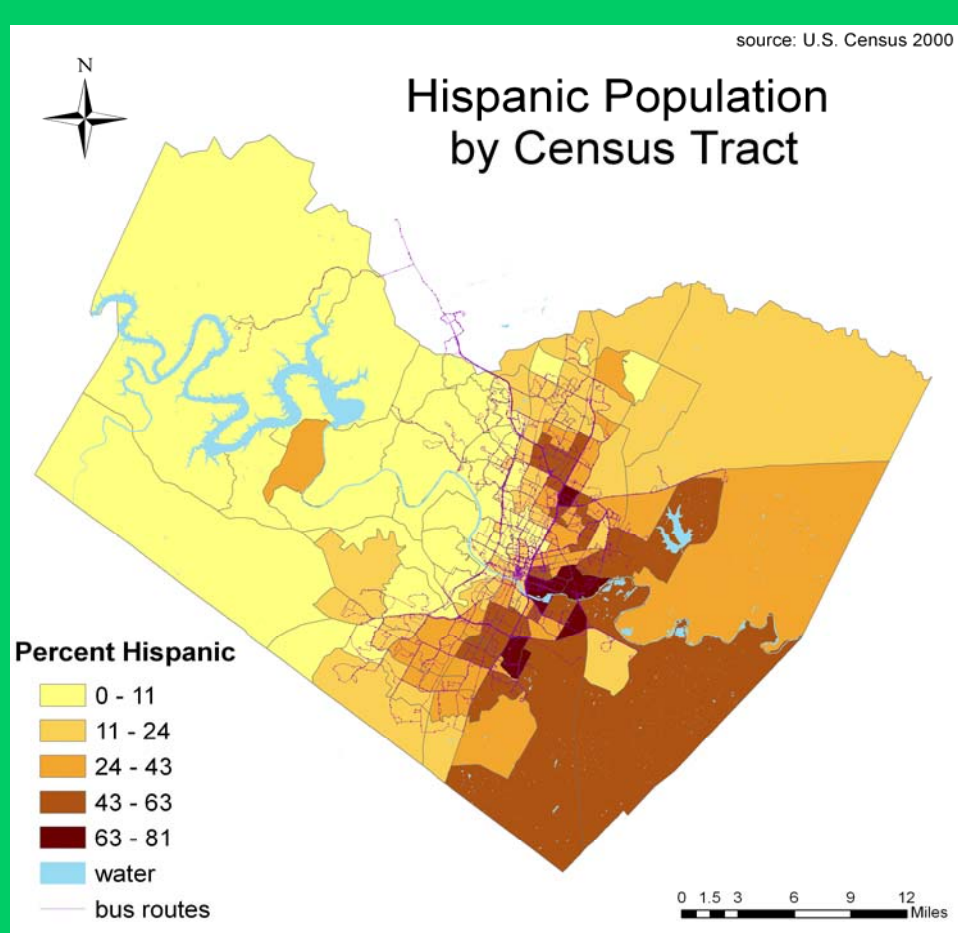
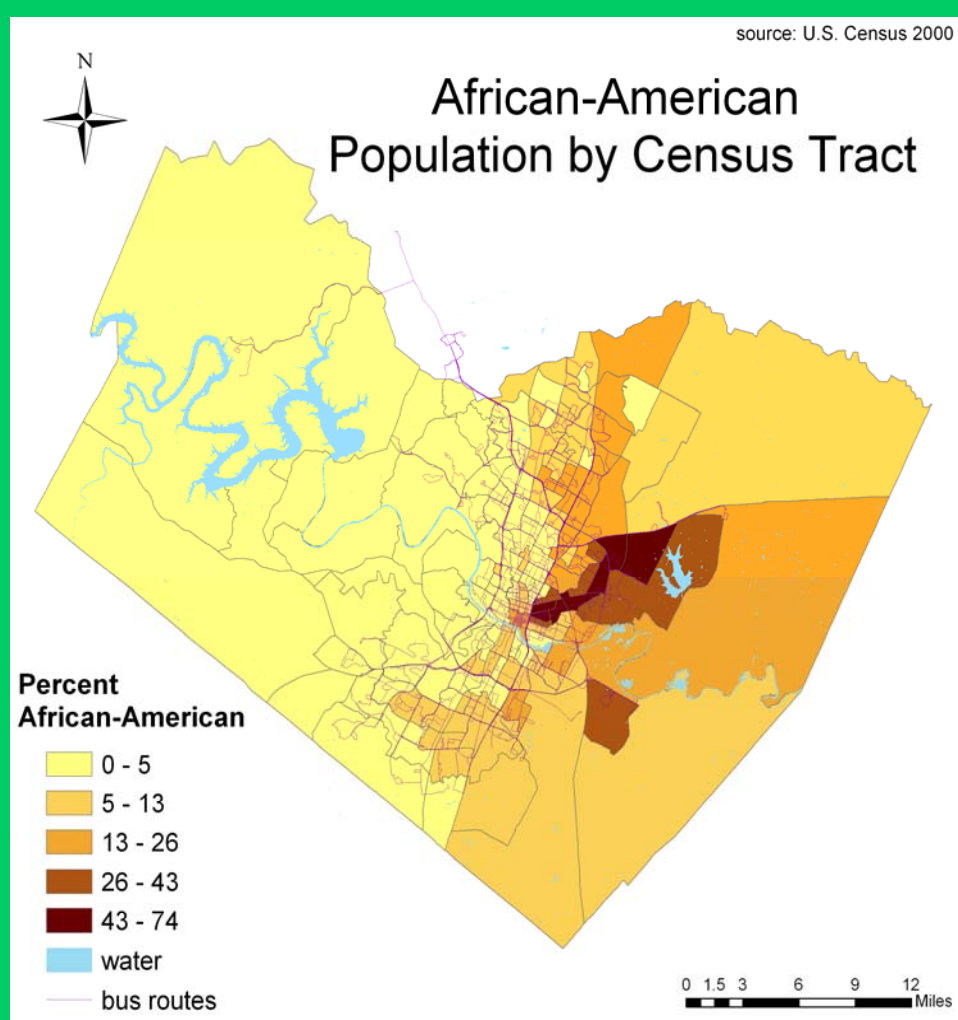
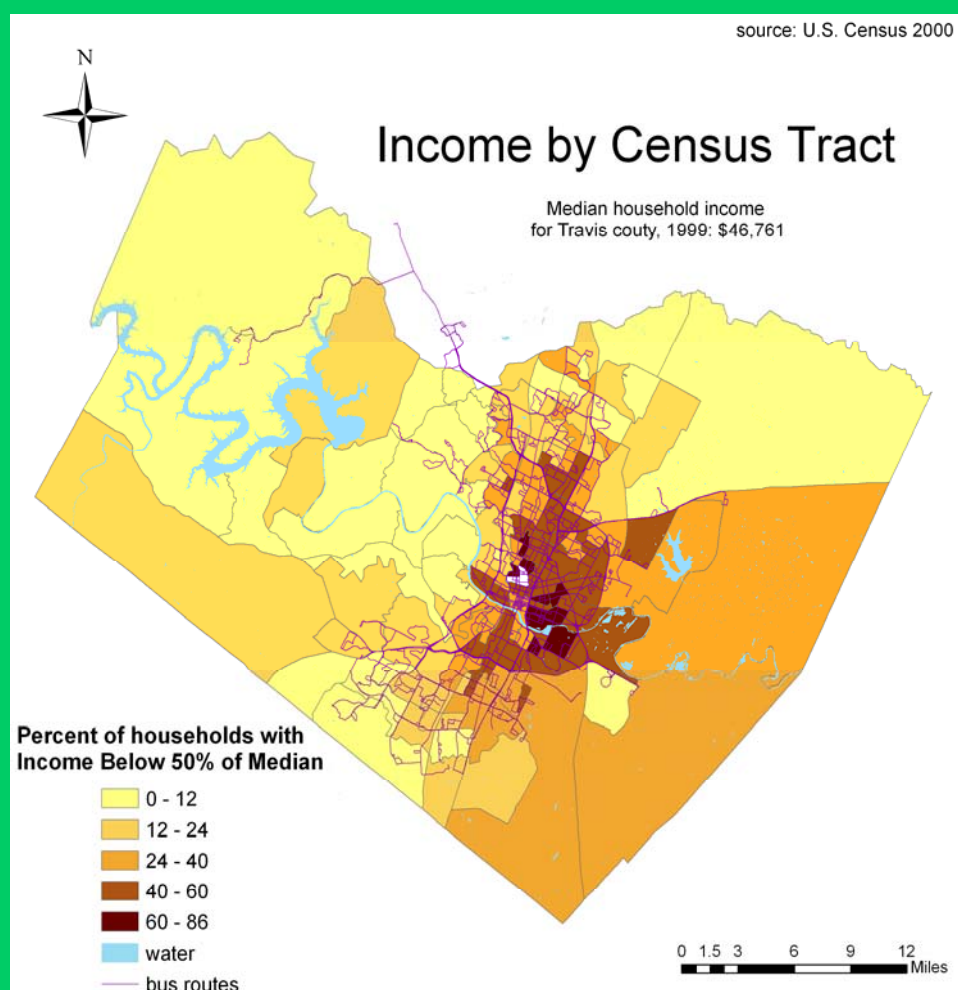


