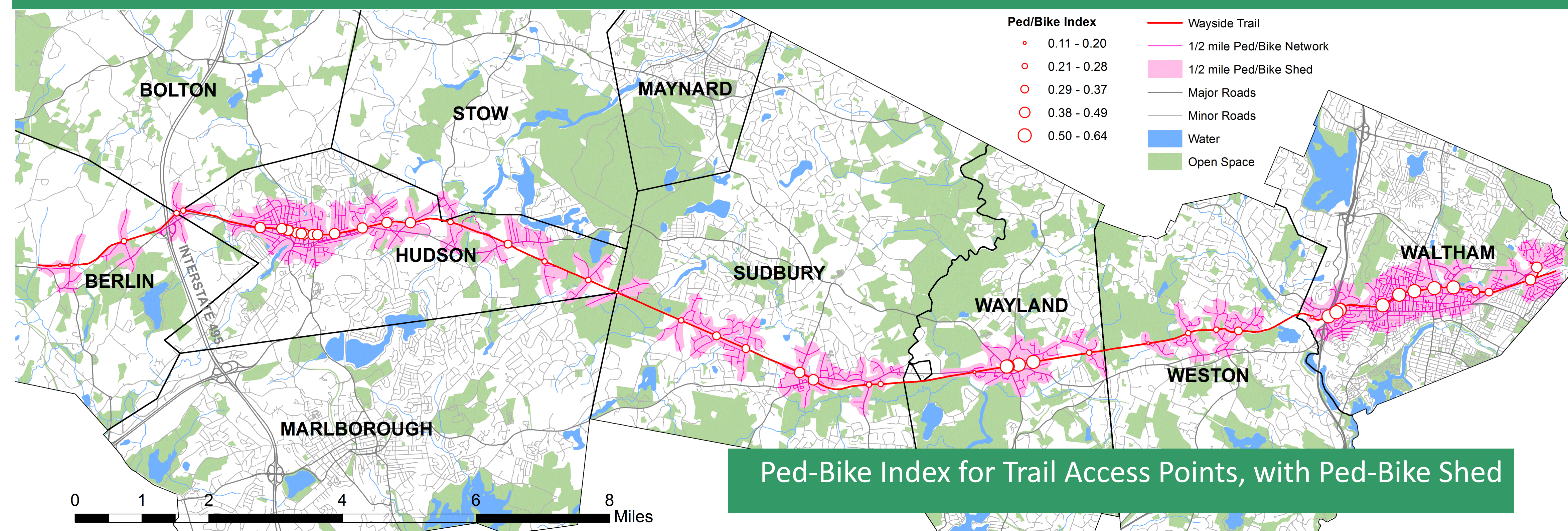


The Wayside Rail Trail: Access and Destination



Overview

The Wayside Rail Trail will be a 23 mile multi-use path along the old Massachusetts Central Railroad right-of-way. My parents' house abuts the right-of-way, and for almost 20 years, my father has been maintaining an informal trail (a gravel path on the side of the railroad ties) along three miles in Weston. I grew up walking and bicycling along the "tracks," as we call them.

In 2011, the Department of Conservation and Recreation (DCR), established a lease with the Massachusetts Bay Transit Authority (MBTA), which owns the right-of-way, to construct and operate the Wayside Trail (DCR, 2014a). Pending funding, DCR hopes to begin construction later in this year, with 2020 as the projected year of completion and trail opening (EEOEA, 2014).

The Wayside Trail is just one part of a larger long-term plan for the 104 mile Massachusetts Central Rail Trail. Eleven miles of the westernmost portion of this trail, from Amherst the Northampton, have been operating as a rail trail for more than twenty years (DCR 2014b).

Project Purpose

To explore the access and assets for the trail and its

abutting towns. My hope is that the findings of this exploration will be useful in either predicting the impact of the trail on the health of community residents, advocating for the trail, or designing programs to promote the use of the trail.

Question 1 How accessible is the trail on foot and bicycle, and how does accessibility vary across the trail?

Rationale Research has shown associations between trails and healthy behaviors such as exercise and active transportation (Dunton et al., 2009; Pierce et al. 2006; Buehler & Pucher 2011), but other studies (Troped et al., 2001 & 2003; Wolch et al. 2010) have indicated that perceived and objective distance from and/or barriers to trails are significantly related to trail use.

Question 2 How ped/bike accessible is the trail to:

- "Natural spaces:" water bodies and open space?
- "Third spaces:" public libraries and cafes?

Rationale Based on my own experience as a walker, runner, and bicyclist for recreation and transportation, I theorize that the trail would be more beneficial to active transport and recreational users if there are "third space" and "natural space" "destinations" accessible from the trail. "Nature contact" has a demonstrated association with improved mental health and cognitive function (Frumkin, 2010).

