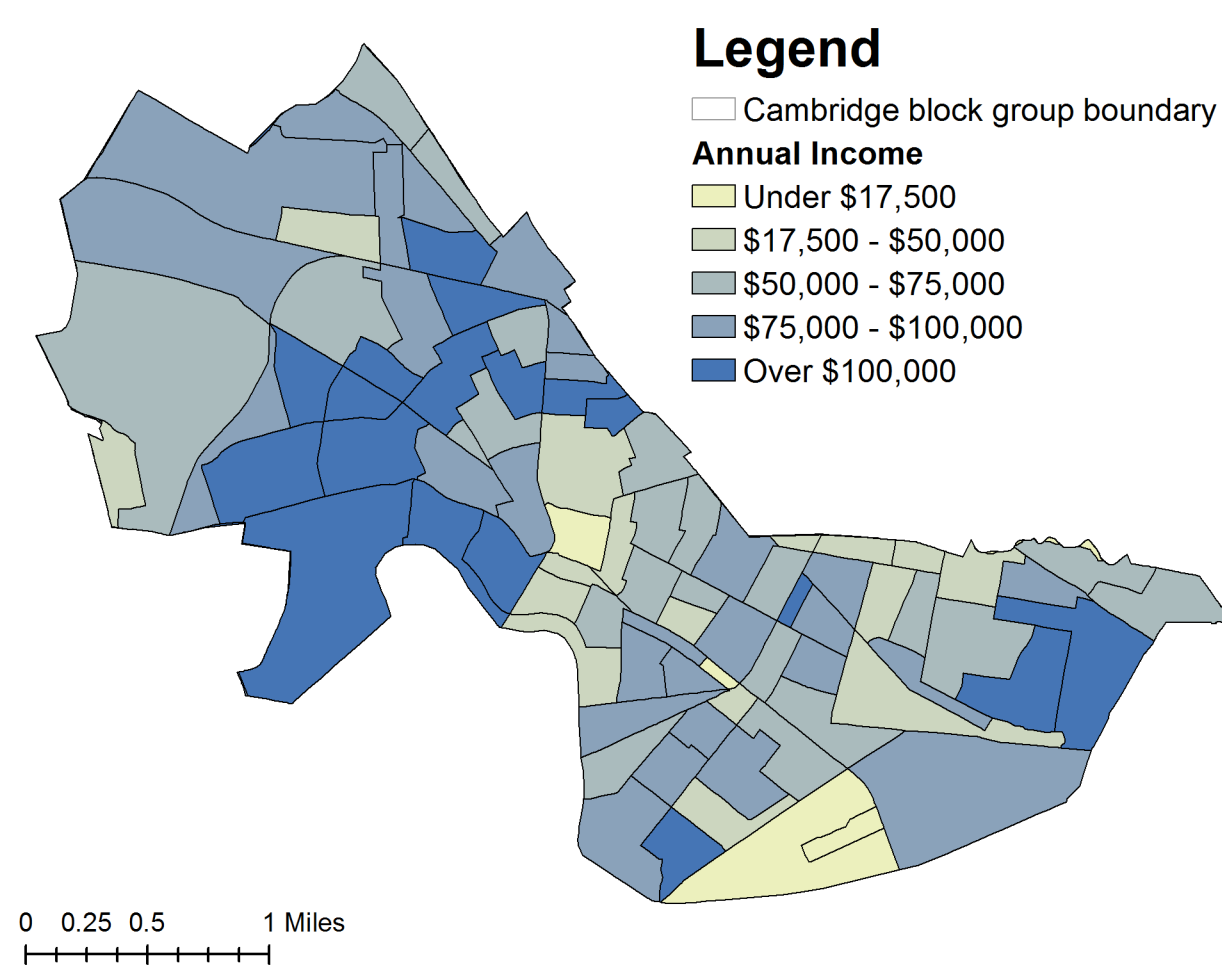


Mapping Desirable Locations for Public Art

An analysis of public art, income distribution, and accessibility in Cambridge, Massachusetts

