

Implementing Cycle Tracks in the Boston Area

What are cycle tracks?

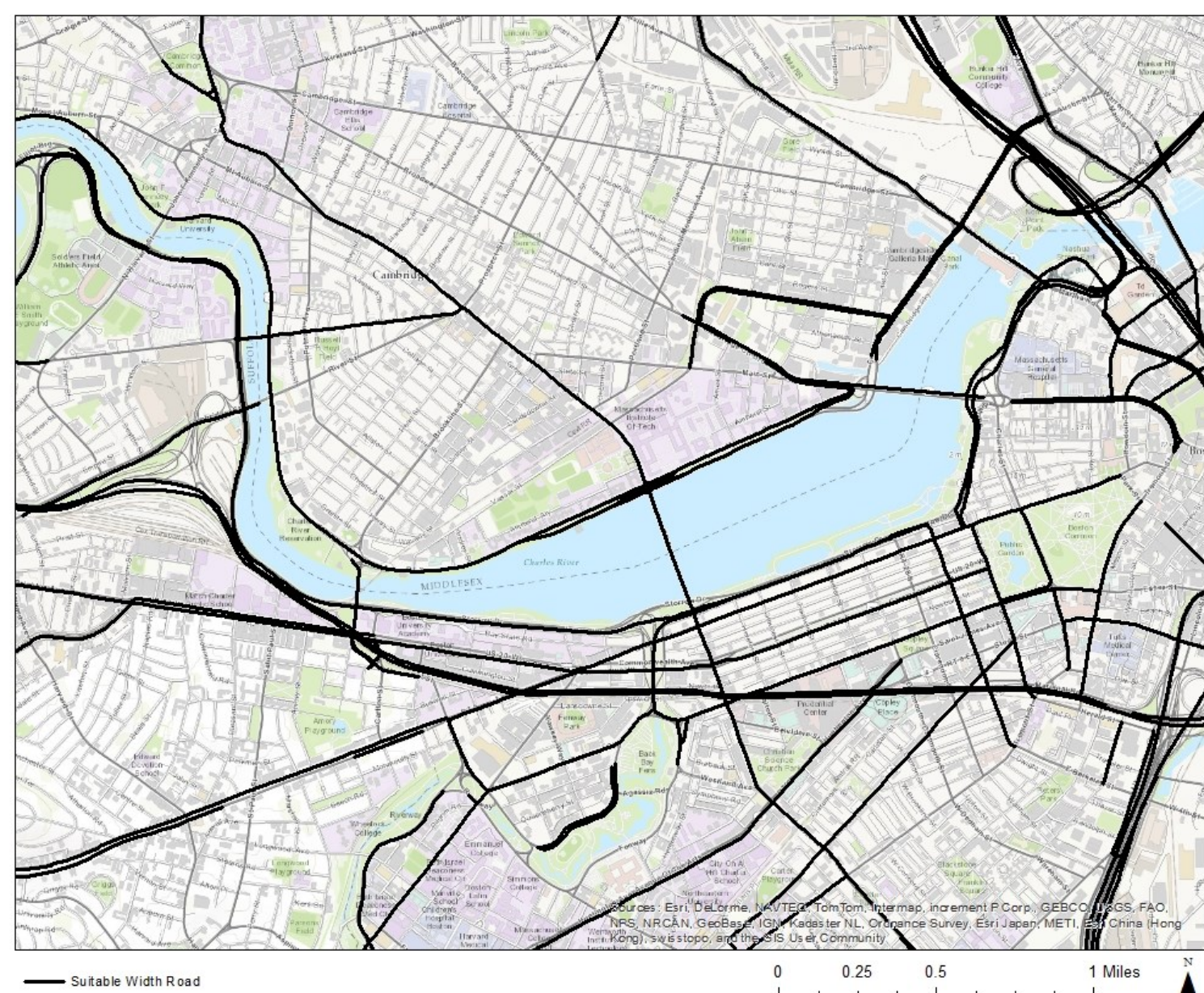
Cycle tracks are the modern indication of a cycling-friendly city. By definition, a cycle track is a path for cyclists that runs parallel to a road, but is separated by a curb, pylons, or stripes. Cycle tracks are a staple of many European cities, and can now be seen in some American cities as well, such as New York City, Portland, OR, and Chicago.



Cycle tracks allow cyclists to avoid conflicts with automobiles during most of their rides, only having to worry at intersections. Adding cycle tracks to the Boston area would benefit the city and many ways. A cycle track would increase ridership- giving commuters the freedom of more time outside, increased physical activity, and smaller daily expenses. The city would experience a milder rush hour, greater capacity, and smaller environmental impact.

