordable housing to garner a more nuanced portrait of the riverfront. With guidance from MRP and our own GIS backgrounds, our project shed light on the riverfront housing market and the extent to which the river stabilizes residential vitality. More importantly, perhaps, it also offers potential implications for social equity presented by both of these trends. This article highlights the research completed by the residential group for the Minneapolis Riverfront Partnership.

Reflections on Community-Based Research

Over the course of the semester, the project enhanced my cartographic abilities and challenged my understanding of community-based research on several fronts. First, the project pushed me to consider both its utility to our community partner and the level of reciprocity between our two groups. Working with our community partner also solicited discussion of responsibility and representation, as our class grappled with our accountability to communities along the riverfront and the voices our research overlooked. Finally, the project raised questions of sustainability, as we tried to develop a project that our community partner could replicate for future research.

In developing the project with MRP, our class sought to produce research that was useful for the community partner and ensure reciprocity within the partnership. By collaborating with local community organizations, the Urban GIS course challenges students to apply their cartographic and spatial analysis skills to a real-world scenario. Because the course partners with a new organization and tackles a different issue each year, each project functions as an experiment, in which no one involved knows how things will unfold over the course of the semester. This pedagogical approach encourages problem solving and stimulates critical thinking, yet the real-world implications of our research meant our project needed to simultaneously serve our interests and those of MRP. Meeting with organization representatives throughout the process allowed us to understand their goals and vision for the project and articulate our own interests. During a midterm progress presentation to MRP and the Federal Reserve, for instance, I not only learned which variables they found most enlightening but was empowered to offer perspectives they had not previously considered. Ultimately, the process yielded a collaborative resource document accessible to community members and policymakers alike.

Another challenge we faced involved our responsibility as researchers to the communities we studied and whose voices would be represented in our research. Though Macalester prides itself on its geographically diverse student body, our class was surprised to discover that none of us hailed from the Twin Cities. While this presented an opportunity for us to learn more about our adopted home, it also meant that we were outsiders and approached the project with admittedly limited knowledge of the study area. To integrate local knowledge and community input, our class communicated with MRP throughout the semester and enjoyed access to a handful of neighborhood liaisons with expertise on various portions of the riverfront. Despite this access, I found it challenging to consistently connect with community members and felt like voices were being left out of the process. As a transplant to the Twin Cities, I wrestled with my accountability to the communities living along the riverfront, questioned my ability to properly represent the interests of people with more intimate knowledge of the riverfront, and worried that our research could be used to further marginalize communities. To confront this challenge, my research group adopted a social equity lens; though we utilized traditional

indicators of residential vitality, e.g. owner-occupancy and vacancy rates, we incorporated broader interpretations of vitality, including access to affordable housing, foreclosure density, and socioeconomic diversity. Admittedly, it would be misguided to assume that our intentions reflect the interests of those living along the riverfront simply because we promoted social equity and equal access. Given more time and resources, further engagement with community members and other community organizations could enrich our understanding of riverfront vitality. However, we hope this sentiment of inclusion will persist and expand as the process moves forward.

As the semester neared its end, our class faced the additional issue of the project's sustainability. When MRP approached our class with the Riverfront Vitality Indicators Project, the organization imagined our collaboration would establish a baseline that could be updated annually. Though the software serves as an invaluable research tool for spatial analysis, GIS incorporates considerable amounts of jargon and comes with a learning curve. To ensure our research could be replicated and used by community members and organizations, our class had to present our findings in an accessible medium and explain our work in a straightforward manner. After presenting our final results to representatives from MRP, the Federal Reserve, and other community organizations, our class shared our maps, data, and the processes we completed to examine each vitality indicator. Throughout the research process, final presentation, and post-presentation discussion, I was inspired by the community partners' engagement with our maps and findings as well as their genuine interest in the trajectory of the project. Presenting the final product to our community partners as we overlooked the Mississippi River from the Federal Reserve Bank of Minneapolis underscored the real-world implications of our work. By offering both our findings and the reins to the research, we launched a project that will outlive our class. As MRP continues where we left off, I am excited to see how inclusion of additional voices through forthcoming community forums and discussions will continue to shape the project.

Ultimately, the community-based Urban GIS project was a gratifying experience. Over the past year and a half, I have had several encounters with GIS, both in and out of the classroom. Though I have applied GIS to interesting projects in classes and at a few community organizations, I sensed myself becoming slightly disillusioned with the software and the disengaging amount of lab time it demands. In fact, after working on a GIS project that had me analyzing social and economic justice issues impacting communities across Minnesota from behind a computer monitor instead of in the field, I found myself frustrated and questioning the impact and accountability of my research. However, the Urban GIS course restored my faith in the software and reinvigorated my desire to yield its potential. It demonstrated that GIS does not need to be and should not be an insular and detached process but instead one of inclusion and collaboration. Discovering how the vitality indicators we chose interacted and shaped conclusions and then sharing our findings with community members and organizations was enriching and affirmed the countless hours in the lab. Unlike most courses I have taken, this one directly engaged the greater Twin Cities community and provided it with meaningful research. Contributing to this project expanded my understanding of civic engagement and public service and has whetted my appetite for further exploration of community-based research. Moving forward, I am especially eager to build upon this experience and continue to learn the ways in which scholars and community members can collaborate to find innovative solutions to our collective challenges.

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