A Study of
Worcester's Webster Square Node
suggesting areas for future economic and community development

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INTRODUCTION

This project began as an analysis of commercial nodes identified by city administration for *Preservation Worcester* to explore. The initial plan was to assess the nodes with an eye toward future development. Over time, the project evolved as different partners brought new analytical tools to bear and as research suggested how imprecise the term "commercial node" is for Worcester.

Early questions about what constituted a commercial node began to prompt the shift. Researchers asked: What makes a node commercial? Is it simply the presence of commerce? If so, what degree of commerce is required, and do all commerce types contribute to this designation? Do commercial nodes have regular schedules, (i.e. 9am-5pm)? What about restaurant/bar areas versus retail areas? Are they "commercial nodes" despite different commodities and schedules? Can a cultural area be a commercial node? Why/why not?

Because the original nodes varied markedly from each other, researchers opted for a deep dive into one node — Webster Square — rather than a broad-brush and heavily-qualified survey of all The approach was to gather and analyze useful data about this mode, and present it to people in the neighborhood. With this method, researchers hoped to provide the community with actionable information about the node to help guide its development.

Looking closely at demographic, geographic, and economic information, researchers found:

- Webster Square is a critical western gateway to the city that often serves as the face of Worcester for those travelers who do not make it downtown.

- Webster Square differs demographically from the larger city, and there are promising development opportunities for the overlooked local population and those who commute to or through the node.

- Webster Square is not effectively and purposefully inter-connected to different loci within and just outside the node, yet doing so could enhance local usage, commercial receipts, and livability for its diverse population.

- Webster Square's underused waterways can be developed to create destination and recreation features in the node, and connect points within and outside of the node more creatively.

- Webster Square occupies an intriguing location between downtown and points west as well as amid three colleges (WSU, Clark, and Holy Cross).

- Development of the area should proceed with the creation of publicly-informed 3-, 5-, and 10-year plans that rest on solid data and voices from the node's commercial and residential stakeholders.

INITIAL NODES

1. Webster Square

2. Rice Square

3. The Summit

4. College Square

5. Richmond and Pleasant Streets

6. Newton Circle

7. Brown Square

8. Tatnuck

9. June and Chandler Streets

METHODOLOGY

In the early stages of this project, Clark University student interns working with *Preservation Worcester* conducted qualitative field work on the original nodes designated by the city. These students surveyed the land-uses, structures, and services in each node. Some interviewed local people about neighborhood conditions. Collectively, that work provided a good jumping off point for this report because it gave researchers some community context about each of the nodes.

From there, researchers of this report used GIS software to extract census data from half-mile circular zones around each node. Through this process, they took in-depth looks at the demography, housing, income, education, etc. for small sub-sections of Worcester located in the immediate vicinity of each node.

Working with *Preservation Worcester*, researchers analyzed the data and determined a comparative study of all nodes would not provide useful data because of the differences. Knowing that Webster Square had an active and engaged merchants association, researchers resolved to focus on this node and compiled a preliminary report for presentation to the Webster Square Merchants Association for comment.

In addition to regular merchants association members, representatives of the city, area universities, and others attended the presentation. Following a fruitful discussion, researchers determined to widen their scope to a 1- mile diameter circle, which would encompass more of the node's population.

This report is the culmination and consolidation of all the previous work. Its data is drawn from public information accessible from the 2010 US Census, the 2014 American Community Survey, and the 2013 Department of Labor Statistics. The analysis was done by the researchers with input from *Preservation Worcester*, and with Worcester State University colleagues and affiliated researchers in the Department of Urban Studies' CityLab.
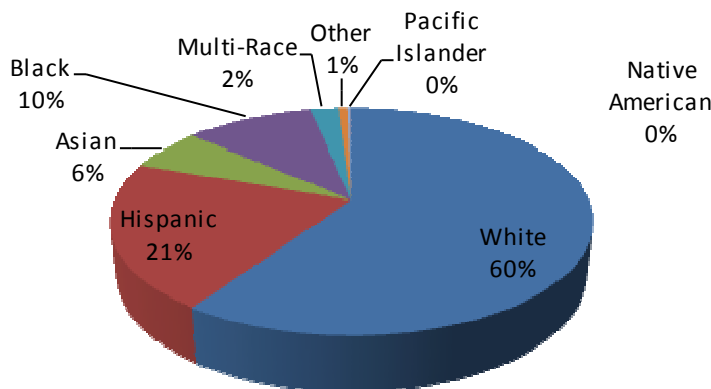
ACKNOWLEGMENTS

Worcester Demography, Housing, and Economy Overall

Race in Worcester, 2010

PEOPLE

The 2010 US Census provides the most comprehensive and accurate recent accounting of the United States population. In that year, the total Worcester population was 181,045 people. The racial composition of the city at that time is represented on the left.

A half-a-decade later, the population had not changed that dramatically by 2015. The US Census Bureau estimates the city population as of July 1, 2015 at 184,815 people, an increase of only 2.08%.

AGE

In 2010, the overall median age for Worcester's residents was 33.4. The male-only median was slightly younger at 32.1, and the female-only median was 34.7. Most likely, this is because women tend to live longer in Worcester — there are more women who live to 60+ than there are men.

Separating the population by age and gender yields the chart on the right, which shows the largest age spikes occur in the 20-24 year old range. It is important to note that with some small exceptions, the only college students who factor into his figure are those who list Worcester as their residences.

Age and Gender in Worcester, 2010
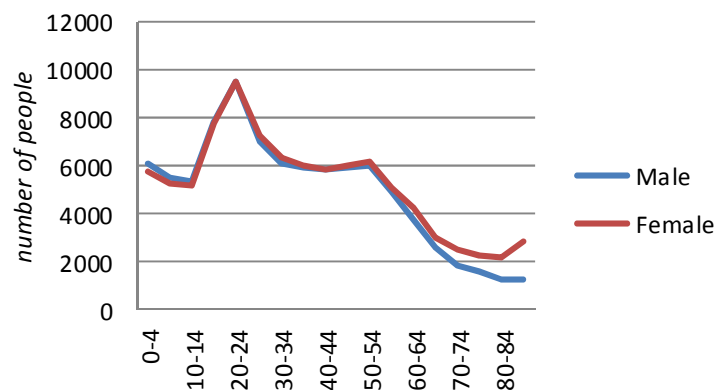
Household Composition by Family Type, 2013
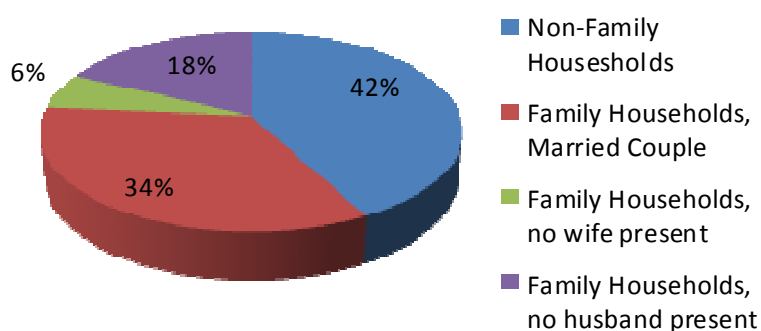
HOUSING

