

Affirmatively Furthering Fair Housing in Greater Boston

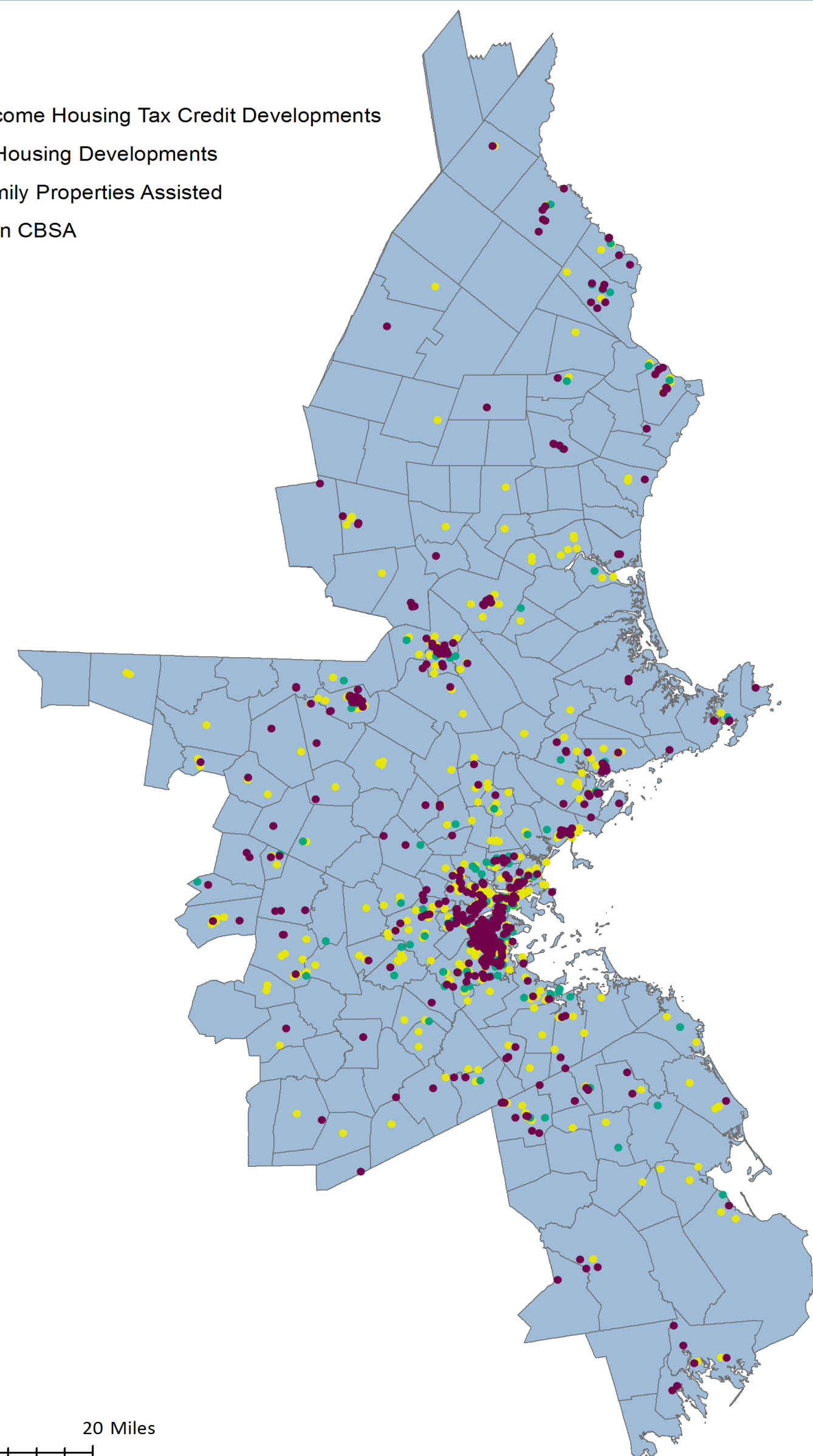
An Analysis of Factors that Predict the Locations of Subsidized Housing