What type of road does a cycle track require?

Only certain roads are physically suitable for cycle tracks. The requirement is that a road be wide enough to support existing auto traffic as well as cycle tracks parallel to that traffic. In order for a two-way street to accommodate cycle tracks, it must have at least three lanes. In order for a one-way street to accommodate cycle tracks, it must have at least two lanes. The cycle track will take over this lane's space, as well as some extra room in the shoulder or existing bicycle lanes. Here are the roads that have a suitable width:



How do we identify the best roads for cycle tracks?

I created a raster suitability map on the region using the data in the four maps above. I then took zonal statistics on the suitable-width road vector data, using the suitability raster. I converted the road-shaped raster of street scores to an integer raster, and then to a polygon. Taking the intersection of this polygon and the suitable-width roads, I was left with vector data of the most suitable roads, complete with each road's score.

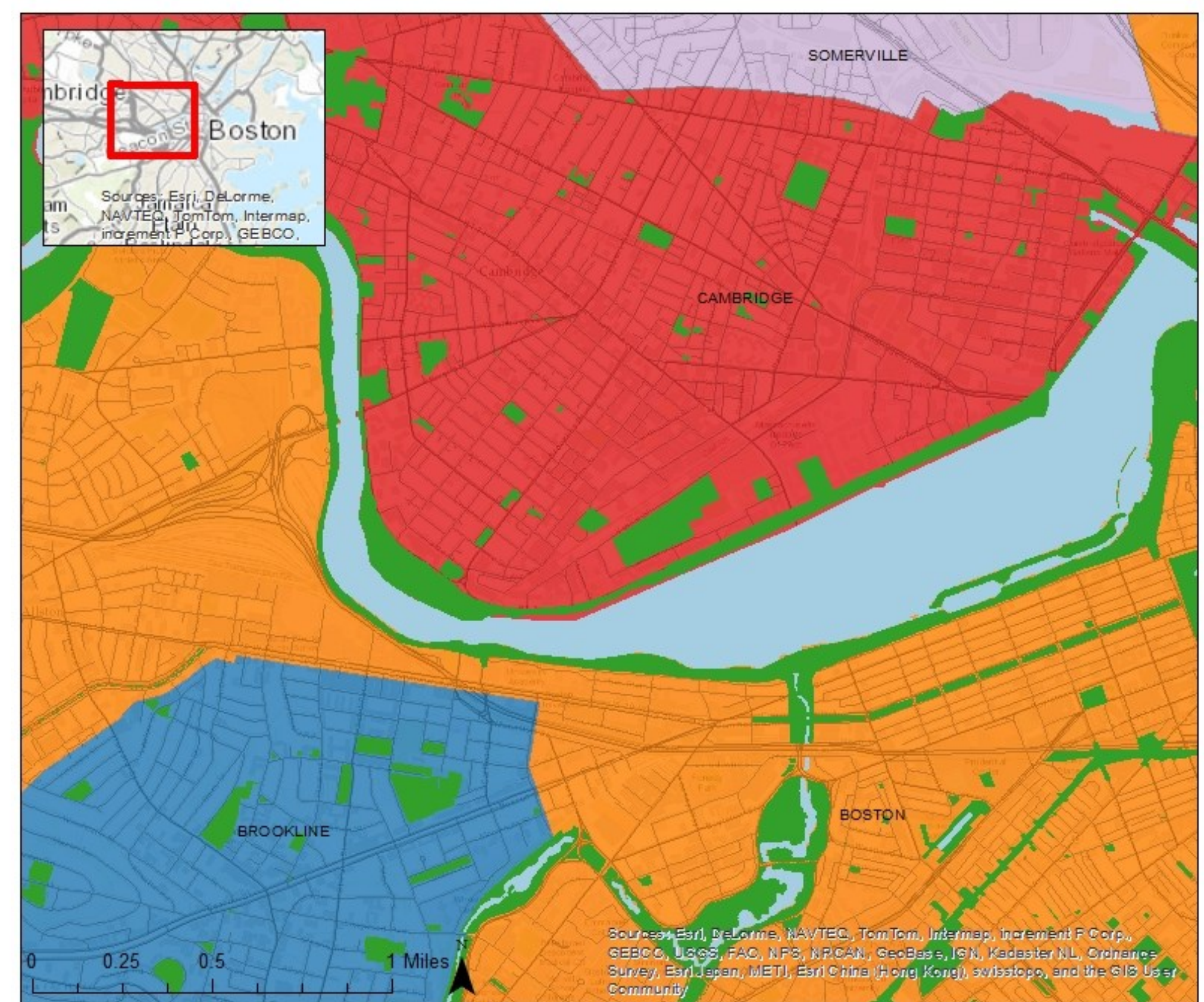
Which roads are most suitable for cycle tracks?