Income Distribution

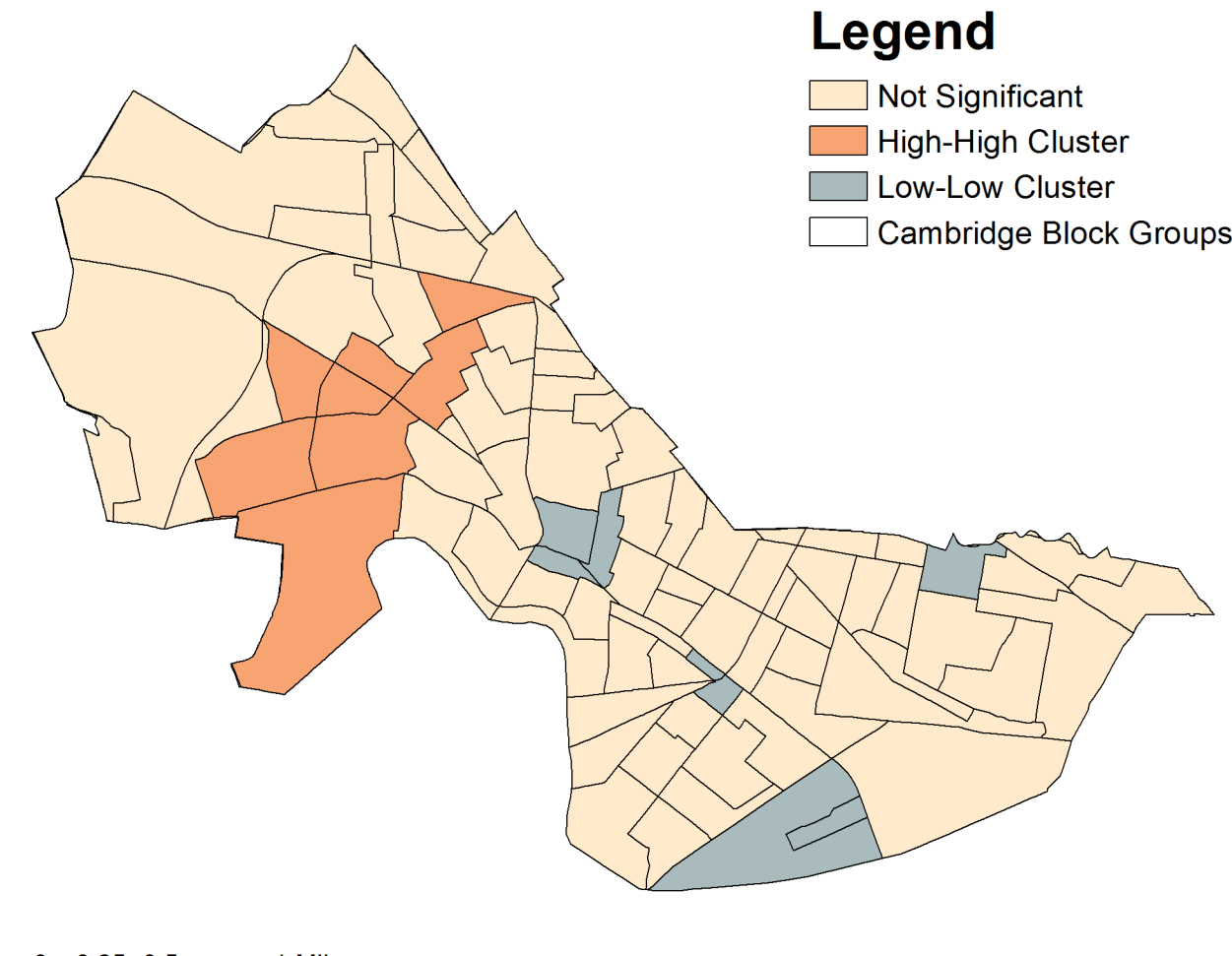


Introduction

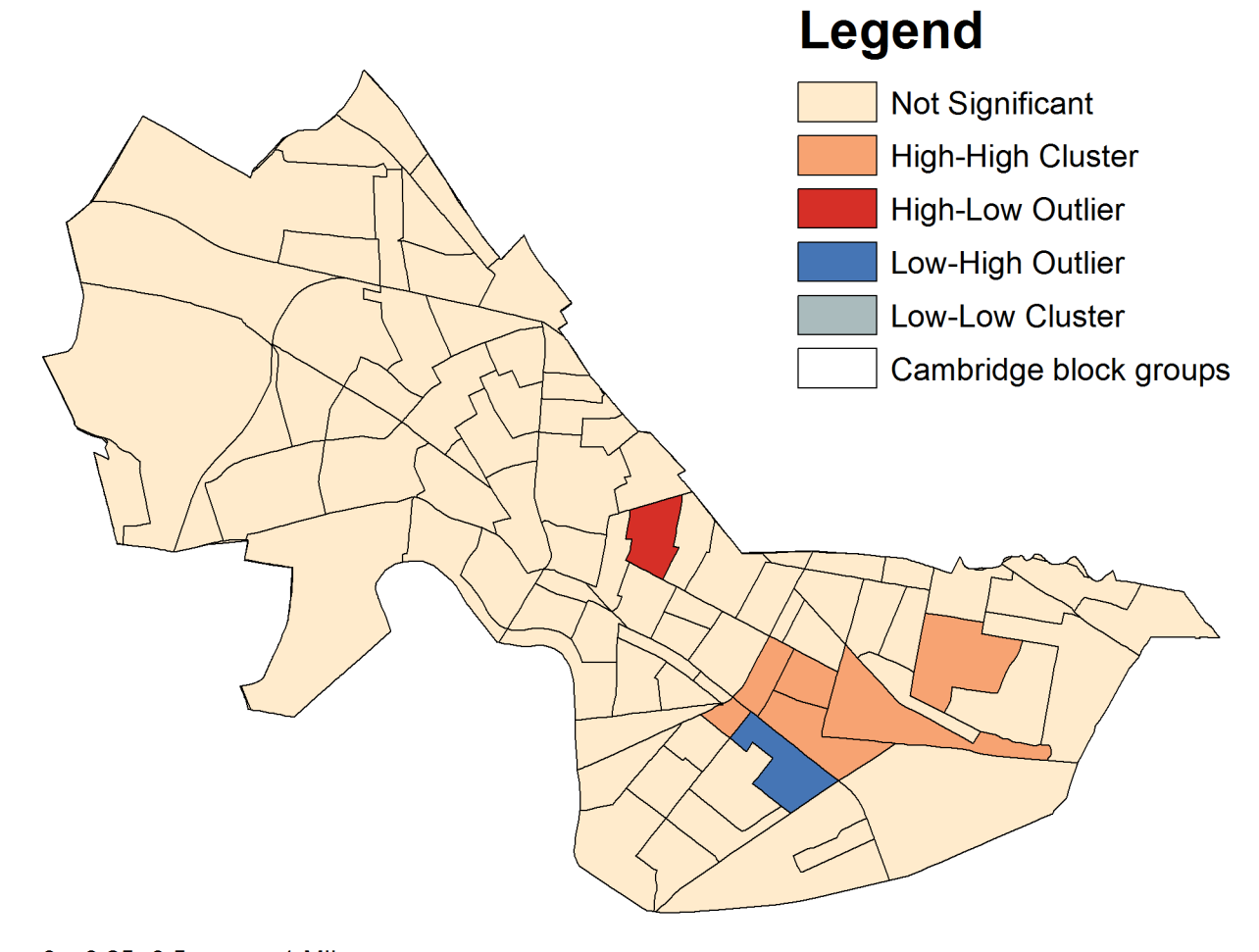
This project explores accessibility in Cambridge public art. Building on research pointing to the benefits of placing public art in low-income areas, I first looked to existing public art sites to determine whether there was a relationship between their location and the distribution of income in Cambridge.

Next, I turned to assessing ideal locations for the installation of public art in Cambridge. The criteria employed to assess ideal location was based primarily on three factors: income distribution, location of existing public art, and location accessibility (mapped in distance from MBTA bus stops). The potential location sites were selected from a map of open space over 200 square feet in area in Cambridge.

