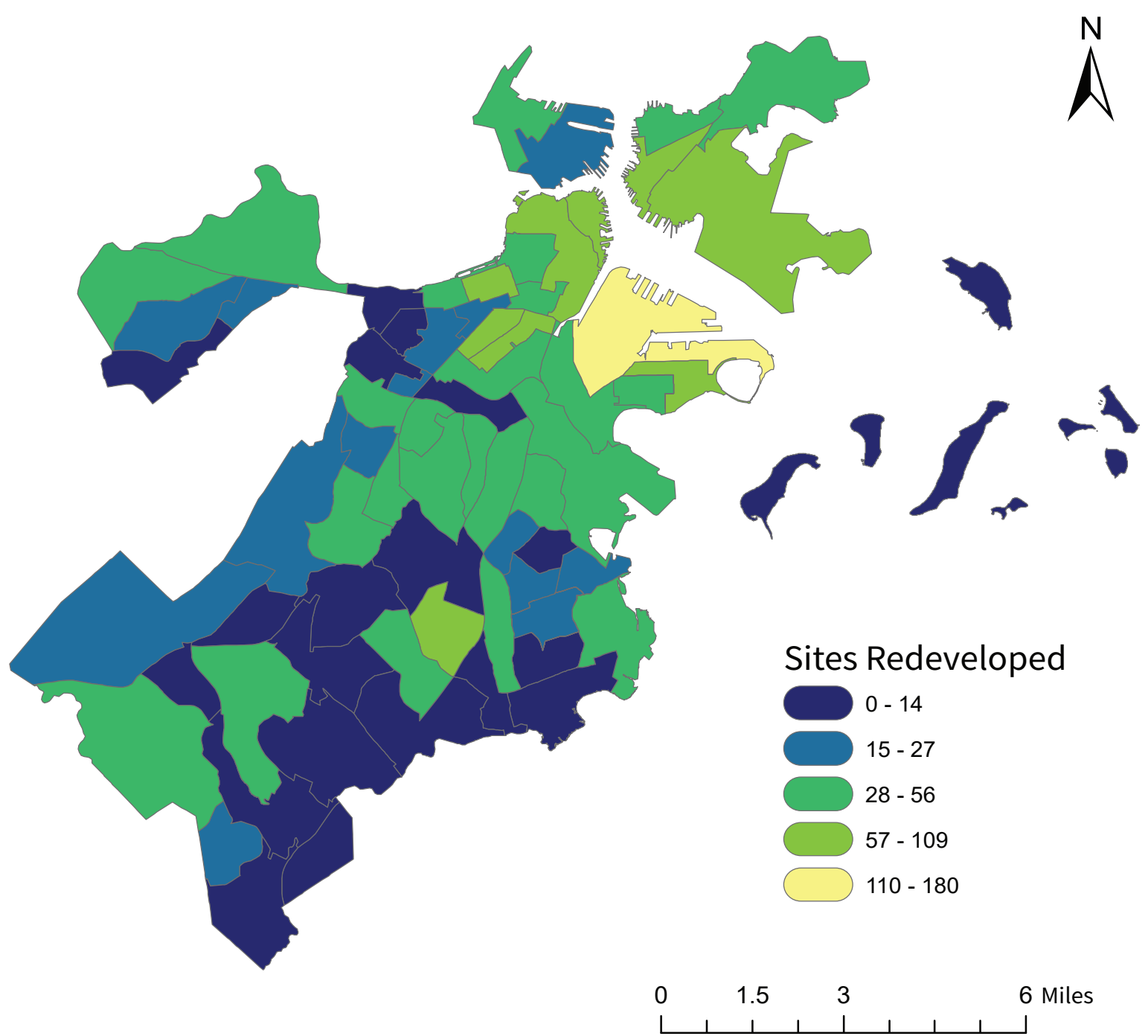


Residential Redevelopment patterns in Boston

What can redevelopment locations tell us about displacement patterns?



Census Data Analysis

The map on income shows market forces are pushing high rates of redevelopment near and immediately around the commercial core regardless of income. The next ring of neighborhoods around the core includes a many low-income neighborhoods (below 60k average income for a household is fairly low for this region) yet most of them still saw medium to high rates of residential redevelopment. Overall it appears proximity to the core is more influential than income, but not uniformly.

