MBTA Commuter Rail Station Site Suitability

Everett, Massachusetts

Introduction

Everett, Massachusetts is a small inner-core city north of Boston. It has a high-density residential area north of Route 16 - which bifurcates the city - and a largely industrial and commercial area south of Route 16. Despite its dense residential makeup and being an industrial employment hub, public transit is lacking. The city is served by numerous bus routes, but none of these connect directly with downtown Boston; one must connect via Orange Line stations in Somerville and Malden. The MBTA Newburyport/Rockport commuter rail line does pass through the city, however, and Everett planners and policymakers have long discussed adding a stop in Everett, between North Station and Chelsea. Such a stop also has potential to encourage new transit-oriented development.

The commuter rail tracks run through two distinct Everett neighborhoods: Lower Broadway and the Commercial Triangle. A potential station would have to be situated in one of the two areas. The City is currently engaged in neighborhood master planning processes for both areas, making it an ideal time to analyze potential commuter rail sites in the two neighborhoods.

Lower Broadway is an appealing site if a proposed casino deal comes through, and is more centrally located between the current stations at North Station and Chelsea. The Commercial Triangle is appealing because it is more easily accessible from all points in Everett.

This analysis seeks to identify the most suitable locations for a commuter rail station in Everett, based on criteria from the literature, parcel cost and ownership data, and a desire from Everett policymakers for walkable transit access.

Methodology

Based on the literature review and best practices, a series of guiding principles were used to determine suitable sites, primarily using parcel data from the City of Everett, commuter rail data and 2010 U.S. Census data.

1. The site should be at least one mile away (track distance) from the nearest station in either direction: Chelsea and North Station
2. The site should be within 100 feet of commuter rail tracks
3. Residential parcels should be excluded
4. Suitable parcels should be at least 0.5 acres to allow for basic station infrastructure

After these parcels were identified, each site was analyzed to show the following:

1. Population within walking distance (0.5 miles)
2. Vacancy and underutilization, using a rough estimate of (assessed building value/total parcel value)
3. Per acre assessed value, to compare different sized parcels by price

Using various GIS tools, including selection by attribute and location, clip, buffer, erase, and network analyst, all Everett parcels were systematically narrowed down to illustrate only the parcels meeting the aforementioned criteria. This analysis does not rank the resulting sites, but presents comparable data points for each so that policymakers can make an informed decision.

References

Data Sources:
City of Everett assessor (2012), MassGIS, 2010 U.S. Census (American Fact Finder)

Literature:
Horner, M. W., & Grubesic, T. H. (2001). A GIS-based planning approach to locating urban rail terminals. *Transportation, 28*(1), 55-55.

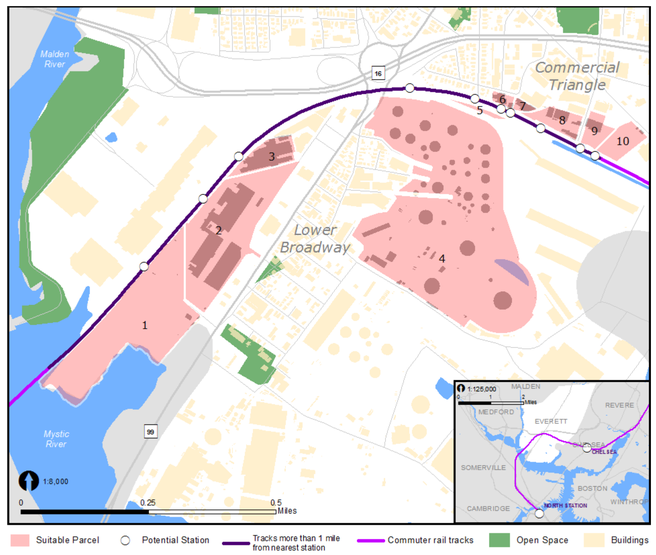
Rosenberg, J. L., & Esnard, A. M. (2008). Applying a hybrid scoring methodology to transit site selection. Journal of Urban Planning and Development, 134(4), 180-186.

Santa Clara Valley Transportation Authority. (2007). Station Area Service Guidelines. *VTA Transit Sustainability Policy 2007.*

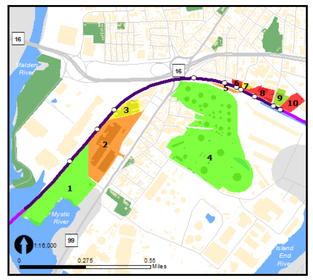
Weinstein Agrawal, A., Schlossberg, M., & Irvin, K. (2008). How far, by which route and why? A spatial analysis of pedestrian preference. Journal of urban design, 13(1), 81-98.

