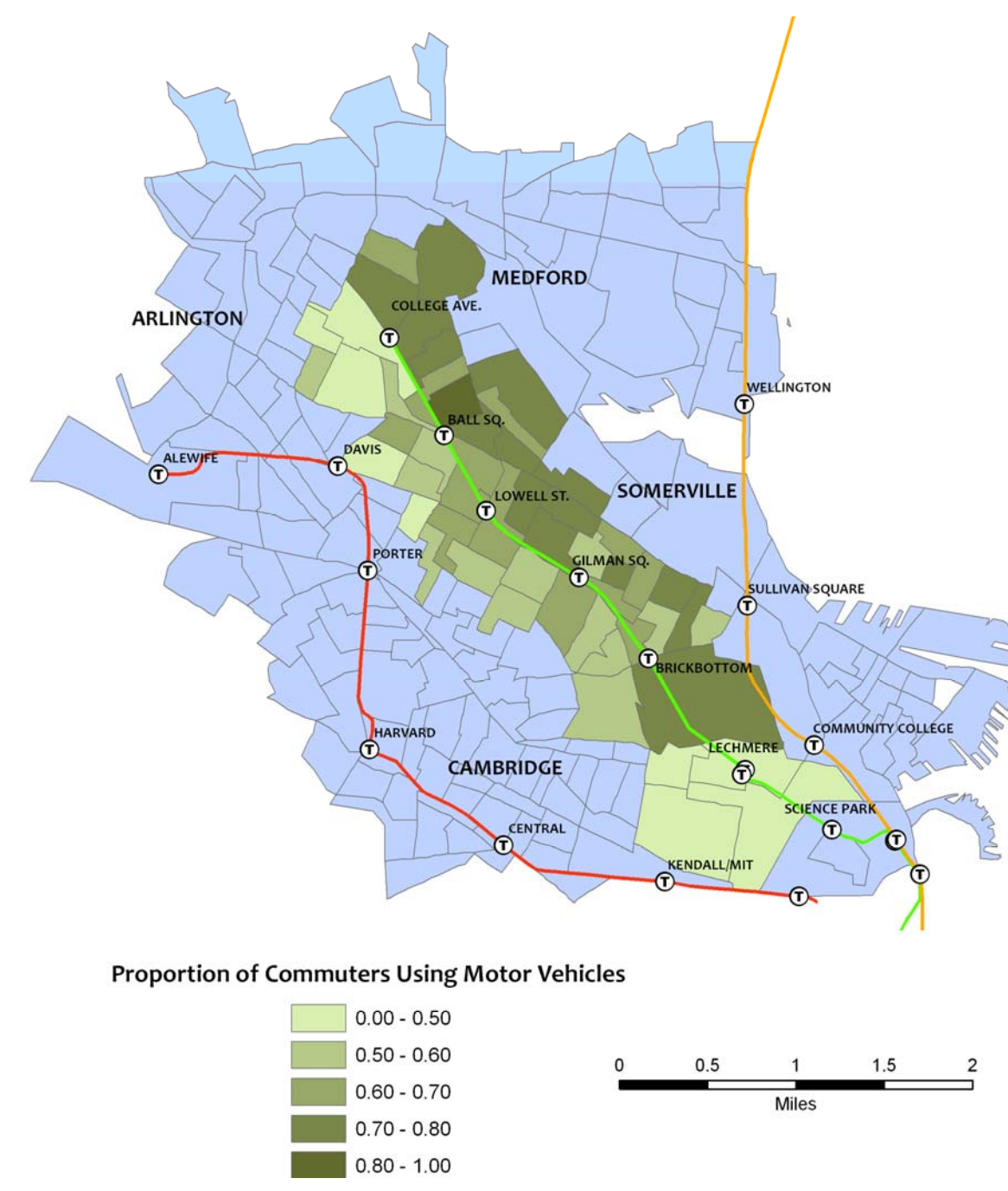