Introduction

In 2015, the U.S. Department of Housing and Urban Development (HUD) published a new rule for Affirmatively Furthering Fair Housing that requires that government agencies “take significant actions to overcome historic patterns of segregation, achieve truly balanced and integrated living patterns, promote fair housing choice, and foster inclusive communities that are free from discrimination.” Given this goal, agencies are instructed to undertake an Assessment of Fair Housing, which summarizes fair housing issues, contributing factors, and goals for improving access to opportunity and furthering integration. HUD provides data about segregation/integration, racially or ethnically concentrated areas of poverty (R/ECAPs), demographic information, and publicly supported housing and asks that recipients of HUD funding use the data to establish their own fair housing goals and priorities. This project will use data from HUD and the American Community Survey to determine the extent to which federally subsidized affordable housing is clustered in segregated neighborhoods or low-income areas in the Boston metropolitan area.

Locations of Subsidized Housing Developments

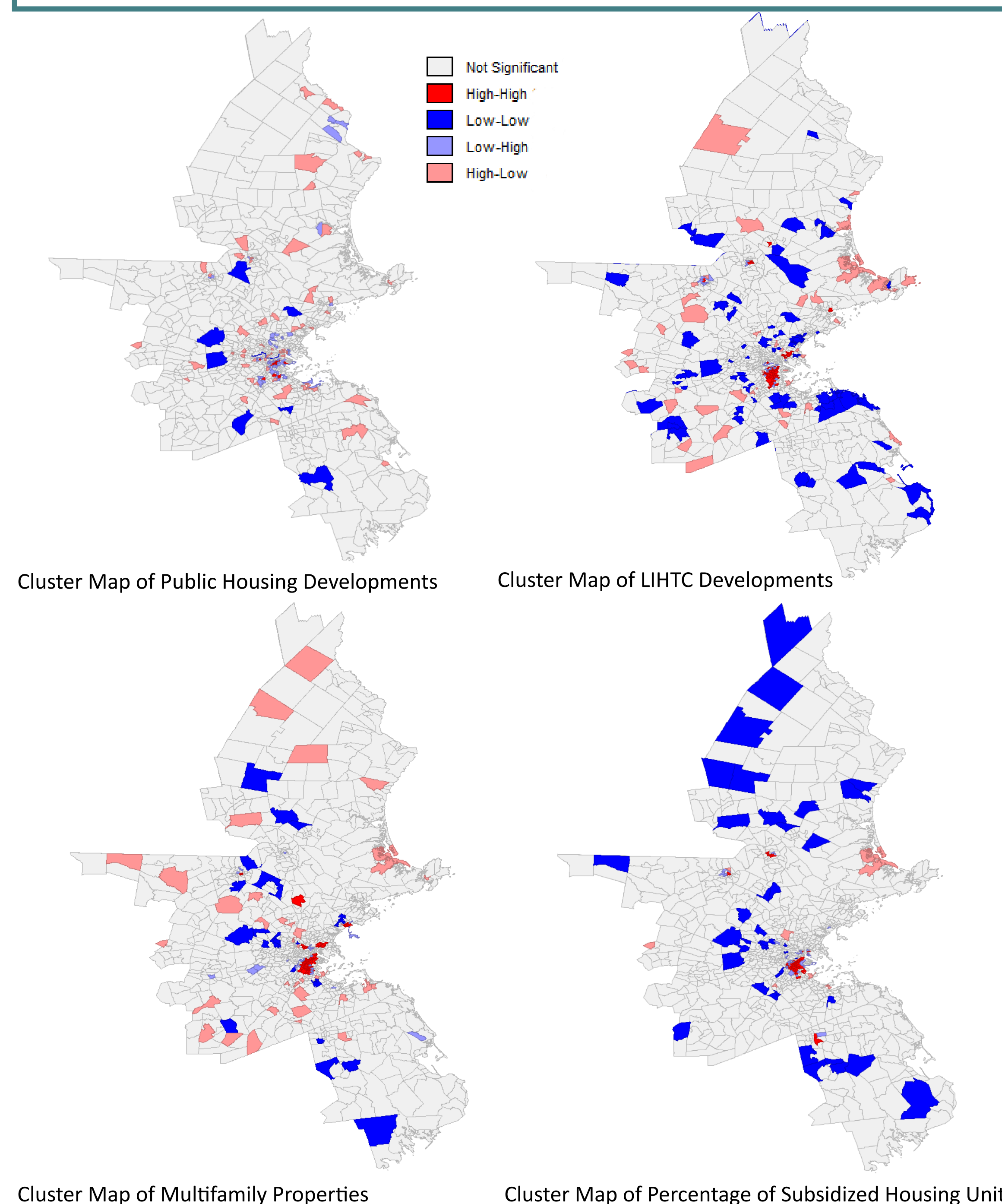
- Low-Income Housing Tax Credit Developments
- Public Housing Developments
- Multifamily Properties Assisted
- Towns in CBSA