In 2013, there were 68,850 occupied household units in Worcester — 8.1% of available units were unoccupied. The chart (left) shows family types in the 91.9% occupied households. Non-family households constituted the largest single piece, but the majority (58%) actually lived in family households.
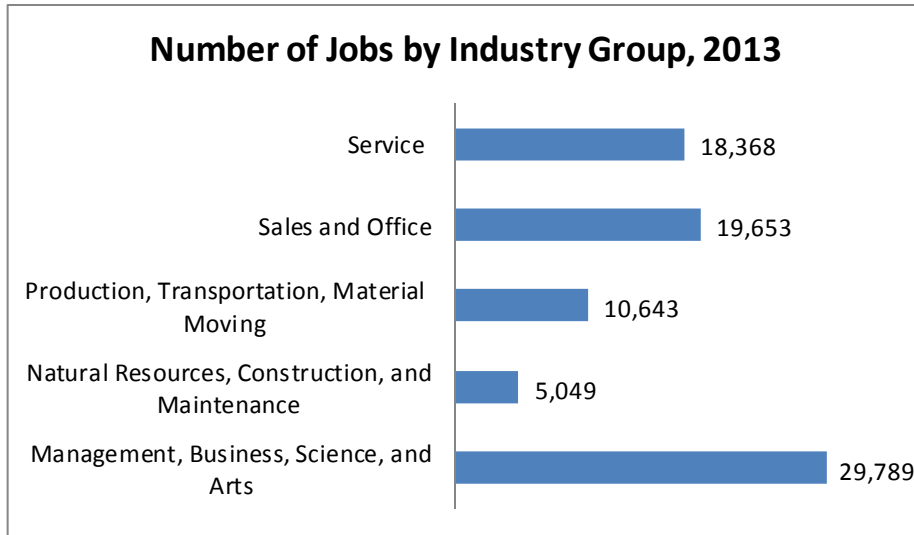
Among family households, most were headed by married couples (25%) while 18% were headed by single mother households and 6% were single father households.

According to the 2010 census, Worcester has a relatively low average household size at 2.46 people per household, and an average family size at 3.14 people per family.

ECONOMY

The 2013 American Community Survey reported that 83,511 people, 16 years and older, comprised Worcester's employed civilian workforce. This workforce was split across gender lines at 50.8% male and 49.2% female.

Using the US Census' general categories of employment trends, Worcester's working population was dispersed over these industries in these proportions:

Number of Jobs by Industry Group, 2013

Industry Group	Number of Jobs
Service	18,368
Sales and Office	19,653
Production, Transportation, Material Moving	10,643
Natural Resources, Construction, and Maintenance	5,049
Management, Business, Science, and Arts	29,789

Yet, while the civilian workforce is more or less evenly divided between males and females numerically, earnings were not as evenly distributed. The graph below shows the earnings disparity in Worcester by the same occupational groups by gender.

Median Earnings by Occupation Sector and Gender, 2013

— Male — Female

Occupation Sector	Male	Female
Management, Business, Science, and Arts	~$61,000	~$47,000
Service	~$23,000	~$19,500
Sales and Office	~$32,000	~$28,000
Natural Resources, Construction, and Maintenance	~$38,500	~$27,000
Production, Transportation, and Material Moving	~$31,000	~$23,000
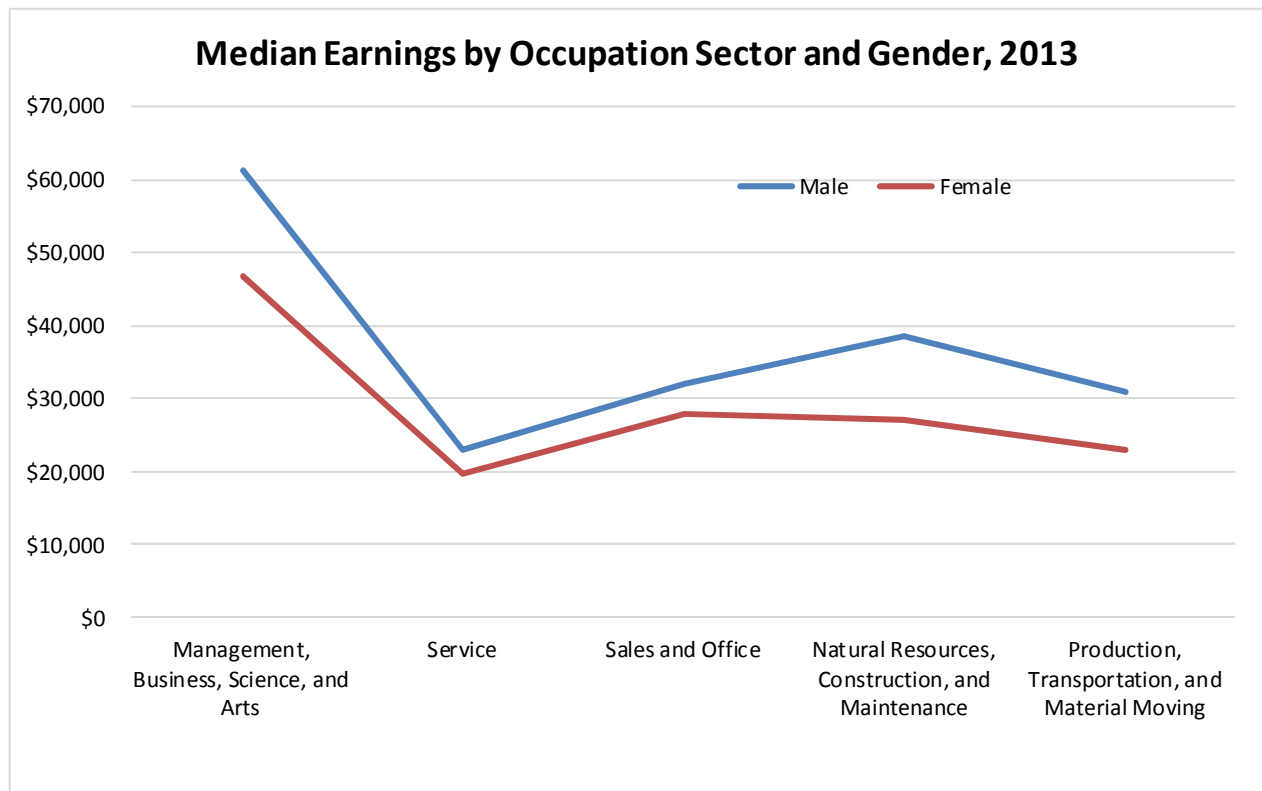
Webster Square Study Area
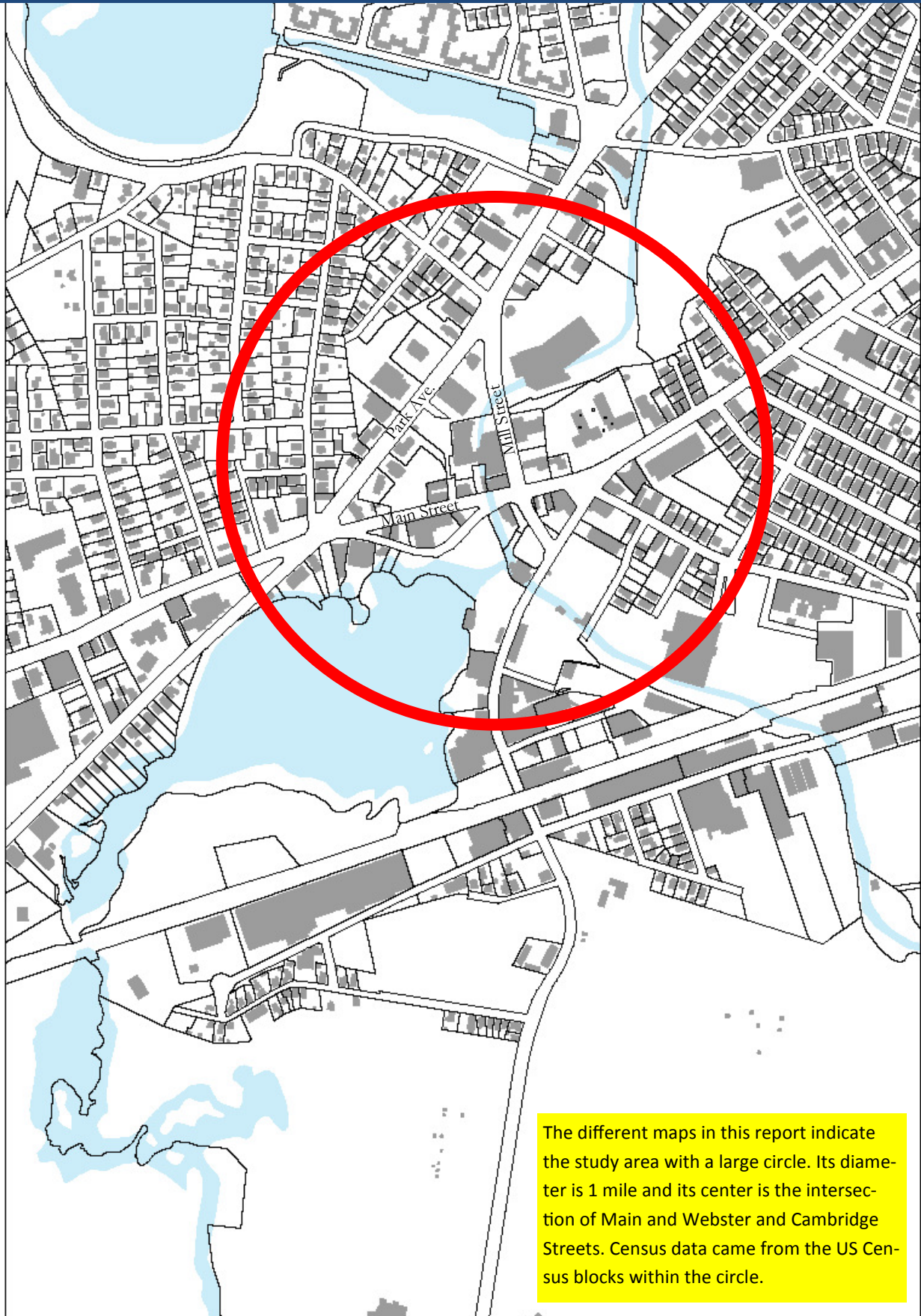
The different maps in this report indicate the study area with a large circle. Its diameter is 1 mile and its center is the intersection of Main and Webster and Cambridge Streets. Census data came from the US Census blocks within the circle.

