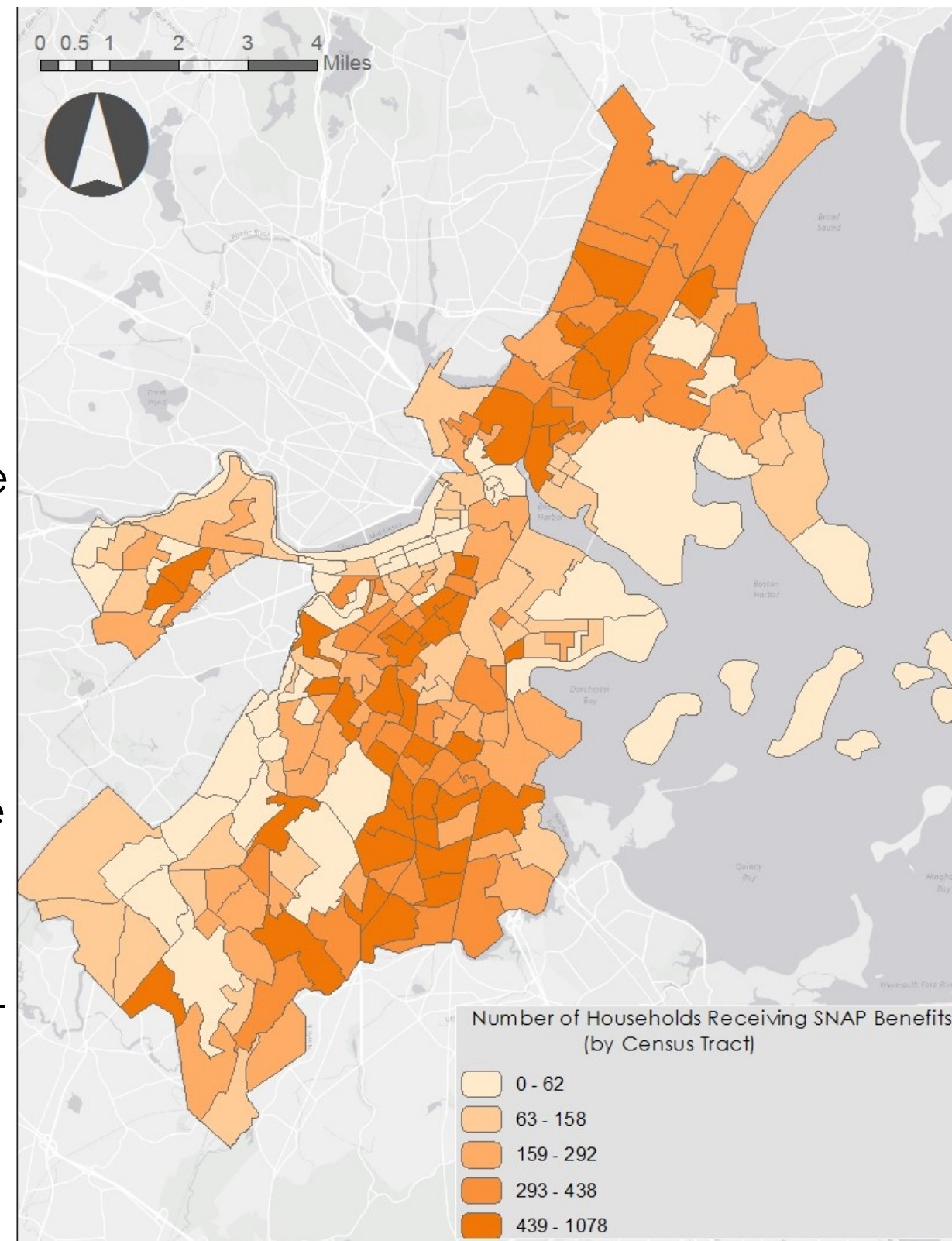


THE BOSTON BOUNTY BUCKS PROGRAM: AN ACCESSIBILITY ANALYSIS

PROJECT CONTEXT

Boston Bounty Bucks (BBB), administered through the Boston Collaborative for Food and Fitness (BCFF), is a dollar-for-dollar matching program that enables farmers' market customers using Supplemental Nutrition Assistance Program (SNAP) benefits to expand their purchasing power. Program participants receive double the amount spent in SNAP benefits at farmers' markets (up to \$10.00). To participate, SNAP recipients simply approach the BBB tent at participating markets, tell the program representative how much they intend to spend, and receive tokens that can be used as money within the market.