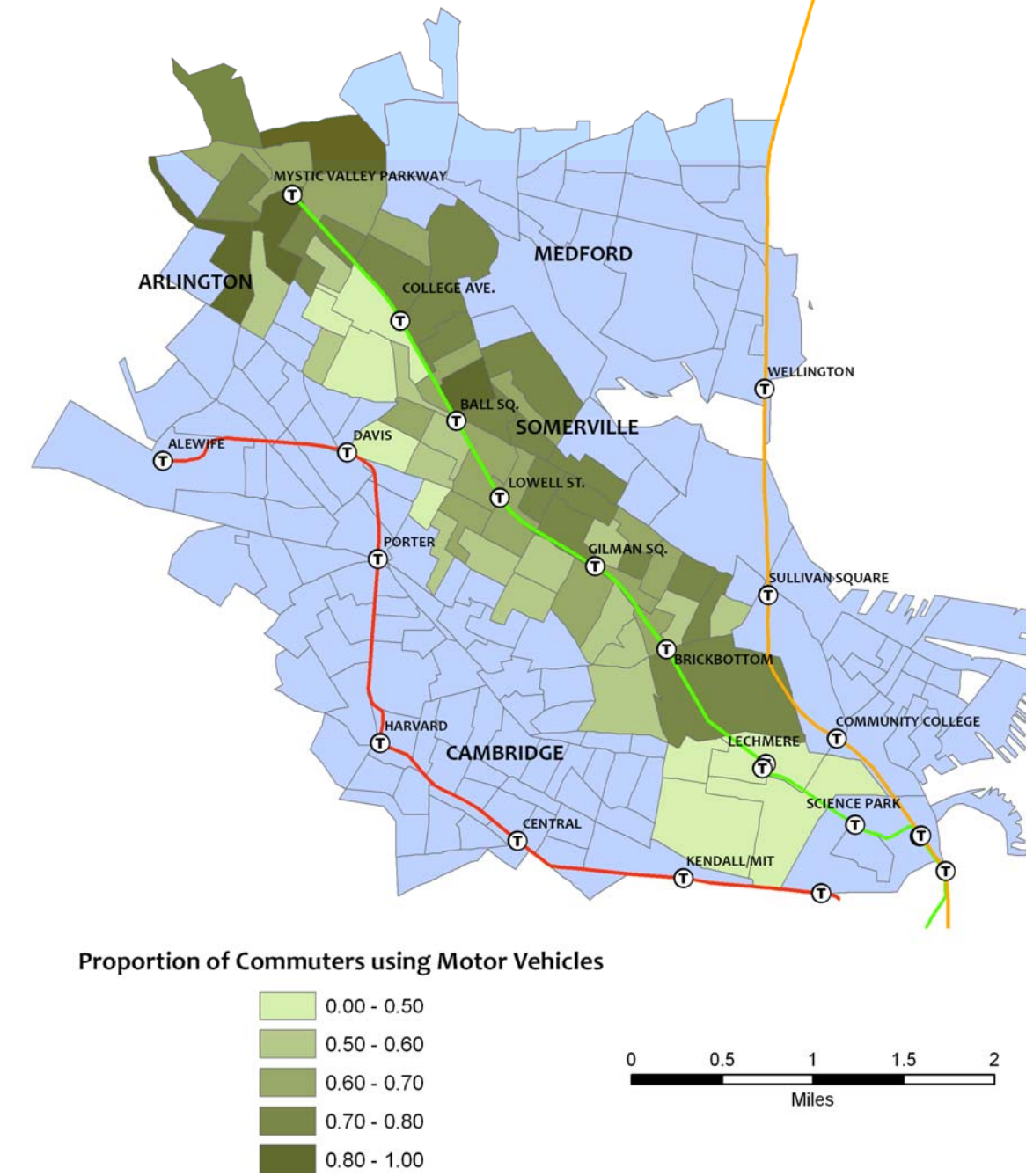