N

Site Layout
1:5,000

0   0.05 0.1   0.2   0.3   0.4
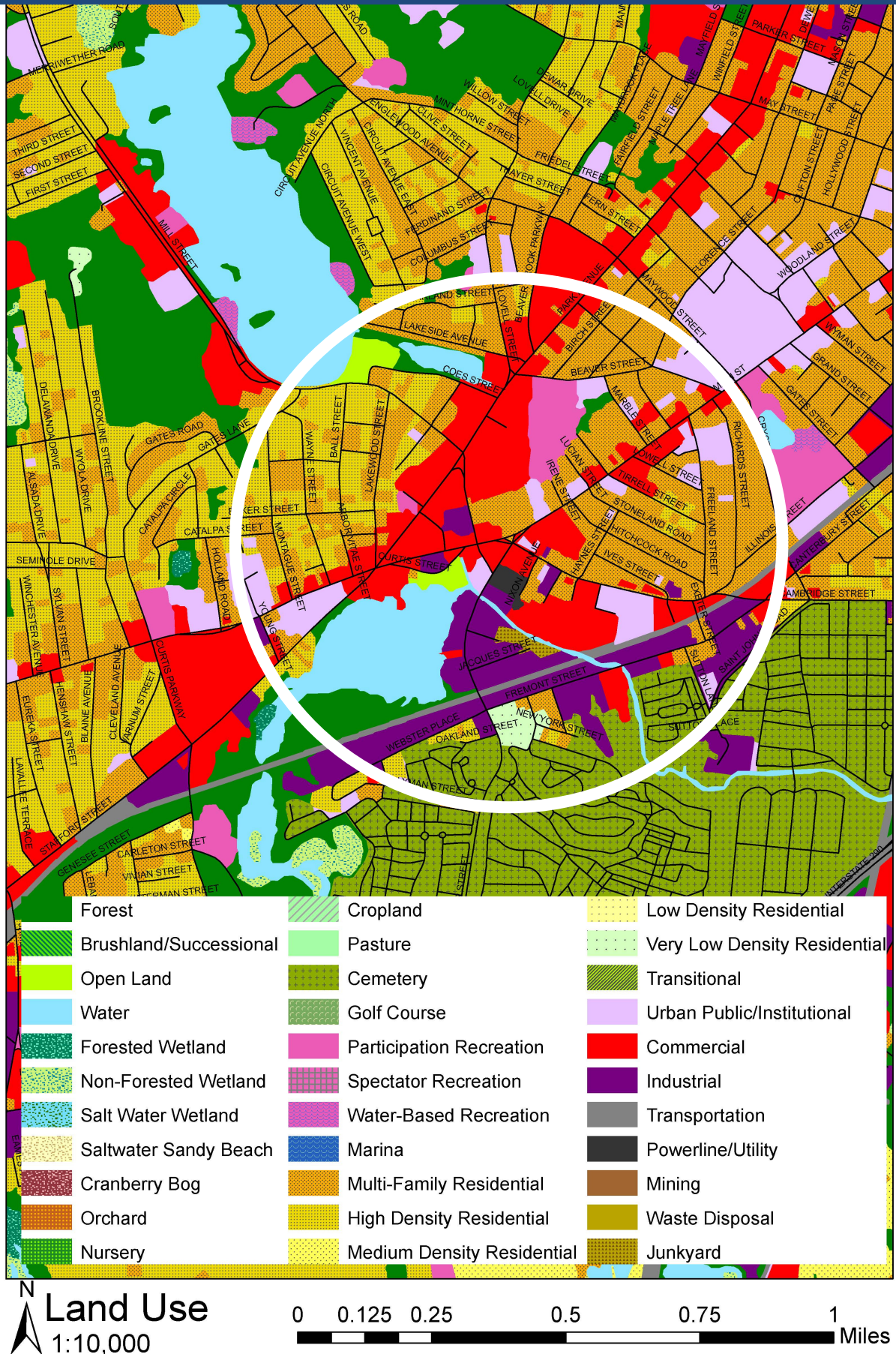   Miles

As early as 1870, as shown in a detail from the 1870 Worcester Atlas above, the intersection at Main, Webster, and Cambridge streets was called "Webster Square." For more than 150 years, the area has been home to homes, cultural organizations, commercial enterprises, and a diverse mix of people. At the same time, it has long been an important node and gateway connecting Worcester to points west of the city.

