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Introduction

Dayton's Bluff is a diverse neighborhood, with a high level of ethnic diversity and a varied housing stock from a wide range of time periods and architectural styles. It would be expected that a measure of local housing market strength would reflect these variations across the landscape. As such, the Housing Market Index (HMI) compares the market conditions of Dayton's Bluff to itself, an approach that provides a more precise view of neighborhood characteristics than would a city-wide HMI analysis. Thus as a market-based, graphic reflection of the many patterns that make up the neighborhood of Dayton's Bluff, the HMI provides a powerful tool for local neighborhood organizations.

Describing the Neighborhood of Dayton's Bluff

This section will outline the demographic and physical characteristics of Dayton's Bluff. As seen in Table 1, the overall population of Dayton's Bluff, based off the 2010 Census, is 14,846, or approximately 5% of St. Paul's total population.

Since the 2000 Census, the western census tracts of Dayton's Bluff (tracts 331, 344, 345, 317.01) have lost between 10 to 15 percent of its population, while the eastern census tract of Dayton's Bluff (346.01) has gained approximately 2 percent in population.

Nearly half of the population of Dayton's Bluff is white, approximately one-fourth Asian, and 17% Black or African American, with the rest of the population comprised of other races such as American Indian and Pacific Islander. Compared to St. Paul, Dayton's Bluff has a smaller white population (St. Paul = 60%) and a much larger Asian population (St. Paul = 15%). It should be noted that there is variation in settlement patterns of race within Dayton's Bluff, with Asian populations clustering in the east and black populations clustering in the west. There is also a strong Hispanic representation in Dayton's Bluff, at 13% of the total population. This is higher than St. Paul's average of 7%.

The built environment in Dayton's Bluff is also widely varied. The average home was built in 1919, although the oldest building in Dayton's Bluff dates from 1855. The majority of buildings in Dayton's Bluff fall within a 60 year range from 1890 to 1950.

The average home size in Dayton's Bluff is 1,376 square feet, which is much smaller than the national average urban home size (approximately 2,400 square feet). The majority of buildings in Dayton's Bluff fall within a range of 885 sq. ft. to 1,866 sq. ft.

The reference map (Map 1) shows Dayton's Bluff's location in the greater city of St. Paul. It is located east of downtown, and borders the Mississippi River. Its most prominent features are

the bluffs of Indian Mounds Park, on the southern edge of the neighborhood, which provide sweeping views over downtown St. Paul.

Table 1

Census Tract	331	344	345	317.01	346.01	Total	Total Percentage
Total Population	1,496	2,117	3,884	2,754	4,595	14,846	
Race							
White	715	1,092	1,771	884	2,452	6,914	**46.57%**
Asian	312	268	935	986	1,087	3,588	**24.17%**
Black/African American	304	458	708	545	487	2,502	**16.85%**
Two or More	73	159	232	146	187	797	**5.37%**
Other	52	111	175	133	311	782	**5.27%**
American Indian/Alaskan Indian	39	29	63	53	69	253	**1.70%**
Native Hawaiian or Pacific Islander	1	0	0	7	2	10	**0.07%**
Ethnicity							
Hispanic	166	243	420	337	780	1,946	**13.11%**
Not Hispanic	1,330	1,874	3,464	2,417	3,815	12,900	**86.89%**

Several old factories are located in the northwest corner of the neighborhood, including the old Hamm's Brewery and the 3M factory. Both of these large areas are slated for redevelopment.

Interstate 94 divides the neighborhood, with roughly 1/3 of the neighborhood to the south of the highway. This presents both a physical and market barrier, as will be seen in the HMI map at the end of this chapter.

The Housing Market and the HMI

The HMI is a measure of the *housing* market rather than the *rental* market. Thus it was necessary to remove rental units from the HMI calculation while conversely including all residential units that would be representative of the housing market. This selection process

was based on the use description of the buildings provided by the Ramsey County Assessor's Office. If a category had mostly homesteaded units that were owned by an individual rather than banks or other organizations, and had the same address for the physical location of the unit and the owner of the unit, then it was assumed that it was by and large representative of a non-apartment style unit.

The table below summarizes which categories were used in the HMI, and how many units of each type there are in Dayton's Bluff. Many of the units that were kept are rented, but they are single-family homes, thus representative of the housing market.

Use Description	Units
½ Double Dwelling	20
Condo/Co-op	11
Double Dwelling	33
Other Residential	1
Single Family Dwelling, Platted Lot	3,154
Three Family Dwelling, Platted Lot	36
Townhome-Detached	1
Townhome-inner	3
Townhome-outer	35
Two Family Dwelling, Platted Lot	549
Two Residences on one Parcel	6
Total Units	**3,840**

Analysis & Discussion

The HMI is comprised of four different variables: Estimated Market Value Change between 2007 and 2011, Owner-Occupancy, Condition of Housing Stock, and Vacancy. The following sections will outline the statistics and present an analysis of the maps that accompany each variable.

EMV by Parcel

The parcels that decreased in value the least are highly concentrated along the bluff in the south and southeast corner of the neighborhood. Most of the greater percentages of value lost appear concentrated in the central portion of the neighborhood as well as the western portion.

Estimated Market Value Change 2007-2011 (by parcel)	
Minimum % Change	-84.40%
Maximum % Change	150.10%
Average % Change	-34.9%
Standard Deviation	7.1%

EMV by Block

The greatest average loss of value is concentrated in the central and western portions of the neighborhood (Map 2). The blocks with the lowest average declines in value are around the bluff and in the eastern portion of the neighborhood. However, the typical block in Dayton's Bluff lost value between 2007 and 2011.