The map on race shows that it is at least one factor that seems to influence the rate of redevelopment with some visible trends and patterns. Both near the core and further there appears to be some correlation between the percentage of non-white residents and the number of redeveloped sites per neighborhood. Outside of the central core, nearly all neighborhoods with over 60% of white residents had low rates of redevelopment while most of the neighborhoods with over 80% of non-white residents saw medium to high

Introduction

When any significant construction building modifications are done in a city like Boston the project must be issued a building permit. The City of Boston makes all their building permits available online, including some classification, GPS coordinates, and basic descriptions. **This project utilized a subsection of that data, filtered to only building permits that likely reflected residential redevelopment, from the year 2009 through November 2019.** The map to the upper left shows the number of residential sites redeveloped split by Boston neighborhood.

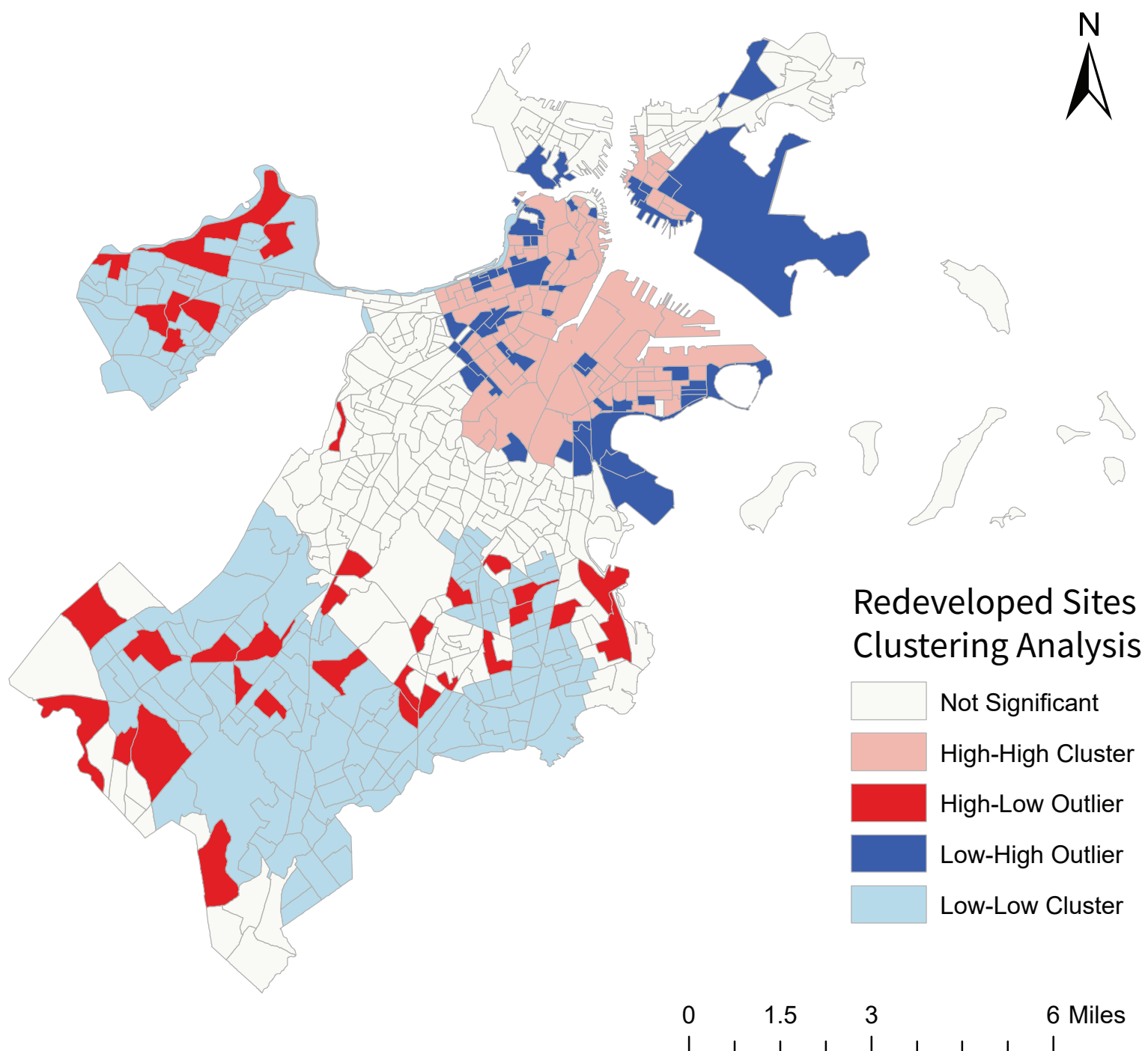
Many market factors influence redevelopment trends, this project aimed to analyze whether the income and race of the neighborhood have some influence as well. This project also aimed to explore redevelopment data in combination with income as an indicator of displacement. In low-income areas where residents are likely to be renters, residential redevelopment is likely to force current residents to relocate. In most instances, those residents are unable to afford units in the building after it is redeveloped and wealthier residents renters move in their place, often demanding more luxury business and amenities in the area and furthering gentrification. Displaced residents often have to move to further away communities, forcing them into long work commutes.