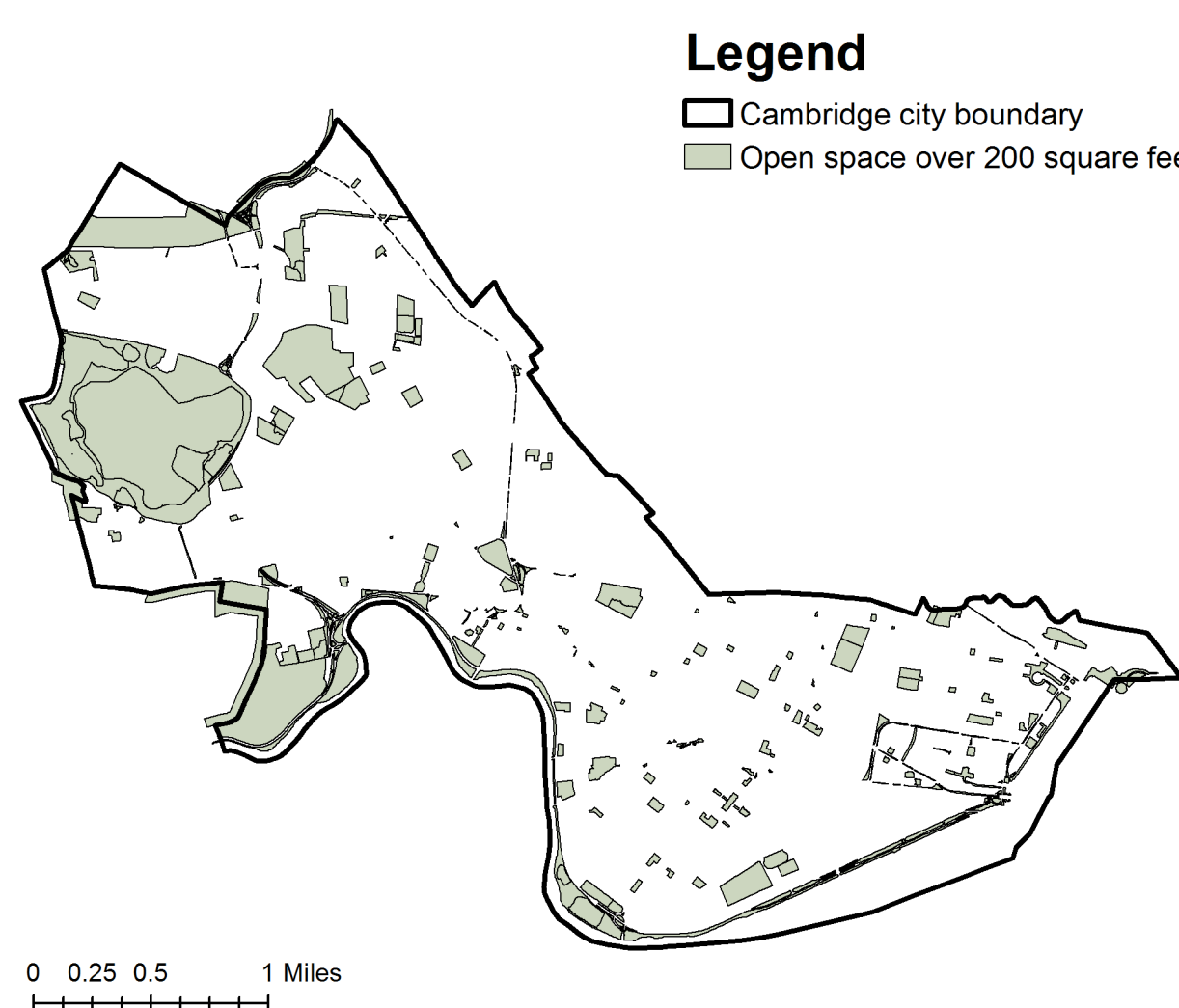
Income Clustering



Public Art Clustering



Open Space



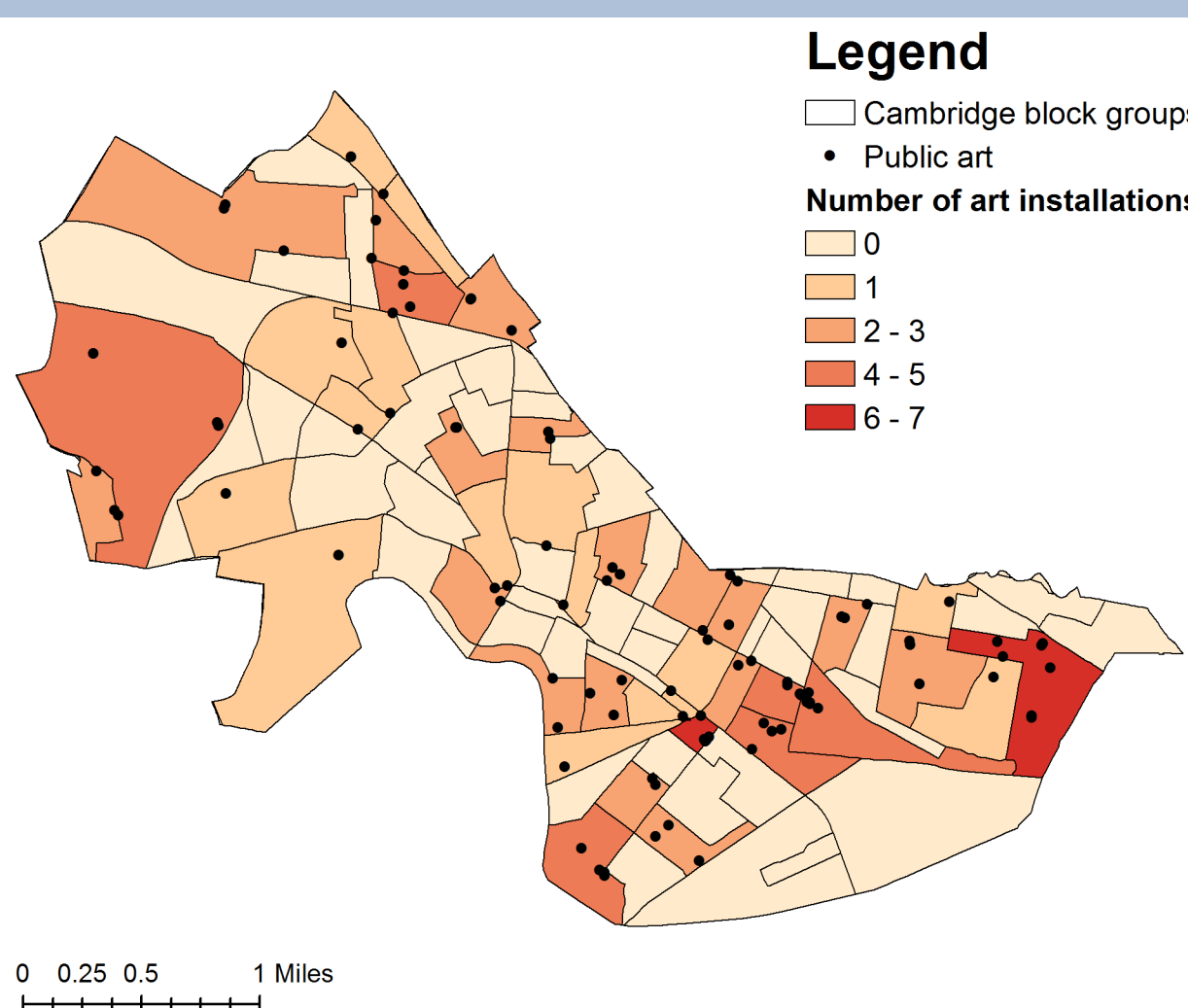
Methods

In examining the accessibility of public art, I considered the clustering of public art versus the clustering of income in Cambridge. I used a local Moran's I as a tool to determine areas where high income was clustered around high income and low around low. To determine locations for public art, I used a raster-based analysis for each criteria, reclassifying the raster to assign most ideal locations the highest value of 5 and the least ideal locations the lowest value of 1. I used a raster calculator to add together these rasters, weighted equally, to produce a map of ideal locations and used zonal statistics to determine the open space or spaces with the highest mean score.

