

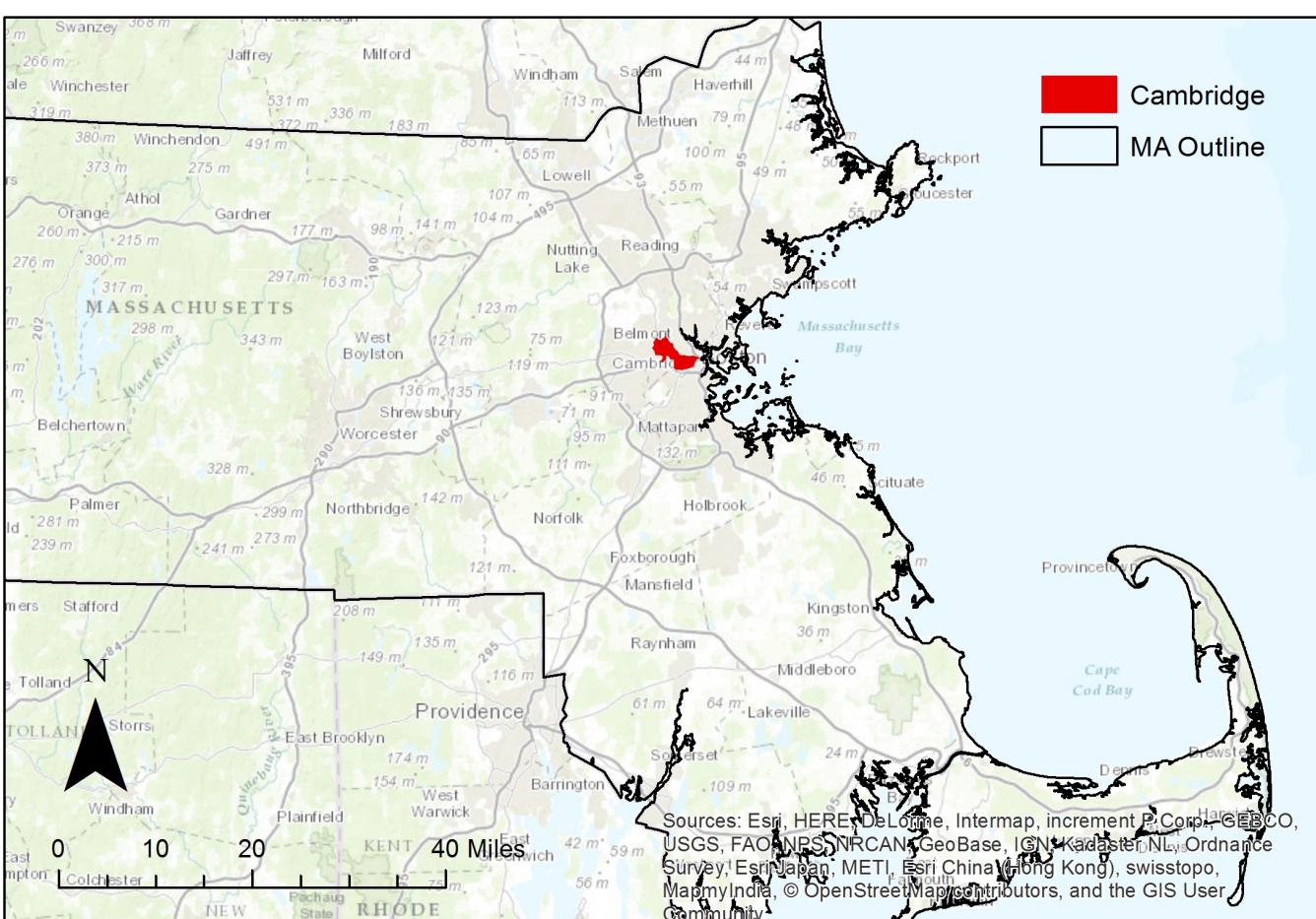
PUBLIC ARTWORK AND DEMOGRAPHIC CHANGES IN CAMBRIDGE, MASSACHUSETTS



Cartographer: Mary Elise Calnan
Date: December 18, 2015
Coordinate System:
NAD_1983_StatePlane_Massachusetts_Mainland_FIPS_2001_Feet
Projection: Lambert_Conformal_Conic
Course: GIS 101, Intro to GIS