Modern GIS visualizations on the "Webster Square Area Land Use Map" show the center of the Webster Square node is occupied mainly by commerce, with substantial residential areas bounding the eastern and western edges as well as to a lesser degree in the northern rim. The eastern side in particular, is an especially densely-packed residential area. To the south/southwest of the commercial core lay an area of industrially-zoned buildings in various states of re-use — the industries for which they were created are, by and large, gone. These structures have not been re-used to their full potential, however.

Webster Square Area Land Use Map

Legend:

- Forest
- Brushland/Successional
- Open Land
- Water
- Forested Wetland
- Non-Forested Wetland
- Salt Water Wetland
- Saltwater Sandy Beach
- Cranberry Bog
- Orchard
- Nursery
- Cropland
- Pasture
- Cemetery
- Golf Course
- Participation Recreation
- Spectator Recreation
- Water-Based Recreation
- Marina
- Multi-Family Residential
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Very Low Density Residential
- Transitional
- Urban Public/Institutional
- Commercial
- Industrial
- Transportation
- Powerline/Utility
- Mining
- Waste Disposal
- Junkyard

N

Land Use
1:10,000

0   0.125   0.25   0.5   0.75   1
Miles

Other important and under-utilized elements of this node are the water and open-space features, particularly (but not exclusively) in the southwestern portion of the node as illustrated on the "Land Use Map." Water features include Curtis Pond, Coes Pond, and Coes Reservoir which are often connected to city-owned land (park, beach, firehouse) or designated as green areas. Less easy to see but equally important are the significant and developable drainage channels that create waterway opportunities into and around the central commercial area. These could be made useful for pedestrian/bicycle/watercraft traffic while providing opportunities for recreation, and public art throughout the node.
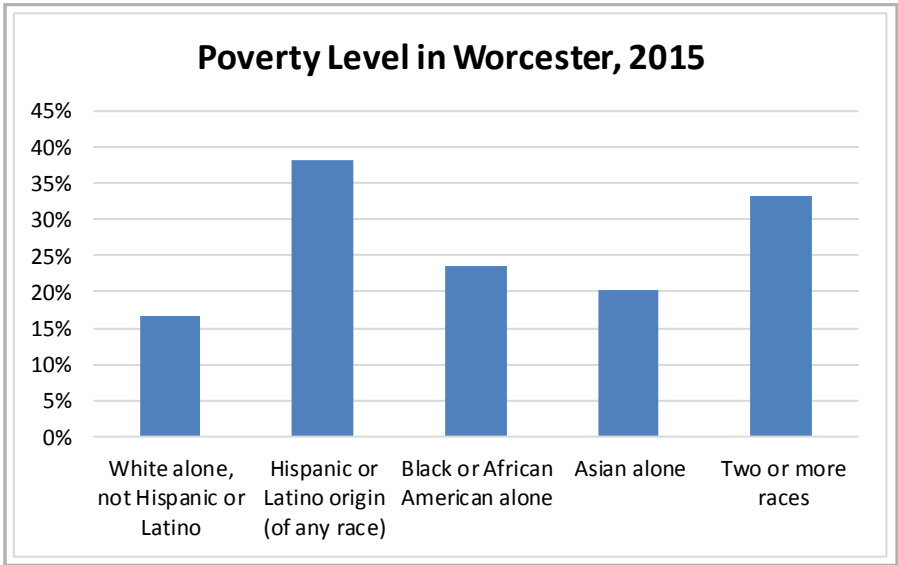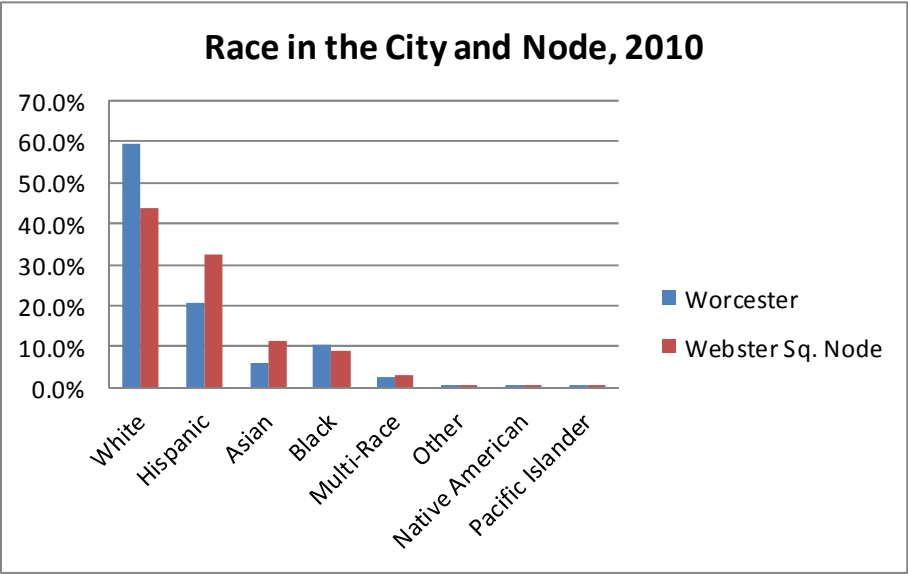
DEMOGRAPHY — RACE