Housing Condition by Parcel

The city of St. Paul designates 10 different categories for condition rating. These range from 0-9, with 0 implying "Unsound" condition and 9 implying "Excellent" condition. The other ratings are 1 ("Very poor"), 2 ("Poor"), 3 ("Fair"), 4 ("Average minus"), 5 ("Average"), 6 ("Average plus"), 7 ("Good"), 8 ("Very good").

We aggregated these rankings into five different categories when creating our maps. The aggregations are as follows: poor (1, 2), fair (3, 4), average (5), good (6, 7), excellent (8, 9), and unsound (0).

Condition Rating (by parcel)	
Minimum	0
Maximum	9
Average	4.4
Standard Deviation	0.7

Housing condition in Dayton's Bluff reflects the dichotomy between the east and west side of the neighborhood (Map 3). In general, the west side of the neighborhood has a lower housing condition than does the east side. The southwest corner of Dayton's Bluff is comprised of homes in the best condition. This is likely due to these homes' more desirable location on the bluff and the large amount of Victorian architecture in this area.

Housing Condition by Block

The average condition of homes per block in Dayton's Bluff is relatively homogenous (Map 4). The majority of blocks in the neighborhood are classified as being between 3 and 4, or "Fair." The second most common rating among blocks is a 5, or "Average." These blocks tend to be at the periphery of the neighborhood, for example the bluff or the eastern edge. There are three blocks that average a rating of 6-7 ("Good"), and they too lie either on the bluff or on the eastern edge of the neighborhood. There are no blocks that possess an average condition of 1-2 ("Poor") or 8-9 ("Excellent") in Dayton's Bluff.

Owner-Occupancy Rate by Block

Owner-Occupancy Rate (by block)	
Average O.O. Rate Per Block	63.1%
Standard Deviation	22.9%

The rate of owner-occupancy by block in Dayton's Bluff is fairly diverse (Map 5). On the eastern side of the neighborhood (around Johnson Parkway), there is a high rate of owner-occupancy (between 80-100%). High rates of owner-occupancy also occur on the bluff. In the center of the neighborhood however, the rates of owner-occupancy drop, with numerous blocks averaging anywhere between 30%-70%. There are a few areas near the bluff and near I-94 where owner-occupancy by block is also very low, but the majority of low owner-occupancy blocks are on the northwest side of the neighborhood.

Vacancy by Parcel

Vacancy (by parcel)	
Total Vacancies	167

Vacancy in Dayton's Bluff is not particularly widespread, with only a small percentage of homes in the neighborhood currently unoccupied (Map 6). The majority of vacant homes appear to be north of I-94. In this area, it appears as if there is at least one home per block that is currently vacant. In the center of the neighborhood (east of Earl and south of Minnehaha), this pattern is the strongest, with multiple homes per block vacant.

Vacancy by Block

The blocks with the lowest percentage of vacancies are concentrated along the bluffs and in the eastern portion of the neighborhood (Map 7). The blocks with the highest percentage of vacancies are concentrated in the interior of the neighborhood, especially in the northwest quadrant.

Calculating and Mapping the Final HMI

The first step in calculating the HMI was to exclude blocks that had too few units, so that outliers would not affect the block HMI value. Seven units per block was decided as the minimum threshold because the average number of the units per block was 17 with a standard deviation of 10. After the blocks were removed that did not fulfill the requirement for minimum units, 214 blocks were left. It was from these 214 blocks that we calculated the HMI.

After calculating the z-scores for each variable, we weighted them according to the preferences of our neighborhood partner. These weightings are: Owner-Occupancy at 5, Value Retention at 7, Housing Condition at 9, and Vacancy Rate at 9.

The final HMI shows the relative strength or weakness of a particular block compared to the larger neighborhood. The blocks with the strongest HMI rating appear in the south and southeast areas of the neighborhood (Map 8). The weakest HMI blocks are located in the central and northern regions of the neighborhood.

Conclusions & Recommendations

The most important patterns that appear in the maps, including the four individual variables and the HMI, depict a strong divide between east and west Dayton's Bluff, as well as a north/south divide along I-94.

The maps depict a much stronger housing market index (meaning higher owner-occupancy, lower vacancy, better condition, and greater value retention) in the eastern part of Dayton's Bluff, almost to a rule.

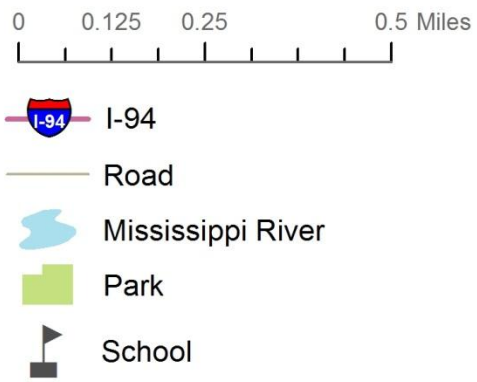
To a lesser extent, but still apparent, is the strong north/south divide which shows a much stronger HMI south of the interstate. This can be explained in part by the views offered from the bluffs, as well as the well-preserved Victorian housing stock in the area.

These patterns highlight a potential target for future community investment in the areas with a lower HMI. This project's usefulness comes in that it highlights these areas as a geographically specific space, which will make target investment much more effective and efficient.