# IMPACT OF GREEN LINE EXTENSION INTO SOMERVILLE AND MEDFORD

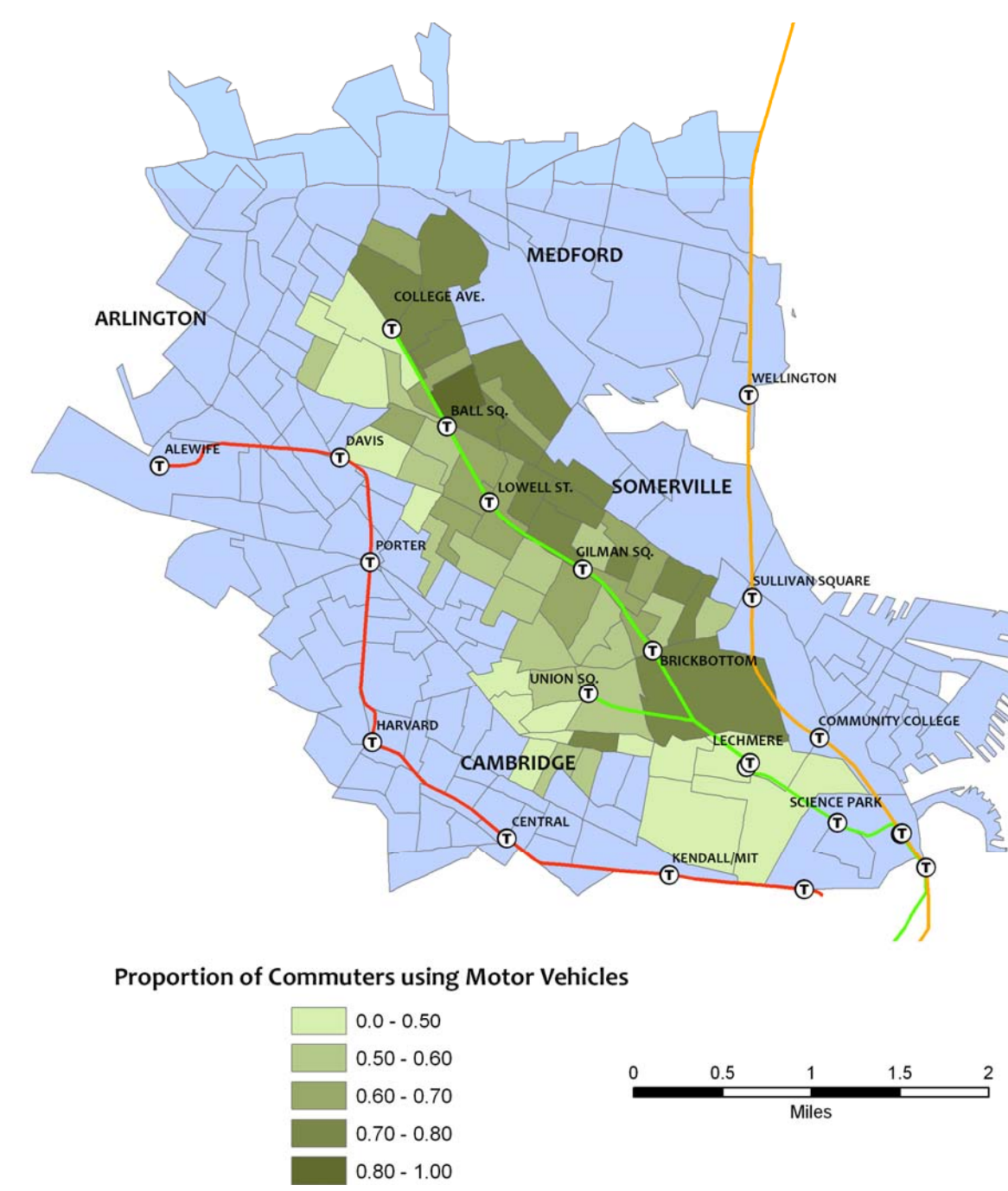
Nathan Abbott



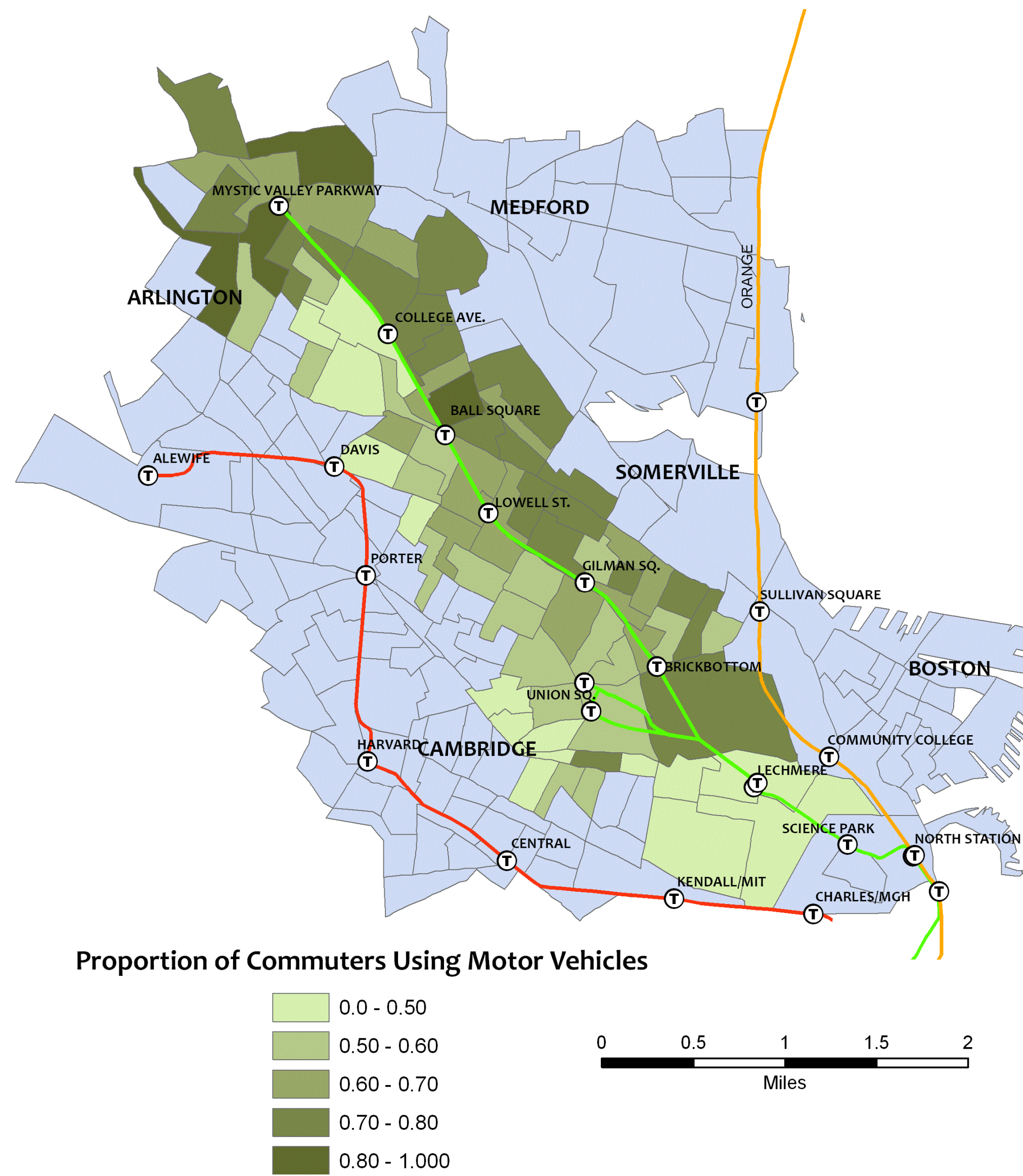
**Figure 1.** Proportion of commuters using motor vehicles in Census block groups located within 1/3 mile of proposed stations (NOT including Mystic Valley Parkway Station or Union Sq. Station).



**Figure 2.** Proportion of commuters using motor vehicles in Census block groups located within 1/3 mile of proposed stations (including Mystic Valley Parkway Station but not Union Sq. Station).



**Figure 3.** Proportion of commuters using motor vehicles in Census block groups located within 1/3 mile of proposed stations (including Union Sq. Station but not Mystic Valley Parkway Station).



**Figure 4.** Proportion of commuters using motor vehicles in Census block groups located within 1/3 mile of all proposed stations.

	Total Population of Block Groups within 1/3 of a mile of Stations.	# of Out-of-home Workers in Block Groups within 1/3 of a mile of Stations
Limited Expansion (5 new stations)	64,180	34,951
Limited Expansion + Union Sq. Station	76,177	41,850
Limited Expansion + Mystic Valley Pkwy Station	75,881	40,942
Full Expansion (7 new stations)	87,878	47,841

**Table A.** Total and commuter populations of census block groups within 1/3 mile of proposed stations

The north portion of the MBTA's Green Line currently ends at Lechmere Station in Cambridge. Massachusetts made a commitment to extend the Green Line past Lechmere by 2011 as a condition for obtaining environmental permits for the Central Artery/Tunnel Project (a.k.a. the Big Dig). The deadline has since been extended to 2014.

