



# EQUITABLE EXPANSION: HUBWAY STATION SITING FOR SOMERVILLE

## Evaluation Criteria

Evaluation of each of the 23 potential sites was based on a rubric of 100 points, broken into four categories:

**1. Station Density:** in 2015, NACTO released research demonstrating how bike share use increases exponentially when stations are within short walking distance, naming station density the number one factor in equitable bike share<sup>1</sup>.

**2. Neighborhood Context and Land Uses:** how useful a station is to the community is highly dependent on what's around it. Each location's proximity to open space, commercial

centers, low-stress bike facilities, and existing or proposed transit stations was determined.

**3. Station Siting:** whether a standard 40' x 6' station can be installed on the sidewalk or must be built on-street is a major consideration, as well as construction needs, city and state obstacles, and effect on parking.

**4. Community Context and Demand:** is the location in an EJ neighborhood, and have residents expressed demand through the Hubway "Suggest-a-Station" web page.

<sup>1</sup> NACTO. 2015. "Walkable Station Spacing is Key to Successful, Equitable Bike Share."

## Introduction

Equity and access issues are pervasive in bike share systems across the country<sup>1</sup>. Short-term users and annual members tend to be disproportionately wealthy, white, and young. According to a study conducted at the University of Vermont, Boston's Hubway system did not show differences in the means for age or education, but it did show race and income disparities when it came to station location<sup>2</sup>.

*"Most bike share deployments locate their docking stations so that users can travel between affluent neighborhoods, tourist destinations, and central business districts. The effects of this approach are beginning to show."* ~ Julian Agyeman and Matthew Claudel, *The Boston Globe*, October 13, 2017

In Somerville, eight new Hubway stations will be added in 2018 followed by eight in 2019 – more than doubling its existing 12 stations. The spatial question this project seeks to answer is: where should they go?

While Hubway has been recognized as a national leader in adopting equity-focused policies<sup>3</sup>, it still has a long way to go. As UEP Professor Julian Agyeman and Matthew Claudel put it in the Boston Globe, "There is a strong financial incentive to develop technologies as marketable lifestyle amenities, not as a form of support for an entire community's livelihood."

Locating stations in low-income neighborhoods and communities of color is not the only factor to consider in developing an equitable, efficient, effective system. Criteria like station density, sidewalk-level placement, proximity to commercial centers, placement in relation to topography, proximity to transit, and proximity to low-stress bike networks are all important to evaluate.

This project only attempts to evaluate criteria for siting, excluding the myriad other ways to increase bike share equity like community outreach, pricing, cash payment options, and local hiring.

<sup>1</sup> Shaheen, S., Martin, E., Chan, N.D., Cohen, A.P., and Pogodzinski, M. 2014. "Public Bikesharing in North America During a Period of Rapid Expansion: Understanding Business Models, Industry Trends and User Impacts." MTI Report 12-29. Mineta Transportation Institute.  
<sup>2</sup> Ursaki, Julia and Aultman-Hall, Lisa. 2015. "Quantifying the Equity of Bikeshare Access in US Cities." University of Vermont Transportation Research Center.  
<sup>3</sup> Whitten, Cameron. 2015. "Prescription for Equity: Boston's Subsidized Memberships Lead The Way For Inclusive Bike Share." Better Bike Share Partnership.

## Background, Methods, and Sources

Discussion between City of Somerville staff and bicycling advocates about the placement of the next 16 Hubway stations began in September 2017, and work on this project commenced in October. Somerville planners provided a map of ideal station location GPS points and a rubric by which to evaluate them. Other key resources and datasets were Hubway's "Suggest-a-Station" community engagement page<sup>1</sup>, NACTO's Bike Share Station Siting Guide, MassGIS physical and political shapefiles, and environmental justice (EJ) data based on the 2010 U.S. Census.

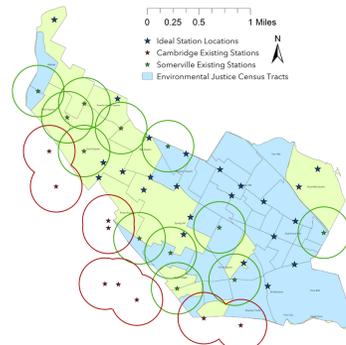
Using 1/4 mile buffers, the walking-distance coverage for existing and potential bike share stations was then compared to different metrics including station density, race, income, and proximity to different land uses.