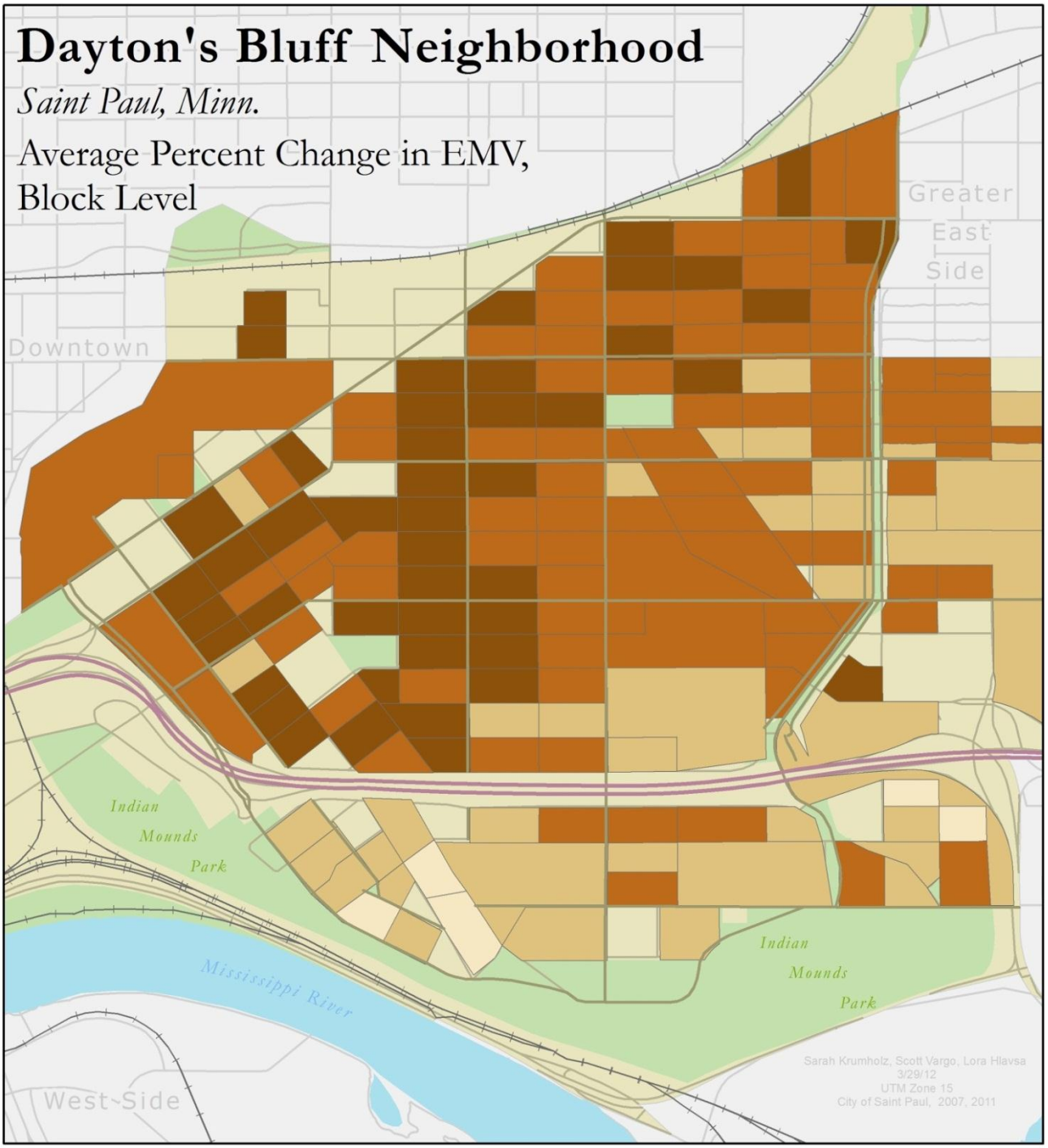
We hope Dayton's Bluff utilizes these maps not only as an analytical tool, but perhaps as basis for community debate and discussion. As there is quite evidently a large divide in HMI between east and west Dayton's Bluff, this project may provide the impetus for inter-community collaboration and investment.

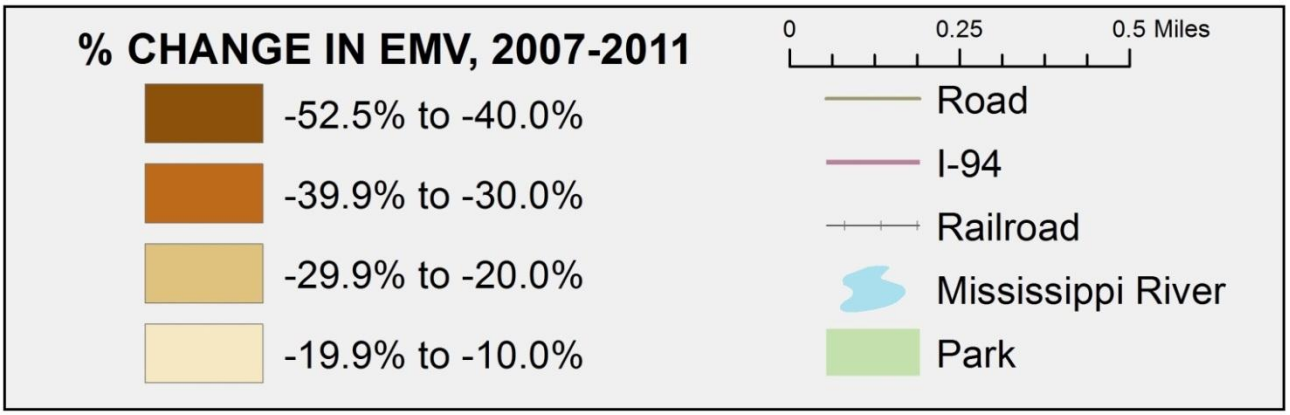
In terms of future investigations, an examination of the relationship between apartment units and a respective HMI may be revealing. The exclusion of apartments in the current HMI analysis is a significant limitation, especially when considering that approximately half of Dayton's Bluff housing stock consists of apartments. It would be interesting to see if an additional apartment market index would follow the same trends as seen in the HMI, or would reveal a new set of dynamics.