Current plans for the new Green Line call for it to continue past Lechmere Station, through Cambridge and Somerville, and end in Medford. The extension would run alongside the Lowell commuter rail tracks. While the general route of the extension has been decided, the exact number and placement of stations is still an unresolved issue. Five of the stations appear in all plans: at "Brickbottom" near the corner of Washington St. and Joy St., near Gilman Square, on Lowell St., near Ball Square, and near Tufts at the corner of Boston Ave and College Ave. There is also the possibility of a station in (or near) Union Square in Somerville. A stop in Union Square would require a separate spur, as it is not located along the same corridor. This potential stop has several possible station locations. It could be directly within the square and connected via a street trolley or a few blocks away and connected by a line alongside the Fitchburg Commuter Rail line. In addition, the Green Line could be extended past Tufts and end at a station on Route 16 (the Mystic Valley Parkway). The towns that would be most affected by an extension of the Green Line would be Cambridge, Somerville, Medford, and Arlington.

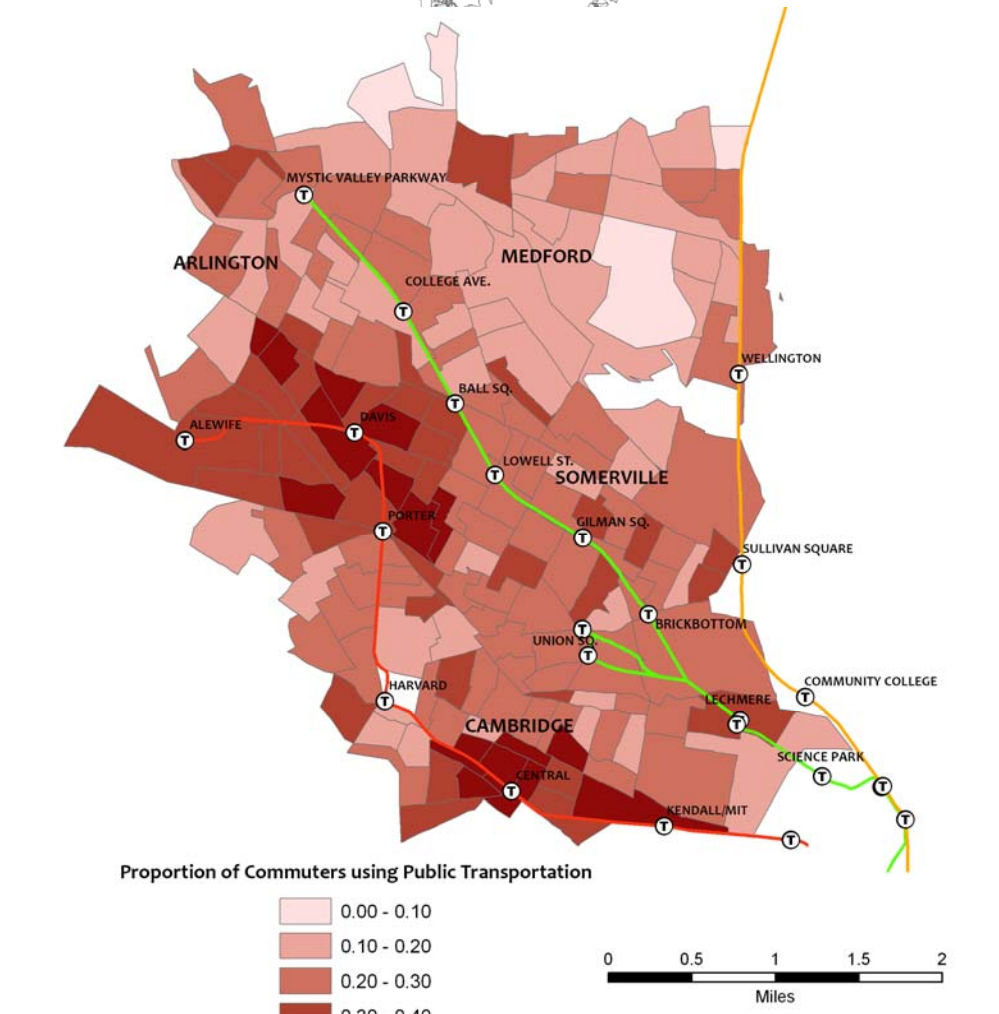
The proposed route would serve some densely populated areas which are currently under-served by rapid transit. Increased options for public transportation could reduce the number of vehicles on the road. Such a reduction could help lower carbon emissions, other pollution, and ease traffic congestion. The Green Line extension could also stimulate economic development.