INTRODUCTION

In 1979 The City of Cambridge implemented a percent-for-art policy (Cambridge Arts Council). This policy requires that one percent of the construction costs of city developments be reserved for the investment of public artwork. Indeed, this policy has led to the construction of more than 200 pieces (Cambridge Arts Council). According to the Cambridge Arts Council, public artwork sites scattered throughout the city "engage directly with their surroundings to create, enrich, or reveal a sense of place." Indeed, this artwork may attract tourists, improve the appearances of urban spaces, and impact residents' connections to their communities. The bronze glove installation in the Massachusetts Bay Transportation Authority's (MBTA) Porter Station and the "Altered Benches" in the Greene-Rose Heritage Park change the way in which commuters, residents, and transient passersby interact with their surroundings.



This project uses GIS to examine the demographic changes in Cambridge, MA from 1980 through 2010 and how these changes relate to the distribution of public artwork sites throughout the city. GIS helps locate public artwork in the city and how these

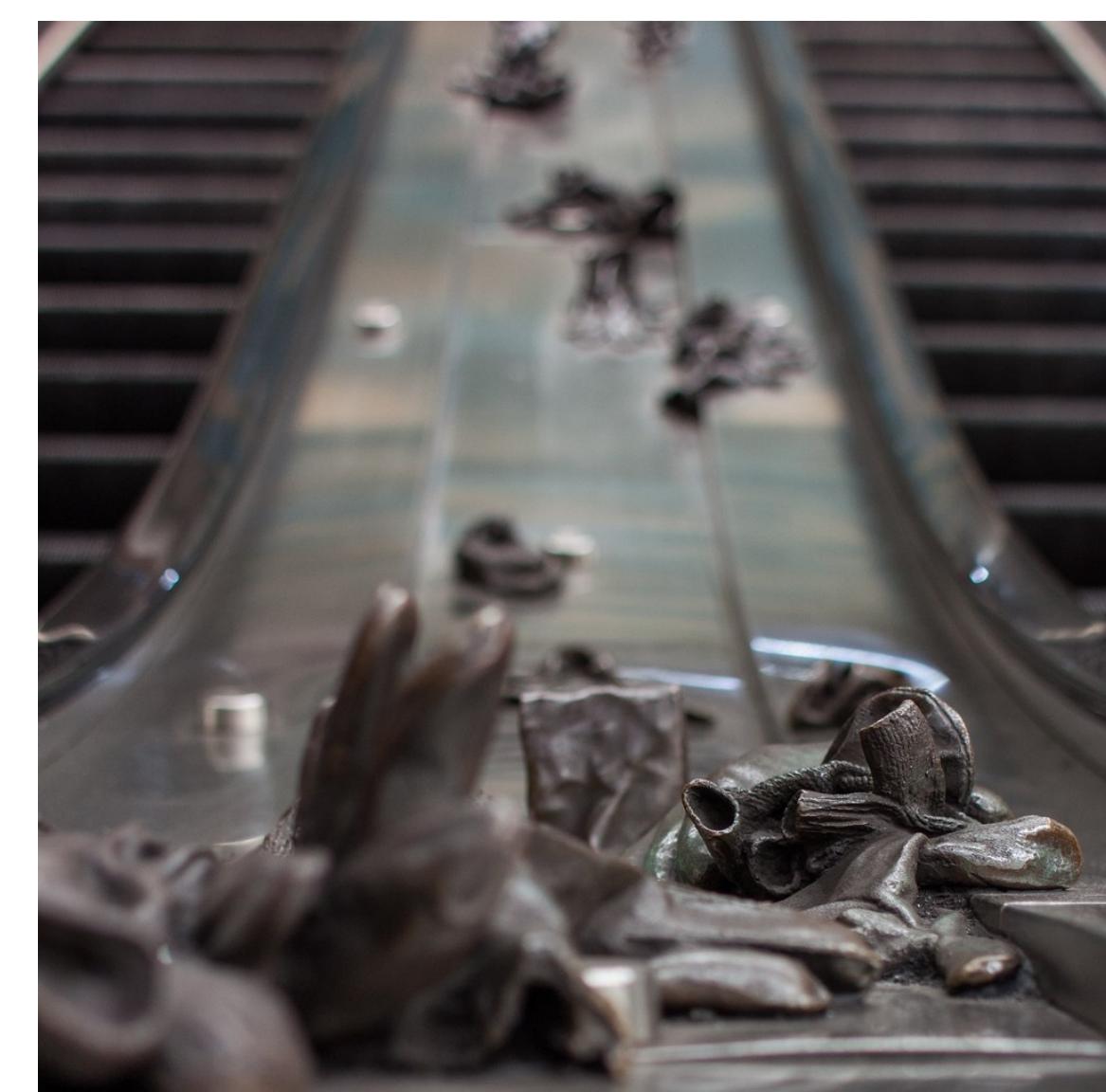
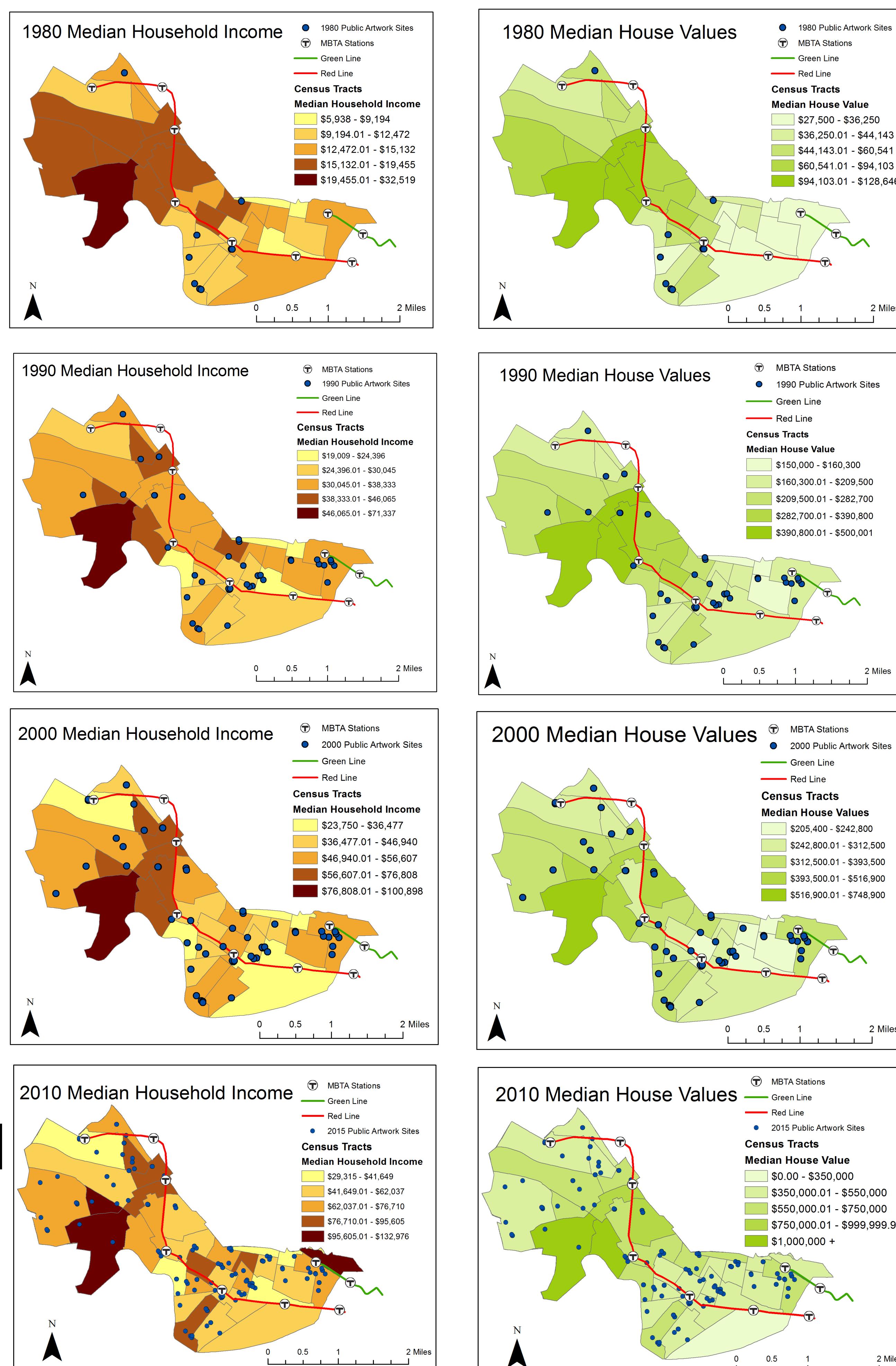
sites link to demographic changes, like median household income and median house values. By exploring the connection between these economic shifts and public artwork, the report highlights how gentrification is linked to commissioned public artwork.