Map 1: Reference Map

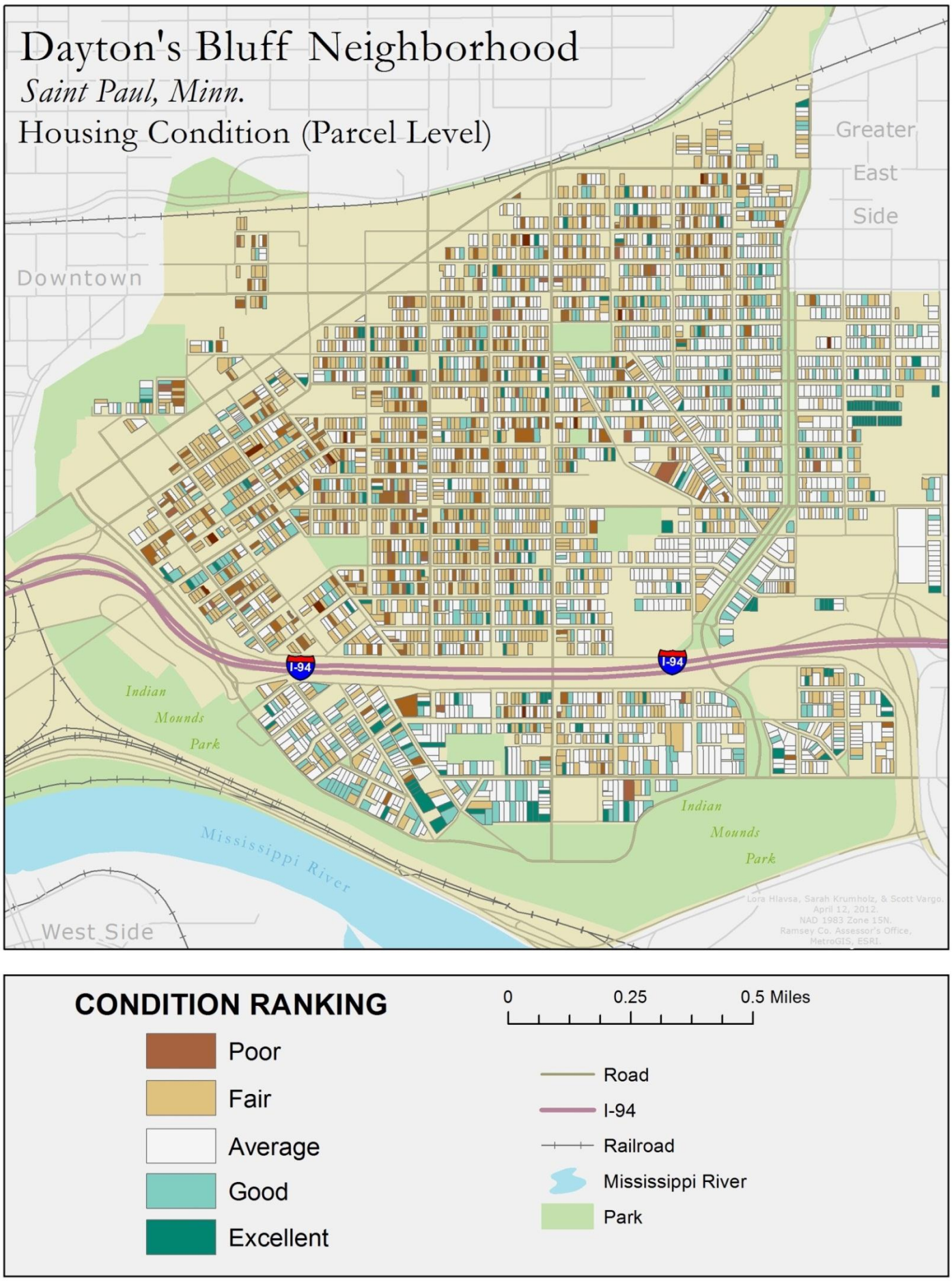


Map 2: Average Percent Change in EMV by Block

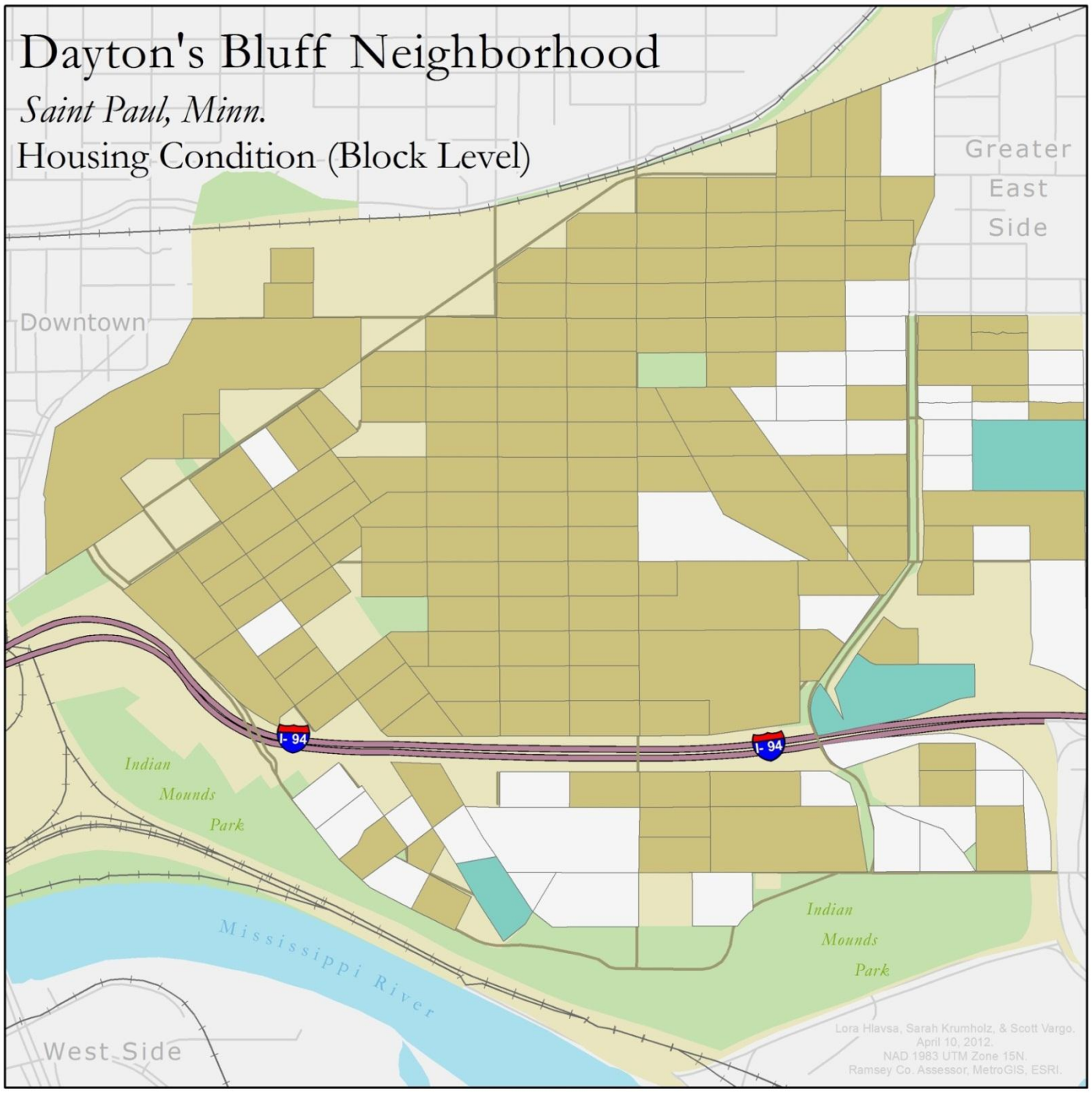




Map 3: Housing Condition by Parcel