Roadblocks to Health: Comparing Accessibility to Health Care for Low Income Housing in Austin, Texas



Travis County Demographics



Introduction:

Without access to a car, many residents of low-income communities are depend on public transportation to access adequate health care - one of the most important parts of a healthy lifestyle. Austin, Texas, with its highly segregated community, multiple types of low-income housing, and public bus system is an ideal place to study the effect of transportation on low-income resident's access to health care.

Goals:

1. To compare the S.M.A.R.T. housing, LIHTC developments, and mobile homes Austin, Texas in terms of their proximity and ease of access to local hospitals
2. Explore the analysis tools of GIS, including Spatial analysis and Network Analyst

S.M.A.R.T.Housing™ (Safe, Mixed Income, Accessible, Reasonably Priced and Transit Oriented): provides fee waivers for developments in which at least 10 percent of the units meet the "reasonably priced" standard, and serves families at or below 80 percent of the Austin median income. In addition, all new construction is required to meet green building standards. (Data courtesy of Elizabeth Mueller, University of Texas, Austin)

- SMART housing addresses were geocoded to Austin's streets with 87% matching.

LIHTC Housing (Low Income Housing Tax Credit): a federally mandated program to which developers apply for tax credits. To qualify, at least 20 percent of the developer's housing must be set-aside for people with incomes less than 50 percent of the Austin median income. Alternatively, a developer may set aside 40 percent of housing for households with incomes less than 60 percent of the area median. (Data courtesy of U.S Department of Housing and Urban Development)

- LIHTC housing was downloaded from US HUD LIHTC database and added to ArcMap by "add XY coordinates"

Mobile Homes: Land zoned for mobile home use in Travis county was selected out of the City of Austin's land use shapefile and then centroid points were generated for use in analysis. (Data courtesy of the City of Austin)

