Alice in Wonderland in Union Square: Creating Lasting Connectivity and Revitalized Public Amenities in Somerville’s Historic Square

Praveen Subramani
Urban Transportation Planning
November 2010
Background & Context

Union Square, located at the intersection of Somerville Avenue and Washington Street is a commercial hub for the surrounding residential and industrial areas of Somerville, Massachusetts. Somerville’s population experienced significant decline between 1930 and 2000, though remains the most densely populated area in New England as of the 2000 census.¹ The Green Line Extension project proposes to bring a new green line station to Union Square as the terminus of one of two branches, the other of which would travel northwest along the MBTA Commuter Rail Lowell Line right-of-way and terminate at College Avenue near Tufts University. The proposed station would connect Union Square to a relocated and redesigned station at Lechmere with a 0.9-mile branch along the MBTA Fitchburg Line commuter rail right-of-way.²

The Union Square station has wide-reaching implications for the economic, social, cultural, and commercial futures of the square, the surrounding city of Somerville, and neighboring Cambridge to the south. The proposed line extension and new station would provide an opportunity for the redevelopment of the industrial landscape along the Fitchburg line and would provide a light rail connection to the square which is currently linked to Boston and surrounding squares (Central, Inman, Harvard, Kendall, Davis) only by bus routes. On the other hand, preserving Union Square’s unique character and largely working class demographic without initiating a gentrification process is a major concern for residents of the square and greater Somerville. Engaging the current residents and business owners as well as other stakeholders including East Cambridge residents and commuters who take advantage of Union Square’s numerous bus connections will be critical for successfully integrating the new station into the urban fabric.
Regardless of perceived benefits or drawbacks, modification of the street network will be required to facilitate pedestrian, bus, and vehicular access to the new station. Moreover, the introduction of the station provides an important opportunity for the redevelopment of Union Square through additions such as improved public spaces, lighting, seating, and amenities.

**Local Accessibility & Connectivity**

Any recommendations for possible changes to the street network must be informed principally by the physical location of the proposed Union Square station. The Final Environmental Impact Report (FEIR) for the Green Line Extension project proposes to take advantage of the existing right-of-way for the Fitchburg commuter rail, thus requiring the station to be located southeast of Union Square, just east of Prospect St near the intersection of Prospect St and Webster Ave (Figure 1). Selection of this location for the Union Square station has broad implications for connectivity to the surrounding neighborhoods and therefore also the recommendations for modifying the street network. Of paramount importance is the fact that the station is not in fact located in Union Square, but rather 0.2 miles south (approximately a 4-5 minute walk). This is chiefly for practical reasons since the proposed extension will parallel the existing Fitchburg rail line and use the same right-of-way which is already owned by the MBTA. Furthermore, placing the station within Union Square itself would have been incredibly costly and politically challenging, since use of eminent domain may have been required.
While this distance is small in absolute physical terms, the proposed station site feels distinctly more industrial and is psychologically quite disconnected from Union Square’s commercial and residential offerings. Indeed, the land use changes from industrial to commercial about halfway between the station site and the square.

To actively facilitate a safe and comfortable connection to Union Square from the station, a thorough redesign of Prospect St will be required, as it will likely serve as the major pedestrian and vehicular connection. Currently Prospect St is one way for vehicles, running northeast from Webster Ave to Somerville Ave towards the eastern portion of Union Square (Figure 2).
The locally preferred alternative proposes widening Prospect Street to provide two-way traffic and eventually restoring two-way connectivity to Washington St, which is currently blocked off as a small parking lot and public plaza in front of The Independent restaurant. In addition, option W1 for redevelopment of Webster Ave and Prospect St provides for the introduction of dedicated bicycle lanes to the streets, while option W2 recommends allocating some of the streetscape for parking and using shared-lane markings (sharrows) instead of dedicated bike lanes. While option W1 would result in a short-term loss of parking on Webster Ave, it is preferable in the long term for strengthening intermodal connections between the station site and Union Square.
Furthermore, additional street parking can later be added to Prospect St south of the intersection with Webster Ave. While the Union Square station may end up being the terminus of this branch of the Green Line if the extension to Porter is never completed, it is not well suited for a park-and-ride facility because of the high residential density within a half-mile radius and the availability of bus connections to other neighborhoods. 

Notably absent from either option is an emphasis on pedestrian connections to the square, particularly for commuters who must walk from the Green line to a bus connection in Union Square. While there are currently sidewalks along the Prospect St bridge over the rail line, they are not particularly inviting to pedestrians and are poorly lit by night. The site is further complicated by the presence of the rusting, decrepit NSTAR electrical substation on the West side of Prospect which is unsightly and quite frankly a frightening and incomprehensible piece of infrastructure for pedestrians, transit riders, and motorists alike. As the bridge will require significant reconstruction to widen the vehicular right-of-way, the sidewalks should be widened as well and graced with improved landscaping and public lighting such as strips of LED lighting in the ground, which would provide a low-cost, and energy efficient lighted path. Such a path would serve to increase perceptions of public safety and provide a visible delineator between pedestrians and the rush of cars along a newly widened Prospect St.