Methods

Data for the Boston-Cambridge-Newton MA-NH CBSA was downloaded from the American Community Survey, including total population, median household income, race, housing units, and housing tenure for census tracts. The locations of subsidized housing developments (public housing, low-income housing tax credit developments, and other multifamily properties), and R/ECAPs were downloaded from HUD. Global and Local Moran’s I were calculated for each of the three housing development types, as well as for the percentage of subsidized housing units of total housing units per census tract, to determine whether or not the locations of subsidized housing developments are spatially autocorrelated. Finally, a spatial regression was used to determine the extent to which the locations of affordable housing can be predicted by demographic variables.

$$\text{Percent of subsidized housing units} = \text{R/ECAP} + \text{Percent people of color} - \text{Median household income}$$



Coefficients	OLS Regression	Spatial Lag Regression
Constant	38.8*	4.80
R/ECAP	76.8*	11.13*
Percent People of Color	0.51*	0.13*
Median Household Income	-0.0003*	-5.13
R-Squared	0.37	0.77
Akaike Info Criterion	11169.8	10270.1
Schwarz Criterion	11189.7	10294.9

* Significance at $p < .05$

Results & Discussion

The Global Moran’s I results indicated moderate spatial autocorrelation for low-income housing tax credit developments, multifamily properties, and the percentage of housing units that are subsidized, but there was no spatial autocorrelation for public housing developments. In general, the Local Moran’s I results showed high-high clusters of subsidized housing in census tracts in and surrounding the City of Boston, which indicates that these groups of tracts have larger shares of subsidized housing. The low-low clusters vary for each type of housing development, but they tend to be located in suburban tracts in the western and southern parts of the region. The ordinary least squares regression determined that R/ECAPs, percent people of color, and median household income were all significant predictors of the percentage of subsidized housing units in a census tract. A census tract that is classified as a R/ECAP will have a 76.8% increase in subsidized housing units. For every one percent increase of people of color, there is a 0.51% increase in subsidized housing units. For every dollar increase in median household income, there is a very small decrease in percent of subsidized housing units. In the spatial lag model, only R/ECAP classification and percent people of color remained significant. This analysis indicates that there is significant spatial clustering of affordable housing in Greater Boston. The percent of people of color, median household income, and classification as a R/ECAP predict some of the variation in share of subsidized housing among census tracts. This indicates that segregation and concentration of poverty are important variables to consider when assessing fair housing and the locations of affordable housing.

Hannah Cross, December 2016, Advanced GIS

Data Sources: American Community Survey (5-Year Estimates), 2014; Department of Housing and Urban Development, 2016; U.S. Census Bureau, 2015.

Coordinate System: GCS_WGS_1984