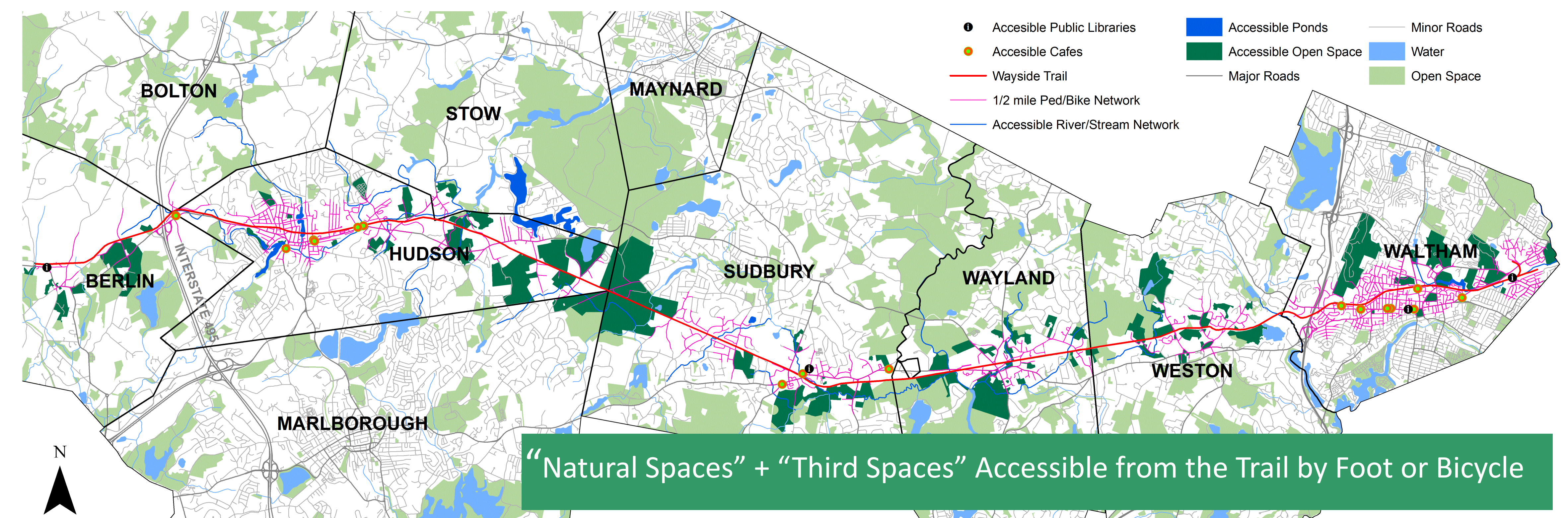
Methods

Ped/Bike Shed: I used the network analyst service area tool to create a layer with all segments of the street network within a half mile network distance from a trail access point, and a polygon defined as the 100 meter buffer around the street network.

"Walkable" and "bikeable" distances are highly subjective; I used a half-mile to define accessibility because it is about a ten minute walk or a five minute bike ride. These polygons were my "ped/bike shed."

Ped/Bike Index: The "ped/bike index" estimates walkability/bikeability within each ped/bike shed. My methods were a simplified version of those followed by Giles-Corti et al. (2011). The index measures accessibility by comparing network distance to "as-the-crow-flies" distance. First, I calculated the area of the ped/bike shed. Then I calculated the ratio of the ped/bike shed area to the area of a circle with a half-mile radius.

Access to "third spaces" and "natural spaces:" Using basic spatial analysis tools, I selected all cafes and public libraries located within the ped/bike shed, and all open spaces and water bodies overlapping with the ped/bike shed. The resulting data layers represented all libraries, cafes, water bodies, and open spaces within a half mile network distance of a trail access point.



Mass Central Rail Trail



Data Sources: Mass GIS, Reference USA
Map Projection: NAD 1983 Massachusetts State Plane (Lambert Conformal Conic)

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Cartography, Photography, & Writing by Marga Hutcheson
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Department of Urban + Environmental Planning + Policy, Tufts University
UEP 232: Introduction to GIS for Urban and Environmental Analysis

Results

Walk/Bikeability: The ped/bike indexes indicated a low overall level of pedestrian/bicyclist accessibility. Indexes ranged from 0.12 to 0.64, with a median of 0.42. Only four ped/bike sheds, all located in Waltham, were "walkable" (as defined by a score of (0.6 or greater). Hudson had the greatest number of access points (21) followed by Waltham (14), but the median walkability was higher in Waltham (0.53) than in Hudson (0.45).

Access to "third spaces" and "natural spaces:" Within a half-mile network bicycling/walking distance of the proposed Wayside Rail Trail, there are: **185 parcels of open space**, **4 ponds**, **19 cafes**, and **4 public libraries**.

The ped/bike shed of the trail connects to an **open space "shed" of 3,682 acres**, and a **river/stream network of 52 miles**.