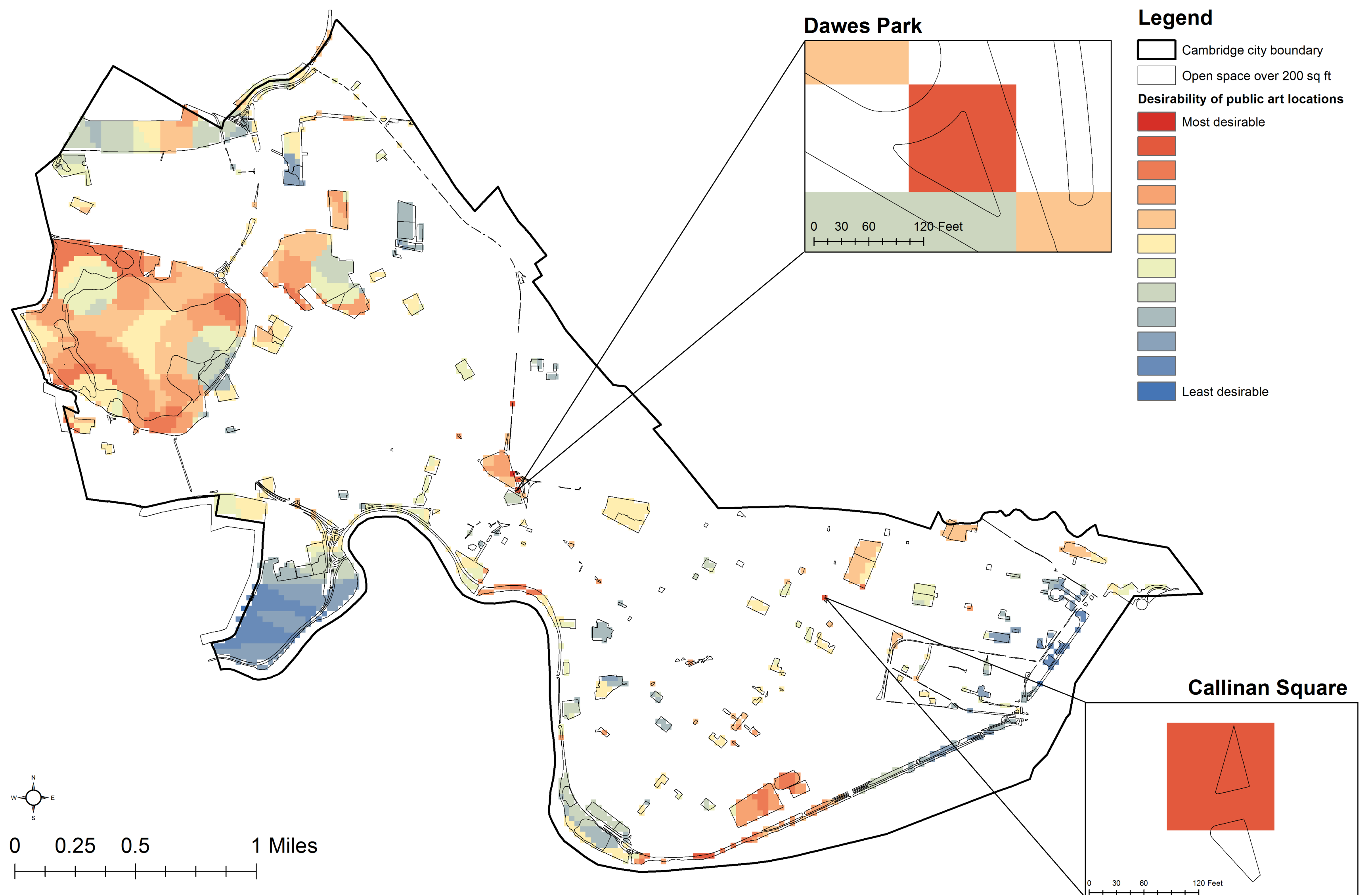
Results

Mapping the clustering of public art versus income determined that there is no significant correlation of public art location with income clustering in Cambridge as clustering of high areas of income around other high areas occur far west of art clustering. Using a raster based analysis to determine the best sites for public art yielded a raster result that does not appear to have significant clustering in any one neighborhood. I calculated the zonal statistics for each open space area to find the park or open space with the highest mean score (most desirable) location to be a tie between **Dawes Park** and **Callinan Square**, both with a score of 14 of a possible 15.