While there are a number of benefits associated with the BBB program (including increased fruit and vegetable consumption among participants), there are a number of factors that might discourage participation. According to a 2012 report by BCFF, 71% of SNAP recipients interviewed regarding their use of farmers' markets responded that they did not use their SNAP benefits at farmers' markets¹. 39% of respondents did not shop at farmers' markets because they did not know the location and 29% did not shop at farmers' market because the location was inconvenient¹. 7% cited 'too expensive' as the reason they did not shop at farmers' markets¹. During a personal interview with a representative of the BBB program, language accessibility was mentioned as a potential factor limiting access. Some SNAP participants are non-English speakers and might find their ability to access BBB benefits limited by the fact that all materials are printed in English.



RESEARCH GOALS

This project seeks to create a framework through which to evaluate the outreach effectiveness of the BBB program. The intent of this research is to identify Boston-area neighborhoods with potentially limited access to the program due to insufficient transportation and/or language accessibility. With this information, BBB program administrators might be better equipped to identify areas for expanded, targeted outreach and reduce participation barriers.

The goals of this analysis are: (1) to identify factors that limit individuals' ability to use the BBB program; (2) to create and implement an analysis model; and (3) to provide recommendations for future research, with the hope that BBB program administrators will expand targeted outreach in areas experiencing a lower degree of accessibility in order to improve program participation.

METHODOLOGICAL APPROACH

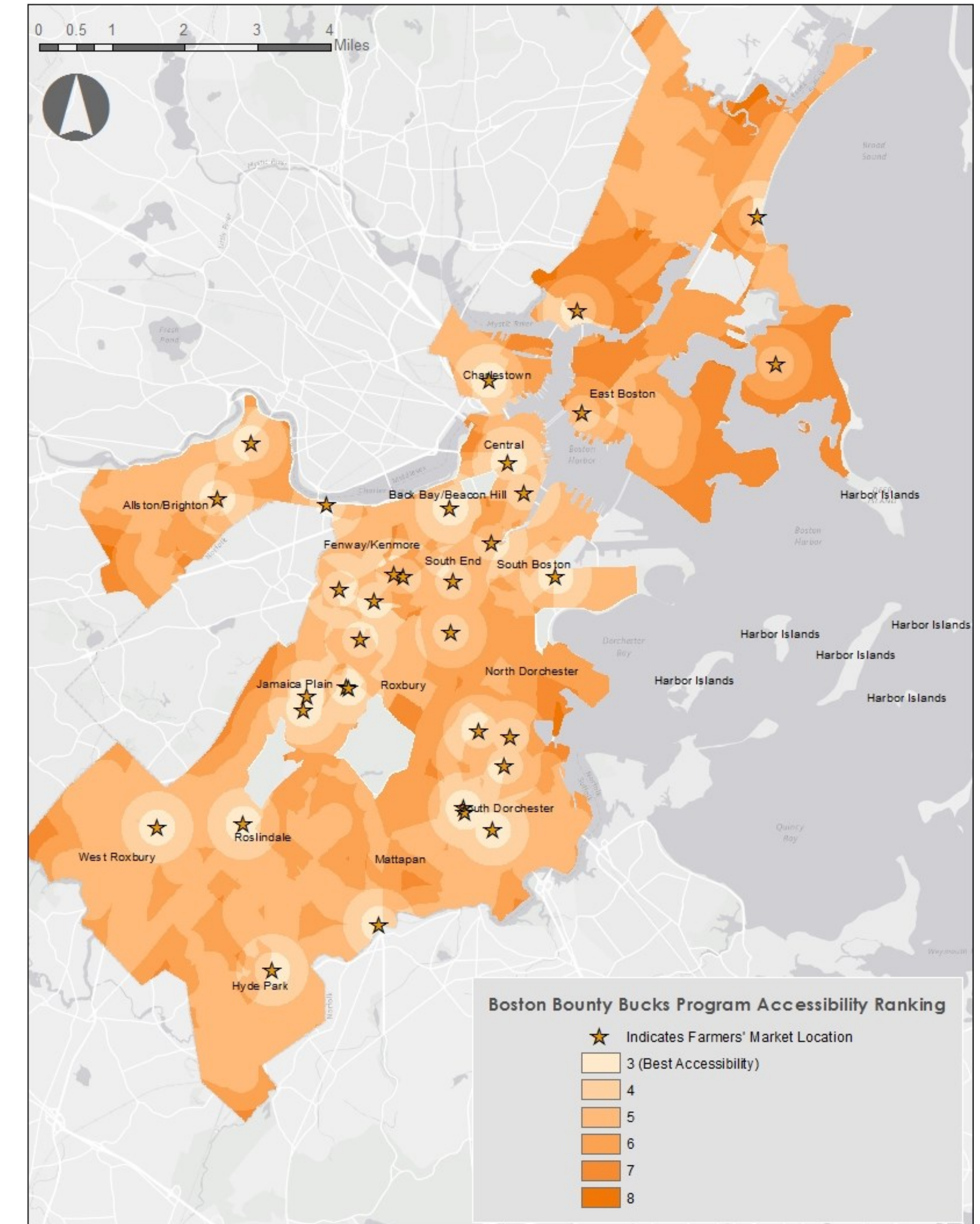
Potential access barriers were determined based on a 2012 report published by BCFF and on personal communication with a representative of BCFF. These potentially limiting factors were analyzed using an 'accessibility assessment' framework. Using Census Tract data for Suffolk County, a proximity analysis was conducted in order to evaluate public transportation accessibility. First, the Raster Euclidean Distance tool was used to calculate the distances between farmers' markets and MBTA T-stops. The output was reclassified into three categories to represent an accessibility ranking (see Table 1). The same process was repeated to gain a three-tiered classification of MBTA Bus line accessibility with regard to farmers' markets. Next, US Census Bureau data on non-English speaking households was obtained and mapped. Using the Polygon to Raster tool, the map was converted into a raster. The data was then reclassified into three classes to represent high, medium and low numbers of non-English speaking households.