Raster: Euclidian Distance

SMART

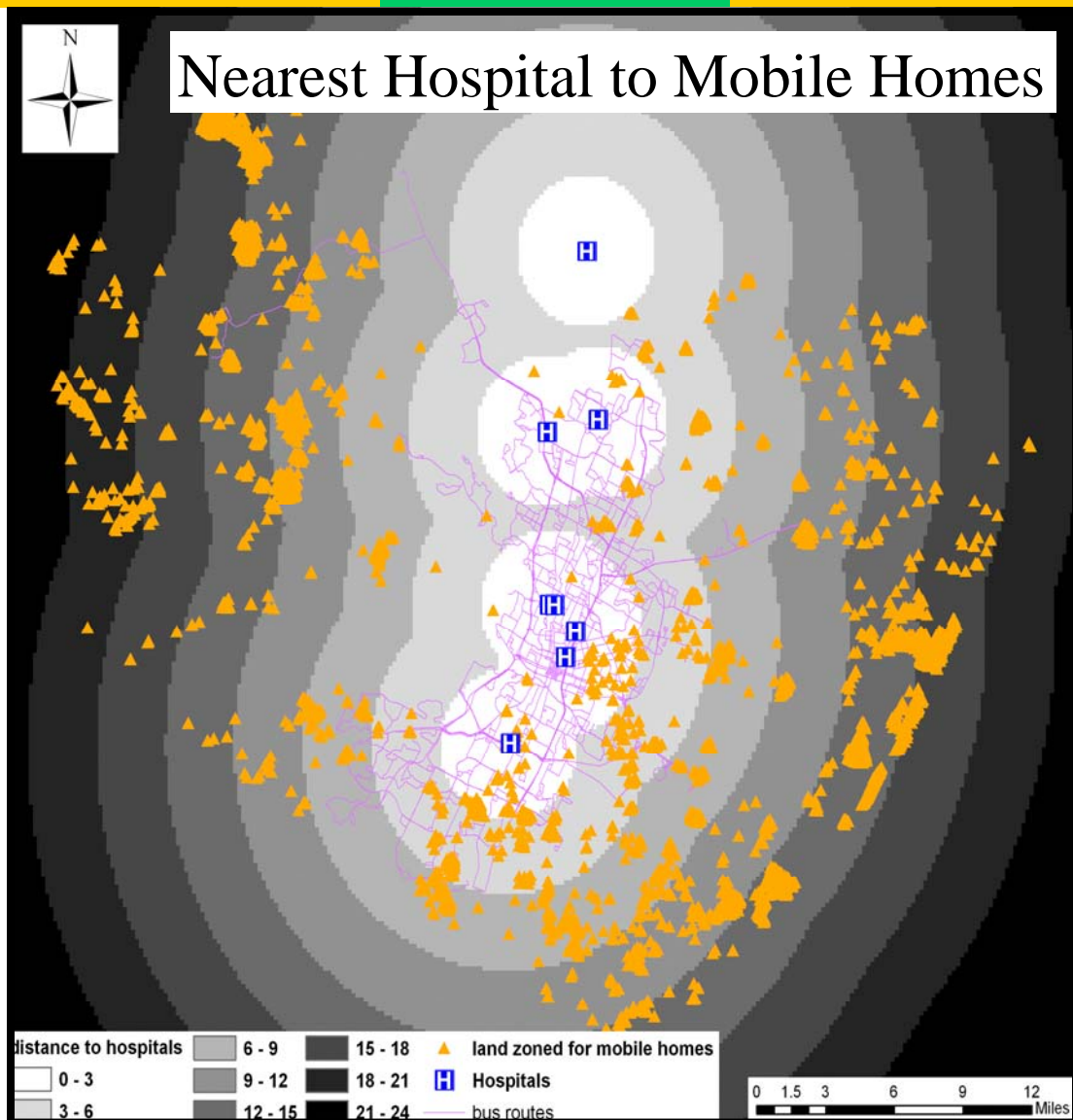