Map 4: Housing Condition by Block



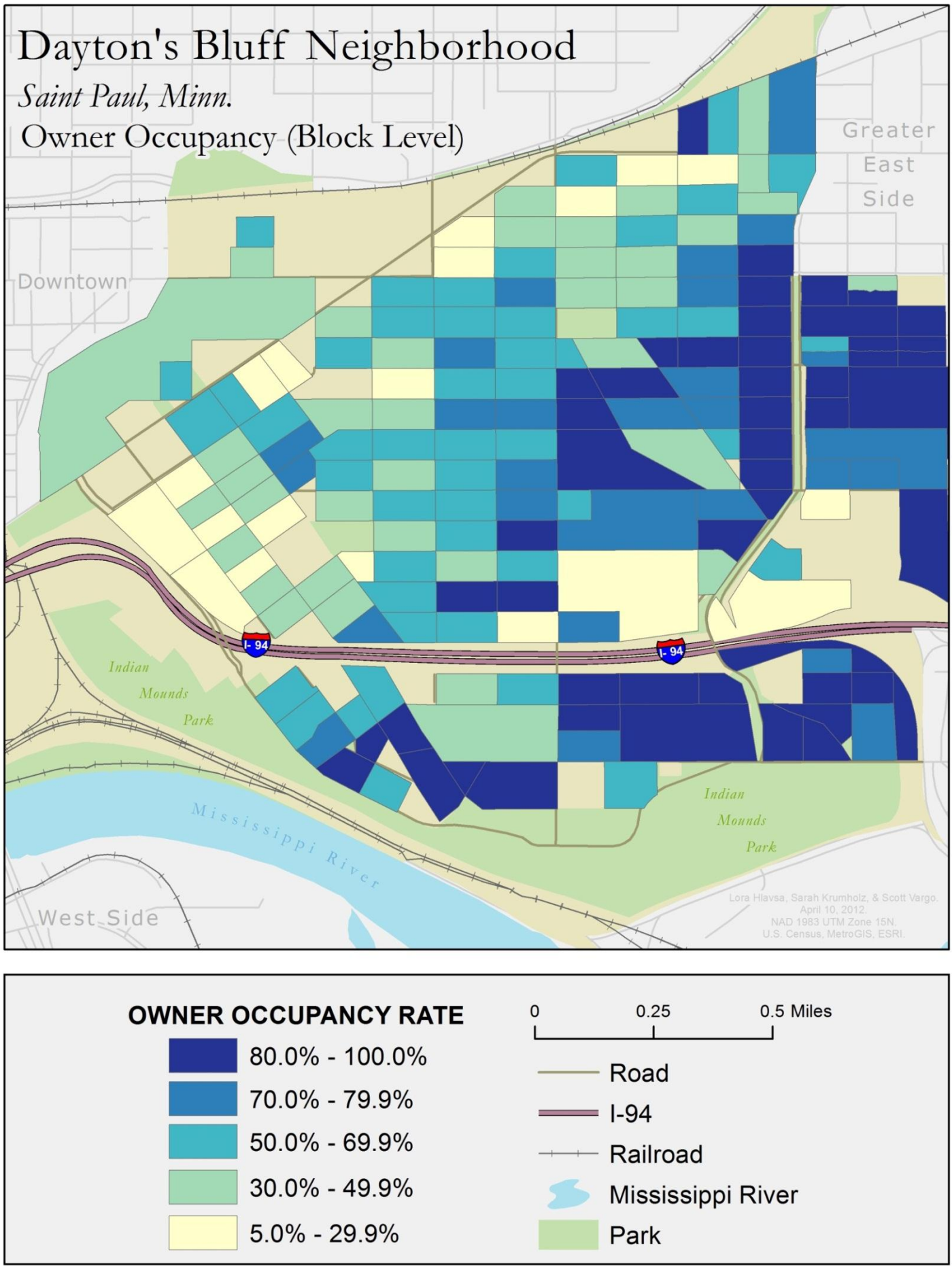
AVERAGE CONDITION RATING

- Excellent
- Good
- Average
- Fair
- Poor
- Unsound

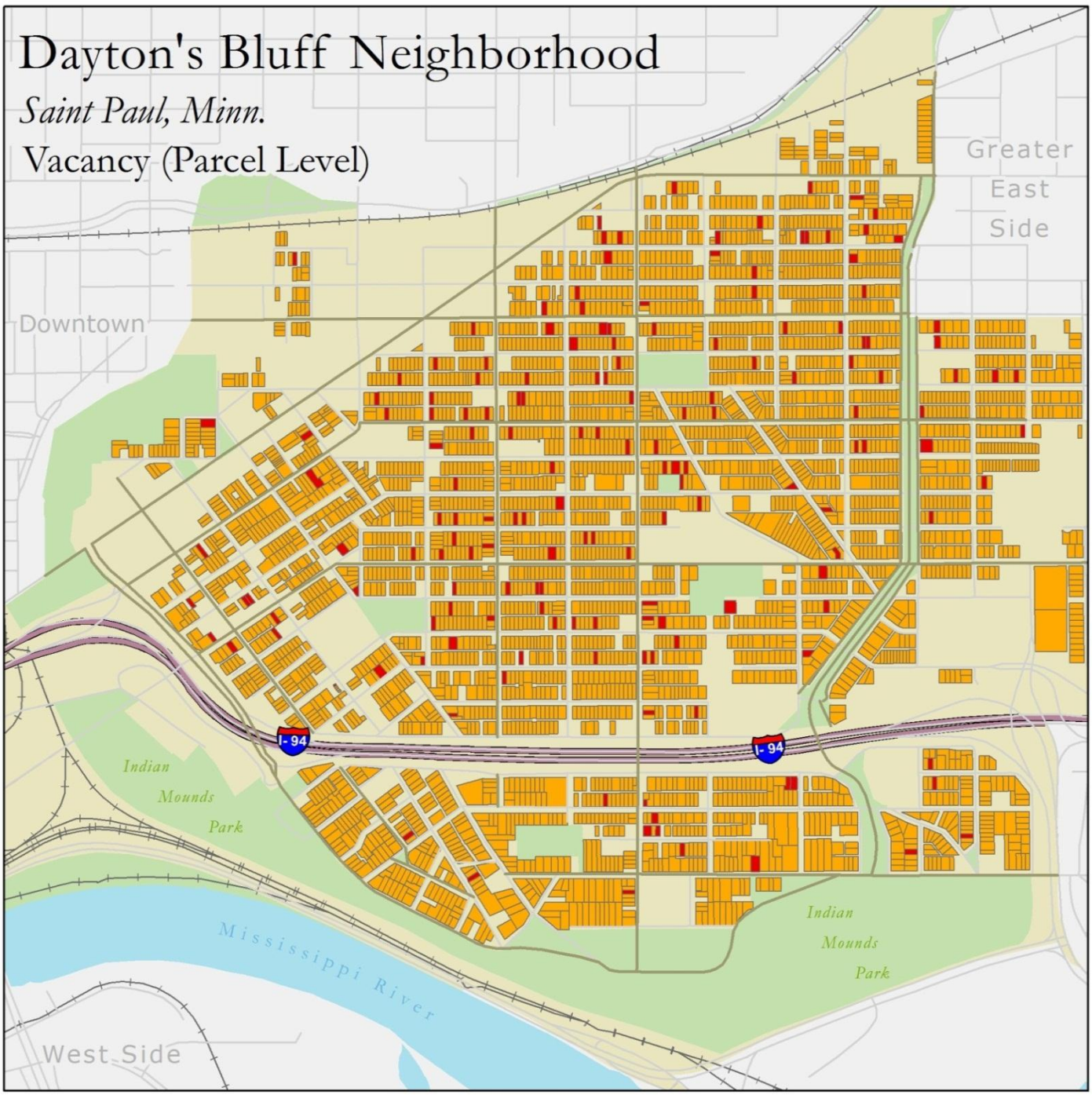
0 0.25 0.5 Miles

- Road
- I-94
- Railroad
- Mississippi River
- Park

Map 5: Owner-Occupancy by Block



Map 6: Vacancy by Parcel



VACANCY

Occupied

Vacant

Vacancy was calculated using data from the United States Postal Service.