<sup>1</sup> <http://suggest.thehubway.com/page/about>

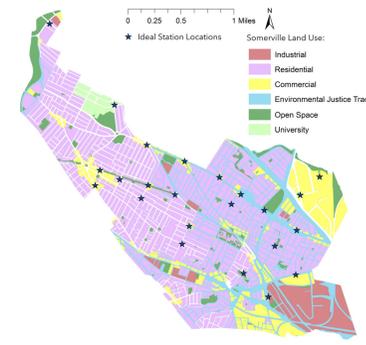


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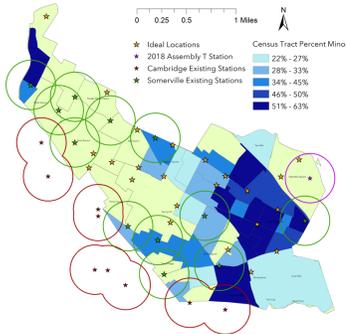
2017 Existing Stations + Ideal Locations and EJ neighborhoods



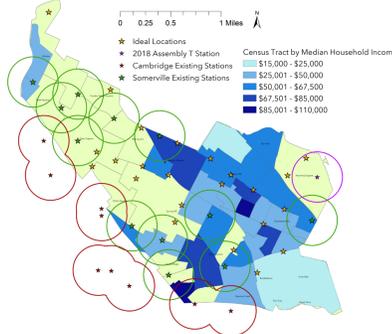
Ideal Station Locations and land use



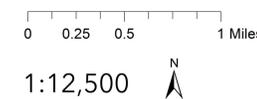
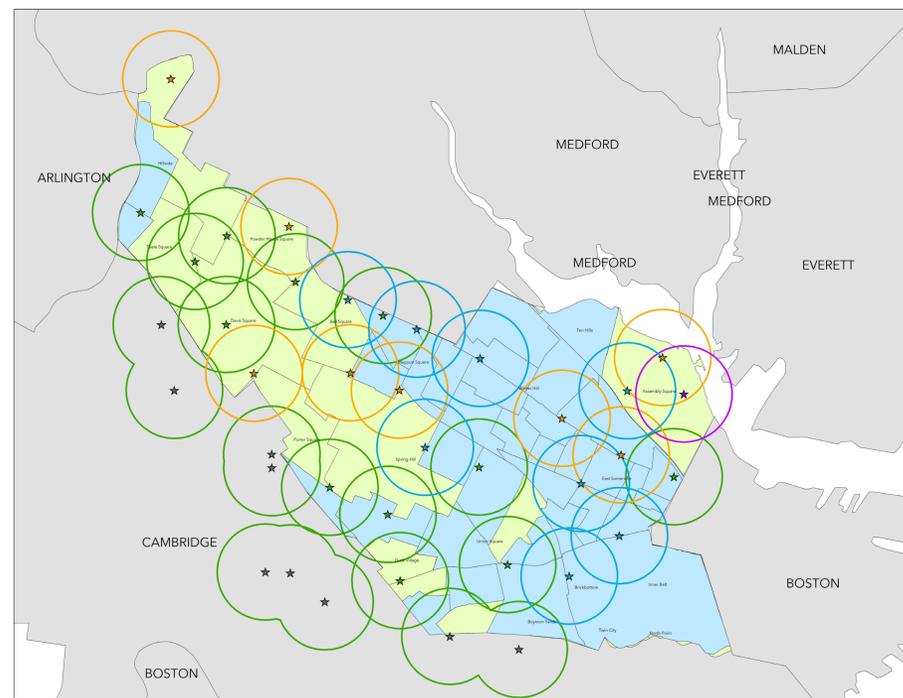
Ideal Station Locations and race



Ideal Station Locations and income



## 2018 & 2019 Recommended Stations and EJ neighborhoods



## Location Visit Examples



**East Somerville Library: Score: 85, Rank: 3**  
Perfect location! The station can be placed where the bollards are currently, or elsewhere in the plaza. Located in an underserved neighborhood, with high community demand. There is a small park and many other businesses nearby.



**Cedar at Highland: Score: 51, Rank: 22**  
Busy intersection, not a lot of road or sidewalk width. Would definitely have to be street level. But good connection with transit because there are two bus stops on either side of the intersection, and it fills in a neighborhood gap.



**Summer at Elm: Score: 68, Rank: 11**  
Community demand for another station at Davis Square is huge, and here, where a triangular pocket park marks the intersection of two busy commercial streets, would be perfect. However, the sidewalk width here is 26' by 9'. But, more space could be cleared if the city removed the fence blocking off the park.

## Results

Location	Rubric Score	Ranking	Year Recommendation
Lowell at Community Path	91	1	2018
Foss Park	86	2	2018
East Somerville Library	85	3	2018
Assembly at Artisans	84	4	2018
College Ave at Dearborn	81	5	2018
Cedar at Community Path	81	5	2018
McGrath at Washington	78	7	2019
Foley at Middlesex	73	8	2019
Boston Ave at Rt 16	71	9	2018
Magoun Square	70	10	2019
Summer at Elm	68	11	2018
Washington at Myrtle	68	11	2019
Ball Square	67	13	2019
Willow at Lexington	63	14	
Pearl at Cross	62	15	2019
Highland at Central	61	16	2019
Broadway - Winter Hill	60	17	
Community Path at Grove	58	18	
Broadway at Main	57	19	2019
Prospect Hill Park	53	20	
School at Evergreen	53	21	
Cedar at Highland	51	22	
Summer at Central	42	23	