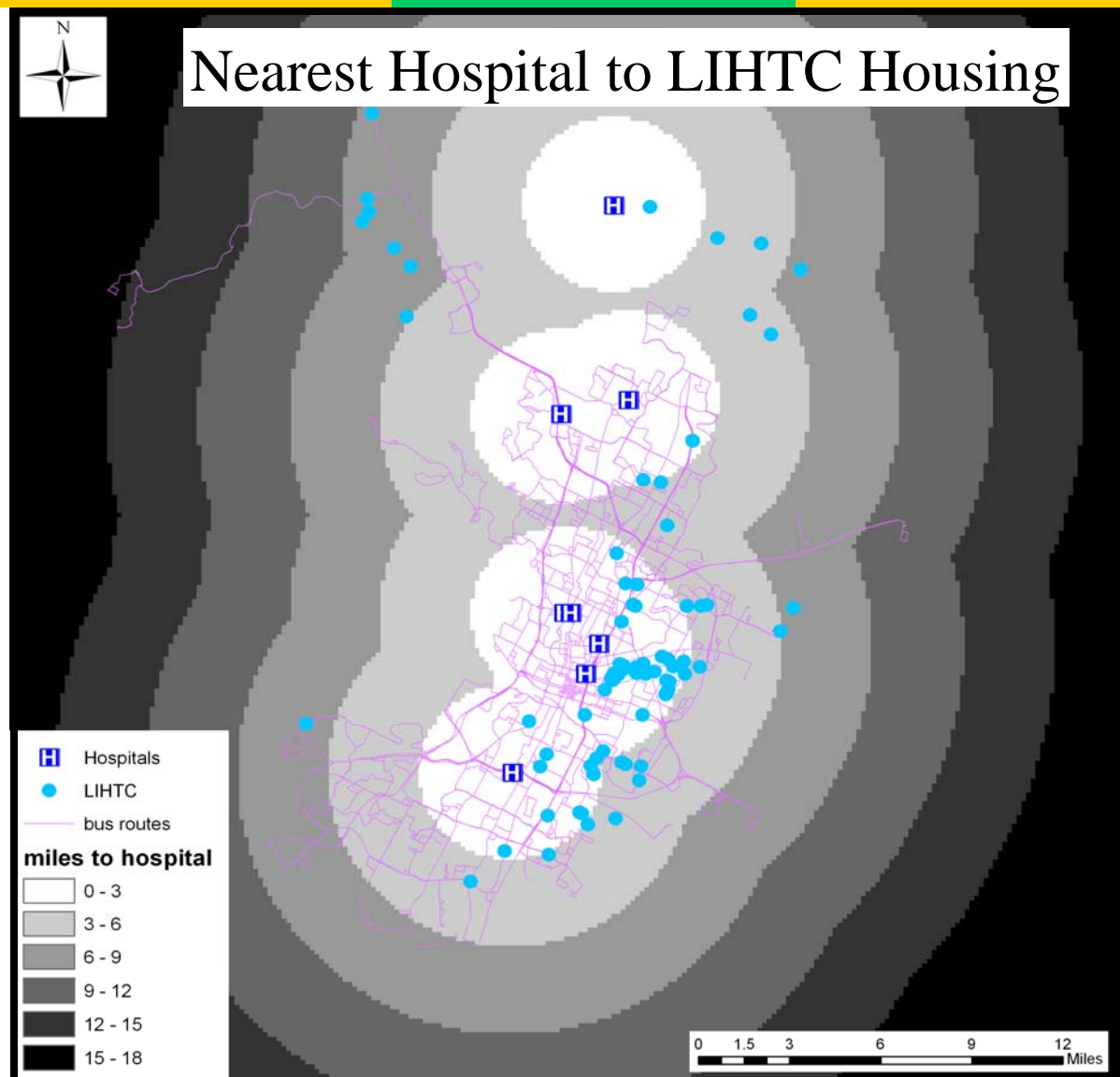
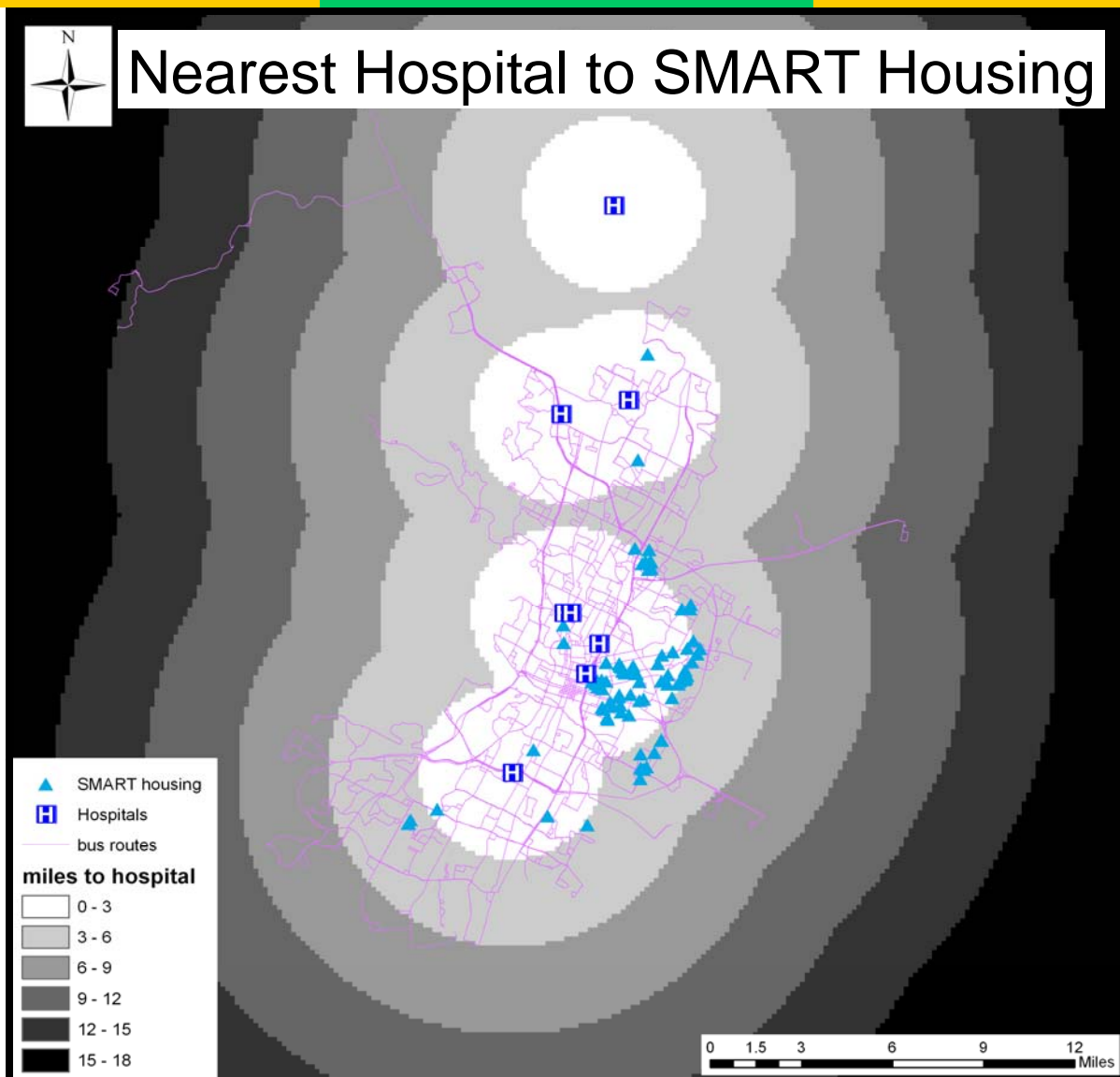
LIHTC