The ethno-racial profile of the Webster Square node strays somewhat from that of the city. The proportion of white and black residents in this area is lower than the city has a whole, while the percentage of Latino and Asian residents is higher than the overall city.
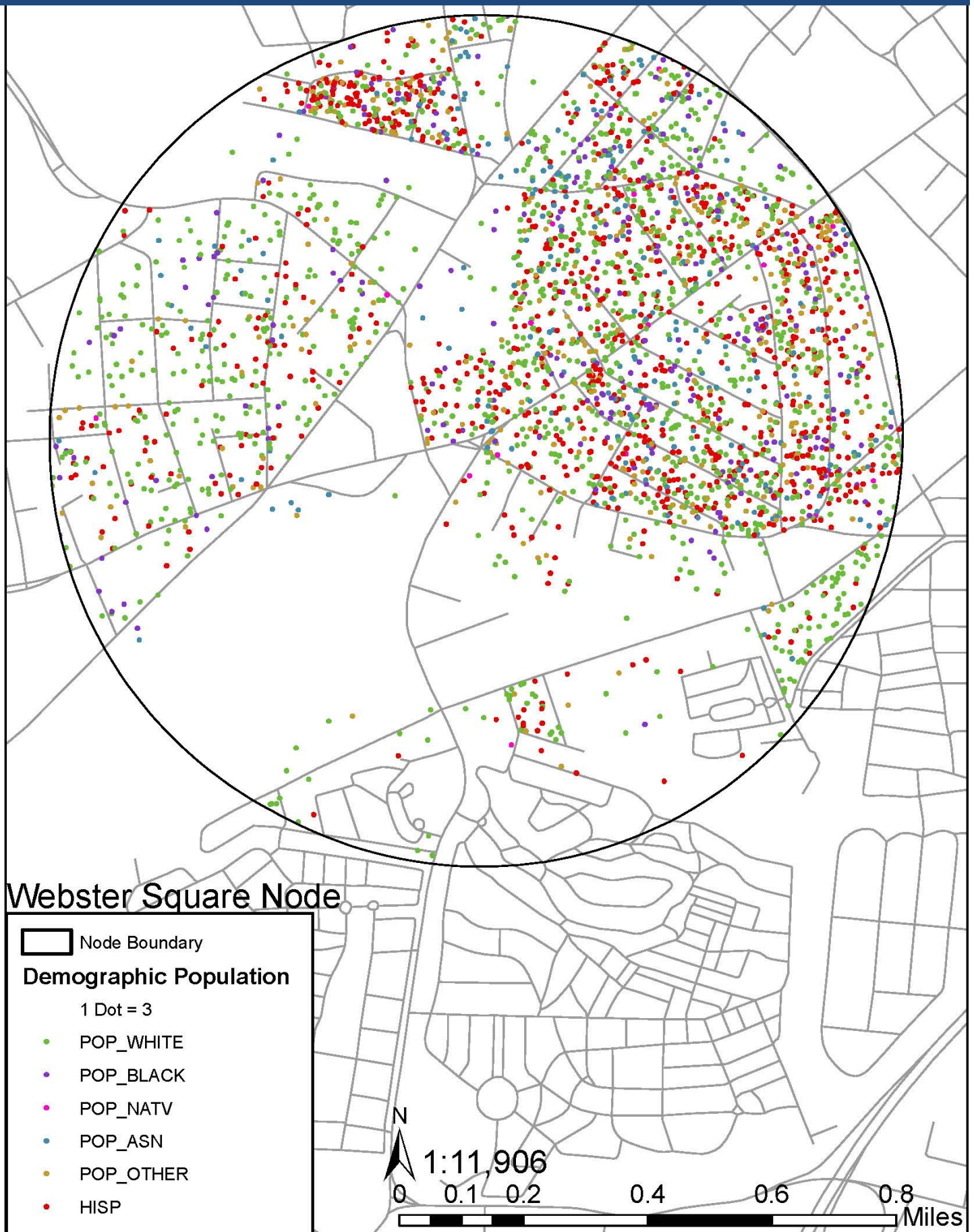
Residents of color in this node are more likely to be clustered in particular areas. As the map "Webster Square Area Population by Race" shows, white residents are found throughout the node, but pockets of Latino, Asian, and Black residents are more densely concentrated in the northern and eastern sections of the node area.
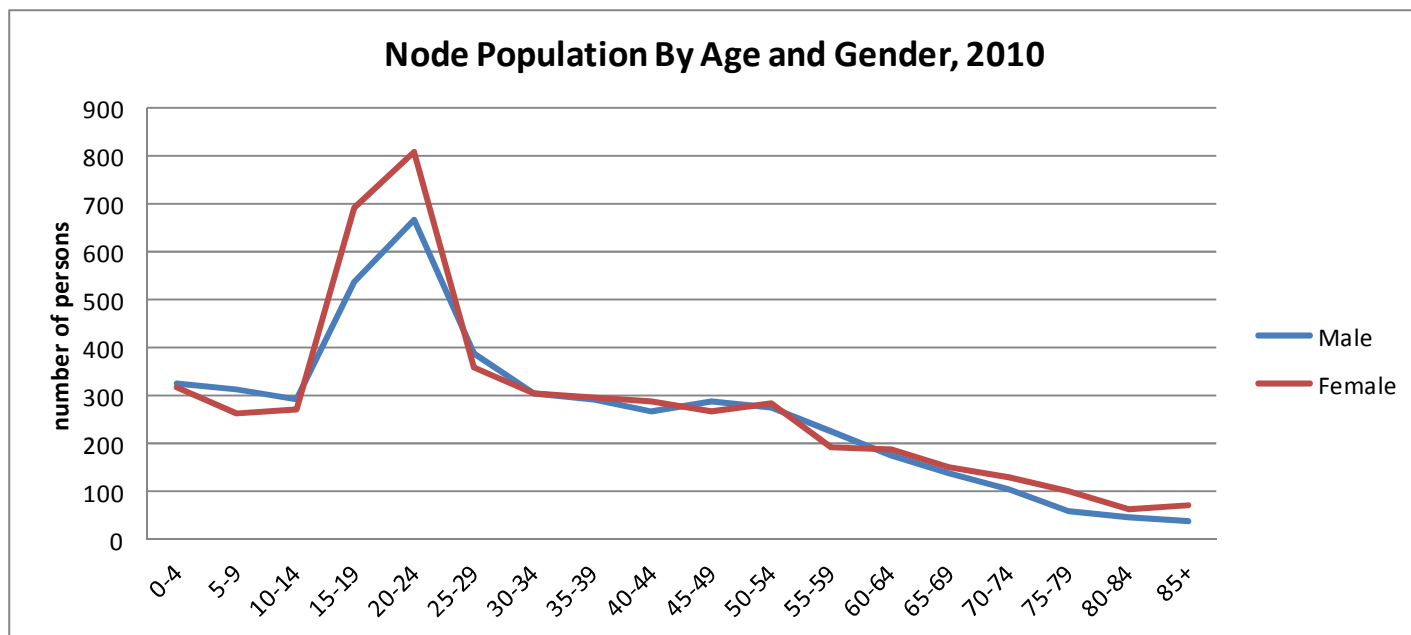
While this is not the result of any official segregation, it is likely that economics has dictated the such settlement patterns in large part because it is less expensive to live in the higher density areas. The 2015 American Community Survey of the US Census Bureau estimated the poverty levels of Worcester's ethno-racial groups as follows: White (17%), Hispanic/Latino (38%), Black (24%), Asian (20%) and Two ro More Races (33%). (These figures are also depicted in the chart.) Communities of color have higher poverty rates in all categories.

Race in the City and Node, 2010

Poverty Level in Worcester, 2015

Of course, there are other impacts on these residents result that from their high-density accommodations which include: more multi-family homes, more noise, more traffic, and less green space. Future development of this area would be wise to take all this into account be certain to include the voices of those not regularly at the table.