In Cambridge, the most suitable roads are Massachusetts Ave., Broadway and Galileo Way.

In Boston, the most suitable roads are Massachusetts Ave, Commonwealth Ave, Arlington St., Tremont St., Huntington Ave., and some more.

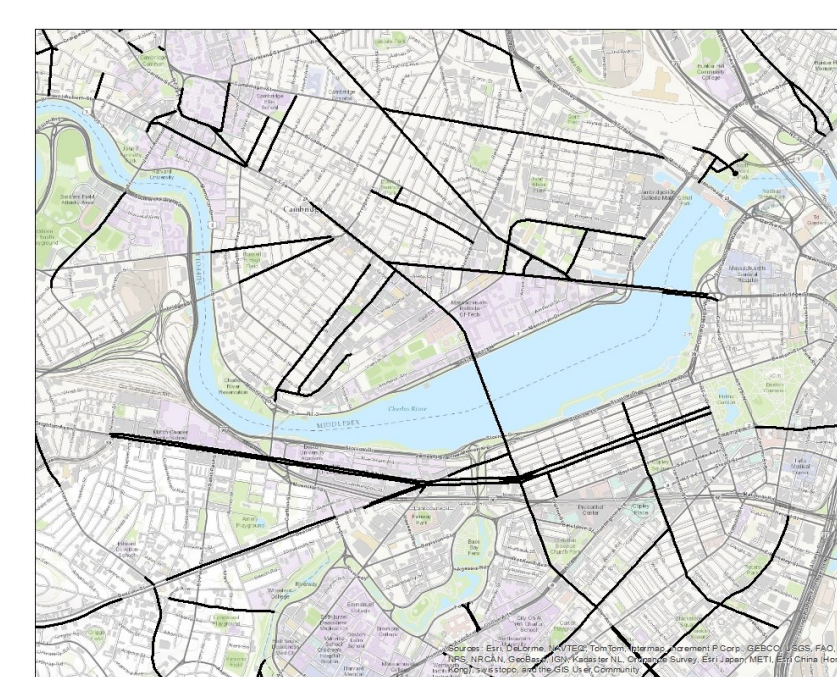
Some of the identified road segments are quite short, but even a short cycle track can be very useful. That being said, Massachusetts Ave., Commonwealth Ave., and Huntington St. may be the best choices, because in the long term, a cycle track could extend to the entire length of the street.

Analysis Location

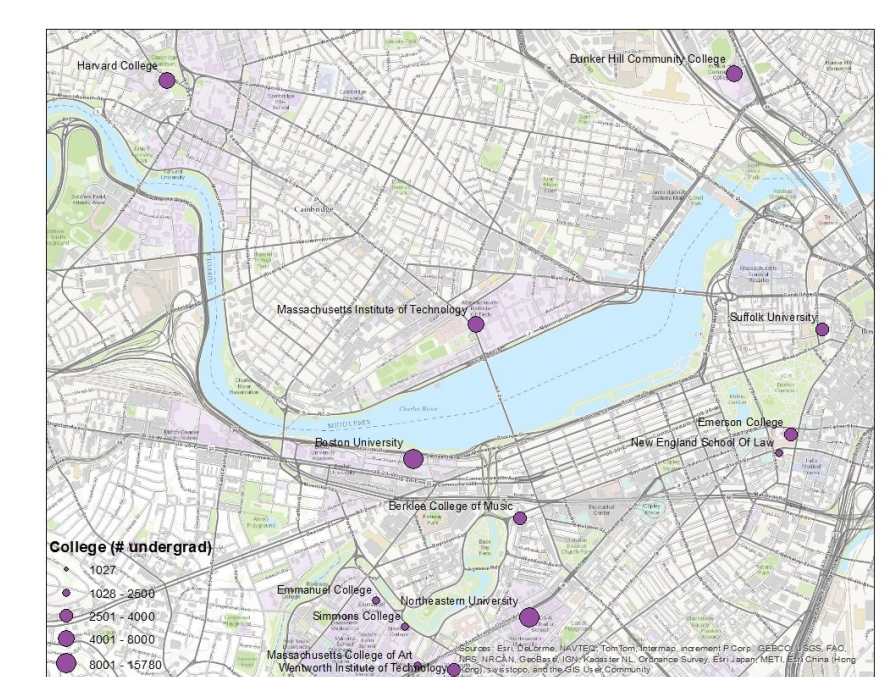


The analysis area is the span of the Hubway bikeshare system. The system that is already in place would complement a cycle track so well that it would not make sense to implement a cycle track elsewhere.