To form the additive model used to conceptualize accessibility, these rasters were combined using the Raster Calculator tool and assigned a composite score ranging from 3-9.

Table 1: METHODOLOGY

FACTOR	RATIONALE	ACCESSIBILITY RANK SCALE
TRANSPORTATION PROXIMITY: MBTA T-Station	Many SNAP recipients cited "inconvenience" as a major barrier for shopping at farmers' markets. The proximity of a T-Station to a farmers' market is a factor indicative of access; individuals can utilize connecting MBTA train lines to access farmers' markets.	1: ACCESSIBLE MBTA Station located within 400 meters (~0.25 miles) of a farmers' market
		2: MODERATE ACCESSIBILITY MBTA Station located within 800 meters (~ 0.50 miles) of a farmers' market
		3: POOR ACCESSIBILITY MBTA Station located more than 800 meters from a farmers' market
TRANSPORTATION PROXIMITY: Bus Line	Again, proximity to transportation can improve accessibility. Many Boston residents utilize the MBTA bus system; therefore, it is important to evaluate the proximity of farmers' markets to various bus lines.	1: ACCESSIBLE Bus line located within 400 meters (~0.25 miles) of a farmers' market
		2: MODERATE ACCESSIBILITY Bus line located within 800 meters (~ 0.50 miles) of a farmers' market
		3: POOR ACCESSIBILITY Bus line located more than 800 meters from a farmers' market
LANGUAGE ACCESSIBILITY: Non-English Speaking Households	Because BBB does not print informational materials in non-English languages, non-English speakers may experience poorer program accessibility. Areas with high numbers of households in which no one over the age of 14 speaks English only or speaks English 'very well' are ranked to reflect the potential for increased language-appropriate outreach.	1: ACCESSIBLE Low number of non-English speaking households.
		2: MODERATE ACCESSIBILITY Moderate number of non-English speaking households.
		3: POOR ACCESSIBILITY High numbers of non-English speaking households.