Existing Public Art Locations



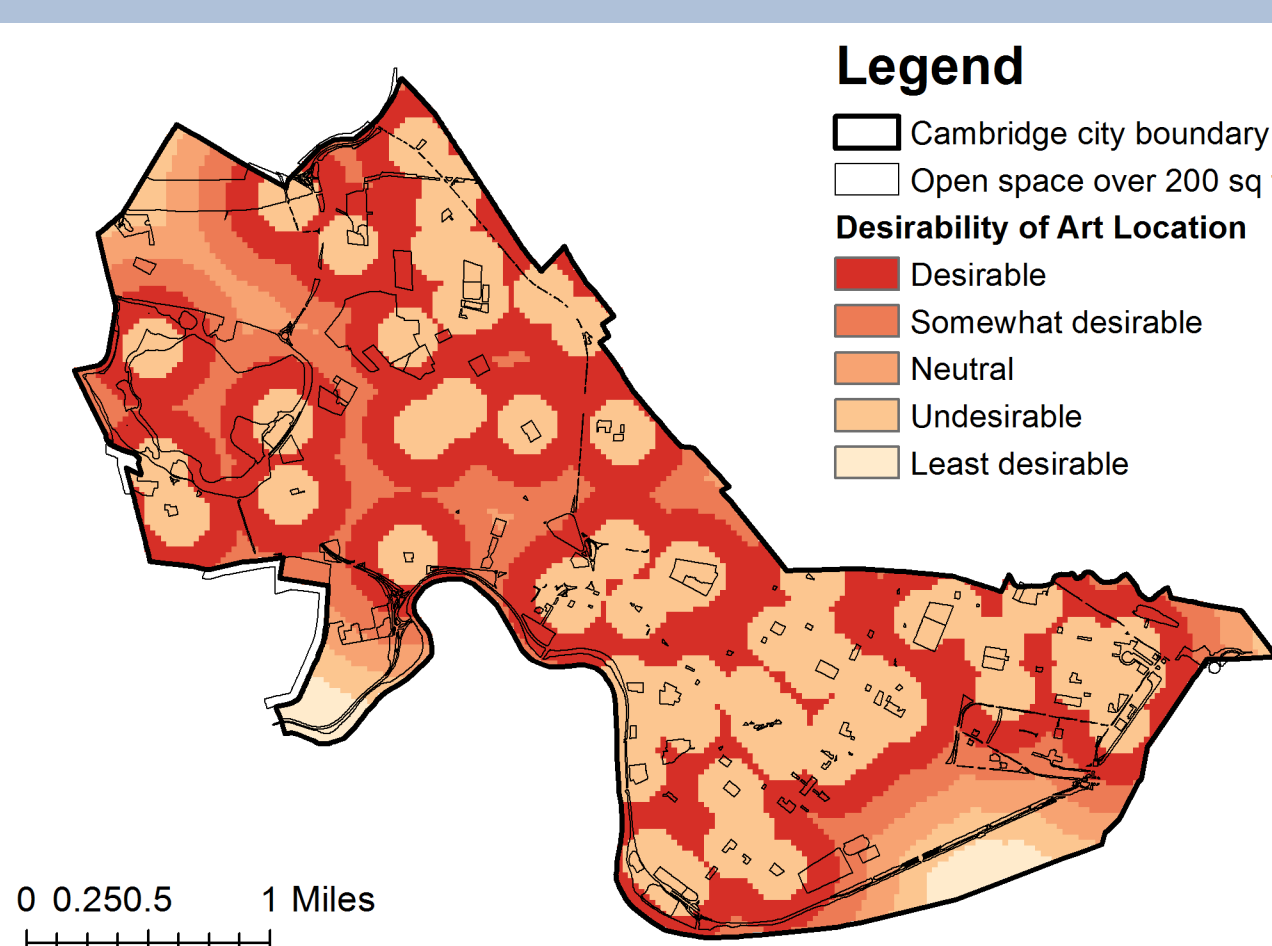
Desirable Locations for Public Art



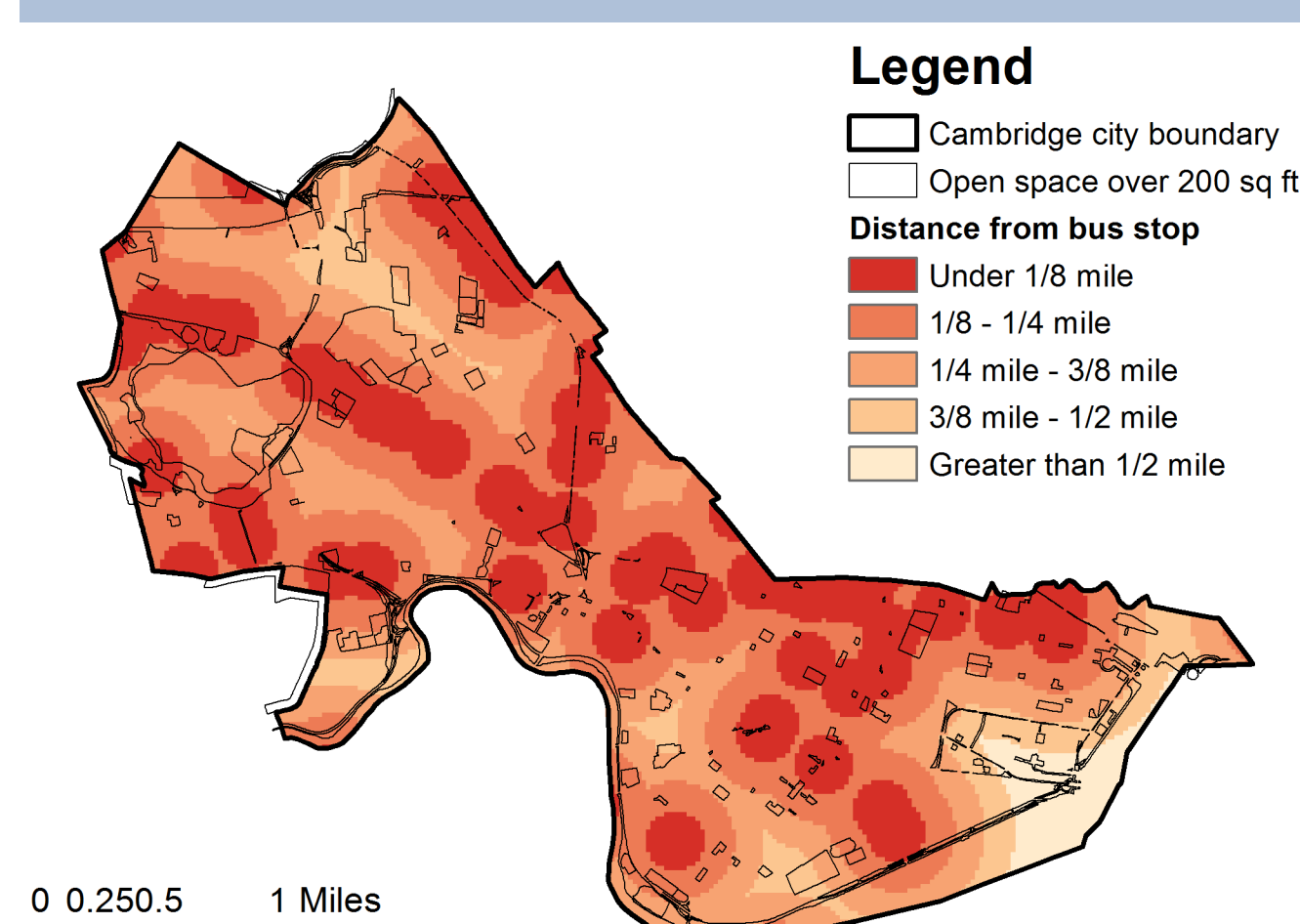
Discussion and Conclusions

The implications of this project for future policy are significant. Most of the research I used to create this project did not pertain to the use of GIS with public art mapping because very little research has been done into this subject. Instead, I took existing research about the benefits of certain indicator variables such as income and art location and imposed my own knowledge of GIS to create a new method of determining ideal sites. There is also potential for error in this lack of existing research. Another source of error exists in summing the rasters; determining the correct weight is difficult and inexact. While subjectivity may produce error, the future use of GIS mapping by city and cultural councils to determine ideal sites would provide a huge benefit to artists, planners, and citizens alike.