Mobile

RESULTS

Methods:

1. Spatial Analyst: Euclidian Distance was used to generate a raster file with each cell containing its distance from the closest hospital
2. Spatial Analyst: Extract Values to Points was then used to give the housing shape files the raster distance file
3. Attribute table field statistics were used to generate mean distance from hospital



housing type	mean distance to hospital (mi.)
SMART	2.26
LIHTC	3.06
Mobile Homes	10.23

Network Analysis: Service Area

SMART

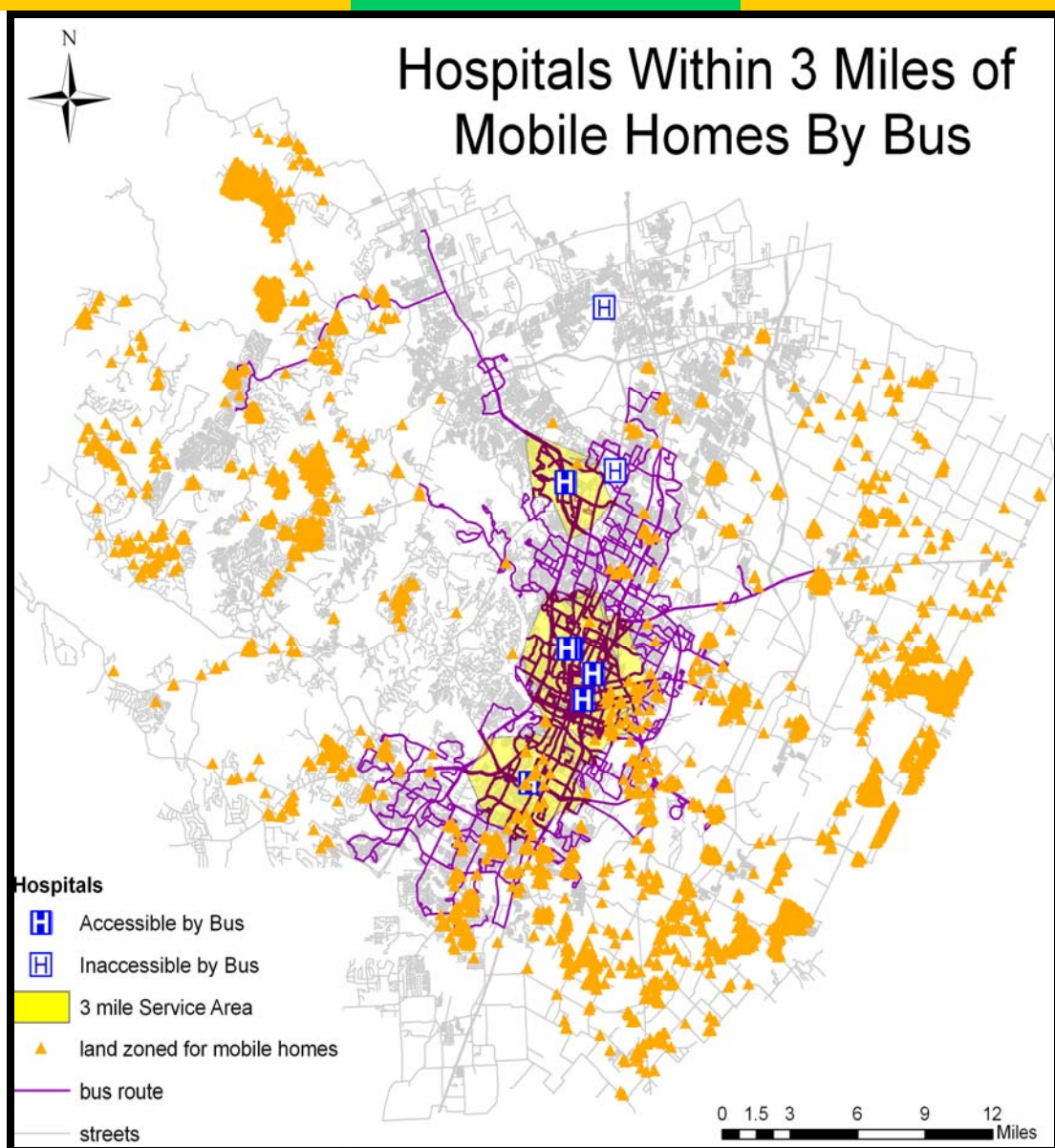
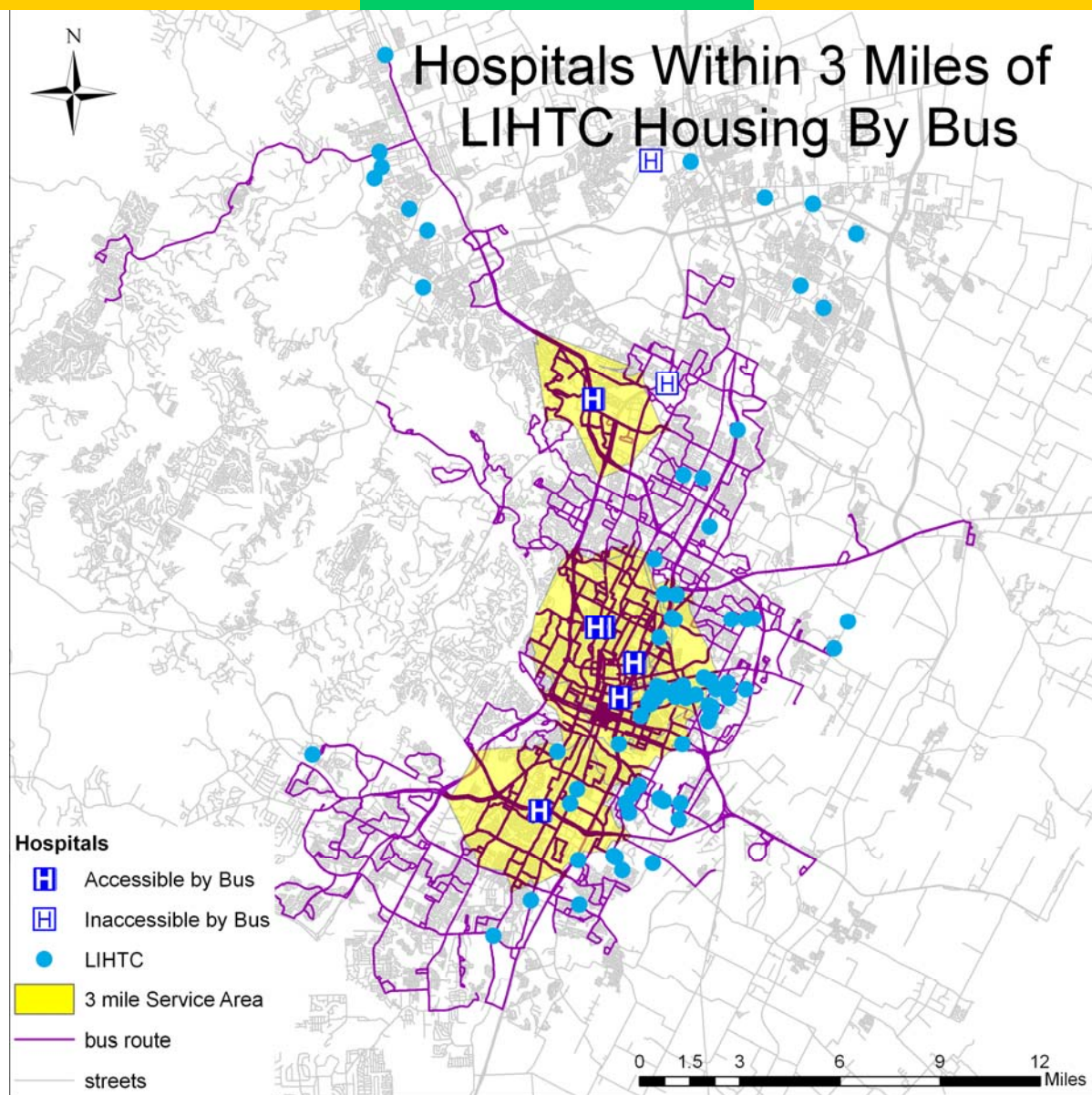
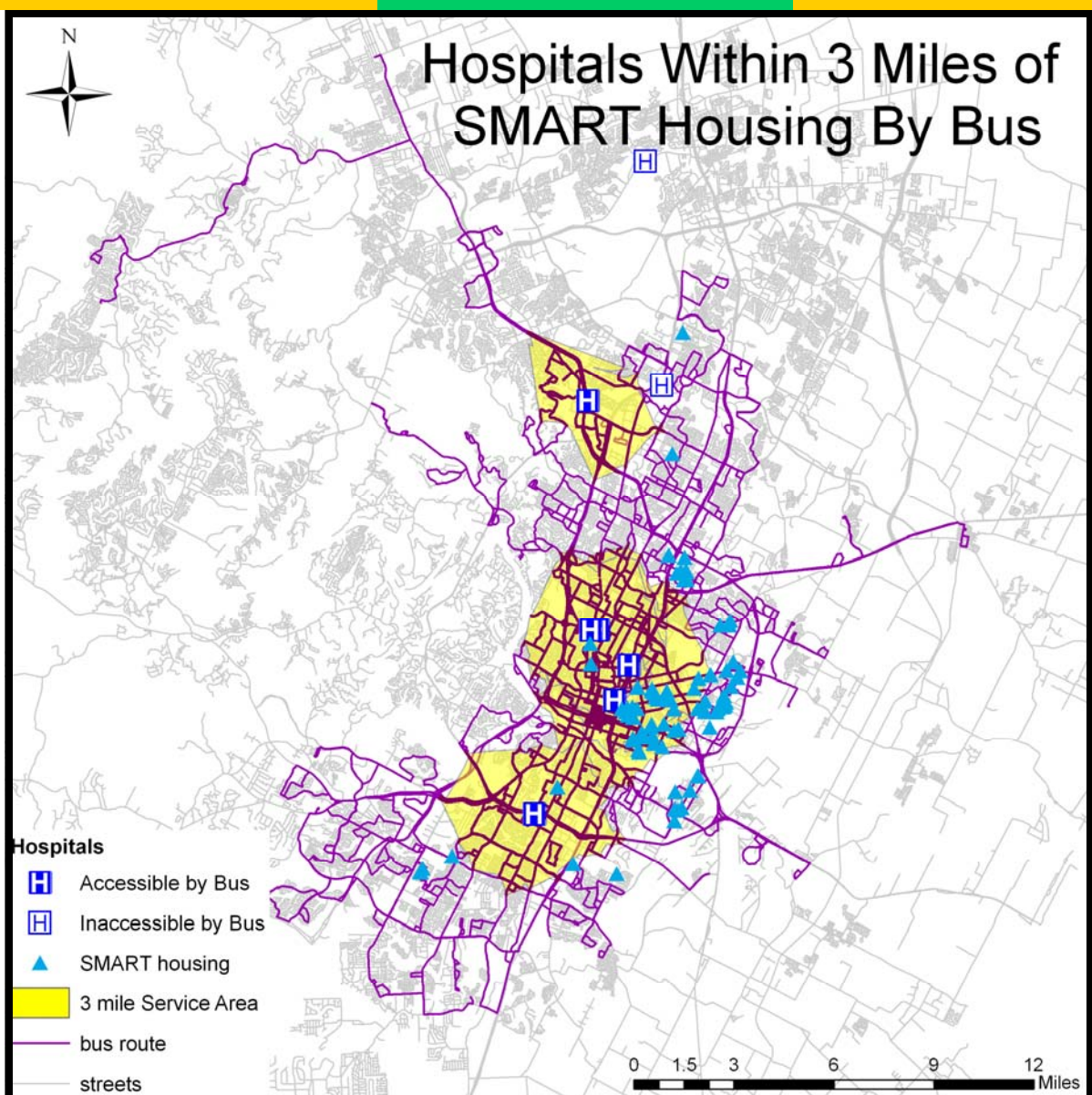
LIHTC