Identified Station Sites

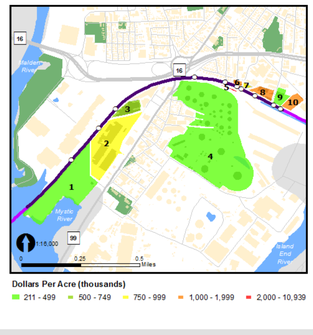
All Parcels (10) Suitable for Commuter Rail Station



Parcel Utilization



Assessed Value Per Acre



Limitations

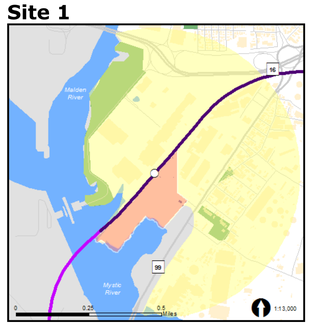
Limitations of this analysis were related to the Census block data and 0.5-mile pedestrian catchment area. First, the population counts within each catchment area in the analysis are likely slightly higher than actual. This is because on the edges of the catchment area, if the 0.5-mile radius touched any part of a Census block, it included the whole block's population in the total count even if only a fraction of the block population is actually in the 0.5-mile radius. Still, the blocks in the affected areas were relatively small, and as noted from the Weinstein article, pedestrians may be willing to walk an average of 0.58 miles to a transit station. Second, the 0.5-mile circular catchment area likely overestimates population because traveling the existing road network is almost always a greater distance than as the crow flies. Using a circular buffer, though, rather than road network analysis, was a conscious decision . It is likely that new developments in Lower Broadway and the Commercial Triangle will include improved road accessibility, so the method used gives a fuller accounting of the potential populations.

Conclusions

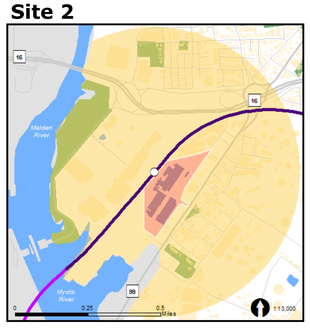
As shown in the accompanying maps, 10 sites met the criteria for commuter rail station suitability. Each has a different combination of parcel affordability and population access, but a few sites stand out for doing well on both fronts. Site 4, located at the nexus of Lower Broadway and the Commercial Triangle, has low per acre value, low utilization, and has a 0.5-mile catchment area including over 8,000 people. Site 9, in the middle of the Commercial Triangle, is almost as undervalued and underutilized, with over 7,000 people in the 0.5-mile catchment area. These two sites stand out, but again, all 10 sites have potential based on the priorities of residents and officials. Site 1 on the Mystic River has a low residential population nearby currently, but as the site of a potential casino, it could accommodate a station that would serve visitors and a new residential population as Lower Broadway develops.

Population within one-half mile of each identified station site

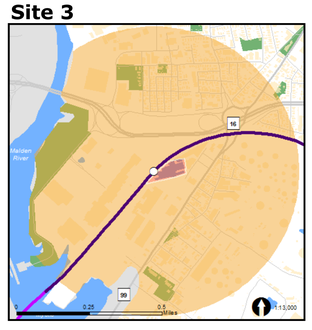
Site 1



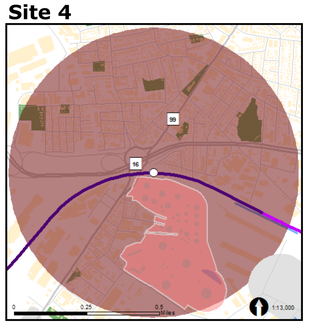
Site 2



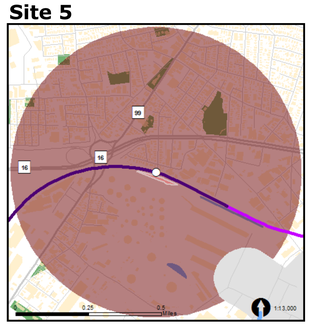
Site 3



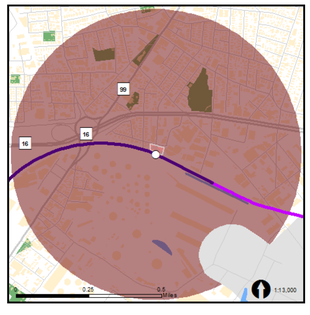
Site 4



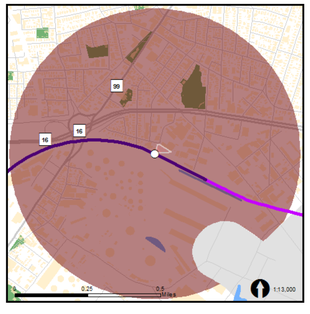
Site 5



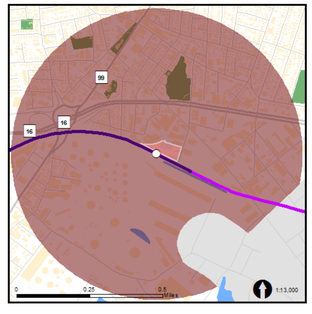
Site 6



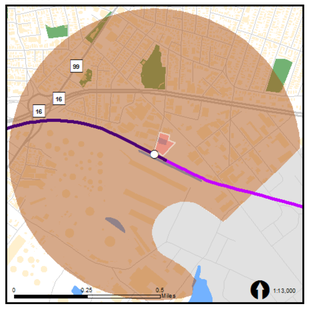
Site 7



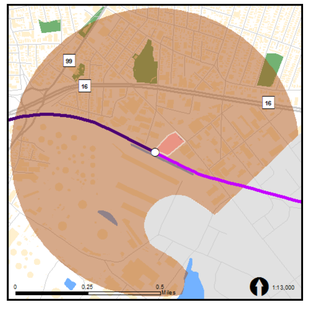
Site 8



Site 9



Site 10



1,463 - 1,999 2,000 - 3,999 4,000 - 5,999 6,000 - 7,999 8,000 - 9,351