METHODOLOGY

I created various maps of Cambridge with demographic information, public artwork site locations, and the MBTA Red and Green Lines for the years 1980, 1990, 2000, and 2010.

I retrieved census tract data regarding the city's median household income and median house values for owner occupied units from American Fact Finder on the U.S. Census Bureau website and the National Historical Geographic Information System (NHGIS). I was specifically interested in the changes of income and house values because this information is connected to gentrification. In her report about gentrification and displacement, Dr. Lisa Bates describes the process of gentrification and how it is associated to changes in the housing market: "as demand rises for the neighborhood, higher-income households are able to outbid low-income residents for housing, and new development and economic activity begins to cater to higher-income tastes" (Bates 2013, 9). After inserting this data into ArcMap, I created eight different maps that represented the economic transformations of Cambridge over a span of thirty years.

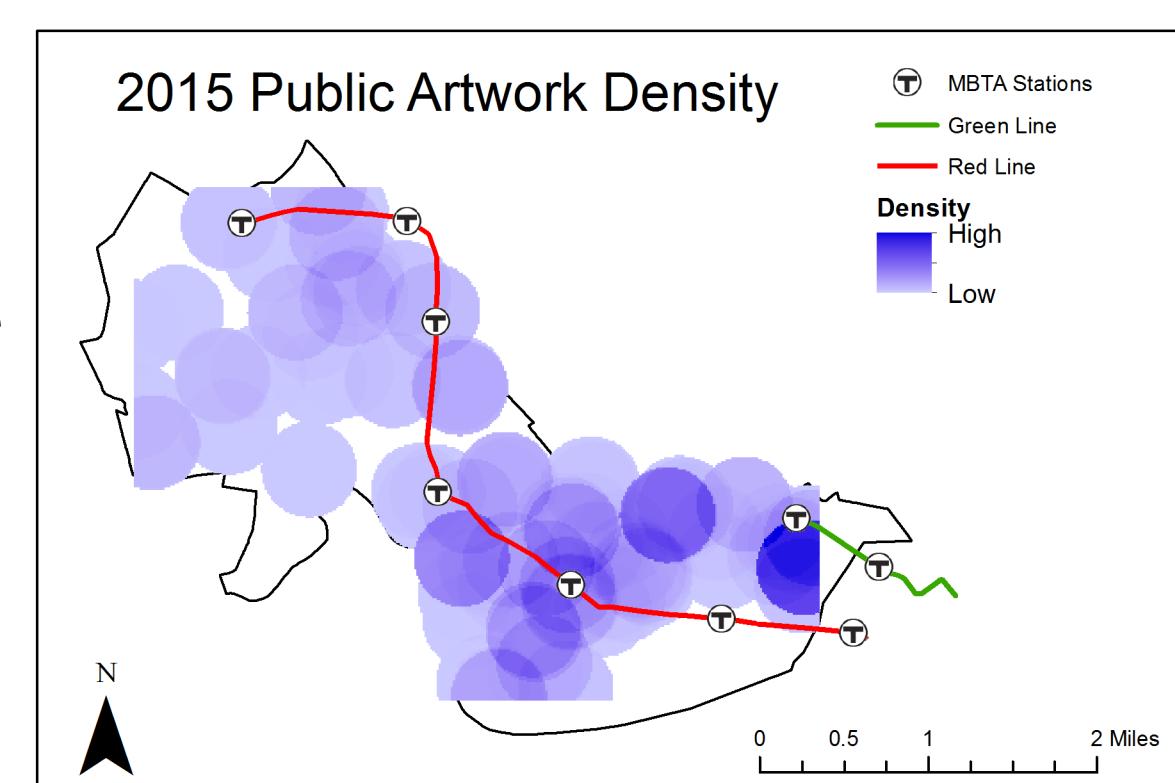
In addition to this census data, I obtained information regarding locations of public artwork sites in Cambridge from the Cambridge GIS Open Data website. I geocoded this data and included it as another layer on the maps. I completed a "select by attribute" for each year so that each map would accurately represent the public artwork that existed at the time. Though I used 2010 census data for the most recent maps, I included 2015 artwork sites to give a more accurate depiction of current art sites. I also created a "2015 Public Artwork Density Map" to better understand where public artwork sites are grouped together in the city.



RESULTS

My project resulted in eight maps that represent Cambridge's changes in median house value of owner occupied units, median household income, and locations of public artwork over the span of thirty years.