Furthermore, the proposed location of the Union Square station creates a number of opportunities for connectivity with the neighboring city of Cambridge to the south (Figure 3). Residents of Inman Square and portions of East Cambridge along Cambridge Street would also be served by the station, so improved pedestrian and bicycle linkages on Prospect St and Webster Ave would facilitate access from the south. Thus residents of East
Cambridge are also relevant stakeholders in the extension of the Green Line to Union Square and should be considered as such. Currently, the sidewalks along Webster Ave between Cambridge St and the new station are in disrepair and the street is dominated by auto-oriented businesses with a strongly industrial character. Prospect St is slightly more welcoming since a residential stretch continues between Inman and Union Squares and the sidewalks are in much better condition, but becomes similarly industrial closer to Union Square with businesses ranging from auto body shops to fasteners and metal products.

Figure 3: Half-mile radius around proposed Union Square station, showing overlap with Inman Square and portions of East Cambridge. (Source: Green Line Extension Land Use Open House)

By night, both streets are poorly lit and feel increasingly unsafe and industrial as pedestrians travel north from Cambridge St towards the proposed station site. Improved public lighting and sidewalk renovation would be very helpful for making this connection more welcoming and increasing public perception of safety, as well as serving to
strengthen ties between the Cambridge and Somerville communities. Coordination with the city of Cambridge is necessary from both financial and practical standpoints, as a community development process may be necessary before local funds can be applied to improvement of these connections.

**Public Space & Regional Accessibility**

While the local connectivity analysis focuses on linking the station site to Union Square along Prospect St, the heart of the square is also a candidate for improvements, particularly with regards to public space and regional vehicular accessibility. The proposal to deemphasize Somerville Ave between Webster Ave and Prospect St and create a woonerf (a pedestrian and cycle-dominated traffic calming area) is quite promising. The woonerf would provide opportunity for safer intermodal mobility and would be a prime location for the introduction of public amenities including bike parking, highly visible public signage emphasizing pedestrian and cyclist right of way, public seating, and new landscaping. Such a revitalized area could dramatically improve the character of Union Square by welcoming pedestrians to stroll casually through the square without having to wait through long traffic cycles to cross Somerville Ave. Furthermore, reintroducing two-way connectivity to Washington St would only result in sacrificing a small amount of currently underutilized public space, as most of the space is currently dedicated to parking.5

Currently MBTA bus routes 85 (Spring Hill to Kendall/MIT), 86 (Sullivan Station to Reservoir/Cleveland Circle via Harvard), 87 (Arlington Center to Lechmere), 91 (Sullivan Station to Central Square), and CT2 (Sullivan Station to Ruggles Station via Kendall/MIT) service Union Square, and careful attention will have to be paid to ensuring that these
routes continue to function at an adequate level of service during and after the upgrades. Fortunately, it appears that all of the bus routes can be effectively accommodated despite the Somerville Ave woonerf, and some routes can even be enhanced to better service commuters departing and arriving from the new Green Line station (Figure 4).

With the proposed introduction of two-way traffic to Prospect St, the 91 bus can be rerouted to travel directly down Prospect between Somerville Ave and Massachusetts Ave in Cambridge, thus providing a speedy and convenient linkage between the new Union Square Green Line station and Central Square’s Red Line. The 87 bus provides an important linkage between Davis Square, Union Square, and Lechmere, so deemphasizing Somerville Ave between Webster Ave and Prospect St could be disruptive to the route. If two-way through connectivity is restored to Washington St, the route can take a slight detour up Washington St and onto McGrath Hwy before reconnecting with the original route along Somerville Ave. Alternatively, the route could cut southeast along Webster Ave to Cambridge St and on to Lechmere. The first option is preferable because the Cambridge St corridor is already serviced by the 69 bus and maintaining the route along Somerville Ave would preserve access to destinations such as Target while serving a larger number of Somerville residents between Union Square and Lechmere. The 85 already traverses the Webster Ave corridor, so its route can remain unaffected, though perhaps a covered stop at Webster Ave and Prospect St to shield patrons of the new station from the elements would be welcomed. The CT2 could make use of the renewed two-way linkage through Washington St or better yet, travel up Prospect St to directly service the new station and avoid the complexity of traversing the heart of Union Square without sacrificing much access. Finally, the 86 can be routed along the renewed two-way Washington St linkage.
**MBTA Bus Routes Through Union Square**