Webster Square Area Population by Race

Webster Square Node

Node Boundary

Demographic Population

1 Dot = 3

- POP_WHITE
- POP_BLACK
- POP_NATV
- POP_ASN
- POP_OTHER
- HISP

N

1:11,906

| 0 | 0.1 | 0.2 | 0.4 | 0.6 | 0.8 |

Miles

Node Population By Age and Gender, 2010

DEMOGRAPHY—AGE

The Worcester population in 2010 was relative young. Its overall median age that year was 33.6 years old, which was older than Boston (30.8) and only slightly older Springfield (32.3). However, in the context of its geographic area, Worcester's population is especially young. In 2010, the overall median ages for Worcester's surrounding towns were: Paxton (39.2), Grafton (39.2), Shrewsbury (40.2), Leicester (40.4), Millbury (42), Auburn (43.7), West Boylston (45.6). Looking more closely at the population of the Webster Square node shows that area has a peak age for both men and women in their early-20s. In fact, this node is younger than most parts of the city despite the existence of two senior-only public housing towers 1050 and 1060 Main Street in the study area.
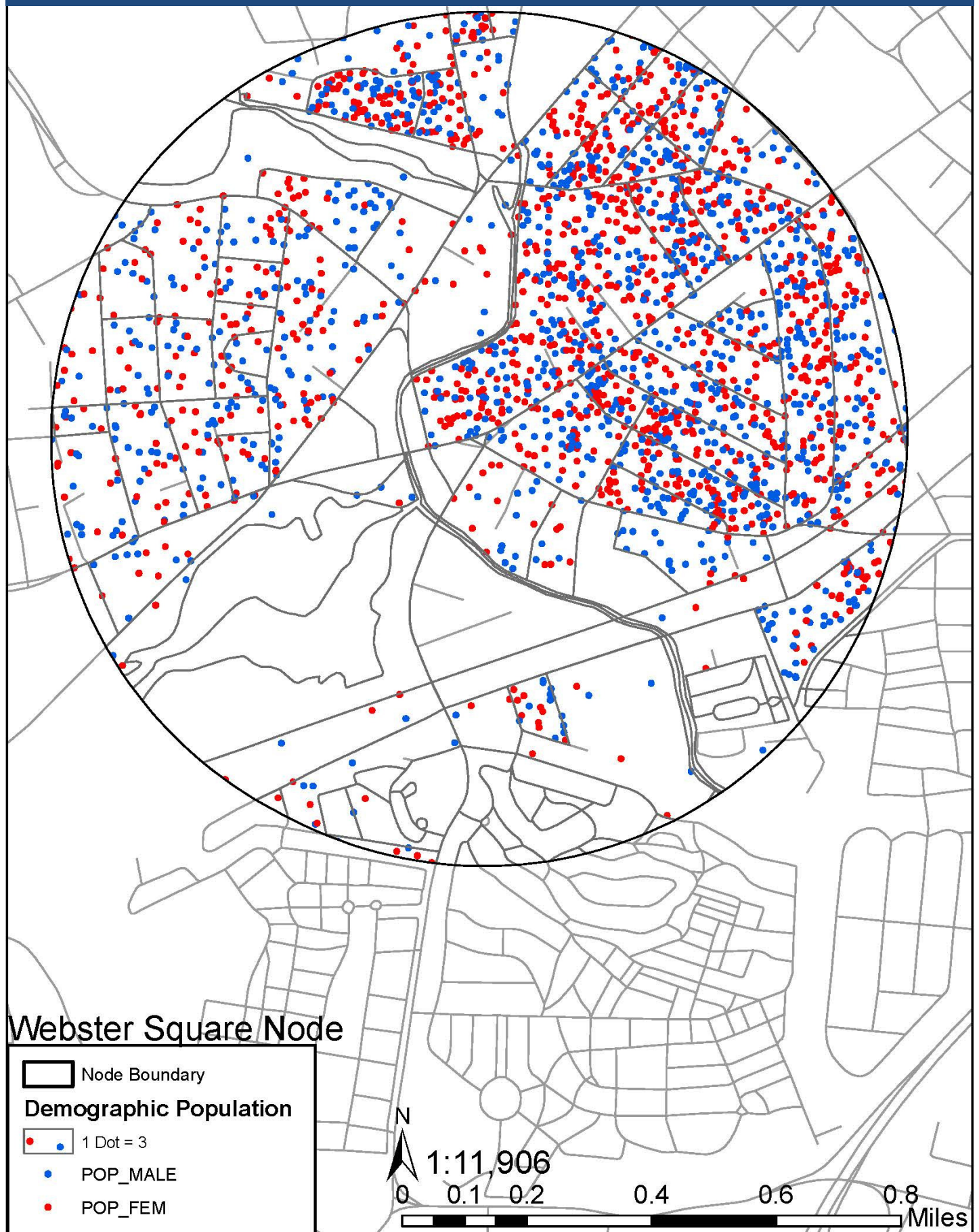
On one hand, there is something anomalous about this figure. That the spike begins with 15-19 year olds and tapers off by 25, and that women significantly outnumber men in this cohort (15-24 years) suggests the increase has to do with the presence of a college-aged population living in the node. In Fall 2016, Clark University reported its undergraduate student population as 61% female and 39% male, and it is located on the eastern edge of Webster Square node; Worcester State University has a similar student body composition—59% female and 41% male—and is not too far away.

On the other hand, despite the anomalous nature of the spike, the important conclusion for developers, mer-chants, and city planning staff, is that this area has a large portion of college-aged residents, some of whom are likely students, which might affect decisions about what to develop and where to develop it.

The notion that the college-aged population is important for development is further confirmed by look-ing at education enrollment and at-tainment.