Mobile

RESULTS

Methods:

1. In ArcCatalog, the network dataset was built based on the underlying streets of the bus routes
2. Network Analyst: Service Area was used to generate polygons based on a 3 mile path by bus routes from each hospital that is located within 150 m of the bus route
3. Count of number of housing developments on bus route was calculated with by selection and attribute table statistics



housing type	percent within 3 mi. service area
SMART	42%
LIHTC	34%
Mobile Homes	1%

Network Analysis: Closest Facility

SMART

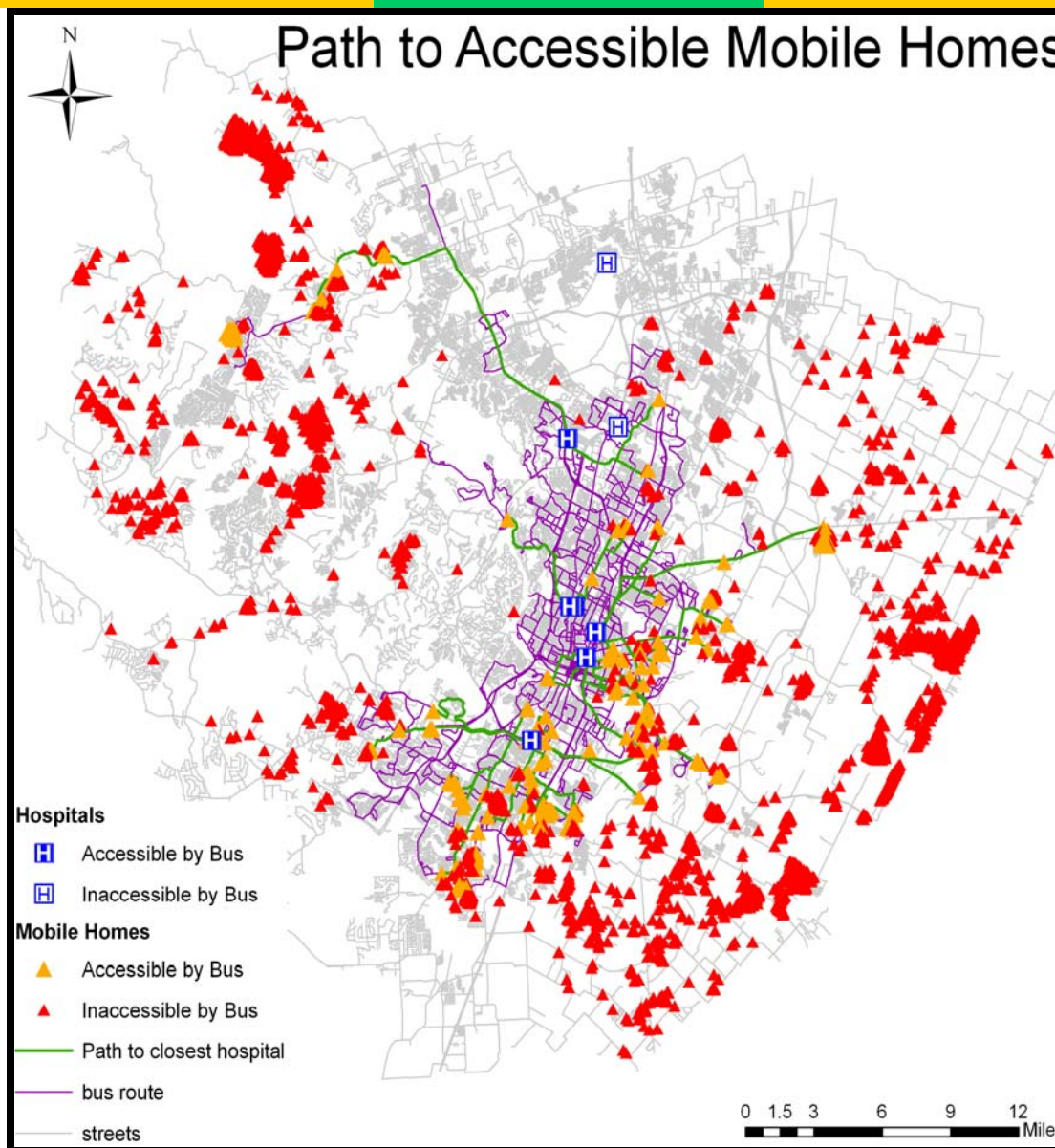
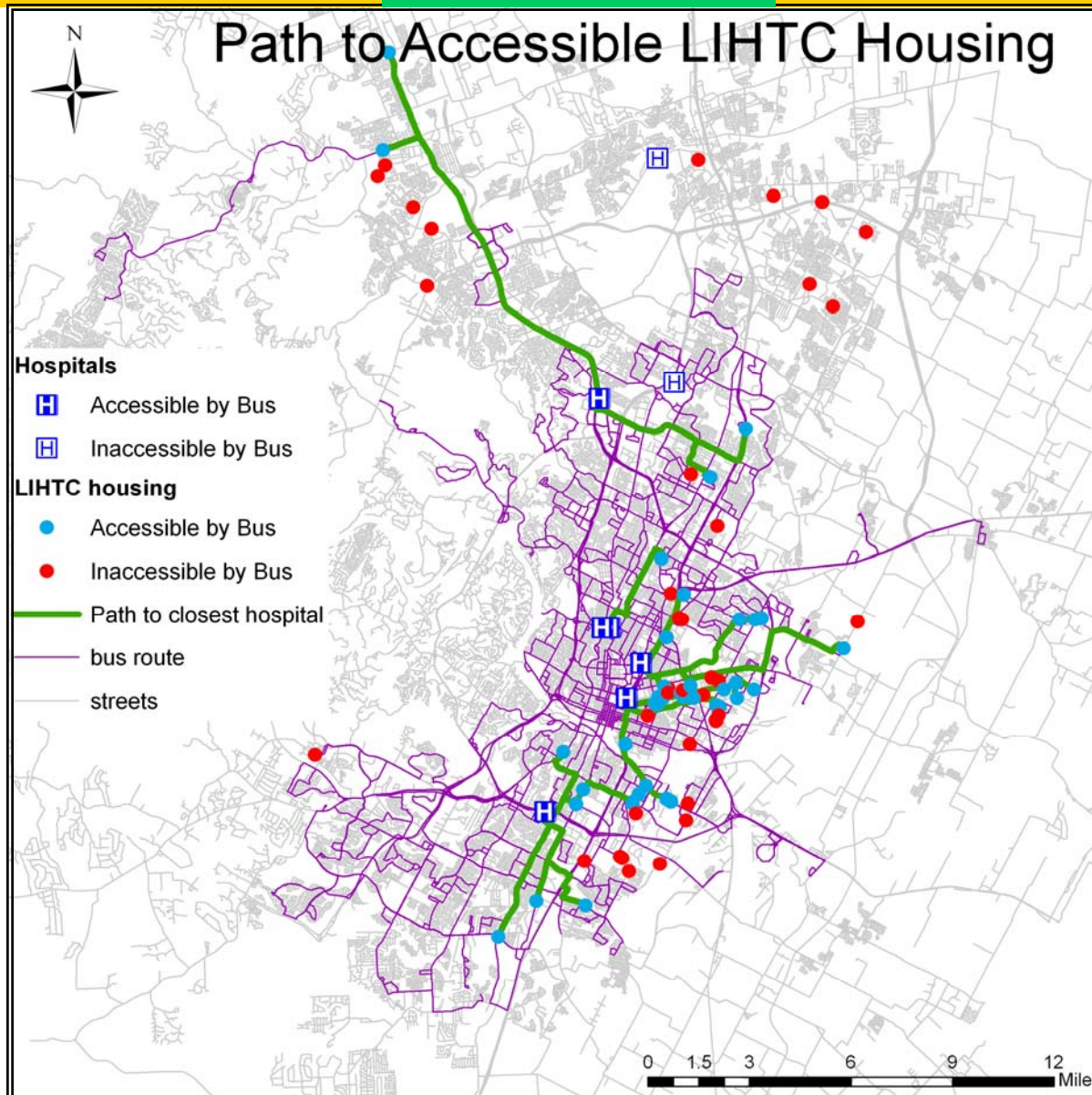
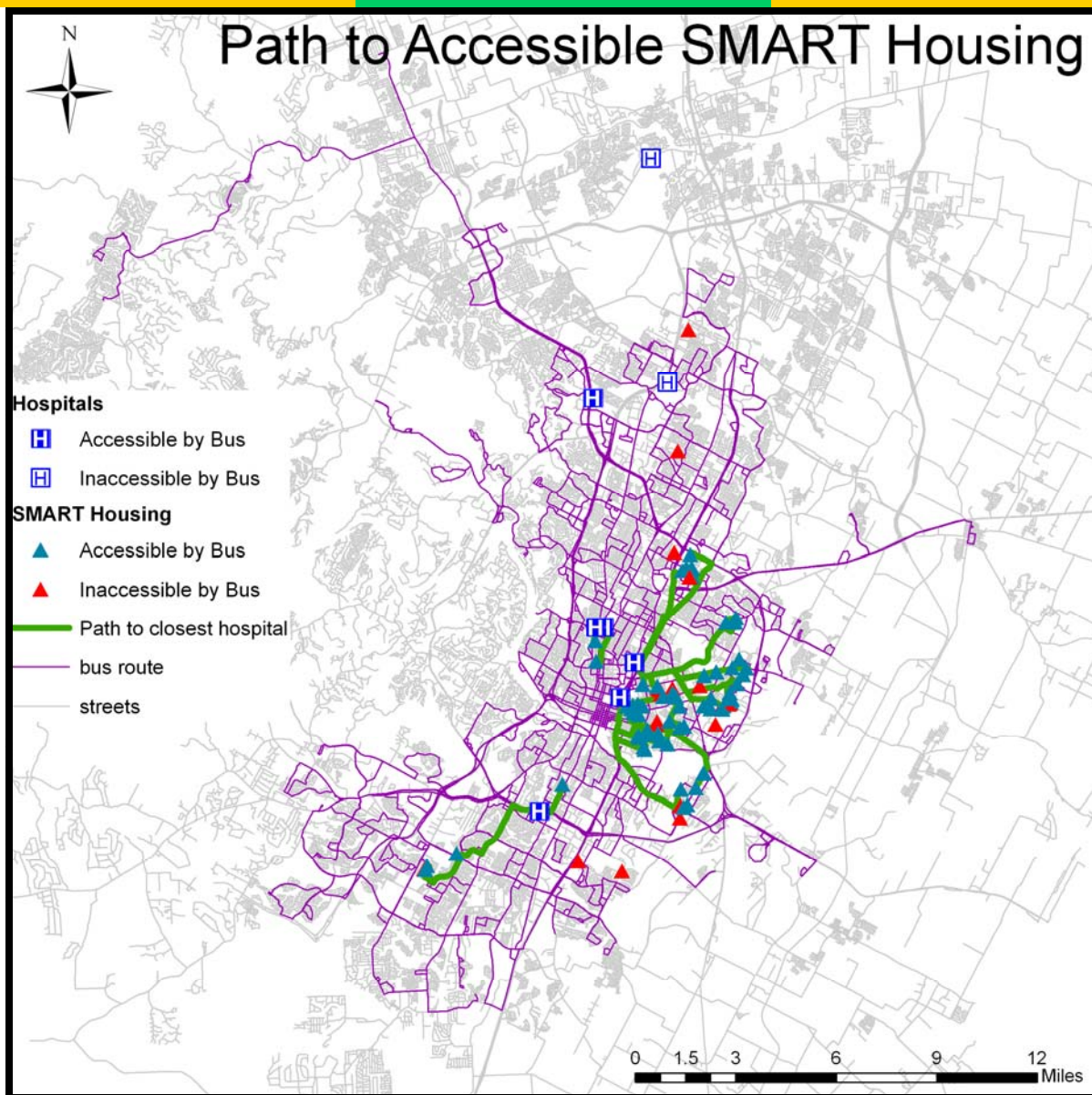
LIHTC

Mobile

RESULTS

Methods:

1. The same network dataset as the Service Area was used for this analysis
2. Network Analyst: Closest Facility was used to visualize the shortest path from all housing units that are accessible to hospitals. Only hospitals and housing developments within 150 meters of the bus routes were considered accessible
3. Mean distance of path to hospital from housing on bus route was calculated with selection and attribute table statistics



housing type	percent accessible by bus
SMART	72%
LIHTC	51%
Mobile Homes	11%

housing type	of those accessible by bus, mean distance to hospital (mi.)
SMART	2.88
LIHTC	3.38
Mobile Homes	6.84