**85**: Spring Hill to Kendall/MIT  
**86**: Sullivan Station to Reservoir/Cleveland Circle via Harvard  
**87**: Arlington Center to Lechmere  
**91**: Sullivan Station to Central Square  
**CT2**: Sullivan Station to Ruggles Station via Kendall/MIT

**Figure 4.1: Existing MBTA Bus Routes Through Union Square (existing routes in orange)**

![Map of existing MBTA bus routes through Union Square.](image1)

**Figure 4.2: Proposed Modification of MBTA Bus Routes Through Union Square (new routes in blue)**

![Map showing proposed modifications to MBTA bus routes through Union Square.](image2)

**Figure 4: Existing and proposed modifications to bus routes through Union Square after the introduction of the Green Line Station and the reestablishment of two-way through connectivity to Washington St. (Source: Schedules & Maps, MBTA)**
As the bus routes can be sufficiently accommodated, the principal drawback to the woonerf proposal from an accessibility standpoint is the additional strain placed on the intersections of Washington-Prospect and Somerville-Prospect intersections, which could result in reduced level of service. Washington St business owners should be reassured that the woonerf will bring increased pedestrian traffic to the triangle between Washington St and Somerville St, while traffic calming measures, improved markings, and prominent signage to promote pedestrian awareness will help keep the traffic speed slow and manageable for all modes.

**Land Use**

The introduction of the Green Line station also brings an opportunity for reallocation of land use and improvement of public space in and around Union Square. The current usage pattern is highly segregated and appears to have arisen from standard Euclidean zoning (**Figure 5**). Addressing this amalgam of industrial, commercial, and multi-family residential areas that currently occupy the neighborhood is particularly challenging. Industrial areas by their very nature tend not to be particularly livable or welcoming to residents and visitors. However, much of the land along the Fitchburg line is currently zoned for industrial use and is occupied businesses such as auto body shops, a ceramic contractor, and a plumbing/heating supply company. Perhaps most unpleasant and particularly unsightly is the pile of debris that lies north of the proposed station site (**Figure 6**). On the other side of the Prospect St bridge lies the heavily industrial NSTAR electrical substation which will have to be relocated if the Union Square spur is eventually extended to Porter Square.
Figure 5: Land use around the proposed Union Square Station. Note the change in land use from industrial to commercial as commuters leave the station and head north towards Union Square (Source: GLX Land Use Study).

Figure 6: Eastward view from the Prospect St bridge over the MBTA Fitchburg commuter rail line. A large junkyard-style debris pile currently lies on the north side of the tracks near the proposed station site. (Source: Green Line Extension Land Use Open House)
The continued presence of these industrial zones is problematic for the future character and development of Union Square. From a purely design-oriented perspective, it would be advisable to remove the industrial land uses and rezone them for high-density commercial use to attract a diversity of small shops, restaurants, and community amenities. The introduction of residential development to this portion of Union Square could be difficult because of the proximity to the rail line, which may be problematic because of noise, air quality, and perceived safety. Despite these factors, there may be an opportunity for second and third story residential units above stores closer to the intersection of Prospect St and Somerville Ave where there is some physical distance from the tracks.

However, the current landowners, employees, and customers of these industrial businesses must also be considered as stakeholders in any redevelopment efforts. Furthermore, the removal of these industrial uses in favor of mixed-use residential and commercial developments could be perceived – and could actually contribute to – the onset of a gentrification process in which the existing working class businesses and residents are pushed out by increasing prices of rents, land, and services. In order to balance the goal of turning Union Square into a livable and attractive space with the rights of industrial business owners and concerns about gentrification, a gradual land use reallocation process should take place in parallel with the station construction and implementation. Any new zoning ordinances will not apply retroactively and the industrial uses will likely be ‘grandfathered in’, so representatives from the city of Somerville along with candidates for development will have to negotiate with the existing landowners. This negotiation process should provide recommendations for (and perhaps even acquisition of) alternative locations for these industrial businesses, perhaps to south of the rail lines. In some cases,
the current landowners may be willing to sell the land for the right price, as many of the businesses appear to be in decline. Finally, the introduction of the station may raise land prices for this area, so it will be worthwhile to facilitate agreements between current property owners and developers who are interested in participating in the commercial repurposing of the land before the completion of the station.