Figure 5 shows the levels of public transportation use as well as the potential route and stations of a full Green Line extension. Note the high levels of public transit uses in block groups near existing Red Line stations. This map indicates that there is a strong possibility of a significant increase in public transportation by commuters. The new stations would serve areas with low levels of commuter public transportation use, but would not be close to those areas (primarily in Medford) with the lowest proportions.

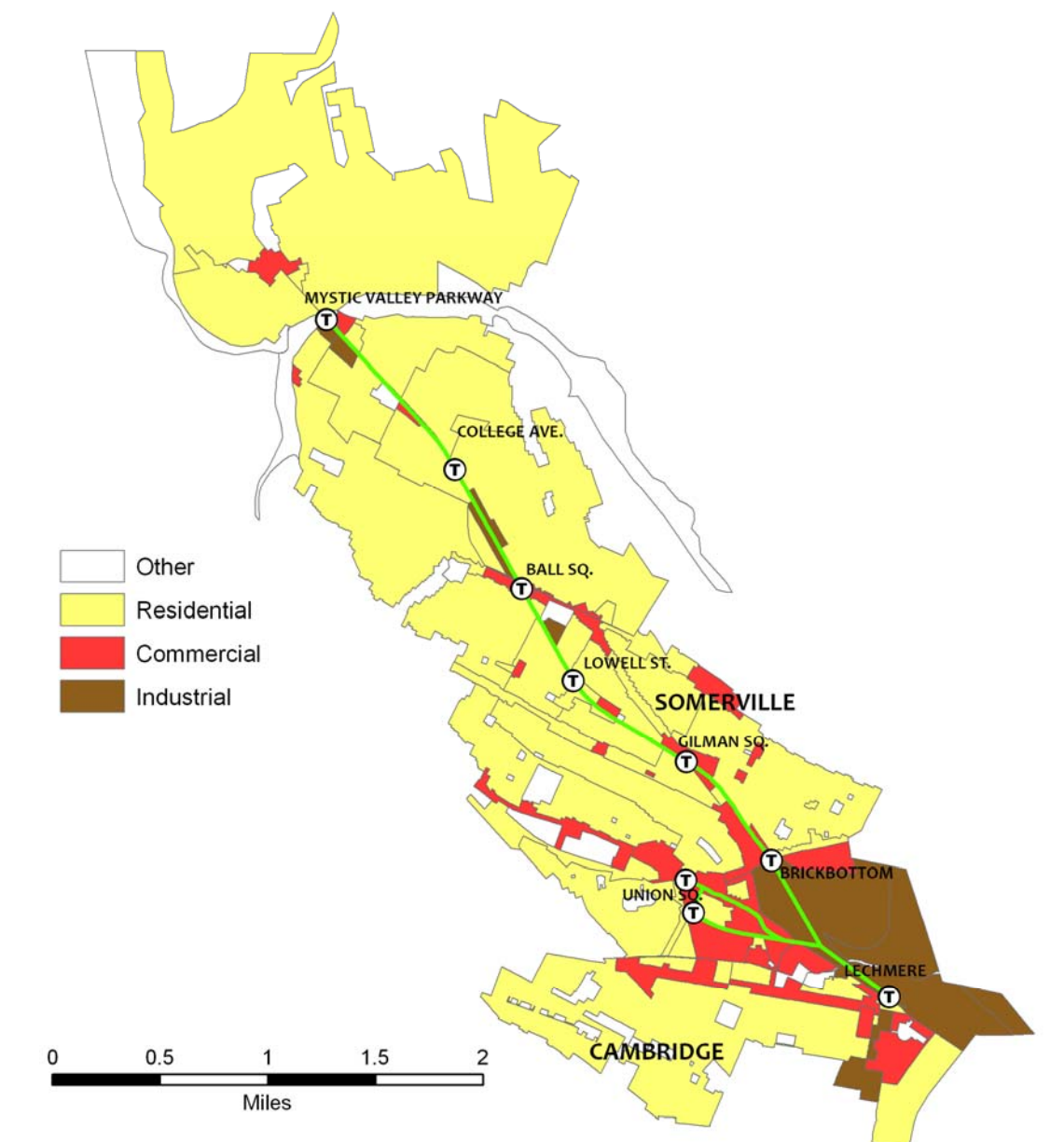
Figures 1-4 show levels of workers who do not work at home, and who currently use a motor vehicle to get to work, in block groups within 1/3 mile from proposed stations. Darker shaded areas could see the highest reduction of commuters driving, and therefore the highest reduction in pollution. These figures suggest that the Green Line expansion would be an enormous asset to commuters. Extension to the Mystic Valley Parkway would serve areas with relatively high levels of commuter vehicle usage. However the Union Square stations are located in areas that appear to have relatively low needs for public transportation for commuters. The main benefit of extension to Union Square may be economic. Figure 6 illustrates that Union Square is near a greater number of commercial zones than other proposed stations.