Methodology

In this analysis building permits were narrowed down to residential and mixed-use (usually first-floor commercial with residential above it) sites, excluding all commercial redevelopment. They were further restricted to building permits classified as either a building being erect after major structural reconstruction, or brand new construction after a full demolition or on a previously vacant lot. That level of construction is one of the least common building permits so from the 400,000 building permits issued in Boston between 2009 and 2019 only 2,600 were used in geomapping for this project.

This analysis used redevelopment sites as a unit. However, since one unit properties are not common in Boston we can assume each redeveloped site reflects multiple housing units.

After site data was geocoded it was spatially joined with Boston neighborhoods and census block group data. Census block group data on race and income was spatially joined with Boston neighborhoods so the analysis could be carried out at that level. Race data were converted to percentages for easier visualization and redevelopment sites data was recategorized so it could be visualized against the race and income census data. Redevelopment data was analyzed for clustering.



Cluster Analysis

Using a measure of Local Moran's I redevelopment sites were analyzed for high-high, low-low, and a high-low, low-high outliers at the census block level.

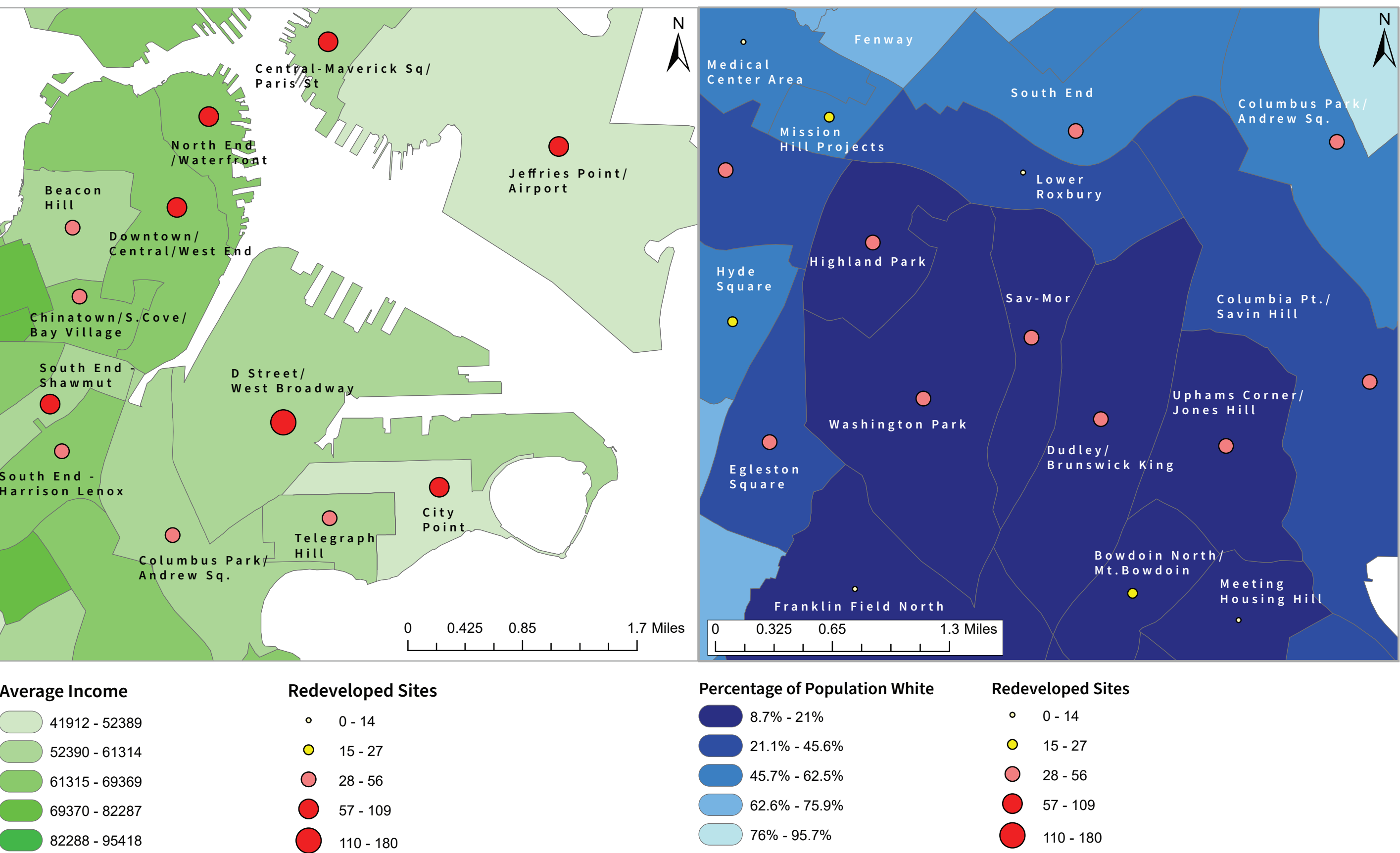
High-high clusters are dominant around the City of Boston's commercial core and the waterfront areas. This is likely due to the high value of those areas given the ocean views and proximity of high paid jobs and office buildings. The areas immediately around the commercial core have a number of high-low clusters showing that there are some census blocks with limited redevelopment despite their high-value location. **This indicates proximity to the core is not the only factor influencing redevelopment rates.**