Webster Square Area Population by Gender

Webster Square Node

- ☐ Node Boundary

Demographic Population

- 1 Dot = 3
- ● POP_MALE
- ● POP_FEM

N

1:11,906

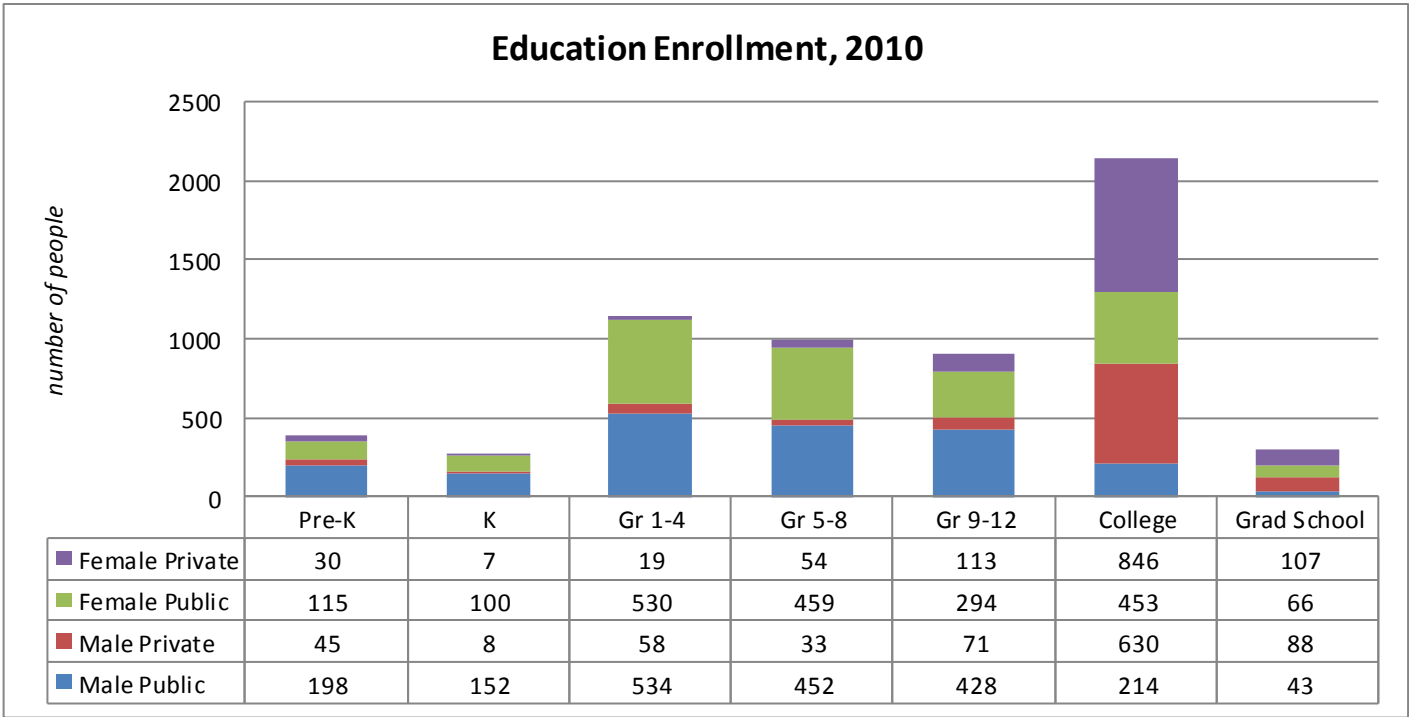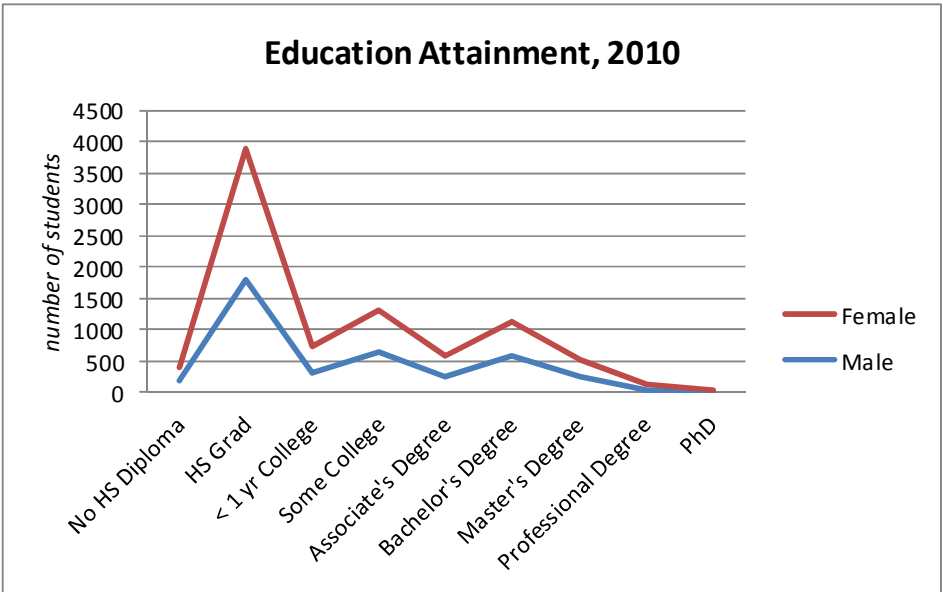0   0.1   0.2   0.4   0.6   0.8
Miles

EDUCATION

In total, approximately 3,700 PreK - 12 students lived in this node in 2010, which helped to lower the median age of the node, and 88.2% of them attend public schools. While numbers might vary slightly from year to year, there is no reason to suspect significant change on this front. The population is stable, and the school system did not see any major changes that would impact this trend.

Education Attainment, 2010

Statistics show that residents in this area overwhelmingly attend public schools through high school. This characteristic, however, it appears to reverse in the college years — there is a steep rise in private college attendance among area residents, particularly for women, and nearly 69% of the node's 2,143 college students attend private schools whereas 31.1% attend public schools. Importantly, this is not necessarily an accurate depiction of what is happening among long-term area residents. Juxtaposing the enrollment and attainment numbers may suggest either that long-term residents are not earning college credentials or they are moving from the node once they have attained them. Either way, this is an important trend for developers, merchants, and cultural organizations to note.

As with the age charts, the proximity of two schools in particular, Clark University (private) and Worcester State University (public), likely affects the population of the Webster Square node. In 2016, Clark University reported that 96% of its undergraduate students lived in university housing, which would seem to suggest they are not within the node. However, the study area—the 1-mile circle centered on Webster Square—actually includes Clark's Blackstone and Maywood Residence Halls as well as private houses for rent in the university's vicinity. These are

Education Enrollment, 2010

	Pre-K	K	Gr 1-4	Gr 5-8	Gr 9-12	College	Grad School
Female Private	30	7	19	54	113	846	107
Female Public	115	100	530	459	294	453	66
Male Private	45	8	58	33	71	630	88
Male Public	198	152	534	452	428	214	43

not necessarily long-term residents of the node though they do present opportunities for businesses there. At the same time, Worcester State University has no residence halls in the area, but 64% of its undergraduate population lived off-campus in 2015. Although this population is spread widely, the northern edge of the study area is 1 - 1.5 miles from WSU, which, along with the comparatively affordable rents, makes the Webster Square area an attractive location for university students.

The node's high student population may also skew its race demography in a similar way that it does its age landscape. Clark reports that 22% of its 2016 undergraduate population consists of ALANA students and WSU reported that 24.1% of its 2015 undergraduate student body consisted of "minority students." Yet, if students from these schools live in the node in comparable proportions, that would actually inflate its white population inaccurately. .

In terms of educational attainment, as the above chart shows, most node residents 25 years old and older had only a high school diploma, and some had college experience. This further suggests that the population spike from 15-24 years old comes from an influx of non-resident college students, an influx that migrates out of the node (and perhaps city) after graduation. This leads to two conclusions of note for area businesses and sites that suggests the necessity for balanced development. First, there is clearly a college-aged population that lives in and around the node and that crave amenities to make their time in Worcester enjoyable — this might even lead to their longer-term investment. Second, there is a larger population of local residents with less college experience but with the same sorts of needs: food (grocery and restaurant), retail, recreation, entertainment, culture, bars, etc. Developers, planners, and merchants might do well to take these groups into account

Interestingly, too, the education attainment chart also shows that greater numbers women achieve more at each stage. This dynamic was underway by high school. Since AY 2010-2011, there has been a steady decrease in female dropout rates at the quadrant high school according to Massachusetts Department of Elementary and Secondary Education data. By AY 2014-2015, the male dropout rate at South High Community School was at least double the female rate.

INCOME and HOME OWNERSHIP

Income and homeownership levels are also important indicators to assess the node's economic and social health, the overall development opportunities there, and a realistically approach to planning over a 10-year period with obtainable benchmarks that simultaneously leaves room for re-assessment.