COMPOSITE SCORE RANGING FROM 3-9
3: BEST ACCESSIBILITY
9: WORST ACCESSIBILITY



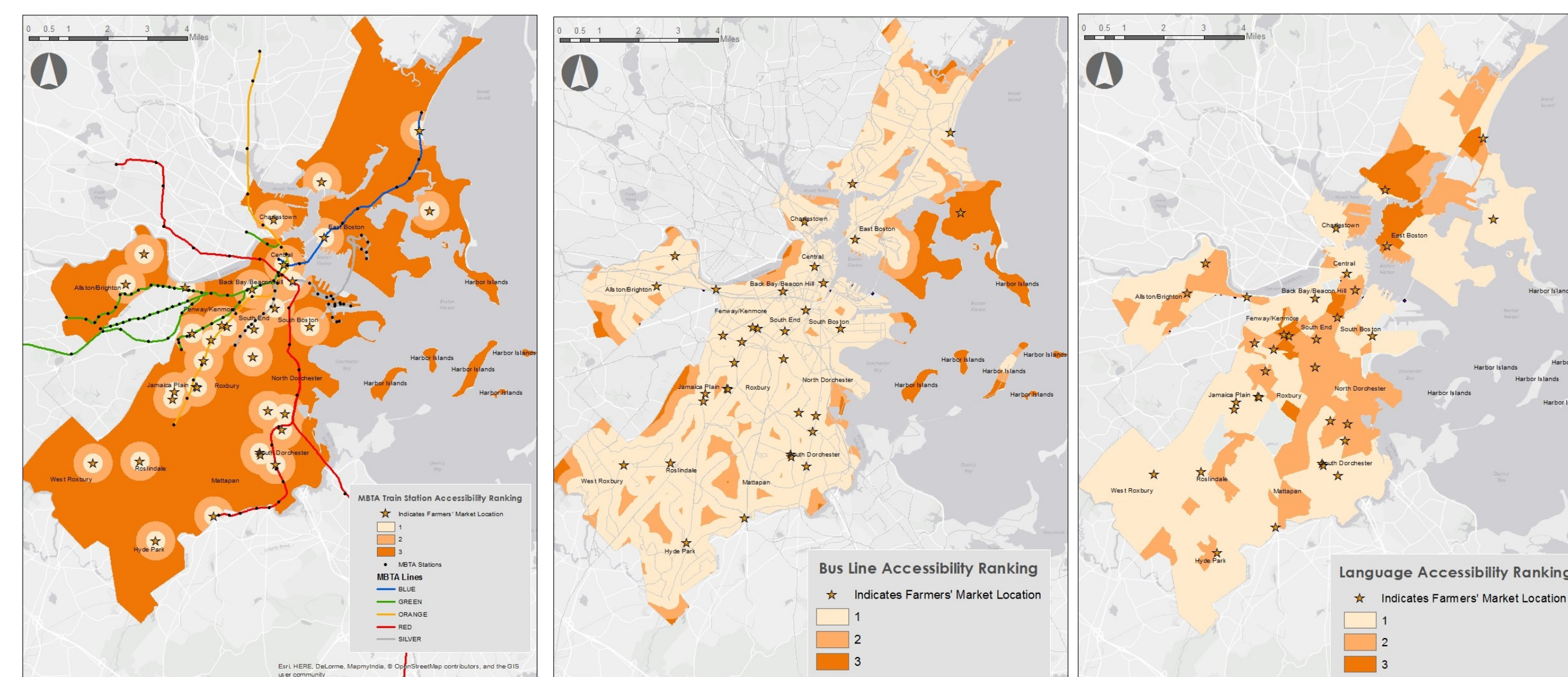
PRELIMINARY FINDINGS

It must be emphasized that the preliminary findings of this research are by no means comprehensive. However, the results of the initial analysis can provide a cursory overview of what Boston-area neighborhoods might benefit from increased outreach regarding the BBB program. The least accessible areas tend to be located around the perimeter of Suffolk County. East Boston is a neighborhood that appears to have significant areas experiencing low degrees of accessibility; small and scattered portions of West Roxbury, North Dorchester, Jamaica Plain, and Roxbury also appear experience limited accessibility and could benefit from targeted outreach.

LIMITATIONS AND RECOMMENDATIONS FOR FUTURE RESEARCH

While the preliminary findings may provide some degree of utility for targeted outreach, this analysis was only meant to provide an *initial* framework for expanded study. A more comprehensive analysis might include additional factors. For example, the presence of full-service supermarkets in close proximity to farmers' markets might play a role in determining an individual's likelihood of shopping at the farmers' market and utilizing the BBB program. The close proximity of a supermarket could either (a) make an individual more likely to use BBB and shop at the farmers' market because they are already shopping in the area, or (b) could serve as a disincentive, as individuals might fulfill all shopping needs there. Determining the impacts of proximal supermarkets was beyond the scope of this project.

Once a more comprehensive model is developed, it is recommended that the resulting information be used by BBB program administrators as a guide for increasing program awareness. Targeted outreach in communities experiencing low levels of accessibility might range from administration of language-appropriate materials to the establishment of new farmers' markets in underserved areas. The intent of this analysis is ultimately to increase BBB program participation and enable more individuals to reap the associated benefits.



Cartography: Victoria Kulwicki, May 2015 | Tufts UEP 232: Introduction to GIS
Data Sources: MassGIS, US Census Bureau American FactFinder (ACS 2013 5-Year Estimates)
References: ¹ Boston Collaborative for Food and Fitness (2012). *Farmers' markets: Impact on fruit and vegetable consumption of Supplemental Nutrition Assistance Program*. Boston, MA: Obadia and Porter.