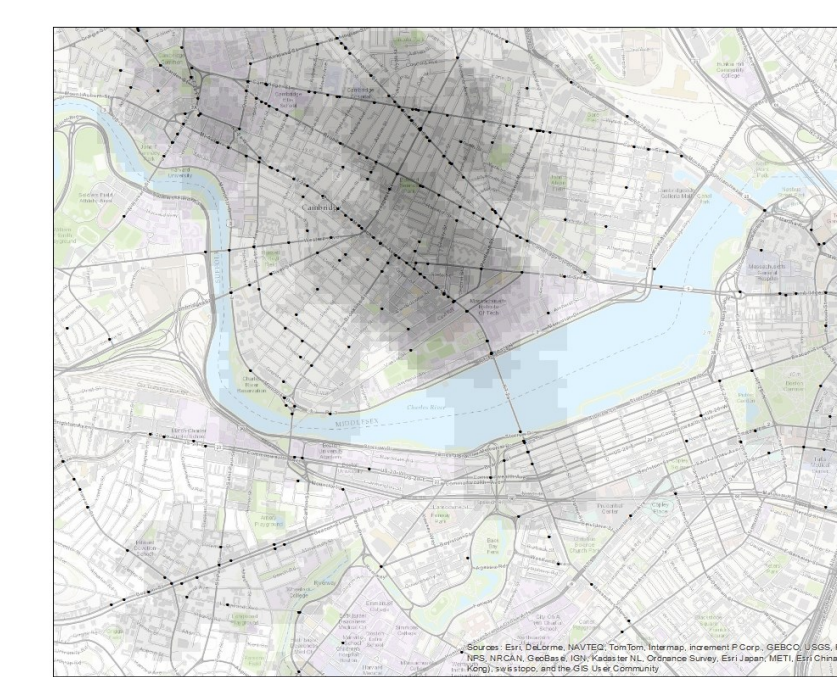
What makes an area suitable for cycle tracks?



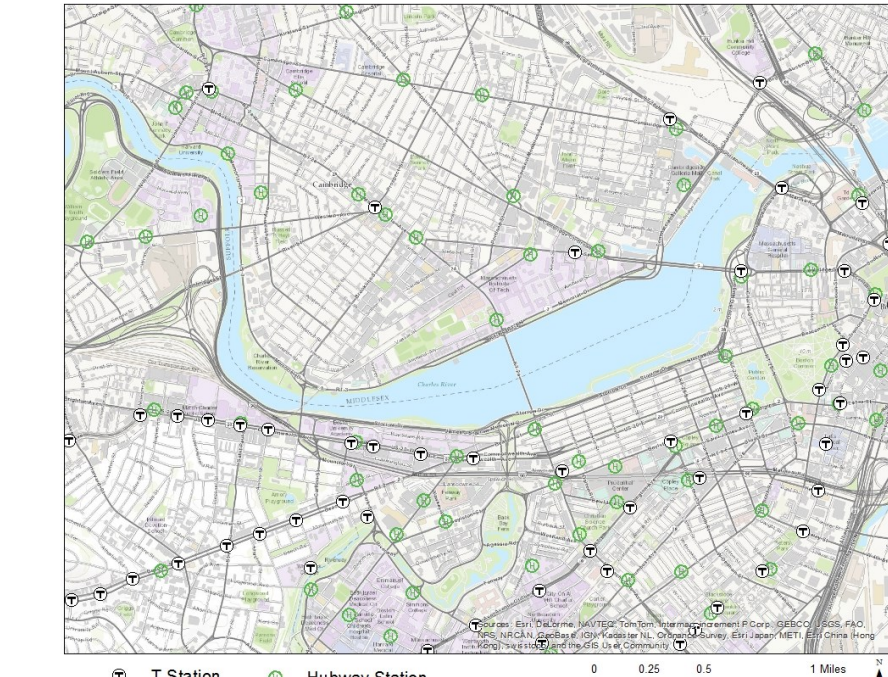
The current location of bike lanes is an important factor, because they are places that have already been identified as important for bike safety.



As colleges represent a permanent population of athletic people who often lack vehicles, their would increase the ridership of a nearby cycle track.



As safety is a large priority of cycle tracks, it is vital to analyze previous bicycle accidents in placing them. The shaded regions represent the highest bicycle accident density.



Locations of Hubway and T stations are crucial. The two stations together along a cycle track gives anybody riding the subway the opportunity to transfer to the cycle track, and vice-versa.

Suitability Map