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April 10, 2012.
NAD 1983 UTM Zone 15N.
US Postal Service, MetroGIS, ESRI.

0 0.25 0.5 Miles

Road

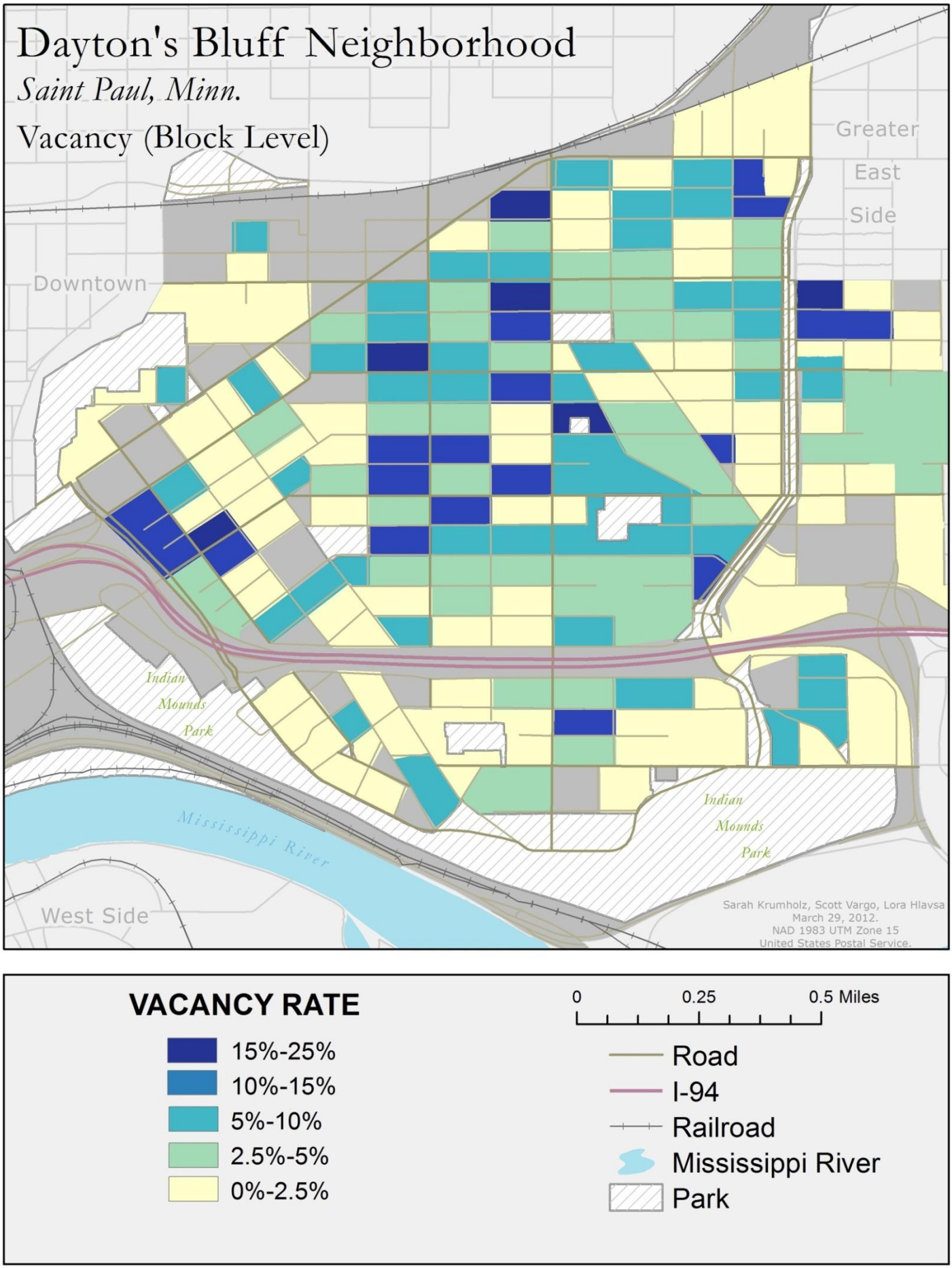