In 2010, the median Non-Family Household Income for Worcester was $29,425 annually, and for this node, it was less at $22,009. At the same time, the median Family Household In-

come for Worcester was $56,053 annually, but for this node is significantly less at $35,473.
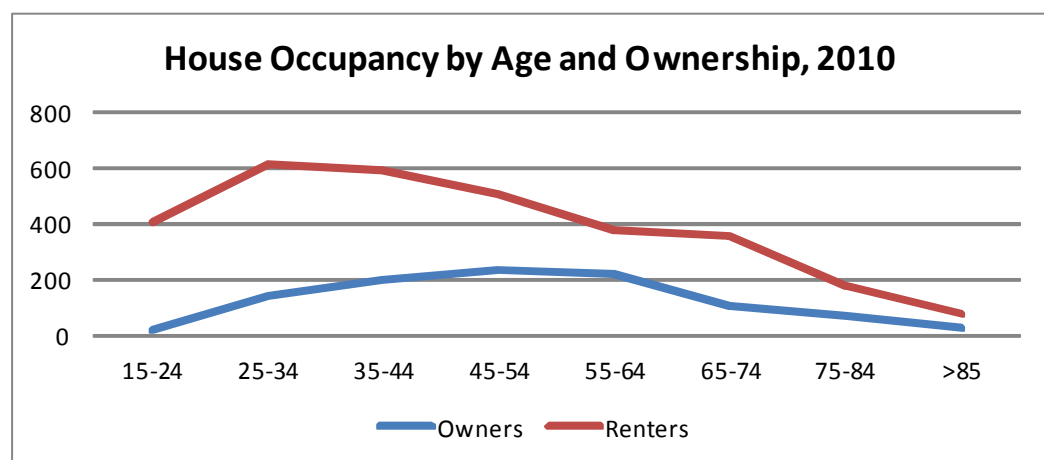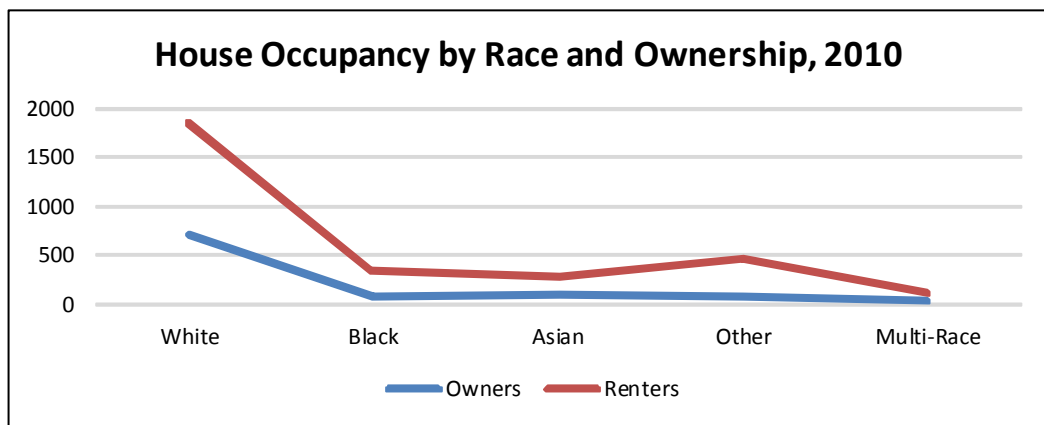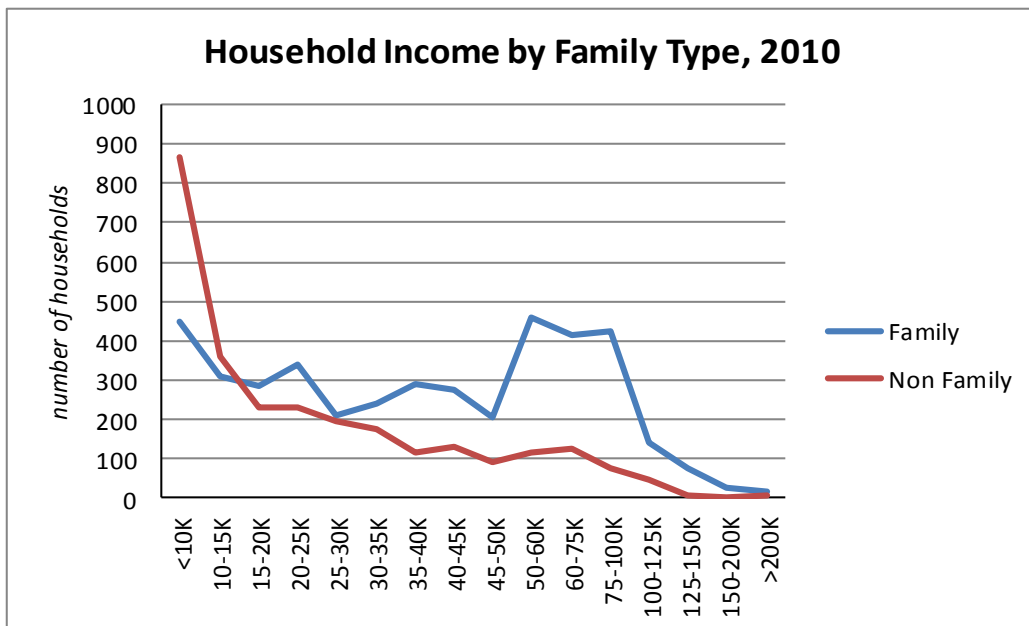
The chart at the right shows both family and especially non-family households experienced particularly high occurrences of poverty, defined by the federal government in 2010 as $10,830 for individuals and $22.050 for families of 4. Although the node's Family Household Income actually peaked between $50,000 - $60,000 and $75,000 - $100,000, there are significant individuals and families in distress throughout the node.

Household Income by Family Type, 2010

number of households

Legend: Family, Non Family

X-axis: <10K, 10-15K, 15-20K, 20-25K, 25-30K, 30-35K, 35-40K, 40-45K, 45-50K, 50-60K, 60-75K, 75-100K, 100-125K, 125-150K, 150-200K, >200K

Perhaps unsurprisingly, residents in this node are renters primarily. In fact, renters outnumber owners in every age bracket and every ethno-racial demographic, sometimes by large margins. For example, white residents had the lowest renter rate at 72%, but they were closely followed by 73% of Asians, 80% of African-Americans, and 86% of "other," which is largely Latino.

It is especially important to keep in mind that households with 3 - 5 people include both "traditional" nuclear family situations (two parents and 1 - 3 children) or single parents with 2 - 4 children. Qualitative work — door knocking, area surveys, interviews, etc. — might yield intriguing information about the needs of these households, which is important for future node development.

The renter information also suggests the nature of the node insufficiently fulfills the income needs of the node's residents, which raises questions about the economic cycle of spending and earning in the area. In other words, who is using the node's residential and commercial enterprises, and who is earning from them?

House Occupancy by Race and Ownership, 2010

X-axis: White, Black, Asian, Other, Multi-Race

Legend: Owners, Renters

House Occupancy by Age and Ownership, 2010

X-axis: 15-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, >85

Legend: Owners, Renters

VEHICLE OWNERSHIP

Finally, the vehicle ownership data for this node is similarly telling. While 40.9% of the residences in this node have at least 1 car registered to them, over a quarter of the node's residences (28.6%) do not. In other words, 69.5% of the area's residences have no or one car. As importantly, more than 3/4 (78.3%) of residents have one or no car are renters.

These data points underscore the need for both a robust public transportation system to get residents around the city effectively and quickly, while also highlighting the need for development in the node with a clear pedestrian-access focus.

As in other parts of the study, it also suggests the need for serious qualitative work, which should be of particular importance to merchants and developers as well. This will help all parties understand the node more deeply and plan more comprehensively for a successful and responsive future.