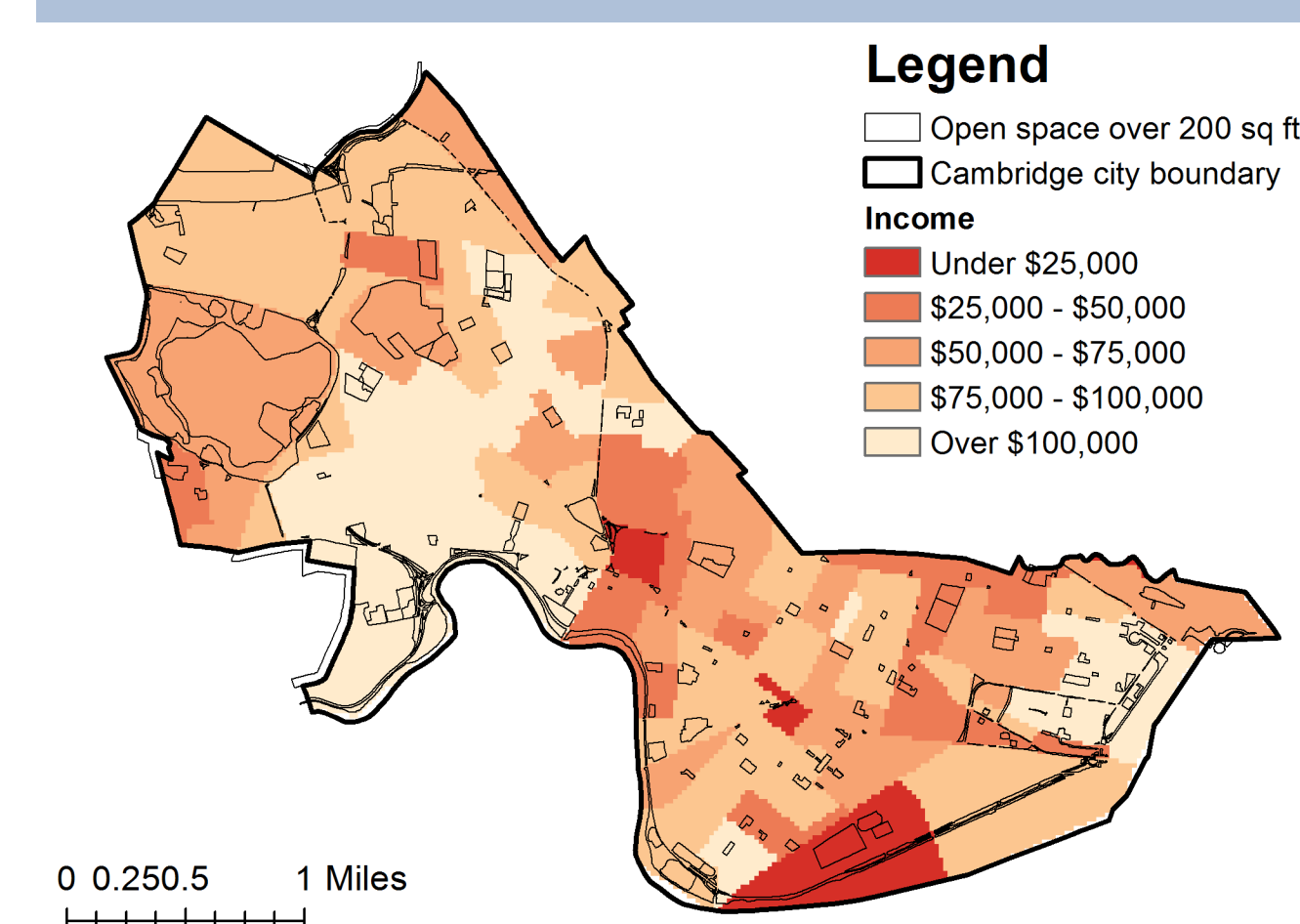
Factor 1: Public Art Distance



Factor 2: Bus Stop Distance



Factor 3: Income Distribution



Cartographer: Madeline Doctor

GIS 101: Introduction to GIS

Produced December 19, 2016

Data sources: Cambridge GIS, United States Census American Fact-Finder, MassGIS

All maps projected in Massachusetts State Plane Coordinate System, Mainland Zone (US Feet)