The more residential areas of Boston towards Jamaica plains and Charlestown have redevelopment but it is more scattered with a number of high-low clusters. This seems to indicate that in those areas other factors are driving the rate of redevelopment beyond location and proximity to the commercial core.

Case Studies

Some of the neighborhoods like Telegraph Hill, City Point and West Broadway (broadly known as South Boston) and Jeffries Point near the airport are examples of areas that are predominantly white but also working-class and lower-income. These areas have seen medium to high rates of redevelopment. Consequently, while historically working-class Italian and Irish descendent neighborhoods these areas have been changing as they experience high rates of displacement and working-class residents are replaced with wealthy professionals seeking an easy commute to the commercial core.

As we move further south from the core to more residential areas such as Roxbury and Uphams corner, we see neighborhoods such as Highland Park, Washington Park, Sav-Mor, Dudley Square and Uphams Corner showing a combination of high minority populations with low income and moderate rates of redevelopment, despite being relatively far from the core. As areas near the core redevelop rapidly and may reach capacity, there should be concerns areas like these experience high rates of redevelopment numbers given their particular vulnerability to displacement.



Conclusion and Limitations

Tracking displacement and redevelopment is challenging yet important. This analysis indicates that residential redevelopment is influenced by multiple factors including land value, the race of local residents, their income, and the location of the area in relation to jobs and commercial centers. Further analysis could be carried out to spatially analyze each market factors independently in order to better isolate demographic influences.

There were many limitations to this analysis. Redevelopment is not easily defined and the criteria utilized here was too stringent. A more comprehensive analysis would required filtering building permits for gut renovations as well, as they are just as likely to point to displacement. They were not included because they were not classified separately from standard renovation in the available data. In this data analysis displacement was only stipulated as an outcome from low income and residential redevelopment combined. That is not a precise measurement, so some hard data on displacement figures would have been helpful, if hard to find.

This analysis would also be stronger if the exact number of residential units was included in the analysis. That was not available in the permit data, only building classifications. Another factor that would have strengthened this analysis would have been to look at redeveloped sites for census race data broken down for each minority group to see if there are patterns and differences depending on what racial minorities are most present in the neighborhood.

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