Further study is necessary regarding station location. Cost, infrastructure, and environmental factors should be considered.

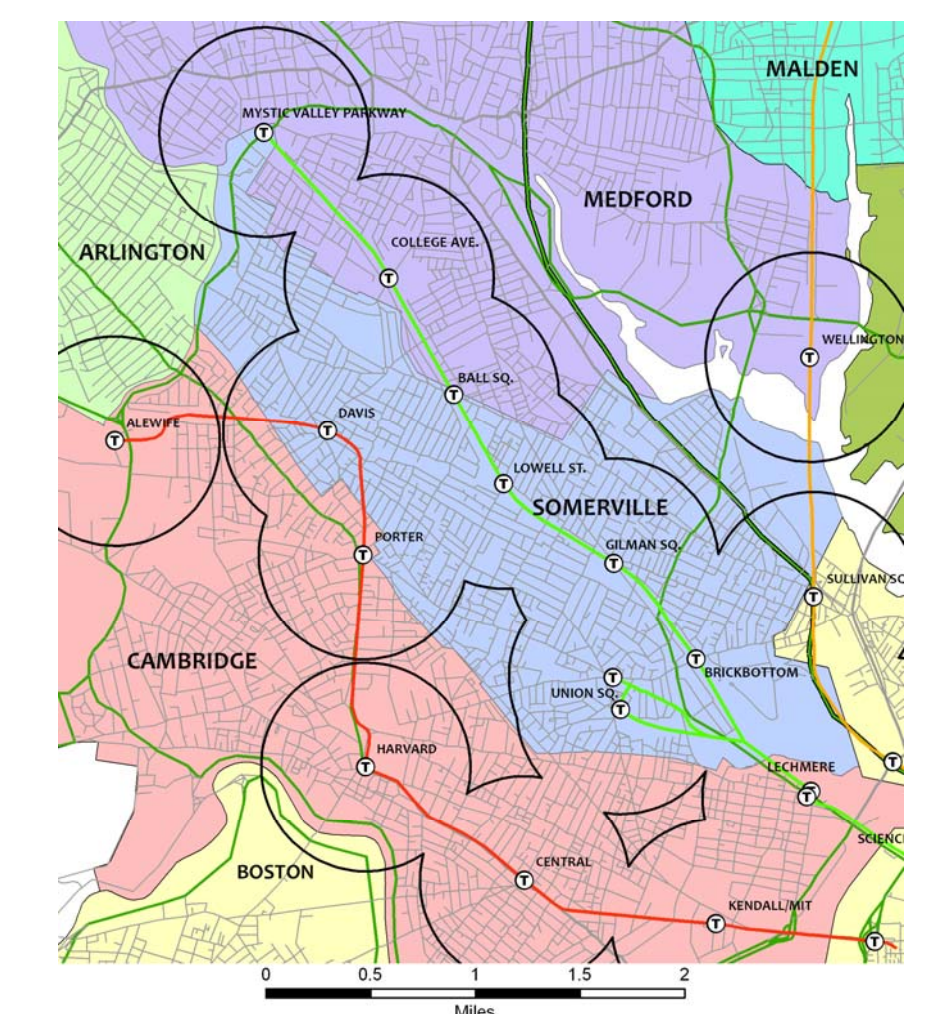
Projection: NAD 1983 StatePlane Massachusetts Mainland FIPS 2001  
Sources: MassGIS, 2000 U.S. Census, www.greenlineextension.org



**Figure 5.** Proportion of commuters aged 16 and over who do not work at home and who use public transportation.



**Figure 6.** Zoning districts along proposed Green Line extension



**Figure 7.** Areas within circles are located within 1/2 mile of any existing or proposed MBTA station.