Community Engagement

Addressing the concerns of residents and business owners in and around Union Square is critical to the success of the new station and any modifications to the surrounding streetscape. While many residents appear receptive to the Green Line Extension project, not all are convinced that the new station will be beneficial to the community. For example, a clerk at the Mid-Nite Convenient store mentioned that many people worry that the station will bring increased crime to the area, citing a fatal stabbing at the Davis Square station shortly after the introduction of the Red Line. Furthermore, with existing bus routes connecting Union Square to MBTA subway lines at Kendall/MIT, Central Square, Harvard Square, Lechmere, and Davis Square, the area is not particularly underserved by public transit. “The politicians come in here saying ‘More MBTA, more MBTA’ like it’s going to be good for us. I don’t think more MBTA is always good for us,” commented the clerk. While this type of public perception may not be entirely based in facts, it is important to address the sentiment and focus on promoting a clear message about improved connectivity and convenience for residents and more business for store owners. Enhanced lighting and increased police or security guard presence at the station and along the segments connecting the station to Union Square along Prospect and Webster could go a long way towards deterring these fears and improving the perceived safety level. Gentrification of
the area is also a concern, as real estate prices and rents tend to increase with improved
transit linkages, as was the case with Porter and Davis squares following the Red Line
extension to Alewife.

Perhaps more troubling is the fact that many of the store employees, residents, and
commuters in and around Union Square have not even heard about the proposed extension
or are uninformed about critical details such as the station site and the “two-branch”
topology. Careful attention should be paid to informing the public of the current proposals
and soliciting their input on streetscape modifications, as was done through the Land Use
Open House in June 2010 which asked community members what elements of the existing
land uses they would like to keep and how the introduction of the Green Line could help
improve their neighborhood. While community meetings and town halls that solicit input
from stakeholders are relevant and well intentioned, their audience is often limited to the
most vocal and politically informed of the affected population. Small and inexpensive
measures such as the addition of billboards and signage with compelling concept
renderings in and around the square would serve to disseminate information and promote
the station as an economic and social asset to Union Square.

The importance of identity should not be overlooked, so while creating a
“destination” out of Union Square may seem appealing to an outsider, it is vital that the
current residents and stakeholders maintain a strong sense of ownership. As Somerville’s
largest and oldest commercial node, this identity can be maintained and promoted through
the upkeep of community institutions and resources such as the USPS office, the police
headquarters, and the Somerville Community Access Television station.7 The historical role
of the square as a recruitment site for the Union Army during the American Civil War and
the Revolution-era significance of neighboring Prospect Hill Park should also be celebrated and publicized, perhaps through small outdoor exhibits and improved accessibility to the Prospect Hill Monument.

**Future Branch Extension**

The current proposal and FEIR for the Green Line Extension project features a two-branch pattern with the Union Square station serving as the terminus of one branch. This branch would parallel the MBTA Commuter Rail’s Fitchburg line, which operates between North Station and Porter Square and onwards through Belmont towards Fitchburg, MA in Worcester County (Figure 7). This two-branch topology leaves Union Square in an odd situation, as passengers seeking to travel on the light-rail line northwest into Somerville towards Tufts University will have to ride one stop to Lechmere before switching directions, or instead walk northeast from Union Square to the Brick Bottom station. With the Fitchburg right-of-way already extending through to Porter Square, it would be an unfortunate missed opportunity if the second stage of the Green Line Extension project failed to provision for an extension of the Union Square spur to Porter, thus facilitating connections with the Red Line and the Commuter Rail.
Figure 7: Map of Proposed Green Line Extension showing the two-branch topology. (Source: Green Line Extension Project FEIR June 2010)

The eventual extension of the line to Porter is worthwhile for the following reasons. Currently, residents of the southern portions of Somerville along the Cambridge border are underserved by public transit connections, particularly light rail. The connection of Union Square to Porter Square with Green Line light rail would bring renewed connectivity to the often overlooked “border neighborhoods” such as Wilson Square and the neighborhood West of Perry Park. This would reduce trip time to Boston for transit riders in these areas who must currently walk or bus to Porter, Harvard, or Central to ride the Red Line into Park St where many must then make an additional switch to the Green Line to access much of the city. Keeping in mind that the Green Line is currently the most traveled light rail system in the entire nation with a daily weekday ridership of nearly 240,000, a direct connection to the Green Line from Porter could significantly reduce the number of bus-to-T
and Red-to-Green switches required for residents of Somerville and Cambridge commuting to Boston.\(^8\)

Additionally, this connection would heavily benefit residents of Cambridge and would serve to strengthen economic ties between Cambridge and Somerville, as residents of the east and northern portions of Cambridge would have facilitated access to the commercial opportunities of Union Square and greater Somerville (and vice versa). Porter Square’s new Red-Green intersection in turn would become the “Park Street of Cambridge” from a transit perspective, providing an improved and more direct connection to downtown Boston locations such as North Station, Haymarket, Government Center, and portions of the financial district without necessitating a line switch at Park St. This may also serve to alleviate some rush hour congestion at Park St, though a more thorough analysis of ridership and rider destination patterns would be necessary to make a reliable conclusion on this matter.

Finally, as the right-of-way directly to the Porter Square station along the Fitchburg line already exists and is owned by the MBTA, the political and financial costs of extending the Union Square branch to Porter would be much more manageable than placing the line through existing developed and privately-owned areas.
References