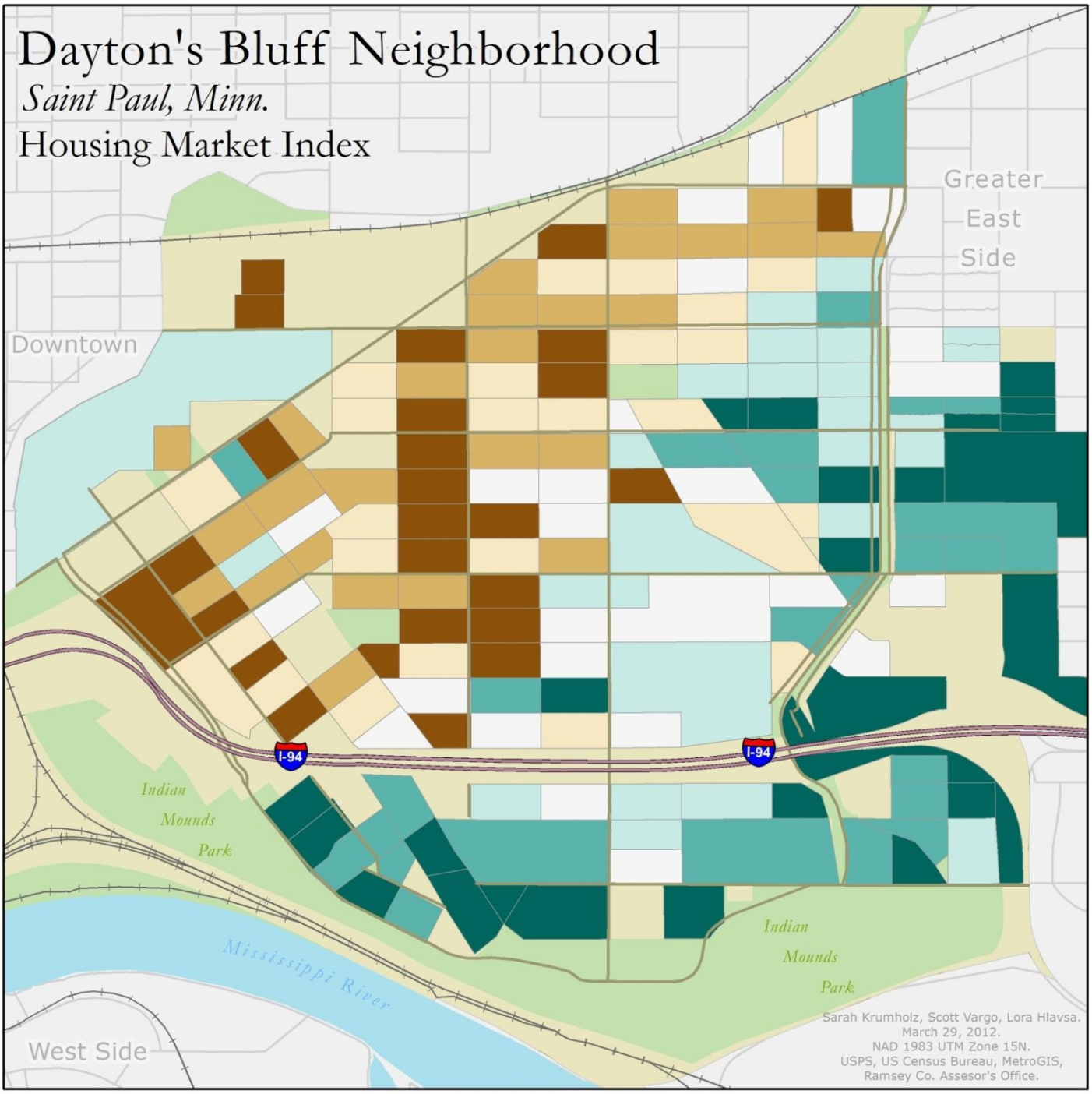
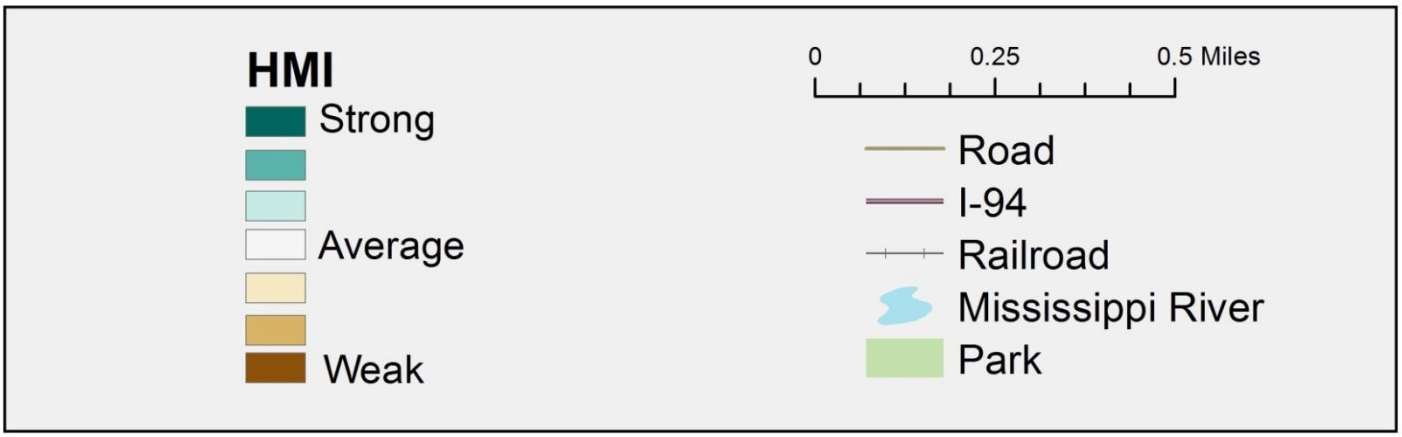
I-94

Railroad

Mississippi River

Park

Map 7: Vacancy by Block



Map 8: Housing Market Index by Block