Overall, Cambridge experienced increases in median household income and house value between 1980 to 2010, signifying the process of gentrification. Specifically, the census tract with the highest median household income at \$32,519 in 1980 was located in western Cambridge while a census tract located in East Cambridge, had the lowest median household income at \$5,938. Regarding the 1980 median house values of owner occupied units, Census Tract 3524, located near the Kendall/ MIT MBTA station had the lowest value at \$27,500 while Census Tract 3541, located near Harvard Square, had the highest median house value at \$128,646 in 1980. In 2010, Census Tract 3522 had the lowest median house value at \$365,100, while two census tracts near Harvard Square had the highest median house value estimated over \$1,000,000. The census tract with the highest median household income reached \$132,976, while the lowest median household income was \$29,315 in 2010.



As these shifts occurred, more public artwork sites appeared overtime. While there are only 22 public artwork sites in the 1980 maps mainly located in the area known as Cambridgeport, the 2010 maps display over 327 sites. The "2015 Public Artwork Density Map" shows that there are the most artwork sites per square foot near Lechmere Station. The 2010 Median Household Income maps also indicates that this area has a moderately high income. However, the other high income area in Cambridge only has a few public artwork sites.

LIMITATIONS

While this project suggests that there is some connection between gentrification and public artwork sites, artwork cannot be directly linked as the causing factor. Further research should be done to analyze public artwork and cities' demographics.

To more clearly understand the relationship of public artwork and social and economic changes in Cambridge, I would complete a more comprehensive study. For example, I would look at crime rates, residents' educational attainment, and race. I would extend my study beyond the thirty year time span of this project. Additionally, I would research the developments of the MBTA stations and their connection to the city's socioeconomic shifts.

REFERENCES

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